



# UNIVERSITY OF EDINBURGH JOURNAL



ISSUE 4, 2024



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:** *Temple of Fame* mural by William Mainwaring Palin (1862–1947) that adorns the interior of the McEwan Graduation Hall at the University of Edinburgh. Photography by Prof. Steve Hillier.

# University of Edinburgh Journal

Volume 51, Issue 4, 2024

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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. We are grateful for the continued support and generosity of our members, 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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The Interim Editor gratefully acknowledges the receipt of the following journals:

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

## From the Interim Editor

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**W**elcome to this jubilee issue of the *University of Edinburgh Journal*, celebrating the 100<sup>th</sup> anniversary of the founding of the University of Edinburgh Graduates' Association (UEGA).

This issue offers a centennial perspective on the Association's past, present, and potential future activity through articles by previous Presidents of UEGA (Peter B. Freshwater and Ronald H. Girdwood), and the Editor of the *Journal's* Canadian sister journal, *EDUCT news* (Simon Miles). We are also delighted to feature the inaugural address of the 54<sup>th</sup> Rector of the University—Simon Fanshawe OBE—delivered at his installation ceremony in the Playfair Library, on 16 October 2024. Edinburgh students and staff expect their Rector to make a difference, and Simon's address makes it clear that he intends to do precisely that. [It is noteworthy that the (21<sup>st</sup>) Rector in office when UEGA was established in 1924 was the then-Prime Minister, Stanley Baldwin.]

Looking back to look forward, we find that the year 1924 was an optimistic one for the University in other ways—not least with respect to female student recruitment. 1924 saw a peace-time peak (31%) in the proportion of women students registering on its courses. Regrettably, it didn't stay that way as societal, economic, and geopolitical pressures militated against university education for many women for decades to come. Happily, things gradually changed, and in the

Graduates' Association's hundredth year, the proportion of women students at Edinburgh now stands at over 60% (AY 2023/24).<sup>1</sup>

It is therefore apt and timely to commemorate the women of a bygone era who showed the persistence and resilience necessary to matriculate—and eventually graduate—at Edinburgh. And this we are delighted to do through the articles by Jo Spiller (Medicine) and Andrew Gardiner (Veterinary Medicine) focusing on women in the vanguard.

Consistent with the *Journal's* aim to encourage cross-disciplinarity within and beyond Edinburgh, this issue also contains articles on our 'special' library collections (Daryl Green), longitudinal research on ageing (Barbora Skarabela), and developments in modern mathematics (Minhyong Kim).

The final slot—Lives Launched—goes to two newly graduated students who gave orations at the July 2024 Graduation Ceremony: Giulia Guasoni (BSc) and Adam Blyth (BMedSc). Their speeches testify to the impact the University has had on their lives so far, and their expectations of it for the future.

Prof. Stephen G. Hillier  
Interim Editor

1. 'University of Edinburgh Factsheet', 21/11/2023 <<https://governance-strategic-planning.ed.ac.uk/facts-and-figures/university-factsheet>> [Accessed November 2024].

# Presidents of the University of Edinburgh Alumnus Association (1924–1930) and Graduates' Association (1930–2024)

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## University of Edinburgh Alumnus Association (UEAA)

1924–1926	Sir Harold J. Stiles KBE LLD (Chairman)
1927	Sir Harold J. Stiles KBE LLD (Acting)
1928–1930	Mr Alexander Miles MD LLD FRCSEd (Acting)

## University of Edinburgh Graduates' Association (UEGA)

1930–1934	Mr A. Logan Turner MD LLD FRCSEd (Acting)
1934–1938	Dr John Brown Clark CBE MA LLD (Acting)
1938–1940	Professor R. K. Hannay MA LLD (Acting–Died in office)
1940–1944	Dr James Watt LLD (Interim Acting President)
1945	Vacant
1946–1949	Professor Emeritus R. W. Johnstone CBE MA MD FRCSEd (Acting)
1949–1953	Professor Emeritus R. W. Johnstone CBE MA MD FRCSEd
1954–1956	Sir J. Randall Philip OBE QC MA DD
1957	Vacant

1958–1960	Very Rev Professor Emeritus John Baillie MA DD DLitt LLD
1961–1963	Sir Hugh Watson MA LLD DKS
1964–1965	Miss Rodney M. Murray OBE MA
1966–1968	Mr David Band MB FRCSEd FRSE
1969–1971	Mr Lawrence S. Miller MA LLB
1972–1974	Mr Archibald I. S. Macpherson MBChM FRCSEd FRSE
1975	Dr James W. Low BSc PhD FRCSEd
1976–1978	Professor Emeritus Neil Campbell OBE PhD DSc FRSE
1979–1981	Reverend R. Stuart Loudon TD DD DLitt
1981–1982	Mr John C. Bartholomew MA FRSE FRGS
1982–1985	Mr William V. Stevens OBE JP BCom
1985–1987	Dr Anne D. Schofield MBChB
1987–1989	Major–General John M. Matheson OBETD MD FRCPEd FRCSEd & Eng
1989–1991	Miss Cecily E. Giles CBE MA
1991–1993	Professor Emeritus Ronald H. Girdwood CBE MBChB PhD MD
1993–1995	Sir Alan Hume CB MA
1995–1997	Mr Ian M. Wilson CB MA
1997–1999	Mr Peter B. Freshwater MA DipLib FSAScot
1999–2002	Mr Iain F. MacLaren MBChB FRCSEd
2002–2004	Dr William C. Hutchison BSc PhD CBiol CChem FRS
2004–2006	Dr W. Neil Morley RD MB FRCPEd & Glasgow
2006–2008	Mrs Christine E. Reid LLB WS
2008–2009	Mr Alan M. Johnston MBA FRSC FIBiol
2009–2011	Miss Bridget M. Stevens MA
2011–2013	Mr Ritchie Walker MA BSc PGCE
2013–2016	Mr David A. Lamb LLB SSC
2016–2018	Dr S. Michael Langdon BSc DPhil CE
2018–2020	Mrs Oonagh Gray BA
2020–Pres	Mr David R. Gilmour BSc PGCE



# The University of Edinburgh Graduates' Association, 1924- 2024: a Centenary Review

by Peter B. Freshwater & Ronald H. Girdwood

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**Editorial Note:** Much of this account has been borrowed from an article by Prof. Ronald H. Girdwood (1917-2006) which appeared in the 75<sup>th</sup> Anniversary Issue of the *Journal* in December 1999. Peter B. Freshwater has edited and updated Prof. Girdwood's text and added his own account of the last 25 years of the Association. Prof. Girdwood and Mr Freshwater are both former Presidents of the Association. A study of the founders of the Association by Simon Miles, President of the Edinburgh University Club of Toronto (EDUCT), appears in the September issue of *EDUCT News* as well in this *Journal*. EDUCT and UEGA have been interested in each other's activities for many years and are delighted to be able to share Mr Miles's article.

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**I**t was on 17 July 1924 that the Association was inaugurated in the McEwan Hall, at a meeting presided over by the Vice-Chancellor, Principal Sir J. Alfred Ewing. The building was thronged with alumni and current students. Indeed, it was reported in *The Scotsman* that over 1,200 people attended the event, and that speeches were followed by dancing. At the time of its inauguration, the Association was named the Edinburgh University Alumnus Association, its main objective being to help to keep alumni in touch with the activities and developments in the University, promoting the welfare of the University or of students, and to

make possible more intimate contact between fellow graduates in all parts of the world. Membership was, as it still is, open not only to Edinburgh graduates but also to members of the teaching and administrative staff, to Court members, and to honorary graduates. Many of the early members, especially medical graduates, had served in the Great War. Those who returned from the War, as well as those who had died, were listed in the monumental *Roll of Honour* which had been published, recently, in 1921. The dead had also been listed on the War Memorial in Old College, designed by Sir Robert Lorimer and unveiled in 1923. The General Council, in those days, published its Register annually in a printed volume. The need for a good connection between the University and its alumni at that time was great.

In 1931, the name was changed to University of Edinburgh Graduates' Association. The initial suggestion that it might be involved in raising money for the University has not been an objective of the Association for many years, although notices of any necessary University appeals have occasionally been printed on the back cover of the *Journal*. However, any contributions to the Association itself to enable it to continue to be active and to expand its activities have always been most welcome. Since its inception, the Association has been financed on income almost entirely derived from subscriptions and donations, and the office bearers are extremely grateful to those who have contributed. The amount derived from subscriptions was comparatively small, and although there has been much voluntary assistance, a small staff has had to be maintained. When, for example, the Association's first computer had to be purchased, it was a special appeal to members which made this possible. The Association eventually set up its own website at [www.uega.co.uk](http://www.uega.co.uk) as well as a Facebook page, but reference to the Association had already appeared on the University's Web service, then known as EDINFO.

From the beginning, women have been welcomed as full members of the Association. At the Annual General Meeting in June 1928, it was reported that the membership stood at 2,112, and a complete list of members, in which women are well represented, was issued that year with the Autumn issue of the *Journal*, Volume 2, No 3. Interestingly, Issue No 1 of that volume included a report of the 1927 AGM of the University of Edinburgh Medical Women Graduates (1924) Club, which had been founded very shortly before the Alumnus Association; it lists the names of its thirty-six members, only very few of whom also joined the Alumnus Association. It should be noted that the Graduates' Association did not have a woman as President until Miss Rodney M. Murray OBE was elected in 1964.

During its first sixty years, the Association had many branches in various parts of the UK and overseas. They were greatly encouraged. A number of them had already been formed before 1924. They were:

- 1864, Edinburgh University Club of London
- 1878, The Edinburgh University Club of Manchester

- 1897, The Edinburgh University Club of Birmingham
- 1907, North of England Edinburgh University Graduates Club
- 1907, The West Riding Association of the Graduates of the University of Edinburgh
- 1912, Sheffield and District Edinburgh University Club
- 1918, The Honours English (1918) Group
- 1923, Aberdeen Edinburgh University Club
- 1924, University of Edinburgh Medical Women Graduates (1924) Club
- Also, in 1840, the Edinburgh Angus Club was formed to support students in the Scottish county of Angus who wanted to study at Edinburgh University

In many instances, it has been the keenness of a graduate who had left Edinburgh and had contacted other alumni in their area that led to a branch being established. This led to meetings, outings, dinners, addresses by invited speakers and the cementing of local friendships, and even to occasional weddings. Individual Faculties (now Schools and Colleges) of the University, notably Medicine and Veterinary Medicine, have created and maintained graduate associations of their own. Reports of branch and club activities frequently were published in the *Journal*, which regularly published a complete and up-to-date list of branch and club secretaries as contact points. The University still has many local and overseas clubs and associations, but links with these are now part of the work of the Development & Alumni Department.

From the Minute Books, it can be seen that the Association had no fixed home until the end of December 1972, when the University very kindly permitted it to have a home at 5 Buccleuch Place, a building in which we occupied part of one floor, the rest being occupied by other University-based activities. The Association was later moved to 24 and then 18 Buccleuch Place, where it again occupies the front flat on the first floor, which it shares with other University activities. This has proved to be a very appropriate move, in that the *University of Edinburgh Journal* was now published from the building in which Francis Jeffrey and others had established the publication of the *Edinburgh Review* in 1802, which is commemorated on a plaque over the main door.

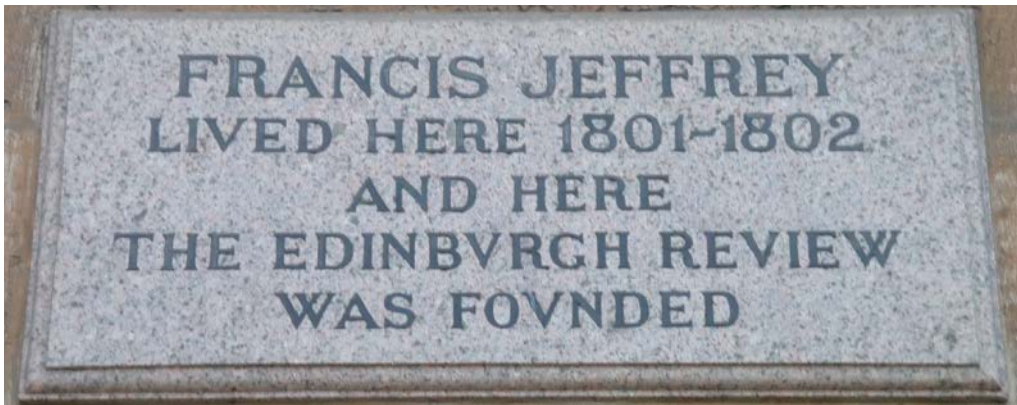
## *The Journal and The Almanac*

Members of the Association receive *The University of Edinburgh Journal* twice a year. The first volume is dated 1925–1926. Over the years, many splendid articles have been published. Some are of considerable historical interest, some give interesting personal experiences including travel in distant lands; there are short accounts of reunions, and news from branches or clubs, of which on occasion there are illustrations. In the *Journal* of December 1974, there is a picture of HRH The Prince Philip, Duke of Edinburgh, Chancellor of the University and Patron

of our Association, with some top table diners at the Golden Jubilee Dinner of our Association held on 3 July 1974 when a total of 222 members and guests attended. The Chancellor's speech is given in full. The *Journal* was the only regular publication received by members until the Autumn 2021 when, during the first Covid-19 lockdown, a digital newsletter *The Almanac*, was made available online twice a year to members who used electronic mail; members who did not use email could ask for printouts to be mailed to them.

It is a matter of serious concern that, while the membership of the Association remained fairly constant throughout the years, it has now seriously decreased to 788, as was reported to the 2023 Annual General Meeting. There are said to be over 250,000 graduate members on the University's list of alumni. It is hoped that those who read this would do what they can to persuade other alumni to become members of the Association or subscribers to the *Journal*. The Honorary Secretary of the Association will be delighted to hear of any new members and to learn of their activities. The Association address is 1fR, 18 Buccleuch Place, Edinburgh EH8 9LN and its email address are: for general queries: **gradassoc.admin@ed.ac.uk** and for editorial matters: **gradassoc@ed.ac.uk**. The introductory annual subscription, which includes four numbers of the printed *Journal* is £25.00 or, one which includes four issues of the *Journal* in PDF digital format, £10.00. Life members, who no longer pay an annual membership subscription, continue to receive the digital *Journal*, but are asked to pay an annual *Journal* subscription of £15.00 if they wish to receive a year's two printed issues.

A retrospective review of the *Journal*, marking its own centenary, will be found in its next issue, Volume 52, Number 1, due for publication in Summer 2025.



*Plaque commemorating Francis Jeffrey and the Edinburgh Review*

## Progress from the Early Days

The founding of the Association was due to the initiative of Sir Harold J. Stiles, Professor of Clinical Surgery from 1919 to 1925 at a time when Stanley

Baldwin was the Lord Rector of the University. Sir Harold was Chairman from 1924 to 1928 but instead of signing the Minutes as President, for some reason, he always signed Acting President as did his successors until 1948. On his retirement from the Chairmanship, he became an Honorary President. Three other men, Principal Sir J. Alfred Ewing, Sir Frederick Whyte, and the Rt Hon. Hugh P. Macmillan, can be regarded with Sir Harold Stiles as founders of the Association, and a study of them by Simon Miles, President of the Edinburgh University Club of Toronto, appears in this *Journal*.

In the early years, there was a problem of obtaining the services of a secretary, and there are constant references to this in the Minute Books which were handwritten until a spell from 1941 to 1943 when an Honorary Secretary managed to find someone prepared to do the typing! Another problem was the amount of the subscription. It started at 5 shillings (25p) a year which included payment for the *Journal*, but in 1926 it was suggested that it might be raised to 8 shillings (40p). This was not accepted but it was noted and hoped that donations would supplement the payment. It appears that the first *Journal* was mailed free of charge to all graduates listed in the General Council Register, and certainly this attracted members to the Association, but such munificence could not continue and, in the Minute Book of 10 March 1927, it was agreed that the *Journal* could not even be given to all students. At their graduations, they would receive a form of application for membership, a tradition which continued for the next sixty years. By this time, the idea of accepting payment of a life subscription had been raised and was later accepted.

In October 1927, it was agreed that a circular should be sent to graduate non-members of the Association at the time of the fifth issue of the *Journal*. Presumably a copy of the *Journal* was included, which must have meant that approximately 15,000 copies were sent. This seems to have been a successful operation because it was reported in the Minute Book of 20 January 1928 that, in one month, 296 new members had joined, of whom 36 were life members. Applications for membership were coming in at the rate of fifteen a day and at that point only those from the UK and Canada had been received. A list of members was attached to the *Journal*, Volume 2, Issue No 3 in 1928.

By February 1928, the President of the University Union, the Presidents of the SRC, the President of the Women's Union, and the Presidents of the Men's



*Journal Archive*

and Women's Athletic Clubs had been elected to the Executive Committee. The Association had been fortunate in that, when it was formed, it received a significant gift of £1,000 from a graduate, Dr Charles Cooper of San Francisco who had qualified in 1897, and hence it had funds. It was perhaps natural that requests for money for student activities would be received, and it was recorded that £150 was requested towards the cost of a new pavilion for the Athletic Club at Craiglockhart. This was agreed, provided the Athletic Club raised a similar amount. Then the Women's Union asked for £200 to fund a deficit which had arisen because of prolonged closure for reconstruction. This too was agreed, provided that a room intended for graduates was labelled the Alumnus Association Room. However, decisions were deferred in relation to requests from the Women's Athletic Club, the Royal Medical Society, and the Students' Representative Council, but £20 was given to a graduate towards payment of his passage to Singapore because of 'exceptional circumstance'. At the next meeting, alarm was expressed at the constant requests for money and it was agreed that the office bearers could disburse funds in exceptional circumstances, the amount not to exceed £20.

In June 1928, it was noted that the proposal by the Association of Teachers that there should be a University Staff Club had been given up because of lack of support for the idea. In that same month a new Chairman was elected in the person of Mr Alexander Miles, another Royal Infirmary surgeon.

In June 1930, four new Honorary Presidents were appointed, those being Sir James M Barrie, Chancellor of the University; Sir Winston Churchill, Lord Rector; Sir Thomas Holland, Principal; Sir J. Alfred Ewing, late Principal. Dr A. Logan Turner was unanimously appointed Acting President. The Minute Book shows that the Association organised Freshers' socials, an annual reunion, an annual general meeting, and in 1931, the first Sunday evening reception. In addition, a number of talks were arranged on health subjects that students might attend. Mention is made of a history of the University which Dr A. Logan Turner hoped to have published in 1933, this being followed by a History of the Royal Infirmary which appeared in 1937. In 1932, a sum of £50 was contributed to the International Universities' Sanatorium for the treatment of tuberculosis at Leysin in Switzerland. Throughout the pages of the Minute Book at this time, there are references to grants of money that were made to bodies associated with the University or of loans that were made to poverty-stricken students or even graduates. The Association is no longer expected to do this.

Early in 1933, the Association was informed by the Secretary of the University that the 350<sup>th</sup> anniversary of the University would be held on 27 and 28 October, and the Association was asked to entertain delegates and other officials to a luncheon on this occasion. It was unanimously agreed that this would be done. About 300 members and guests were expected, and the cost of a luncheon ticket was fixed at 5 shillings (25p).

On 3 November 1933, a Fresher's social was held in the McEwan Hall, the expenses in part being paid for by the Graduates' Association. Surprisingly the Association, which must have been well endowed with funds at the time, had paid £350 for the installation of a loudspeaker system in the McEwan Hall. In that year, it also gave a loan of £60 to a medical student to enable him to finish his course. In *The Scotsman* dated 15 June 1935, it was reported that the number of members was 2,759 and that the Association had granted a sum of £20 towards the International Inter-University Sports at Budapest. In 1936, it was decided to hold a garden party in the George Square Gardens on one of the graduation days, 3 July, when 650 guests were expected; a similar party was repeated in the following two years. Indeed, graduation garden parties were continued until well into the 1960s, and attracted many new members from among the new graduates and their families.

In 1939, with the inevitability of the outbreak of another World War, everything was different. At the graduation ceremonies in July, the Association had set up a table in the McEwan Hall with large posters on display and the Secretary in attendance. The Association must have been optimistic if they thought that anyone would want to join when war was about to break out. Indeed, there were no applicants then, but an appreciable number joined later in their careers. In the Minute Book just after this date, it was agreed that the *Journal* would be sent to all graduates in the forces but clearly this well-intentioned plan could not be implemented when those in the services were constantly on the move. The Association did, however, assist the Polish Medical School which was established in Edinburgh on 22 March 1941. The wartime issues of the *Journal* which, because of paper rationing, were slimmed right down and for a time reduced to one issue a year, also provided, in increasing lists, the University's only Roll of Honour for World War II. The Association eventually published a full *Roll of Honour* as a separate booklet, in 2014, to mark the centenary of the outbreak of World War I and the 70<sup>th</sup> anniversary of the end of World War II.

After hostilities had ceased, the Association continued to be active but it was a quarter of a century before it had its own premises. There was not only a continuation of meetings but once again garden parties together with outings, dinners, annual luncheons, visits to theatres and many other activities and, in the meantime, the *Journal* had gone from strength to strength. In 1955, there was a visit to Edinburgh from the Glasgow Branch which was always welcomed at the Edinburgh meetings. On occasion, members of the Edinburgh section have visited branches elsewhere in the UK, sometimes having been invited to give a talk.

Once it became housed in 5 Buccleuch Place, the Association became a much more settled arm of the University. Here it had a staff, a room for lectures, and a meeting room for the Executive Committee and the AGM, together with a small kitchen and other facilities. There were many interesting outings to such places as Abbotsford, Traquair House, the Farne Islands, New Lanark, Inchcolm, and



Dalmeny House to mention but a few. Many members participated in these which made the Association a real success. The Association's programmes of activities have continued along these lines during its last twenty-five years. Face-to-face events had to be suspended during the COVID-19 pandemic from 2020 to 2022, but occasional talks and discussions were offered to members by Zoom.

Until the University's Fourth Centenary celebrations in 1983–1984, the Association remained the main communication link between the alumni from all Faculties and the University. During the preparations for the Centenary, the University realised that its system of communication with its alumni was now very limited, and so what has become the Development & Alumni Relations Department was established with a full-time staff of its own, mainly focusing on persuading alumni to provide additional funding for the University, especially for students' welfare and extramural activities. Since University fundraising had not become one of its aims or activities, the Association continued its role of providing a traditionally collegiate service for the community of its members, many of whom were ageing life members who had joined at their own graduations welcomed the fact that they could join the Association without their being constantly pursued for money for the University.

The Chancellor of the University, HRH The Duke of Edinburgh, retired as Patron when he retired from the Chancellor's post, and was succeeded in both roles to the Association's delight, by his daughter HRH Princess Anne, The Princess Royal. As testimony to its enduring attachment to the University, the Association has continued to be invited to lay a wreath on behalf of all alumni with other University wreaths on Remembrance Sunday at the War Memorial in Old College.



*UEGA's Offices at 18 Buccleuch Place*



## About the Authors

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**P**eter B. Freshwater is a former Deputy University Librarian, Convener of the General Council Business Committee, and President of the University of Edinburgh Graduates' Association. He is the current Editor Emeritus of the *University of Edinburgh Journal*.

**R**onald H. Girdwood (1917–2006) was Professor of Therapeutics at the University of Edinburgh and a President of the Royal College of Physicians of Edinburgh. He served as Dean of the Faculty of Medicine and contributed to the expansion of the Medical School, was elected a Fellow of the Royal Society of Edinburgh, and awarded a CBE in 1985.

## Notes

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1. Ronald H. Girdwood, 'The University of Edinburgh Graduates' Association—Its Development over Seventy-five Years', *University of Edinburgh Journal*, 39 (2) (1999), pp. 82–86.
2. Simon Miles, 'The Founders of the University of Edinburgh Graduates' Association', *EDUCT News*, (2024). It is reprinted here with the author's kind permission.
3. University of Edinburgh, *Roll of Honour 1914–1919* (Edinburgh: Oliver & Boyd, for the University, 1921).
4. University of Edinburgh, *Roll of Honour 1939–1945*; compiled by the University of Edinburgh Graduates' Association (Edinburgh: University of Edinburgh Graduates' Association, 2014).

## Images

**Page 250:** Close up image of the plaque commemorating Francis Jeffrey and the Edinburgh Review. Photography by Peter Freshwater.

**Page 251:** The *University of Edinburgh Journal's* hard copy archive, housed at its offices. A former President and Honorary Secretary of the Association and Editor of the *Journal*, William V. Stevens OBE BCom JP (1900–1987) presented to the Association the magnificent glass-fronted bookcase for housing the back volumes and spare copies of the *Journal*. Photography by Steve Hillier.

**Page 254:** Exterior view of the University of Edinburgh Graduates' Association's current offices at 18 Buccleuch Place. Photography by Peter Freshwater.

# The Founders of the University of Edinburgh Graduates' Association

by Simon Miles

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**Editorial Note:** Formed in 2002, Edinburgh University Club of Toronto (EDUCT) is young and vigorous. Enthusiasm for *alma mater* shines from the columns of its newsletter *EDUCT News*—hence the invitation to Simon Miles, to write this overview of events leading up to UEGA's foundation in 1924. The following is a lightly edited version of Miles's article which first appeared in *EDUCT News*. You can learn more about EDUCT, and read past issues of their newsletter, by visiting: <https://www.ed.ac.uk/alumni/services/community/north-america/educt/newsletter>

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Upon learning that the University of Edinburgh Graduates' Association (UEGA) is celebrating the centenary of its founding in 1924, I asked Prof. Stephen Hillier, the Interim Editor of the *University of Edinburgh Journal*, whether he planned to write an article on the founders of UEGA and, if so, whether I might reproduce it in *EDUCT News*. Very deftly, Steve turned this around, and here I am writing that article for both *EDUCT News* and the *Journal*!

As one of the older alumni clubs of our University, UEGA deserves special recognition for its worldwide membership and the fact that, being based in Edinburgh, it can maintain especially close relations with the University. It is thus in a good position to keep its finger on the pulse of the University and its needs

and, at the same time, mobilise all manner of resources from its worldwide network of members. Although the Internet has shortened distances for all of us, these are two attributes of UEGA that are likely to warrant its continued existence.

There will be other articles in the *Journal* on aspects of the early work of UEGA. And next year, the *Journal* will celebrate its centenary. Here, in keeping with EDUCT's tradition of profiling famous alumni in *EDUCT News*, the focus is on the four men who are widely regarded as having played key roles in the founding of UEGA.

As was related in the Summer 2024 issue of the *Journal*, the dinner and the formal launching of what was first known as the Edinburgh University Association of Alumni (EUAA) was a glorious event. That evening, on 17 July 1924, before an audience of some 1,200 people, messages were read from the then-Chancellor of the University, the Lord Balfour, and the then-Lord Rector, the Rt Hon. Stanley Baldwin—both being former Prime Ministers. And, of course, as was documented in *The Scotsman* the next day, moving speeches were made by each of our four figures of note. Let me turn to them now.

## Sir Harold J. Stiles

Sir Harold was the Regius Professor of Clinical Surgery at the University in 1924. He was at the height of his career and was recognised as one of the world's leading surgeons. His reputation was based on his contributions to research, his skill as a surgeon, his willingness to innovate in surgical operations, and his popularity as a teacher. He was clearly conscious of his contribution to the reputation of the University and the benefits the University was bringing to society. He wanted to enable more of his colleagues to be able realise their potential contributions. And for this, the University needed increased revenues.

Stiles was born in Lincolnshire in 1863. His grandfather and father were doctors. At the age of 16 he was encouraged by his grandfather to operate on specimens of



*Sir Harold Stiles*

body parts. He entered the Medical School at Edinburgh in 1880 and graduated with his MBCM (first-class Honours) in 1885. Perhaps he had been motivated to succeed in his studies because his father had told him that his elder brother would

be inheriting father's practice and that young Harold should establish his own career. In any event, he remained in Edinburgh for the rest of his life. He worked his way up the ladder in surgery, initially under the mentorship of surgeons at the University of Edinburgh. By 1889, at the age of 26, he was already doing groundbreaking research on breast cancer. He was elected a Fellow of the Royal College of Surgeons of Edinburgh that year.

In 1895, he was appointed Assistant Surgeon at the Royal Infirmary and while there spent six months working in Bern, with the famous surgeon, Theodor Kocher. He learned some new techniques from Kocher: most notably how to minimise infection arising from surgery by the application of what is known as the aseptic system of surgery (essentially creating barriers to the spread of germs by the use of gowns, gloves, masks, sterilisation of everything in the surgery, etc.). By 1898, Stiles had moved to become Surgeon at the Edinburgh Sick Children's Hospital, and shortly thereafter also assumed the role of Surgeon at the Chalmers Hospital, which was for adults. In this period, among other achievements, he advanced the understanding of tuberculosis, he came up with a treatment for the extroversion of the bladder and, in 1910, he was the first to conduct a pyloromyotomy—a treatment for a congenital condition known as pyloric stenosis, which is a narrowing of the opening from the stomach to the first part of the small intestine. While it is not common, young children, from about two to twelve weeks of age, can exhibit serious symptoms.

When World War I broke out in 1914, Stiles became a surgeon in the Army, based outside Edinburgh, where he was responsible for secondary and tertiary treatment of those wounded in battle. It was in this work that he began to advance understanding of peripheral nerve injuries. In recognition of his contributions to the war effort, he was knighted in 1918 and then, one year later, promoted to the rank of Knight Commander of the Most Excellent Order of the British Empire (KBE). And it was in 1919 that he was appointed to the post that he had always aspired to—that of Regius Chair of Clinical Surgery at the University of Edinburgh. From 1923 to 1925 he served as the Surgeon to King George V in Scotland and, in the same two-year period, served as President of the Royal Society of Surgeons of Edinburgh.

Then, suddenly, much to the surprise of his colleagues, he resigned all of his medical posts in 1925, and retired to his home in Gullane, outside Edinburgh, to spend time on his interests in geology, botany, ornithology, painting, and photography. There was speculation that he was feeling the pressure from his work and, knowing that this could kill him, he just decided to slow down. As it happened, he enjoyed a long retirement, dying only in 1946.

Quite possibly (and here I am speculating), by 1923, Stiles was already looking back on his life and recognising the importance of the University to society, the importance of the efforts of individual researchers, teachers, and practitioners to

the standing of the University, and the importance of adequate funding to enable the efforts of those individuals. In 1923, speaking to the new graduates of the Medical School, Stiles introduced the idea of an association for all alumni of the University. There were already seven alumni clubs serving geographic regions of the UK and there was one bringing together graduates in Honours English. Stiles wanted a worldwide network to be created that would enable those who were looking for ways of retaining their ties with, and giving back to, their *alma mater*. Over the next year, he used his standing at the University to champion the idea. He was supported in this by three others whom we will learn about below. By 1924, the idea had become a reality.

At that official launching of the EUAA, on 17 July 1924, Stiles spoke passionately about the potential for expanding the role of alumni in helping to fund the work of the individuals whose contributions to the generation of knowledge and new understandings were the foundation of the international standing of the University. He lamented the fact that student fees, which had once funded one third of the University's budget, were declining in significance. He made clear that the University could not expect more money from the government. And nor should it plan to be more dependent on government funding since that would lead to more government control of what is studied and taught. And there were few very wealthy benefactors to whom the University could turn, in part because they were being taxed so heavily by the government. In short, he laid out the case for the EUAA as a new vehicle for fund-raising. Despite his many demanding obligations, he assumed the office of Acting President of the EUAA.

## Sir J. Alfred Ewing

Sir Alfred was Principal and Vice-Chancellor of the University in 1924. He was recognised internationally as a leading scientist in such varied fields as seismology, thermal power, magnetism, and code-breaking. Having been Principal since 1916, he was already overseeing the implementation of his plans to greatly expand the facilities for the research and teaching of sciences and engineering with the establishment of the King's Buildings campus. Like Sir Harold, he was very conscious of the need for additional sources of financial support to enable the University to make the most of its potential contributions to society.

James Alfred Ewing was born in Dundee in 1855. It is likely that, since his father was called James, he was always called Alfred. He attended the famous High School of Dundee, that had been established in 1239. From there, he was awarded a scholarship to study at the University of Edinburgh. He read both physics and mechanical engineering and graduated with a degree in the latter. He had the good fortune to be able to spend his summer vacations working on the laying of submarine telegraph cables, one of which went to Brazil. This afforded

him the opportunity to get to know H. C. Fleeming Jenkin, the Regius Professor of Engineering at Edinburgh and his business partner and friend, Sir William Thompson (who later became Lord Kelvin). Both men were leading lights in the business of the laying of submarine telegraph cables.

In 1878, shortly after graduation from Edinburgh, thanks to Jenkin's recommendation, Ewing was invited to take up the post of Professor of Mechanical Engineering and Physics at the newly-founded (1877) University of Tokyo (that went through various name changes until it reverted to its original name in 1947). Japan was a fascinating place to be at the time. In 1868, with the overthrow of the last of the feudal generals and the restoration of the emperor to the supreme position of power, Japan had commenced the period of the Meiji Restoration. Meiji, the new Emperor, was fostering major societal reform at the time, and very welcoming of



*Sir J. Alfred Ewing*

contributions from western scientists, engineers, lawyers, and medics. In 1880, a major earthquake struck Yokohama. It was a case of all hands on deck. With Thomas Gray and John Milne, also British scientists working in Japan, Ewing established the Seismological Society of Japan that year. They also collaborated, under Milne's leadership, on developing the first seismograph.

In 1883, Ewing returned to Dundee to take up the post of Professor of Engineering at the recently-established University College of Dundee. While there, Ewing developed a reputation for promoting the application of recent research in engineering to improving the local sewer system, especially in the poorer parts of the city. Years later, in 1954, the University honoured Ewing by naming the new Engineering Building after him. In 1887, while at Dundee, Ewing was elected as a Fellow of the Royal Society.

In 1890, Ewing was appointed Professor of Mechanism and Applied Mechanics at the University of Cambridge. While there he turned the department, in all but name, into a department of engineering. It was in Cambridge that he made his greatest contributions to the field of magnetism. He was already known for having coined the term 'hysteresis' in 1881, when he was working in Tokyo. In essence, hysteresis is the dependence of the state of a system on its history. Following Ewing's work on magnetism, the term has been used in such varied fields as

physics, engineering, chemistry, biology, and economics. Ewing had observed a resistance in magnetic molecules to rearranging themselves in alignment with the new direction of the magnetic force. In 1895, he was awarded the Gold Medal of the Royal Society for his work on magnetism. While at Cambridge, he also worked with Charles Parsons to develop the steam turbine. In 1897, a turbine-driven boat, *Turbinia*, set a new world speed record of 35 knots-per-hour for boats.

While at Cambridge, Ewing had been advising the Admiralty on various matters and, in 1903, he took up the post of Director of Naval Education at Greenwich. Clearly, by this time, his contributions to society were being recognised: in 1906, he was made a Companion of the Order of the Bath, and in 1911, he was promoted to the rank of Knight Commander of the Order of the Bath. With the onset of World War I in 1914, Ewing headed 'Room 40', the Admiralty's office charged with code-breaking. Ewing's team became famous in 1917 for having decoded the infamous Zimmermann telegram that signalled Germany's preparedness to support Mexico in reclaiming the south-western United States. This revelation is widely acknowledged as having been the main reason for the US to enter the war.

In 1916, Ewing accepted the invitation of the University of Edinburgh to become its Principal. Initially, he continued to oversee Room 40. However, the impossibility of doing justice to two demanding jobs led to his resigning his Admiralty post in 1917. As already noted, the establishment of the King's Buildings campus owes much to Ewing's drive. He remained at the University, as Principal, until his retirement in 1929. That year, the Royal Society of Arts awarded him the prestigious Albert Medal for his contributions to society. He died in 1935, in Cambridge. Posthumously, in the 1960s, the University honoured Ewing by naming a house in the Pollock Halls of Residence in his memory.

## Sir Frederick Whyte

**S**ir Frederick was President of the Central Legislative Assembly in India in 1924. This was a prominent office in the running of Britain's most populous colony. His presence at the launch of the EUAA was doubtless designed to send a clear signal that the Association should be global in its reach. Like Sir Harold and Sir Alfred, Sir Frederick's key message was that the University had to mobilise more funding to realise its potential: as a trainer of people to take on any number of tasks confronting them in life; as a research body; and, as a champion of, and as an enabler of, the pursuit of knowledge and truth. Like Sir Harold, he played up the dangers of over-reliance on government funding, since it would doubtless come with strings attached. Coming from Sir Frederick, a former MP, this warning of the shortcomings of government funding must have registered with his audience. There were also concerns about the reliability of government funding. In January 1924, Ramsay MacDonald had become the first Labour Party Prime Minister and

had begun to introduce reforms that greatly increased taxes in the hope that this would bring a halt to the slump in the then-important coal trade. It did not.

Whyte was born in Edinburgh in 1883. After attending Edinburgh Academy, he read modern languages, firstly at Jena University and then the University of Edinburgh, from which he graduated with a first-class honours degree. While at Edinburgh, he also served as President of the Edinburgh University Union. At the age of 27 he was elected MP for Perth. His party, the Liberal Party, was in power and Whyte was fortunate to be able to serve as Parliamentary Private Secretary to Winston Churchill. Churchill, who was a Liberal from 1910 to 1924, served as Home Secretary (1910–11), First Lord of the Admiralty (1911–15), and, Chancellor of the Duchy of Lancaster (1915 for six months until he resigned). Whyte served as an MP until 1918. The experience had given him an excellent



*Sir Frederick Whyte*

understanding of the workings of government. From 1917 until 1920, Whyte was also Editor of *New Europe*, a newspaper he had founded.

In February 1921, Whyte was appointed by the Governor-General of India as the first President of the newly constituted Central Legislative Assembly in India. This was the lower house of the new bicameral legislature. The Assembly was an advisory body and, to be run effectively, it required a President with much political and administrative savvy. Whyte had developed a reputation at Westminster for having a sound grasp of the internal workings of parliament and the civil service. That was doubtless one of the reasons why he was chosen for the new job of President. When he finished his term in August 1925, he received lavish and seemingly well-deserved praise for the manner in which he had exercised his duties, and the procedures he had established. For his services, he was knighted in 1922, and later, in 1925, elevated to Knight Commander of the Order of the Star of India.

Following his sojourn in India, Whyte took on a variety of roles. Notably, he served as a political adviser to the National Government of China from 1929 to 1932. In 1938, he assumed the role of Director-General of the English-Speaking Union of the British Empire, and from 1939 to 1940 he served as head of the American Division of the British Ministry of Information. He also wrote a



number of books on international political developments and contributed many articles to scholarly journals. In June 1949, we see another side of Sir Frederick: he became the founding Chairman of the newly-created Reindeer Council of the United Kingdom. Seemingly, a prime motivation was to establish another source of meat for the then-hungry nation, although the Council's mandate made clear that their work could also be pursued overseas. The Council, based in Cambridge, had been offered a herd of 25 breeding animals from Norway and was seeking a suitable site. In 1951, the Scottish Home Department gave permission for the herd to come to Scotland, and 300 acres was made available by a Lieut.-Colonel J. P. Grant in Rothiemurchus. Sir Frederick died in 1970.

## Rt Hon. Hugh P. Macmillan

Macmillan was serving as Lord Advocate in 1924. Somewhat oddly, given that he was a Conservative, he was serving in Prime Minister Ramsay MacDonald's Cabinet—the first ever of the Labour Party's governments. MacDonald found that he had no King's Counsel among his MPs from Scotland. Macmillan was a highly respected advocate and was thus a credible choice. Macmillan served in this Cabinet from February to October 1924.

On 17 July 1924, Macmillan had, earlier that day, been awarded an Honorary LLD by the University of Edinburgh. Not surprisingly, that same evening, at the launch of the EUAA, he was in good humour. In his remarks in support of the creation of the alumni club, he noted that his job as Lord Advocate was to see that the law was observed. Thus, he reminded his audience that 'there is no principle of the law in Scotland more fairly founded than this, that it was the duty of the child to support the parent when the parent is in necessitous circumstances'. Again, this was a reinforcement of the central message to the alumni to recognise the impecunious state of the University and, by virtue of his being a Cabinet Minister, underscoring that the University should not be looking to the government for more of its funding.

Hugh Macmillan was born in Glasgow in 1873. He entered the University of Edinburgh in 1888 and graduated with a first-class Honours MA in Philosophy in



*Rt Hon. Hugh P Macmillan*

1893, and then pursued an LLB at the University of Glasgow. He was remarkable in his achievements at Edinburgh, receiving at least eight medals in various subjects. As a professional lawyer, he became a King's Counsel in 1912. During WWI, he served as Director of Intelligence in the Ministry of Information. Although he had political ambitions, he decided to put these aside when, in 1917, he suffered a serious illness. In 1923, he was elected a Fellow of the Royal Society of Edinburgh, but he resigned his fellowship in 1931. (It was not uncommon for fellows to resign.)

As Lord Advocate in MacDonald's government, his mandate was to serve as the chief legal adviser of the British Government and Crown on Scottish legal matters, both civil and criminal. Seemingly, this was not enough to keep him busy. But his impressive reputation as a lawyer meant that he was called upon to chair numerous governmental and non-governmental committees. For example, in 1924, he chaired the Royal Commission on Lunacy and Mental Health. And from 1929 to 1931, he chaired the government's Committee on Finance and Industry, which was to identify the root causes of the 1929 stock market crash, while also chairing the government's Committee on Income Tax Codification in 1930. In 1933, he was in Canada to chair the Royal Commission on Banking and Currency. Its main recommendations were that a central bank should be established and that an enquiry should be initiated to devise a system for the provision of rural credit. Macmillan was already a known quantity to the Government of Canada: since 1928, the Dominion of Canada had been one of his major clients in the UK. The Commonwealth of Australia became a client in 1929.

In 1930, Macmillan was appointed a Lord of Appeal in Ordinary, more commonly known as a Law Lord. At the same time, he was created a life peer, and assumed the title of Baron Macmillan of Aberfeldy in the County of Perth. He continued to sit in the House of Lords until 1947, except for a brief period from 1939 to 1940, at the outset of WWII, when he served as Minister of Information. Seemingly, he was subject to considerable criticism in this office and he was replaced.

Macmillan had also developed a reputation as a public intellectual and frequently delivered prominent lectures. A number of his public lectures, including, for example, the 1934 Rede Lecture at Cambridge, the 1934 Maudsley Lecture, the 1935 Henry Sidgwick Memorial Lecture, and his 1936 Broadcast National Lecture, were published together under the title *Law and Other Things*. In 1941, he was appointed Professor of Law at the Royal Academy of Arts. Several professional and academic bodies—for example, the Royal Institute of British Architects, the Institution of Civil Engineers, and the American Academy of Arts and Sciences—made him an honorary member.

And particularly relevant to the launch of the EUAA, since 1915, Macmillan had been leading the fundraising drive to establish the National Library of Scotland. He struck lucky on that front when Alexander Grant, then-head of McVitie and Price, the biscuit makers, came forward to donate the bulk of the money being

sought. The Library was established in 1925, with the passing of the National Library of Scotland Act. Fittingly, Macmillan's Papers, which tell us more about this remarkable man, are archived in the Library. Macmillan died in 1952.

One remarkable piece of trivia struck me when writing these profiles. The fathers of three of the four men were reverends. And the same three were all involved in the field of intelligence gathering during one or both world wars. Stiles, whose father was a doctor, was the exception. Whether this shaped the approach of the EUAA and then the EUGA to fundraising is for another chapter in the Association's history.

In conclusion, we can observe that, just as our current Principal, Sir Peter Mathieson, had in the Summer 2024 issue of the *Journal* looked back on the observations in 1974, by then-Principal McIntyre, on the need of the University for more funding, and observed that 1974 was no different from 2024 in that respect, so we see that 1924 was also a time when the University was seeking more funding to enhance its contributions to society. Doubtless it will ever be thus. But by the same token, it will doubtless be the alumni of the University who will be able to, and should to the best of their abilities, respond to the needs of their *alma mater*.

## About the Author

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Simon Miles graduated with an MA (Hons) in Geography in 1962. After a short stint in county planning with Hertfordshire, he had the opportunity, in Canada, to launch a four-year, international programme on the problems of big cities. The findings were published in *Simon Miles: Metropolitan Problems* (1970). Simultaneously, he taught at part-time at York University. He then worked as an independent public policy consultant worldwide, for such bodies as the UN and the OECD, as well as all levels of government, tackling issues in many sectors of societal concern. A Director of the Edinburgh University Club of Toronto since its founding, he served as its President, launched its first fund, and is currently the Editor of *EDUCT News*.

## Notes

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1. Image of Sir Harold Stiles. Aesculapian Club Photo Album, Library of Royal College of Physicians of Edinburgh.

2. Image of Sir J. Alfred Ewing. Whole-plate glass negative by Bassano Ltd, 1915, National Portrait Gallery.

3. Image of Sir Frederick Whyte. Bromide print by Walter Stoneman, 1927, National Portrait Gallery.

4. Image of Hugh Macmillan, Baron Macmillan of Aberfeldy. Bassano Ltd, 1924, National Portrait Gallery.

# Rector's Inaugural Address

by Simon Fanshawe

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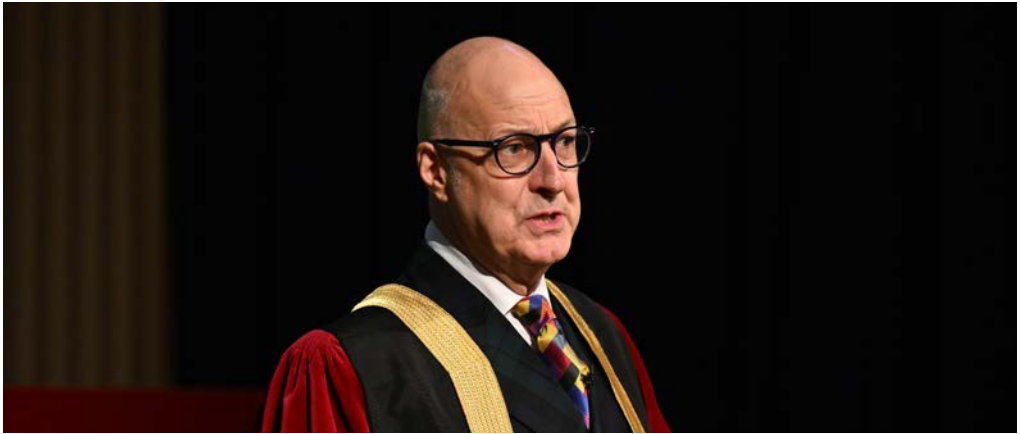
**Editorial Note:** The office of Rector is arguably the most important and influential post in the University, to the benefit of students and staff alike. Our new Rector, Simon Fanshawe, was inaugurated and duly delivered his Rectorial Address on 16 October 2024. It is therefore fitting that his Address be reproduced in this jubilee issue of the *Journal*, and we are most grateful to him for allowing us to do so. Simon Fanshawe is a writer, broadcaster, and activist. He was a co-founder of the charity Stonewall, and actively supported the creation of the LGB Alliance. He read Law at the University of Sussex.

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I am honoured to be the 54<sup>th</sup> Rector of Edinburgh University and take up the role 165 years since its first, the then-Chancellor of the Exchequer, William Gladstone.

The University's 441 years since first admitting students gives it an entirely justifiable claim to be one of the key shapers of Scotland and of the UK's intellect and their immense contribution to thought throughout the world. With its history anchored in the city that James Buchan called, in his 2007 book, 'The Capital of the Mind', its history is rooted in the Age of Enlightenment, the intellectual movement that was the first to articulate, through the idea of the power of rational thought and argument, the political ideals of universal freedom and equality.

We know that the reason of those thinkers, in and of their time, in respect of women and those who were not white, deserted them in favour of prejudice. Nonetheless, their ideas are the deep background to our work on diversity today. As universal suffrage became the common sense of the twentieth century, after the Second World War and the Holocaust, anti-racism took the moral high ground in democracies. The world, through the United Nations Universal Declaration of Human Rights, attempted to tip the scales of rights and freedoms in the direction of a true universalism.



*The University of Edinburgh's 54<sup>th</sup> Lord Rector, Simon Fanshawe.*

I am standing as Rector pledging to work on three related themes:

- To work with the University community of all staff and students to **embrace and promote the free exchange of ideas** as the core purpose of the University
- To work with students, staff and the University management to bring about **improvements in the student experience**, in particular any enhancement of student support, and to help build a **greater sense of academic community**
- To **facilitate bridges across any divides** between staff, between students, between staff and students and between the University community and the management—helping to improve communication all round

The Rector has great convening power across the University and it should be used to explore and heal. As institutions, Universities are not merely players in national debates, they are the forum for them. We must promote fearlessness in the expression of lawful views. It's not just our legal obligations, it's our moral obligation to contribute well to civil society and the discussions which lead to a Good Society.

In addition to an intellectual love of Edinburgh and of the value of Higher Education, I also spent a good part of my childhood here. My father was in a Scottish regiment, and I attended primary school in Davidson's Mains. I appeared at the Edinburgh Fringe for 10 years from 1982, and won the Perrier Award for Comedy there in 1989. My sister and her family still live in the city.

Edinburgh (along with Brighton, where I live, and Wiltshire, where I went to school) is one of three compass points of my life.

So for reasons both of the pursuit of knowledge and understanding through the free exchange of ideas, and because of my own personal history with the city, I am honoured to be the new Rector.

I'd like to quote, if I may, one of the most lyrical descriptions of the value of a University, from a speech by John Masefield, then the Poet Laureate, on being made an Honorary Graduate at Sheffield University on 25 June 1946:

There are few earthly honours more to be prized than this which you are now giving to us. There are few earthly things more splendid than a University. In these days of broken frontiers and collapsing values, when the dams are down and the floods are making misery, when every future looks somewhat grim and every ancient foothold has become something of a quagmire, wherever a University stands, it stands and shines; wherever it exists, the free minds of men, urged on to full and fair enquiry, may still bring wisdom into human affairs.

There are few earthly things more beautiful than a University. It is a place where those who hate ignorance may strive to know, where those who perceive truth may strive to make others see; where seekers and learners alike, banded together in the search for knowledge, will honour thought in all its finer ways, will welcome thinkers in distress or in exile, will uphold ever the dignity of thought and learning and will exact standards in these things.

They give to the young in their impressionable years, the bond of a lofty purpose shared, of a great corporate life whose links will not be loosed until they die. They give young people that close companionship for which youth longs, and that chance of the endless discussion of the themes which are endless, without which youth would seem a waste of time.

There are few things more enduring than a University. Religions may split into sect or heresy; dynasties may perish or be supplanted, but for century after century the University will continue, and the stream of life will pass through it, and the thinker and the seeker will be bound together in the undying cause of bringing thought into the world.

## Notes

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1. Simon Fanshawe delivering his inaugural address as Rector of the University. Photography by Neil Hanna.

# The Edinburgh Seven: Pioneers of Medical Education for Women

by Jo Spiller

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**Editorial Note:** The Edinburgh Seven were the first group of undergraduate female students to matriculate at Edinburgh or any other British university, in 1869, spearheaded by Sophia Jex-Blake. The historic events leading to their matriculation (but not graduation) as medical students at Edinburgh are recounted here by Jo Spiller. Had they been allowed to graduate, the ceremony would most likely have been in 1874, i.e., 150 years ago.

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**A**t the summer graduation ceremony in 2018, the Edinburgh Medical School posthumously awarded seven women full medical degrees on the 150<sup>th</sup> anniversary of their matriculation at Edinburgh. The degree awards were presented to seven current medical students representing Sophia Jex-Blake, Edith Pechey, Isabel Thorne, Helen de Lacy Evans, Matilda Chaplin, Mary Anderson, and Emily Bovell, who began their studies at Edinburgh University in 1869. These women, who later became known as the Edinburgh Seven, were among the first women to be enrolled in a full degree programme at any British university, but were eventually barred from graduating with their medical qualification. It should be noted that James Miranda Barry, born Margaret Ann Bulkley, had qualified with a medical degree fifty years earlier; they matriculated, graduated, seemingly lived

their entire life as a male doctor, and was only discovered to be female post-mortem. This means that 1869 was the first time women were given sanctioned access to a British university.

## Who are the Edinburgh Seven?

We know that about forty women matriculated during those first years so why do we speak of ‘the Edinburgh Seven’. In November 1869, the University Court approved the matriculation of both professional and non-professional female students. The ‘professional’ medical students were registered as students with the General Medical Council (GMC), whereas the non-professional students were not. Female students were to be taught in separate classes and were required to pay the professors directly, resulting in significantly higher costs for their education due to the smaller class sizes. Many of the non-professional women who matriculated in that first wave did so to provide both financial and moral support to those pursuing a full medical degree.

In November 1870, a petition was submitted to the Royal Infirmary of Edinburgh, requesting access to clinical ward teaching, without which it was impossible to meet the full requirement for a medical degree. The petition was submitted in the name of the seven women listed above and it was after this that newspapers began to refer to the ‘famous “Septem contra Edinam”’<sup>1</sup> as the ‘adventurous band of seven ladies at Edinburgh’.<sup>2</sup> The exact provenance of the term in relation to the women students in Edinburgh is unclear but it was popularly believed to be parodying a well-known play at the time by Euripides—*Septem Contra Thebes*.<sup>3</sup>

## Sophia Jex-Blake and the Start of the Campaign

Sophia Jex-Blake was the driving force behind the Edinburgh campaign from the beginning. She had first approached London for access to their medical programme, but was rejected on the basis that their charter excluded them from examining women for a medical degree. Edinburgh University and the city held many attractions for her.<sup>4</sup> She had many supportive friends in Edinburgh who felt that Scotland’s liberal approach to education would make it more amenable to offering women access to universities. Edinburgh University was also unique among Scottish universities in being founded on a secular charter, not on an ecclesiastical one, or papal bull. It had been known as the ‘tounis college’ for 200 years and supporters believed that this origin as a publicly funded institution would provide a compelling argument to admit women.<sup>5</sup> As a correspondent to *The Lancet* argued in 1869:

If one University is to the lead the way, it must be a national institution like Edinburgh. The London schools, which it is said have been applied to in



vain, are private institutions, competing with one another. The University of Edinburgh is supported partly by endowments, which are public property, and receives, moreover, money from Government. It is, therefore, public property; and if women can show that they would benefit by being admitted there, it is very difficult to deny their claim.<sup>6</sup>

The women were aware that they would need to excel in their studies and approached their work conscientiously and collegially, setting up their own evening tutorials and even a chemistry lab at their home at 15 Buccleuch Place. But as these women progressed through the course and began to come top of the class in some subjects, and win class prizes, opposition to their presence began to grow; they struggled to find professors willing to teach them and faced increasing harassment on campus.

A pivotal moment came in November 1870 when the women arrived at Surgeon's Hall to sit an Anatomy exam. They were met at the gates by a crowd of over two hundred people, students and public alike, throwing verbal abuse, mud, and rubbish at them. The 'Surgeon's Hall Riot' made the national news and shocked many people, their fellow male students included. It led to the setting up of a committee of over three hundred national social reformers, including Charles Darwin, dedicated to securing women the right to a university education and intensified the national debate on women's right to access a university education and to



*Sofia Jex-Blake*

enter professions such as medicine. A legal ruling by the Court of Sessions in 1873 effectively ended their hopes of graduating from Edinburgh with a Medical degree. The campaign subsequently moved to London to petition changes in the law to allow women access to all universities.

Those four years in Edinburgh saw much bitterness and acrimony and left deep scars on both the women and their supporters. Sophia Jex-Blake, who led the campaign in Edinburgh, reflected nearly twenty years later, that 'some of us will bear the marks all our days' from the struggle in Edinburgh.<sup>7</sup> It had challenged many widely held beliefs at the time and pushed at the door of institutions and professions that women had not previously been granted access to but at a personal cost to many involved.

## Challenging Victorian Norms

John Stuart Mill, the prominent philosopher and social reformer, became Rector of St Andrews University in 1867. In his 1869 work, *The Subjection of Women*, Mill argued for ‘a principle of perfect equality’ to govern all social relations between men and women—allowing no power or privilege on one side, nor disadvantage or disability on the other.<sup>8</sup> Mill questioned the idea of natural domains for men and for women, arguing that the concept of the ‘Nature’ of women was an entirely artificial notion, largely formed by the societal constraints placed upon her.<sup>9</sup> This was challenging the popular belief at the time of *separate spheres*, proposed by John Ruskin, where the man’s sphere is the ‘open world’ where he is the ‘doer, the creator, the discoverer, the defender’ and the women’s sphere is the domestic space where her intellect is needed ‘for sweet ordering, arrangement, and decision’.<sup>10</sup>

Professor David Masson, who was Professor of Rhetoric at the University, and a steadfast supporter of the women students throughout, believed that women should be entitled to ‘any position they can fill honourable or usefully by their minds or their abilities’<sup>11</sup> and that until women receive the same education as men, are taught by the same teachers in the same systematic manner, ‘our nation is unjust to half its members and exists spiritually, intellectually, and in every other respect at but half its possible strength’.<sup>12</sup>

## View on Women’s Education

Education for women in Victorian Britain had been greatly influenced by Ruskin’s views on separate spheres. Many people believed that serious study could harm a woman’s health and that women lacked the intellectual capacity and physical stamina required for a university degree. Women were beginning to challenge these beliefs and provide empirical proof to the contrary. In 1867, Ladies’ Education Associations were being established across the UK, offering women access to degree-level courses taught by university professors. The Edinburgh Ladies’ Education Association (ELEA) was founded in 1867 and in its first year had 80 members, growing to 335 in 1868. Women were taking classes in Science, Experimental Physics, Philosophy, and Literature and impressing their professors with their intellectual abilities. Dr Nicolson, who offered the women a course in literature, reported in 1868:

‘What I have seen and examined, which is not little, in the University of Edinburgh, I have no hesitation in saying that not only would any of the ladies whose papers I have looked at, pass in the department of Edinburgh Literature for the degree of M.A. but that some of the would probably take a high place among the candidates.’<sup>13</sup>

In its 1869 report, the ELEA stated that their experience had proved that the belief that ‘too much learning’ would make women mad or unwomanly was groundless and that, just as education benefited men, it could also benefit women.<sup>14</sup>

But crucially, these Education Associations were not offering women access to full University degrees. Mill’s advocacy for equality can be seen in Jex-Blake’s first petition to the University of Edinburgh, in which she requested ‘a fair field and no favour’ in determining whether women had the intelligence and stamina to study for a medical degree. Alexander Russel, the editor of *The Scotsman*, was also a committed supporter of the women’s cause, used similar language in an editorial praising the university’s decision to admit the women. He wrote, ‘The arbitrary exclusion of women from opportunities of professional education belongs to a past age [...] now that “a fair field and no favour” are at length accorded, the real capabilities of women for the study and practice of medicine will be fairly tested’.<sup>15</sup>

## Opposition to Women in Medicine

While the debate over women’s access to education was one thing, the idea of women studying medicine was another. Many opponents of women in medicine focused on the physical and graphic nature of the profession, arguing that women should not be exposed to the blood, anatomy, and post-mortem aspects of medical practice. When Jex-Blake approached individual members of the medical faculty for support, she encountered strong opposition from some quarters. One professor, Dr Laycock, reportedly told her that he ‘could not imagine any *decent* woman wishing to study medicine’.<sup>16</sup> The *Australian Medical Journal*, in 1865, likened female physicians to a ‘freak show’, drawing comparisons to dancing dogs and bearded ladies.<sup>17</sup>

Even *The Lancet*, which had published letters supporting women’s education, refuted the need for female doctors, arguing that just because women had bodies did not mean they needed to study medicine any more than children needed to become doctors to treat childhood illnesses.<sup>18</sup>

## Harassment and Hostility on Campus

The female students faced significant personal challenges during their time at the University. In the lead-up to the Surgeon’s Hall Riot, the women experienced increasing harassment on campus. They had smoke blown in their faces as they passed students on campus, had rude remarks made to them, were followed home, and had their doors and windows routinely rattled—to the point where they stopped going out alone and stopped going out after dark altogether.

The riot at Surgeon’s Hall shocked many, including their fellow male students, some of whom began to form themselves into an informal group of bodyguards

to escort the women around campus. Isabel Thorne, one of the Edinburgh Seven, would later state that ‘much courage was required for a medical man to declare himself a friend of the movement’.<sup>19</sup> Male supporters were subjected to disparaging views of their masculinity, illustrated in a letter to *The Lancet* by someone calling themselves Scoparius, who referred to the ‘would-be lady students (and their effeminate male friends)’.<sup>20</sup> Research in the United States highlights similar denigratory perspectives about supporters of women’s rights activism appearing in newspapers during the same period. ‘The Revolution’ according to one Connecticut journalist, ‘is edited by two old and ugly ladies men, Mr Elizabeth Cady Stanton and Mrs Parker Pillsbury’.<sup>21</sup>

## Public Criticism of the University

The University of Edinburgh also faced public criticism for admitting women, with some arguing that the decision had damaged the institution’s prestige. Scoparius, and another calling themselves F.G., writing in *The Lancet*, expressed their views thus:

I must say I always thought Edinburgh University was very particular in upholding its professional dignity and distinction, though the present state of things does not look very like it.<sup>22</sup>

I am no alarmist, and least of all fear any rivalry in our profession from the opposite sex, but I do think that the University of Edinburgh will take a foolish step if it throws open its medical classes, or even portions of them, to would-be lady doctors [...] I hope, in conclusion, that all such graduates of the Edinburgh University as are anxious to see maintained the old *prestige* of their school, will stir in this matter.<sup>23</sup>

In 1871, a petition was signed by 504 of the 550 current medical students objecting to the women students receiving clinical teaching on the Royal Infirmary wards. Amongst the objections laid out, the students stated that had they been aware of the University’s intention to admit women they would have not applied to study medicine at Edinburgh:

[...] when we entered upon our hospital studies we had no means of foreseeing that there was any probability of their having to be pursued under circumstances so distasteful to us; and further that had such circumstances been foreseen, they would have materially influenced us in our choice of a school of medicine.<sup>24</sup>

## Posthumous Recognition

Although the women were ultimately unable to complete their degrees at Edinburgh, the four years had begun an unstoppable momentum towards opening universities to female students. In 1878, legislation was passed allowing women access to university education in the UK. The lukewarm ruling stated that universities may, but are not obliged to, admit women students. Some institutions took up the opportunity—London leading the way this time in 1878. Edinburgh, having first admitted women nine years earlier would wait a further fifteen years before admitting women students again.



*Prof. Lorna Marson, Principal Peter Mathieson, and Prof. Moira Whyte with seven students accepting posthumous honorary degrees on behalf of the first female undergraduate medical students—The Edinburgh Seven—to matriculate at the University of Edinburgh.*

In 2018, the University of Edinburgh finally awarded the Edinburgh Seven their medical degrees, symbolically correcting this historic wrong. This act of recognition sparked a series of creative commemorations, including the magnificent triptych tapestry which hangs in the newly established Edinburgh Future Institute, as an enduring reminder of their achievements. The story of the tapestry—its creation, meaning, and symbolism—is a fascinating topic for future exploration.

## About the Author

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### Images:

**Page 270:** Portrait of Sophia Jex-Blake, aged 25, by Samuel Laurence, 1865. Laurence died in 1944. Wikimedia Commons <[https://commons.wikimedia.org/wiki/File: Sophia\\_Jex-Blake\\_Aged\\_25.jpg](https://commons.wikimedia.org/wiki/File: Sophia_Jex-Blake_Aged_25.jpg)> [Accessed November 2024].

**Page 274:** Prof. Lorna Marson, Principal Peter Mathieson, and Prof. Moira Whyte with seven students accepting posthumous honorary degrees on behalf of the first female undergraduate medical students (The Edinburgh Seven: Sophia Jex-Blake, Isabel Thorne, Edith Pechey, Matilda Chaplin, Helen Evans, Mary Anderson Marshall, and Emily Bovell) to matriculate at the University. Photograph courtesy of Douglas Robertson. This article gives more context: <<https://www.ed.ac.uk/edit-magazine/supplements/representing-the-edinburgh-seven>> [Accessed May 2024].

# Edinburgh's Veterinary Women

by Andrew Gardiner

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**Editorial Note:** The early veterinary medical women also had uphill struggles to achieve professional recognition, at Edinburgh and elsewhere. Their story, told here by Andrew Gardiner, '[...] is a tale of determination—of the talent and tenacity [...] required to defeat the extraordinary level of misogyny that typified the era.

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**E**ach year, the Royal (Dick) School of Veterinary Studies, known to its friends and alumni worldwide as the Dick Vet, welcomes around 170 new students on its Bachelor of Veterinary Medicine and Surgery (BVM&S) programmes. The five-year course is the typical route for UK school-leavers, with a four-year option available for about 60 graduate entrants, many of them international, who have a first degree in life sciences. Just over 80% of the students at the annual White Coat Ceremony of welcome each year are women, a figure typical of veterinary schools worldwide. The veterinary profession has 'feminised', to use a term which first found currency in the international veterinary press in the 1990s and early 2000s. Since the mid-twentieth century, women have been attracted to this profession in steadily increasing numbers and have found careers in all the veterinary disciplines and specialties but, as with medicine, the struggle for true equality of opportunity has not been easy. The history of the early, pioneering veterinary women is less



well-known than that of their medical counterparts, and it is fair to say that progress towards gender equality in veterinary medicine experienced a particularly difficult birthing—a *dystokia* indeed. It is a story in which Edinburgh features prominently.

Let's begin with a Tweet (as was). In 2022, I came across a post to the thread **#InHerShoes**. The writer was in The Royal Dick Bar at Summerhall, and shared an image of the old animal hospital entrance sign on display there. 'Going to a gig tonight,' she wrote, 'I feel privileged to be in the building where Aileen Cust the first ever female vet trained'.

It was a lovely post, and an easy mistake to make. Britain's first woman vet did indeed train in Edinburgh, but not at the Dick Vet which, last year, celebrated its bicentenary. Cust qualified in 1897 from New Edinburgh Veterinary College, which opened in 1873 at East London Street, moved to new premises in Elm Row in 1883, and then, in 1904, transferred to Liverpool to become the first vet school fully incorporated into a university. New Edinburgh Veterinary College is not to be confused with the earlier Edinburgh (New) Veterinary College, which opened in 1857 at Drummond Street before moving across Edinburgh to Lothian Road in 1862, and then relocating to London in 1865 to become the second veterinary college there (where it was known as Albert Veterinary College). The two names—Edinburgh (New) and New Edinburgh—seem purposely designed to confuse. So how many veterinary colleges did Edinburgh have? The answer is four, if we include the Polish Veterinary Faculty, the veterinary equivalent of the Polish Medical School which operated during the war years for displaced students. The Polish Veterinary Faculty operated within the Dick Vet but existed as a separate entity and had some teaching spaces of its own.

The historical geography of veterinary education in Edinburgh is therefore interesting and complicated, not least because of a fondness for the use of the word 'new'. Since 2011, when the Dick Vet finally vacated its historic Summerhall site, all teaching has been located at the Easter Bush campus, still referred to by one and all as NVS—New Veterinary School. Vets, it seems, are unimaginative when it comes to naming their institutions, although perhaps 'the Dick Vet' makes up for this.

But what of this older 'new' veterinary college that trained *Aleen*, as she was universally known? Historical cause and effect can be a curious thing and to understand how Aleen came to be trained at New Edinburgh Veterinary College we have to understand a bit about the history of the Dick Vet, and also broaden our focus from 'woman veterinary surgeon' to 'veterinary woman'. This subtle change allows us to bring someone in from the periphery, an individual always present in discussions about the history of Dick Vet but one who perpetually exists in the shadow of her famous brother. It is Mary Dick, William's sister. She was not a veterinary surgeon, yet she was key to the success of veterinary education in Edinburgh, which began in 1823 when her brother gave a series of lectures at the Calton Convening Rooms (now Howie's restaurant) supplemented with practical

classes at his father's forge in Clyde Street (now the site of Edinburgh bus station). It turns out Mary was also, indirectly, key to the inception of New Edinburgh Veterinary College but that, as we will see, was a less than happy association.

In 1817, on hearing from a neighbour about a London-trained veterinary surgeon in Edinburgh, Mary Dick was said to have responded, 'Oor Willum's gaun tae be a graun' veet'nar. He's saved enough siller noo tae tak the lang road coach for London, and he's making his will afore he starts'.<sup>1</sup>

That journey was to the London Veterinary College. It had opened in 1791 on the French model, but its progressive first Principal died in 1793 after only a short time in post. He succumbed to glanders, a horse disease that could also afflict humans (a *zoonosis* in modern parlance). Charles Benoit Vial de St Bel was succeeded by a London medical surgeon, Edward Coleman. Dick arrived in town around half-way through during Coleman's long tenure at London. This farrier's son from the north evidently felt his training in Edinburgh, where he had come under the influence of renowned comparative anatomist, Dr John Barclay, was superior to anything available south of the border. Dick later wrote:

Finding that it was possible to derive as much knowledge in Edinburgh as would lay the foundation for the successful working out of the scheme which I intently cherished in my mind, I considered it was not necessary to remain longer in the English metropolis. After three months' study there, I had the confidence to apply for a diploma, the time of residence not being then defined, and I obtained it.

Present day veterinary students facing four or five years' hard graft may gasp when told of Dick's brief sojourn at vet school, but the young farrier arrived in London already trained by one of the finest anatomists and medical educators in the world. The scheme cherished in Dick's mind was to open a veterinary college of his own, and in this Barclay fully supported him. He started on the project immediately, with several series of lectures delivered between 1819 and 1821, before opening his college in 1823. It was a family affair from the start and, for many years, Dick was the only teacher, funding his college from the proceeds of his horse practice. So successful was this private practice that it was said that Dick paid for substantial property he accumulated in Fife from the proceeds of his practice that were earned before breakfast. In the grand historical scheme of things, Dick appeared in Edinburgh, Athens of the North and epicentre of the Scottish Enlightenment, at just the right time. Extensive practical training as a farrier at his father's side, wedded to Barclayan comparative anatomy, resulted in a more rational system of medicine that reaped rewards (more horses cured).

Mary Dick played a central part in the whole endeavour; it probably would not have succeeded without her. We know she had a role in what we would now call student support and that erring students had to report to her. She may well have

supported Dick with school and practice financial management, and she certainly maintained the household: neither married and brother and sister lived together 'above the shop'. A bit like the veterinary wives of single-handed practitioners up and down the country, Mary would likely have been drawn into a wide variety of tasks. At any rate, for nigh on fifty years while Dick lectured, practised, wrote, and contributed to the development of the profession in Edinburgh and beyond, his sister steadfastly supported him. During 1865-66, Britain experienced a devastating outbreak of cattle plague. The disease had been seen advancing across Europe and a national day of prayer was called to try to halt its spread. It entered Britain through the port of Hull and infection quickly spread south. Dick travelled to London to investigate cases but, already a sick man, the arduous travel and stress of overwork caused a deterioration in his health. On his return to Edinburgh, he experienced breathing difficulties and was told to rest, but he succumbed to heart failure on 4 April 1866. He is buried in New Calton Burial Ground, just a short distance from his birth place in White Horse Close.

Her brother's death must have been a terrible blow to Mary but she retained her prominent role at the college. The Principal from 1867 was William Williams, who had trained under Dick. In 1873, following a series of disagreements with Mary Dick, which were serious enough to end up in the courts, Williams left his *alma mater* to set up a rival college, New Edinburgh Veterinary College. It must have been difficult for Mary to work with someone else and Williams had a very different personality from her brother. Like Dick, though, Williams was a popular teacher. When he left, he took most of the students with him and, because the library belonged to the students, most of the books went too. This was a precarious time for the Dick Vet and it could have folded. After a series of unsettling changes in leadership, stability was finally regained under the steadying influence of Thomas Walley, who stayed at the helm for 20 years from 1874.<sup>2</sup>



Mary Dick

In an indirect way, then, through bringing about the departure of William Williams, Mary Dick created the circumstances for the first woman to enter a course of veterinary study. That woman would be Aleen Cust and the veterinary college, the New Edinburgh, run by an enterprising Welshman who became a strong advocate for women in the profession.

## An Unsuitable Occupation for a Lady?

Connie Ford's biography of Aileen Cust, recently reissued by Routledge, gives a rich account of Cust's background and career. There's also a popular novel, *The Invincible Miss Cust*, written by Penny Haw, and the story would probably make a good film. It is a tale of determination—of the talent and tenacity shown by all the pioneering women vets—with, in Cust's case, a strong injection of pathos. She came from an aristocratic family with prominent connections at court, and had an idyllic childhood surrounded by ponies and dogs in Ireland, but her choice of career effectively isolated her from much of her family, and this lasted a life-time. Not only that, she was ostracised by the profession she hoped to join, so much so that she was not admitted to the Register of the Royal College of Veterinary Surgeons (RCVS) until 1922, 25 years after she had qualified in Edinburgh. Her eventual admission to the Register was enabled by the clunkily titled Sexual Disqualification (Removal) Act of 1919. The RCVS became legally bound to accept



*Aileen (Aleen) Cust*

her. Prior to this, she had been barred from practising her profession in Britain and instead worked under the radar in Ireland, where she was much respected as a country veterinary surgeon. In fact, she could have taken the RCVS to court and would probably have won. The RCVS had acted in a somewhat duplicitous manner concerning her case but, after an initial attempt at the Edinburgh Court of Session, put forward by Williams on Cust's behalf, the matter was dropped, probably to avoid embarrassment to the Cust family in London.

By April 1934, Cust had been rehabilitated enough for the profession's house journal, *The Veterinary Record*, to run a special Ladies Number.<sup>3</sup> The issue reported on an event held by the Central Veterinary Society in London on the topic of women in the profession. Aileen was invited as guest of honour and regaled the audience with stories of 'roughing it' as a large animal vet in Ireland. She accepted that most of the women students and vets in her audience would, of necessity, probably end up working with dogs and cats, but for those who wanted to follow her path she

offered a few hints for veterinary life in the farm yard and stable: how to shoot a horse without having it fall on top of you; how to make a funnel using the thumbs to allow pouring from a large container into a small dispensing bottle; and how to improvise an instrument from the car repair outfit to perforate the hymen in so-called white heifer disease of cattle. But the reality was that it was extremely difficult for women vets to get any kind of job. Some ended up working unpaid; most had, like Cust, graduated with high honours and hoped for a career in mixed general practice doing the full range of veterinary work. They were to be disappointed. A well-meaning but patronising attitude about what women could and could not do as vets was summed up in the editorial of the special Ladies Number:

Eminent men research workers find particularly that when the need arises to exploit their original ideas and preliminary investigations so that a great deal of painstaking and tedious collection of further detail has to be undertaken, women are invaluable collaborators.

Another comment suggests an interesting view of gender and the veterinary role. The writer wondered whether the previous generations of old-time horse vets would now consider the colleges 'largely filled with unregenerate, pallid and studious sons of suburbia, with a sprinkling of virile and competent women'. Aleen Cust certainly seems to have been made in the latter mould but if this was a compliment to those early veterinary women it did not much alter their prospects.

The numbers of women graduated from the different veterinary schools at the time of the *Veterinary Record* special issue in 1934 tells an interesting geographical story. The Dick Vet remained resistant, while London and Liverpool seemed progressive, London especially so under the influence of its principal, Frederick Hobday.

**Table 1:** Cumulative totals of women joining the RCVS Register from British veterinary schools at years 1934, 1940, and 1947.\*

British Veterinary School	1934	1940	1947
London	22	96	152
Liverpool (including New Edinburgh)	10	33	46
Dublin	5	8	17
Glasgow	4	16	34
Edinburgh (Dick)	0	0	0

\*Data in the table are extracted from a document in which one page is partly missing (that corresponding to 1947), so it is possible the numbers qualifying that year are slightly larger than quoted here.

Why was the second oldest veterinary school in Britain so slow to admit women? It was not the case that none was applying. One woman had applied to the Dick Vet as far back as 1920 but was told all places were being reserved for ex-servicemen. Miss Hilda Bisset's enquiry to the college in January 1920 was no doubt connected with the recent passing of the Sex Disqualification (Removal) Act in 1919. Hilda Bisset went on to qualify at Dublin in 1927, one of three women to enter the profession that year, two from Dublin and one from Liverpool. The principal of the Dick in the crucial period of 1911–37 was Orlando Charnock-Bradley. He appears a progressive individual and did much for the profession locally and nationally; his diaries show he knew Aleen Cust and met her regularly in Edinburgh while she was studying at the rival veterinary college. He seems to have supported her in her studies, yet his own college remained resistant to admitting women. Perhaps there was a problem of internal politics. If so, the reasons have not surfaced but clues may yet be lurking in the archive. In 1938, an issue of *The Centaur*, the Dick Vet student magazine, carried a piece on 'Dick Entry Qualifications'. It noted that students 'must be essentially male, unless wishing to be a secretary, when skirts must be worn' and that all students should 'abhor the sight of women within the gray walls'.

The Dick Vet did not graduate its first women until 14 years after *The Veterinary Record* first celebrated women veterinary surgeons in print. In 1948, four women were in the graduating class: Elizabeth A. Y. Caird, Elizabeth A. Copland, Marjorie E. Millar, and Ann C. Preston. These, then, are the 'Dick Vet Four'—the college had finally qualified a quartet of women who could take up the baton that Aleen Cust first seized 51 years before in Edinburgh.



*The Dick Vet Four.*

*From left: Ann C. Preston, Marjorie E. Millar, Elizabeth A. Copland, and Elizabeth A. Y. Caird*

There was, however, an earlier woman student who graduated *in* the Dick Vet, if not *from* it. During the later war years, a Polish Veterinary Faculty was established in Edinburgh, mirroring a similar initiative at the medical school. The veterinary

faculty operated from 1943 to 1948 and used some of the teaching facilities at the Dick Vet. Janina Maria Sokolowska started her veterinary training in 1934 but her education was interrupted by war occupation just as she entered the final part of her training at Lwów Veterinary Medicine Academy. She sought refuge in Edinburgh with some 63 fellow students and finally obtained her veterinary diploma in August 1945 after studying in the Dick Vet, but as part of the Polish Veterinary Faculty in exile.<sup>4</sup> It is ironic that the first woman to become a veterinarian at the Dick Vet was not a matriculated student there.

## 'Physicians of the Farm'

Just as the first Dick Vet women had been settling into their course in 1944, the government published an updated version of the pre-war Loveday Committee report, which had been considering the whole structure and remit of British veterinary education. The 1944 version reaffirmed many of the original recommendations, but they were now given much more urgency. The Atlantic Blockade had shown that the nation was not self-sufficient in its food supply; the war-time government had been days away from declaring a nutritional emergency. This, it was agreed, must never happen again. A key theme of the 1938 Loveday report was that the British veterinary profession was backward-looking, still fixated on the now redundant horse, and paying too little attention to an animal that could embody a new policy towards human food and nutrition: the humble dairy cow. The report took a few well-aimed swipes at the vet schools for providing a stagnant education unresponsive to the nation's needs—'spiteful bosh', A. M. Whitehouse, principal of Glasgow Veterinary School, responded, and debate raged in the columns of *The Veterinary Record*. However, the Loveday Committee repeated its assertion that the veterinary surgeon of the future must now be trained as a 'physician of the farm'.

Around the time women started to train in higher numbers, the British veterinary profession was in an existential crisis following the decline of horse transport. As an animal, the horse was both noble and useful, and the equine class structure, from blue-blooded thoroughbreds, through 'middle-class' hacks and hunters, down to humble cart and commercial horses, mirrored and reinforced the human one. By attending to horses in all their varied and important roles in human society, the veterinary profession, too, could think of itself as noble and useful. The suggested new species of focus, cattle, did not quite cut the mustard in the same way. The veterinary profession had lost a symbolic animal of focus and identity in the horse, and there seemed no other available to replace it.

The intended re-set of the profession's role and purpose by the Loveday Committee was in some ways an opportunity. Human and animal health were to be drawn closer under the same umbrella using an old idea of One Medicine (later

to be expanded and re-cast as One Health). The term 'physician of the farm' reflected the new interdisciplinary outlook. However, this bold vision was one in which women were sidelined. It must have been depressing for those first Dick Vet women students to read phrases like the following in a report that was supposed to modernise the British veterinary profession: 'We could not justify expenditure of public money on the training of women for work among dogs and cats; the number of women admitted by the schools should be small'.



*Disassembled Reclining Horse Rising Sculpture, Summerhall*

What the Loveday Committee was trying to do, no doubt with the best of intentions, was to socially engineer a profession to make it better suit society's needs. In doing so, they were making assumptions not just about gender but also social background ('The veterinary student is more likely to be successful if he comes from the farm or is the son of a practising veterinary surgeon than if he is town bred'). It is also clear that in a job where professional identity was (and still is) constructed around animal species—horse vet, farm vet, small animal vet, etc.—animal species was heavily gendered. For a profession of men, work with some animals (horses, cattle, working dogs) had been seen as manly and respectable. Work with other animals (cats, lap dogs, poultry) was effeminate and 'below the salt'. Gender and species were therefore linked in veterinary medicine in interesting ways, with one animal, the horse, placed above all the others. We can better understand the profession's late acceptance of women by taking this linkage into account. It helps explain how veterinary role and purpose were constructed in times of great change and also allows us to question common assumptions made about women vets. A frequent one is that women *caused* the huge turn towards small companion animals from the middle of the twentieth century as



more women entered the profession. In fact, the British Small Animal Veterinary Association, which now hosts one of the largest veterinary conferences in the world, was formed by a group of men, who began to see the small companion animal (dog first, then cat) as a suitable recipient for a new type of scientifically driven veterinary medicine, where cost was not always a limiting factor in deciding upon treatment, as it was with livestock. Science was linked to sentiment, as in human medicine, and diagnosis and treatment could become more elaborate. The new branch of veterinary medicine was also a promising business opportunity. So the status of the small animal as a veterinary patient gradually changed in the twentieth century and pet medicine became not only respectable but, eventually, the prestigious norm. Most British vets are now small animal vets.<sup>5</sup>



*Contemporary students at the Dick Vet*

A related assumption is that women only joined the veterinary profession when they saw it was 'becoming more small animal'. But the first woman vet was an enthusiastic large animal practitioner, as was the second, Edith Knight, who initially qualified from Reading Agricultural College and then went on to Liverpool University Veterinary School to obtain her veterinary diploma in December 1923, staying on for a further three years to gain the new Bachelor in Veterinary Science degree awarded there (the first woman to do this). Like Cust, Knight was an inveterate horsewoman and rode regularly to hounds. A study of adverts placed by women seeking veterinary work shows that many wanted to do the whole job of veterinary medicine: they wanted to treat all creatures great and small. The following example is interesting, not only because of the range of species mentioned, and the order in which they are listed, but for the bracketed gender and the emphasis placed on what were seen at the time as masculine personality traits. Given the advert's year of publication in *The Veterinary Record* (14 December 1935), it may well have been Knight placing it, as BVSc veterinary degrees, taken in addition to the qualifying diploma, were unusual at this time:

Qualified veterinary surgeon, BVSc, (woman), desires position as Assistant in large, mixed practice. Is highly recommended as 'excellent surgeon, obstetrician, observant and sound diagnostician in horse, cattle and small animal practice' and as 'strong, active, keen, commands respect with all clients'. Motorist. Box 366.

Recorded oral history from retired women vets who worked in the post-World War II period also confirms that they wished to do the whole job of veterinary medicine.<sup>6</sup> Thus the entry of women into the British profession was brought about by a complex interplay of professional and social factors shaped by changes in post-war British society and refracted through the lens of veterinary medicine's own changing role and purpose, and through animal species. It was slow progress at first but, as can be seen in the annual graduation photographs of the Dick Vet, the number of women steadily and then more quickly increased throughout the second half of the twentieth century. Now they are the majority of every veterinary cohort in every veterinary school.

Veterinarian William M. Reed, in his foreword to a collection of essays on diversity and inclusion in veterinary medicine, wrote:

While it is undeniable that the veterinary profession has made many important contributions to both human and animal health, one wonders what other contributions could have been made by a more diverse and inclusive profession. Would the many fractious and divisive debates over animal welfare, the disagreements over the status and value of animals to society, or the rise of animal rights organisations have occurred if more voices with different cultural perspectives had been heard?<sup>7</sup>

The wide remit of veterinary training, its essential comparative character, and its unique blend of scientific insight and pragmatism are valuable commodities to any society, but the people employing those skills must be as diverse as the skills themselves if the profession is to rise to current global challenges in relation to climate, food security, and human and animal health and well-being. In terms of articulating, developing and delivering the One Health concept which will be essential to securing our future on this fragile planet, we need to maintain a diverse and inclusive veterinary profession open to all. The 'Dick Vet Four', the women who preceded them from the other British veterinary schools, and of course Aleen Cust and her unjustly delayed recognition after qualifying from the 'New Edinburgh', were the vanguard of this more inclusive veterinary profession.

## Acknowledgements

My thanks to Clare Boulton, RCVS Knowledge, for providing sources leading to the data in Table 1.

## About the Author

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Andrew Gardiner holds a personal chair in Veterinary Medical Humanities at the Royal (Dick) School of Veterinary Studies. Andrew qualified from the R(D)SVS in 1992. After 16 years in veterinary general practice, during which time he obtained further qualifications in surgery, he was awarded a doctoral scholarship in Medical Humanities to research twentieth-century British veterinary education and practice at the Wellcome Unit for the History of Medicine, University of Manchester. He then joined the teaching staff of the Dick Vet as a veterinary clinical lecturer. Since 2009, he has run All4Paws, an accessible veterinary care practice for homeless and vulnerably-housed animal owners in Edinburgh. He is a Diplomate of the European College of Animal Welfare and Behavioural Medicine in Animal Welfare Science, Ethics and Law, and teaches across the veterinary curriculum. *The Veterinary General Practice Casebook*, jointly edited with Anne Quain, University of Sydney, will be published in February 2025.

## Notes

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1. Quotes from Mary and William Dick are from O. C. Bradley, *History of the Edinburgh Veterinary College* (Edinburgh: 1923).

2. In 1872, Thomas Walley diagnosed the cause of death of Greyfriars Bobby, one of the most famous dogs in the world. The little Skye terrier succumbed to cancer of the jaw.

3. The 'Ladies Number' of *The Veterinary Record* appeared in 1934: vol. 14, no. 14.

4. For information on the Polish Veterinary Faculty and Janina Maria Sokołowska, I am indebted to Alastair Macdonald and Colin Warwick. See their *History of Veterinary Education in Edinburgh* (Edinburgh University Press, 2023).

5. For an account of the rise of British small animal practice, see A. Gardiner, 'The dangerous women of animal welfare: how British veterinary medicine went to the dogs', *Social History of Medicine* 27(3)(2014): 466–487. <<https://doi.org/10.1093/shm/hkt101>> (open access) [Accessed November 2024].

6. Some extracts from oral historian Sue Bradley's extensive conversations with British veterinarian Mary Brancker are available at <<https://www.bva.co.uk/news-and-blog/blog-article/mary-brancker-a-life-of-many-firsts/>> [Accessed November 2024].

7. W. M. Reed, (2013) 'What it means to be inclusive and why it is imperative for the veterinary profession', in L. M. Greenhill, K. P. Davis, P. M. Lowrie & S. F. Amass

(eds) *Navigating Diversity and Inclusion in Veterinary Medicine* (West Lafayette: Purdue University Press).

### Images:

**Page 280:** Mary Dick took a central role in running her brother's veterinary college during his lifetime and following his death in 1866. Photo courtesy of Centre for Research Collections, University of Edinburgh.

**Page 281:** Aileen (Aleen) Cust in academic robes. Her admission to the veterinary register was delayed by 25 years as the British profession resisted the entry of women. Photo courtesy of RCVS Knowledge.

**Page 283:** 'The Dick Vet Four'—the first women to qualify from the college, in 1948. From left: Ann C. Preston, Marjorie E. Millar, Elizabeth A. Copland, and Elizabeth A. Y. Caird. Photo courtesy of Yerbury Studio, Whitburn, Bathgate, and Centre for Research Collections, University of Edinburgh.

**Page 285:** The decline of the horse was all-too symbolically represented when the equine sculpture on top of the MacCallum Clinical Department at Summerhall was taken down. *Reclining Horse Rising* (sometimes known as *Startled Horse Rising*), originally commissioned by Dick for the Clyde Street premises, was restored and now rests outside the equine hospital at Easter Bush. The rupture is barely visible. Photo courtesy of Centre for Research Collections, University of Edinburgh.

**Page 287:** Contemporary students at the Dick Vet being taught bovine ultrasonography. Photo courtesy of Royal (Dick) School of Veterinary Studies.

# The University's Heritage Collections

by Daryl Green

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**Editorial Note:** The University of Edinburgh is graced with libraries containing some of the most important books in the world. But libraries are not only about books. Daryl Green reminds us here that 'they provide the building blocks, the raw material, of higher education: ideas, inspiration, research, and questions still to be answered.' You can arrange to view the collections by request at the library—amongst which lies the full back catalogue of the *University of Edinburgh Journal*.

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**L**ibraries are the beating heart of any university. They provide the building blocks, the raw material, of higher education: ideas, inspiration, research, and questions still to be answered. A research-intensive university like Edinburgh lives and breathes on the amount and ease of access its community has to peer-reviewed publications, to current and historic public opinions and media, to primary resources like art, photographs, and archives in digital or physical format, and to rich datasets shared between academic communities.

The modern library at the University of Edinburgh fulfils all of these needs to the contemporary community, but Edinburgh is unique in that our library actually *predates* the foundation of the University. Clement Litill, advocate and brother of William Litill (future Lord Provost of Edinburgh), was deeply involved in

the mid-sixteenth century attempts to found a university in Edinburgh. In 1579, Litill was appointed to a Council committee 'for taking of ordour anentis the founding ane universitie', but he wouldn't live to see the eventual foundation of our University. Instead, Litill died on 1 April 1580 and bequeathed his library to the future aspirations of the *Tounis Colledge*, a collection which formed the core of the University Library as our University emerged into existence in 1583.

Today, all of Litill's books can be found still in our stores in the University Main Library in George Square—they are regularly called up to our reading room in the Centre for Research Collections and also used in teaching in our classrooms. But today's University Library would boggle the minds of our sixteenth century founders. Today, the University Library houses over 2 million books, archives, artworks, and musical instruments, and provides access to 2.4 million e-books and journals. In the academic year of 2023–2024, over 750,000 people visited the library, making it the busiest building on campus.

But, as these statistics indicate, the Library isn't just home to books, nor has it historically been. The University's Heritage Collections are managed by Library & University Collections staff with expertise in historical musical instruments, in works of two- and three-dimensional artworks, physical and digital institutional archives, personal papers and other archives, early and rare printed books and manuscripts, oral histories and sound recordings, and film and photography collections. Unlike our circulating general collections, the University's Heritage Collections are open for all to use—from University of Edinburgh students and staff, to researchers from other institutions, to members of the public who are curious or have a research interest.

The main hub for interacting with these collections is the Centre for Research Collections (CRC), sitting on the top floor of the Main Library (with glorious views out towards Blackford Hill and the Pentlands beyond), where our reading room, our main public desk, and our three teaching rooms operate at capacity through the academic year. On any given day during the semester, you could walk into the CRC and see through the glass doors a reading room where an early modern manuscript is being consulted by one researcher while another is dissecting a nineteenth century trombone to measure its individual pieces, while yet another researcher examines large-scale architectural plans; you'd also likely see one of our academics from the School of History, Classics and Archaeology, or maybe Languages, Literatures and Culture or Edinburgh College of Art, teaching a group of undergraduate students with books and archives from our collections. Last year, over 2,600 students were taught with Heritage Collections and our reading room issued nearly 50,000 items to researchers.

However, the top of the Main Library isn't the only place where one might encounter the University's Heritage Collections. St Cecilia's Hall Concert Room & Music Museum, on the Cowgate, is home to the University's only public

museum—displaying the University's internationally significant collection of musical instruments. Many of these are kept in playing order by our onsite Conservators and Technicians so that performers wishing to play historic pieces of music on historic instruments (in a historical music venue!) can do so. At New College, our staff provide access to a combination of the special and historic collections of the Church of Scotland and personal papers and archives relating to the College and School of Divinity, in a stunning new reading room with views over Princes Street Gardens. Finally, returning closer to the heart of things in George Square, the School of Scottish Studies Archive & Library provides specialist access to oral history, music, photography, and sound recordings taken by field ethnologist and documentarians who have been working since the middle of the twentieth century to preserve, codify, and study Scotland's rich tapestry of people, traditions, and languages.

George Square, too, would be an odd place for Clement Litill to find the University Library today. Although the *Tounis College* was still a figment in Litill's imagination when he died in 1580, by the end of the sixteenth century, the University already established a physical centre of gravity in roughly on the site of today's Old College, coming up the hill from the Cowgate. What is now George Square was, in Litill's time, a combination of Commons, the 'burgh loch' and parkland, later Georgian townhouses, and in the 1960s the epicentre of the University's new 'humanities campus' expansion (with the doors of the current Main Library opening in 1967).

The University's Library grew and changed in shape and size throughout the seventeenth and eighteenth centuries, and by the end of the eighteenth century, plans were enacted to construct what is now Old College, and by 1830 what is now Playfair Library and Talbot Rice Gallery was furnished and home to the University's expanding library, natural history collections, historic scientific instruments, and objects.

It is these various spaces, many iterations and ways of thinking can be found about a university's collection that inform our curators, librarians and archivists, our conservation staff, and collections managers in how we provide access to, and interpret, our collections today. Not only have the majority of our heritage collections lived long lives within the institution, they are still today doing important work for our students and our researchers. The 500,000+ early printed and rare books that we now manage and curate are called up regularly to teach our students the importance of understand how a piece of canonical literature has been liquid in its state from manuscript to first editions to later critical editions. Dr Adam Budd (HCA) regularly shows his classes our deluxe copy of James Thomson's *The Seasons* (1733) to demonstrate the difference between an eighteenth century trade print publication and a deluxe presentation copy. Our nearly eight linear kilometres of archives range from institutional account books to the rich collection of personal papers, correspondence, and diaries of eminent geologist Sir Charles Lyell; they

cover the earliest of Scottish medieval book culture to archive present day websites (with over a terabyte of digital archives preserved to-date). During the semester, St Cecilia's Hall is full of the sounds of instruments from our extensive collection of harpsichords or brass instruments. Students from the Edinburgh College of Art come in regularly throughout the year to interrogate our recent and historic artworks to understand the impact of media choices and remediation, or how artists have grappled with issues such as gender, environment, and race. Importantly, too, our teams manage and curate the University's wider collection of art which is hung across campus in public buildings—our heritage collections are not dormant, they are constantly doing work.

The University's heritage collections, though, are not static. We grow our collections through donations, bequests, and purchases both supported by historic endowments and by the University's own investment in helping us fill collection gaps and build on strengths. We acquire new books, manuscripts, artworks, archives, and musical instruments through auctions, sellers, and through donation, but we do so ethically and while ensuring that these new items will have immediate relevancy to our teaching academics, our students, and our researchers. For example, in the past few years, the School of Languages, Literatures and Cultures has embraced the teaching of Gothic literature and the long nineteenth century. Working with Dr Madeline Potter, we were able to add a whole collection of works to our shelves which complemented a small core of books already in situ. Anne Radcliffe's *The Mysteries of Udolpho* (1797) now sits alongside the first edition of Bram Stoker's *Dracula* (1897) as bookends to this century of dark and fantastical fiction.

Heritage Collections also acquires contemporary works, including a new selection of gorgeous artist's books by Diane de Bournazel, and also new works of art for the University. This past year, our Art Collections team has been deeply involved with the artistic collective Cooking Sections to support their Climavore project on Skye & Raasay. This year, the University will acquire one of a select few 'bivalve murals' produced by this collective using a new form of tile made from the shell waste of the food industry. The mural's twin will be hung for the public on Skye or Raasay, linking the University to community and sustainable practices which are cutting-edge and produce incredibly deep works of art.

In 2022, the University was successful in fundraising for, and saving from export, a 400-year old manuscript of lute music which had belonged to musical historian, Arnold Dolmetsch. At risk of being sold abroad, the UK Government imposed an export bar on the book to give UK institutions the chance to secure it and Edinburgh was well-placed with its strong School of Music and its world-class collection of historical musical instruments to provide a home for this landmark manuscript. After the manuscript was conserved, it was put on display in St Cecilia's Hall and several lute performances have been scheduled to play one of the University's seventeenth century lutes directly from this seventeenth century manuscript.<sup>1</sup>





*Celtic Psalter from the Western Medieval Manuscripts Collection*



*Project Conservator Amanda Dodd cleans glass plate negatives from the archives of the RZSS.*

Our collections now also do work far beyond the confines of University buildings. Heritage Collections is one of a very few departments across the University which supports a Civic Engagement team. The University adopted a Civic and Social Responsibility Plan to support its 2030 Strategy, and our small team has been hard at work mounting public programming, working with community leaders within and outwith Edinburgh to bring new audiences to the doorstep of the University and to attract new students to the University. This is all done, from our team, through the lens of engaging with the University's long history and heritage. Our teams are active in recruitment fairs, they host a year-long series of concerts and events at St Cecilia's Hall and at the CRC in the Main Library, they mount engaging and thought-provoking exhibitions in the Main Library exhibition space, and they work hard to make our historic collections relevant to modern-day audiences. One of the most successful programmes in the past few years has been our partnership with the furthering education programmes at His Majesty's Prison & Young Offenders Institution Polmont and at His Majesty's Prison Perth. Our curatorial teams have joined our engagement teams in going into these prisons to deliver educational and artistic response sessions at the HMP learning centres.

Philanthropy has always played an essential role for our Heritage Collections; from foundational and regular donations of items, to financial support to help us with our work. Our current fundraising priorities include the areas of conservation, acquisition, student experiences, and community and public engagement. With generous support, we are able to invest in our collections and help make them better used and more widely enjoyed through teaching, research, and a range of public activities.

Student experiences provide invaluable opportunities to deploy talented and enthusiastic students on a wide range of Heritage Collection projects through short- and long-term paid internships and other placements. Outstanding collections, brilliant students, and guidance from professional staff have proven to be a winning combination and an area we would like to expand in the future. Another area which requires additional support is the care and conservation of our collections. As our collections continue to grow and be used more and more for research and teaching, for digitisation, and for display, conservation work is one of our highest priorities. Our Philanthropy Manager, David McClay ([david.mcclay@ed.ac.uk](mailto:david.mcclay@ed.ac.uk)), is always pleased to discuss our current needs and options for support.

At its very core, the University's Heritage Collections might still be something recognisable to Litill and those sixteenth century champions of the foundation of the University of Edinburgh. However, the scale of our collecting (nearing 450 years old now!) and the ambition of the professionals who care for, interpret, and grow these collections, would be astonishing to those champions of the past. As our collections continue to grow and meet the demands of our academic community, so, too, will we have a need for our services and our spaces to meet those demands.

The University Library, today, is still the beating heart of the University—and we continue to work as both the centre for institutional memory and in inspiring future generations of students and researchers.

## About the Author

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**D**aryl is Associate Director, Heritage Collections (Research & Curatorial), Co-Director of the Centre for Research Collections based in the University's Main Library. He joined the University in March 2020, having previously held the position of Fellow Librarian at Magdalen College, Oxford, and Rare Books Librarian at the University of St Andrews. He is a bibliographer and historian of early Scottish book culture, and is co-editor of the forthcoming *Edinburgh History of the Book in Scotland*, Volume 1 (EUP, 2025). He is a Council member of The Bibliographical Society, and IFLA's representative to the UNESCO Memory of the World Register Subcommittee.

## Notes

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1. To learn more about how our collections are growing, read up on our annual acquisitions here: <<https://library.ed.ac.uk/heritage-collections/collections-and-search/recent-acquisitions>>

### Images:

**Page 295, upper:** Celtic Psalter from the University's Western Medieval Manuscripts Collection. © Copyright the University of Edinburgh.

**Page 295, lower:** Project Conservator Amanda Dodd cleans glass plate negatives from the archives of the Royal Zoological Society of Scotland. Photography by Laurence Winram.

# Celebrating Longitudinal Research into Cognitive and Brain Ageing

by Barbora Skarabela

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**Editorial Note:** Lothian Birth Cohorts are an interdisciplinary research programme based in the School of Philosophy, Psychology and Language Sciences at the University of Edinburgh. Focused on brain and cognitive ageing, the programme depends on longitudinal testing of selected individuals at different times of life. The LBC investigators are drawn from all three Colleges of the University. Theirs is a compelling example of cross-University collaboration at work, to the benefit of science and society.

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For over twenty years, the University of Edinburgh has been the home of a unique longitudinal research programme into cognitive and brain ageing: the Lothian Birth Cohorts. At the heart of the study are two groups of older adults, born in 1921 and 1936, who took a test of thinking skills when they were 11 years old as part of The Scottish Mental Surveys of 1932 and 1947. Over 80,000 11-year-olds who were born in 1921 and over 70,000 11-year-olds born in 1936 attending school in Scotland took the test in 1932 and 1947 respectively. No other nation in the world has ever tested an entire year-of-birth within their population on their cognitive skills; Scotland did it twice. These two unique historical events led to unforeseen insights into later-life cognitive and health outcomes.



*LBC1936 Participants Reunion*



*Mr Scott, LBC Participant, with a 3D-printed model of his brain*



The results of the initial surveys were analysed and written up at the time, and then faded into obscurity. They remained forgotten until they were rediscovered by Professors Ian Deary and Lawrence Whalley in the late 1990s who recognised their remarkable value: if they could find adults born in 1921—who were then in their 70s—and match them up with their scores in childhood, they would establish an unprecedented baseline score from which they could better understand how and why people’s thinking skills were changing across the life course. Beginning in 1999, some of these adults, now living in Edinburgh and the Lothians, received a letter from the University of Edinburgh: a unique invitation to participate in a new research study into cognitive ageing. The first adults who agreed to participate in the study visited the Western General Hospital for a two-hour battery of tests on 7 September 1999; 550 attended in total and they formed the Lothian Birth Cohort of 1921 (LBC1921). Five years later, in 2004, 1,091 of their younger peers born in 1936 who took the same test of mental abilities as 11-year-old school children in 1947, agreed to participate in a similar, but far more extensive, battery of tests; they formed the Lothian Birth Cohort of 1936 (LBC1936). Many members of both cohorts have returned regularly over the years to undergo repeat testing. The Lothian Birth Cohorts’ participants are now stars in the scientific world of ageing studies.

This year we celebrate two important anniversaries in the history of the Lothian Birth Cohorts studies: it is the 25<sup>th</sup> anniversary of the LBC1921 established in 1999 and the 20<sup>th</sup> anniversary of the LBC1936. The LBC1921 participants were followed up five times from the average age of 79 years until 92 years. Beginning in 2004, first members of the LBC1936 were invited for testing every three years; over 200 of them are expected to come back for a testing visit for the seventh time at the average age of 88. Each time, the participants meet psychologists from our cognitive testing team and research nurses at the Western General Hospital for several hours at a time, one-on-one, taking cognitive tests, surveys, and physical and health exams. Each visit yields a vast amount of data, including around 200 items from cognitive scores, 50 items from the physical exam, 50–100 blood test results and another 100+ items on demographics and health, plus millions of further data points from genetic and brain scans obtained from a separate appointment with the radiography team at the Royal Infirmary of Edinburgh. It involves many hours of collaborative effort from the testing team and the data manager to cross-check the collected data for accuracy before it can be made available for new scientific discoveries.

The principal aims of the LBC studies have remained the same over the years—to discover secrets to healthy cognitive ageing and to understand why some people’s brains age better than others’. The foundation of the studies is The Moray House Test, a special test of thinking skills designed by Professor Sir Godfrey Thomson, Educational Psychologist at the University of Edinburgh from 1925 to 1951. The studies have shown that cognitive abilities in older age partly reflect

cognitive abilities in childhood: those individuals who scored higher on cognitive tests in childhood tended to do better on these tests in older years. This early finding expanded into a body of research demonstrating a robust link between cognitive ability and health outcomes—linking higher childhood intelligence test scores to longevity and lower risk of death from many major causes of mortality, forming the foundation of the field of cognitive epidemiology. Yet, the association between early- and late-life cognitive functioning is not straightforward: there are people who perform less well than one might expect given their childhood score, and *vice versa*. The team has spent considerable time seeking out those factors that might explain—beyond age 11 cognitive performance—why some people experience steeper cognitive ageing than others. They have discovered many, from health conditions, genetics, lifelong socioeconomic circumstances, pollution, neighbourhood deprivation, and lifestyle factors. In a review of the top ~100 or so publications (from the 700 and counting), the team coined the phrase ‘Marginal Gains, Not Magic Bullet’ to summarise their findings. That is, there are very many small contributions to cognitive and brain ageing, rather than one single ‘bullet’ that holds the key. Here are a few of the top-line findings.

Most people’s thinking and memory skills decline as they grow older, even in the absence of dementia. Some cognitive abilities are well-preserved, such as people’s knowledge of words. However, everyone’s reasoning skills tend to get worse with ageing, and how quickly we process information declines even more quickly.

Differences in people’s genes account for about 25% of the variation in how thinking skills change from childhood to old age. People with a particular version of the Apolipoprotein E (*APOE*) gene are at an increased risk of experiencing steeper cognitive decline in older age, more brain ageing, such as shrinking in the overall volume of the brain, and damage to the brain’s white matter which connects different areas of the brain together.

The LBC team relies on sophisticated brain imaging techniques that allow us to investigate what features of our brains are important for maintaining thinking skills into older age among the hundreds of LBC participants who have undergone MRI scans every three years for nearly two decades. The study was at the forefront of establishing which aspects of the brain’s white matter connections are important for cognitive ageing; the study newsletter is still called the *Disconnected Mind Newsletter* in a nod to that important contribution to science. Discoveries include establishing that cognitive ageing and changes in subtle white matter microstructural features occur in a coupled fashion, and the importance of large areas of bright-white-appearing signal in the white matter (known as white matter hyperintensities) as indicating widespread damage to the connections. They also revealed that brain size and the thickness of the cerebral cortex (the brain’s outer layer) are important indicators of cognitive health. The cortex, which carries out essential cognitive functions like memory, thinking, learning, reasoning, or problem-solving, tends to



*LBC Team in February 2023*



*Mr Scott, LBC Participant, with a crystal model of his white matter*



thin with age more quickly for some than others. Cigarette smokers have a thinner cerebral cortex compared to those who never smoked or those who gave it up.

How can we protect our thinking skills and brain health? Most factors associated with better cognitive ability in later years have been on the public's radar for years, including keeping physically active, staying cognitively engaged, keeping a healthy diet, maintaining good sleeping habits, staying socially connected, and not smoking. Cardiovascular health is important for brain and cognitive health: lower blood pressure and healthier blood vessels are associated with slower brain aging and better cognitive function. Additional specific activities discovered with the LBC data that are associated with better cognitive outcomes include playing analogue games, musical experience, bilingualism, or gardening.

Environmental factors, too, are linked to cognitive, brain, and health outcomes: taking advantage of information collected from historical records about the neighbourhoods that the LBC participants have lived in throughout their lives, a recent collaboration between the LBC team and colleagues from the School of Geoscience at the University of Edinburgh has provided important insights into the relationship between air quality, neighbourhood characteristics, and ageing. Using estimates of historical air pollution has shown that greater exposure to air pollution at the very start of life was associated with a small but detectable detrimental change in cognitive skills up to 60 years later and that air pollution in earlier life may be associated with faster biological ageing. Those who lived in deprived neighbourhoods across the life course were more likely to experience frailty, and living in more deprived neighbourhoods in childhood and middle age exposes people to a greater risk of worse cognitive outcomes later.

The Lothian Birth Cohorts studies thrive on innovation, have evolved rapidly, and have tried to keep ahead of the curve in terms of new methods and approaches. And collaborators from across the globe have seen opportunities in the wide range of collected data to answer their specific research questions, too. This has led to many unforeseen research opportunities. It is most certain that the 11-year-olds in 1932 and 1947 did not anticipate that one day they may contribute to the study of cognitive, brain, and general ageing with whole-genome sequencing, lipidomics, DNA methylation or, for example, induced pluripotent stem cells, which have allowed researchers to study molecular mechanisms underlying individual differences in cognitive ageing and resilience to age-related neurodegenerative diseases. The participants' brain imaging data have contributed to insights about gene expression across different brain regions, and how these relate to complex cognitive functions. Their blood samples have been used to look for proteomic and epigenetic signals associated with general cognitive function and brain ageing. They have contributed to discovery of the genetics of blood-clotting, the pre-cancerous genetic changes to our blood-making system (clonal haematopoiesis), and to 40+ other genetic and phenotypic consortia efforts on an array of measurements such

as diabetes, lung function, or blood pressure. Over 170 LBC1936 participants have signed up to provide post-mortem brain tissue, another remarkable contribution to the study of cognitive and brain ageing, which allows scientists to gain insights into how brain cells relate to lifetime cognitive and brain scan data.

The richness of the data collected is unprecedented. The value of the data leading to 700+ scientific publications is hard to enumerate. The findings have not only advanced our understanding of cognitive and brain aging but also influenced the way others approach the field, offering implications for promoting healthy aging and improving public health (the list of >60 policy and advice documents to which the team's research has directly contributed is available on the study website). Longitudinal research makes these outcomes possible. The average funding period for projects supported by UK Research and Innovation (UKRI) typically ranges from three to five years. Achieving continuous funding for over twenty years is rare. The LBC studies have benefitted from the continuous support from Age UK and the UKRI funding councils, allowing the collection of one of the most informative datasets of older adults anywhere in the world for twenty years. Thus, though the study was initially focussing on 'normal' healthy ageing (no participants had a dementia diagnosis at the outset), having been able to follow them up for so long has also provided information for studies on dementia and death as those numbers sadly accrue.

A recently published paper by the core LBC team examined what factors, conditions, and behaviours are associated with living a greater number of years beyond age 79 when the participants born in 1921 joined the study. The average age of death for the LBC1921 study participants is at 89 years. Sixteen of the LBC1921 members celebrated their 100<sup>th</sup> birthday. Five of them have celebrated their 103<sup>rd</sup> birthday and one remaining participant will turn 103 next month. What can explain this unique achievement? The study found that those who enjoyed longer lives were more likely to be women, those with higher cognitive and physical functions and greater physical activity at age 79, and those who had lower rates of lifetime smoking. Importantly, cognitive ability emerged as the strongest unique predictor of longevity, surpassing physical function, highlighting later-life cognitive ability is an important predictor of survival in the oldest old.

The Lothian Birth Cohorts' participants are well known in the scientific world of ageing studies. Their data have provided invaluable insights into long-term cognitive and brain health and general ageing. Their dedication and commitment to the study are remarkable and humbling—when asked what motivates them, they express their desire to make a difference for future generations. Their story achieves no less: founded in a historical event, they are shaping the path to our future. It is fitting that the Lothian Birth Cohorts will soon be joining the newly founded Edinburgh Futures Institute to continue to carry out their mission.

## About the Author

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**D**r Barbora Skarabela is Knowledge Exchange and Impact Officer working with the Lothian Birth Cohorts (LBC). She is the current editor of the *Disconnected Mind Newsletter*, issued every three months, with updates about the LBC. She leads the group's public engagement activities and supports the team in the development and delivery of research impact. Under her leadership the team has developed hands-on activities and events, making science accessible to diverse audiences through festival and school workshops and art collaborations. Most recently, the team has launched a new intergenerational 'science with art' educational programme called 'Marginal gains', around the findings of the LBC studies, raising young people's awareness of brain and cognitive ageing. Dr Skarabela received her undergraduate education in the Czech Republic and continued with postgraduate degrees in the United States, completing her PhD at Boston University. Her doctoral thesis examined language development in children acquiring Inuktitut, an indigenous language spoken in Northern Canada. She joined the University of Edinburgh as Teaching Fellow in Language Acquisition and has held research posts investigating various aspects of language development. She is a founding member of the Wee Science developmental lab in the School of Philosophy, Psychology and Language Sciences, and uses diverse data and methodologies to examine verbal ability across the life-course.

## Notes

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### Images

**Page 299, upper:** LBC1936 Participants Reunion photograph. Image courtesy of the author.

**Page 299, lower:** Mr Scott, LBC Participant, with a 3D-printed model of his brain. Image courtesy of the author.

**Page 302, upper:** LBC Team in February 2023 outside the University of Edinburgh Psychology Department at 7 George Square. Image courtesy of the author.

**Page 302, lower:** Mr Scott, LBC Participant, with a crystal model of his brain. Image courtesy of the author.

# On the Duality of Numbers and Figures

by Minhyong Kim

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**Editorial Note:** The Chair of Mathematics is as old as the University of Edinburgh itself, which was founded in 1583. Initially based in the Faculty of Arts, Mathematics—ever a hybrid academic discipline—did not move to the Faculty of Science until 1966. Alexander Aitken FRS, FRSE (1895–1967), held the Chair from 1946 to 1965. Aitken was an eminent mathematician whose best-known contribution was the introduction of the generalised least squares method in linear regression, a fundamental tool in statistics and data science. In 1955, Aitken wrote an expansive article titled ‘A Mathematician Reviews his Subject’ dealing with mathematical disputes of the day, which can be accessed at <<https://www.uega.co.uk/aitken>>. Seventy years on, given the continuing centrality of Maths as an academic discipline, we invited Minhyong Kim—our current Professor of Mathematical Sciences—to read the Aitken article and provide a current perspective. His response is as follows.

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**H**ere is a puzzle: a triangle has three sides with lengths 5, 5, and 7. Is one of its internal angles  $90^\circ$ ? How would you go about answering this question? I will end this paragraph here in case you would like to think about it a bit.

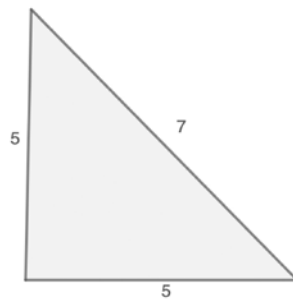
\*

Depending on your inclination, you might remember the ‘theorem of Pythagoras’ and calculate:

$$5^2 + 5^2 = 25 + 25 = 50$$

Note that this not the same as  $7^2 = 49$ . Thus, the triangle in question is *not* a right-angle triangle, and we can answer the question in the negative.

I hope you have had some opportunity in the course of your schooling to appreciate just how remarkable this conclusion is. We have found something quite definite about the shape of the triangle without drawing a single picture, which would have been quite hard to do with accuracy in any case. Rather, we arrived at our conclusion from an algebraic *calculation*. I have generated a picture of the triangle in question using the programme Geogebra:



You will notice that one of the angles looks fairly close to a right angle. It might have easily appeared to be one if the representation were attempted by hand. But you know for sure it is not because of the calculation just done, which is in fact a much more reliable check than drawing pictures.

These days, even schoolchildren learn how to represent points in the plane with pairs of numbers—a great pedagogical achievement—the so-called Cartesian coordinates [Figure 1].

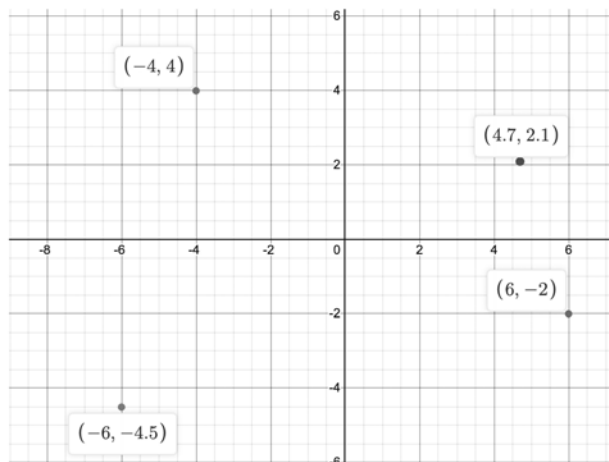


Figure 1: Cartesian coordinates of points

An equally remarkable fact is that the distance between two points with coordinates  $(a_1, a_2)$  and  $(b_1, b_2)$  can be calculated using the formula:

$$\sqrt{(a_1 - b_1)^2 + (a_2 - b_2)^2},$$

which is easy enough to use, except for the horrid square-root that might require the aid of a calculator<sup>1</sup> on your mobile phone. If you do not have one, asking for ‘scientific calculator’ on Google will take you to quite a powerful one. Anyway, I hope you will acknowledge that the formula for the distance is quite straightforward and efficient as long as you are not asked to do the calculations yourself. If the points instead were in space, then they would each have three coordinates  $(a_1, a_2, a_3)$ ,  $(b_1, b_2, b_3)$ , while the formula for the distance is generalised to:

$$\sqrt{(a_1 - b_1)^2 + (a_2 - b_2)^2 + (a_3 - b_3)^2}.$$

Such a system of expressing locations using numbers, which has a long history in the case of latitude and longitude, is critical in the operation of the GPS system that guides the navigation of your car.

It would seem that all kinds of information about shape and space can be encoded into numbers and subjected to calculation. This was never surprising in the history of mathematics, since even a superb geometer like Archimedes was very proud of his calculations, like the volume of a sphere or the value of  $\pi$ , and knew that they revealed many deep facts about figures, numbers, and the diverse connections between the two kinds of entities.

In preparing this essay, I was asked to comment on at least some aspects of Professor A. C. Aitken’s lecture from 1955, ‘A Mathematician Views his Subject’,<sup>2</sup> especially with a view to explaining how the present perspective on mathematics might differ from his. To me, nothing stands out as much as the importance he attaches to the difference between geometry and algebra, drawing upon some versions of history to support his views. The tension and collaboration between what he believes to be two distinct frameworks of thought provide structure to his entire essay. He finds individual inclination towards one or the other significant in learning and research, and even believes whole civilisations to have had algebraic or geometric tendencies. Perhaps the short discussion above will already suggest that the distinction is not so clear as a mathematician in the middle of the last century might have believed.<sup>3</sup>

The pragmatic divisions of areas of mathematics, such as that between algebra and geometry, still appear frequently enough in the landscape of the subject, such as the classification of faculty specialities or papers submitted to scholarly journals. However, the experience of the twentieth century has created substantial unease about this division, an unease that is becoming even more pronounced in

the twenty-first century. The unease has in fact been a remarkably constructive force that has affected essentially all of mathematics. What we observe now, with increasing clarity and depth, is that algebra and geometry are *dual* to each other in some sense, like mirror images.

There are a number of prominent sources for the conflation about which it would have been essentially impossible for Professor Aitken to have known in his time. One is the advent of computers, certainly more commonplace now than automobiles were in the 1950s. I have displayed below [Figure 2] a tiny but typical fragment of the data contained in a file on my computer. Its normal appearance on your monitor shows a familiar mural in the University of Edinburgh's McEwan Hall [Figure 3].

```

1D4AC96E 74429328 5FF8C75A 055E3B48 786006FB C69E6388 374C00A3 91938273 81C9AC39 F57D6A74 996F8598 6031879F 142A3085 81D5F767
89CFA63E 85C73C48 5782378D 34549E65 007F3638 C056F669 50858617 9021520F 200C2E7A 72783E85 308E8462 42608429 24449370 8E7C441D
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958E879F 4DAB92E9 F07B5684 85F056A6 B7F786F6 A1268505 AE240A3F D581C7FD F26876EB E27681A7 333C3707 17928F98 0868803F 063C1AF9
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781FC88B 28E0A9C3 59EAF000 033A95A5 2D4D0038 E02789F5 59067D72 F2DED893 96334A67 938F61C7 77E5F779 A4FC00F0 FD8C63FB 4EF6EECC
E725176C 484F1D89 3D877AED B5958A1C B2AB67A1 D858F827 C1DA12AB 58691621 93A3C99E 680FC583 525E78E7 C3FA6898 737F6AB2 22EEF251
C16007FB 239E3B5 633AAA21 1A739E7F 3377F162 07875934 8D3AFAF7 CC728A16 2F2F3838 272F8E32 7AD61DEF 8F3C4777 75347656 D676F080
0249248D 231273CE 0606D2C8 1CE78570 55C57F48 D0E8861D 2DCC38BD 5F527447 D63C4C63 F2504AE9 68862590 905804F2 429F9475 E79EFC56
743689AA 5E4FFE81 77A819D4 90F2AC98 C0C1927 E5E83C6 0E3D718A E59CE737 EE8FEAC6 F1491D1A E87AACF6 8F1DAE95 68611390 91892555
68D3800E 1338E00E 07E951C8 6567A2E0 EB9E25D3 D022E30 8163666E 39396FF6 57803878 D113CA7 A750E751 39C8D0F18 7C38B150 871AA5EE
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403915D0 E848D045 64640A01 89C82DD3 04019AF4 AA497B38 18C13E78 98DE088F 838AD78A 74281D4E 18AB2858 1888C059 182EE769 2A7E503D
81C915E8 9A0FECF3 A0DA80DA B5DE5F3 1FBC8088 90FE832D FAD79DED 586E291A CED1D4F4 CD27C13E 15F0E207 83D2AC60 65FF0096 AD1867FF
008E0827 F5A48FF8 81E1DD3D 2E42DF43 349E88F3 2280F98C 89E83038 F078F6AA 9D480357 7AB30519 D57A1CEE A3F12AF6 48AD9F46 D29E5497
6991AESF C9F254E7 92304E70 09C5F287 FE30F11D DCF23C97 F6868657 0C90DBF9 69F3283F 209727AE D1D31D4F 85790571 92969157 89094F0F
18EE732C D6DADEC 567ABDE5 FEAC6C4F 993C6483 92C46EC1 D83A8385 42638D5F 86D03549 84525968 4F04F38C 4D24972E 8180A092 DDF7062E
3A0E3D38 15CC8DA5 46AF87F9 A377689A D268D77A 7C5E6681 AF699A54 7181E580 ABC63AB1 2D87F21C 7D689C9F C41F0F34 78E248BD 72F35668
    
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Figure 2: A typical tiny segment of a .jpeg file



Figure 3: The Figure of Mathematics from the McEwan Hall ceiling.

The format of the file is called ‘.jpeg’, which is one format used for many of the digital pictures you have stored in your hard drive. If you would like to extract from one of your files ‘raw’ data of the sort I’ve shown, you will need something called a ‘hex editor’, which is easily available online in a number of places.

Perhaps you will guess why I am showing you this. It is to recall that all pictures are stored as a collection of numbers and a few other symbols, themselves representing a configuration of semi-conductors. Thus, a picture is entirely algebraic as far as the computer is concerned. An image search engine, available via Google, must be able to recognise visual features just from the algebraic data; it is a genuine marvel of technology and theory that it is able to do so. Our usage of the Pythagorean theorem at the beginning might give a rudimentary sense of how such a task can be carried out, since the only thing a computer can do is calculate. Also remarkable is that the information in the picture, especially when it gets transmitted over long distances like an Internet connection to Australia or even the space between Jupiter and Earth, are almost always subject to intricate modes of addition and multiplication which enhance their robustness to errors. In short, the devices we have routinely perform a quite sophisticated *algebra of pictures*.<sup>4</sup> This and other kinds of algebras of shapes are ubiquitous in present day mathematics.<sup>5</sup> The deepest manifestation is probably that of *topological quantum field theory* [Figure 4],<sup>6</sup> describing how special kinds of strings or particles might be created, split into pieces, merge, or be destroyed entirely in complex interactions they are subjected to over time. Some believe this theory will yield the key to an effective method for *quantum computation*. It is, in any case, a guiding theme of the Centre for Doctoral Training in Algebra, Geometry, and Quantum Field Theory that has started this year in Scotland, a collaboration between the University of Edinburgh, the University of Glasgow, and Heriot-Watt University (<https://www.agq-cdt.org/>).

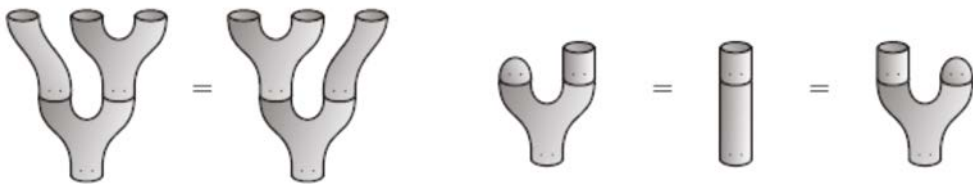


Figure 4: Algebra of two-dimensional TQFT

(picture from nLab: <<https://ncatlab.org/nlab/show/functorial+field+theory>>)

A blurring of the supposed boundary between algebra and geometry is related to various developments in the twentieth century that showed how geometry can be literally constructed out of nothing but algebra. Many mathematicians contributed to this development, but the key concepts are usually associated with the French mathematician Alexander Grothendieck.<sup>7</sup> One way to conceptualise this is to go back to Archimedes and theorems about the measurement of geometric objects. Once they are measured, of course, one ends up with a collection of numbers that



are subject to algebra. However, the key insight is that quite a range of algebraic structures including *rings*, in which you can add, subtract, and multiply, and certain *categories*, equipped with a broad range of coherent interlacing algebraic operations, can be viewed as an algebra of measurements in a geometry constructed out of the algebra itself. In short, many kinds of seemingly abstract algebras are algebras of measurements. The geometry obtained in this way is sometimes called the *spectrum* of the algebraic structure.

The construction of the spectrum is significant in numerous ways, including the suggestion it brings that the universe itself can be constructed purely out of algebra in some manner. It is a fact of life that a precise microscopic description of nature is algebraic and goes by the name of *quantum mechanics*. In that theory, one can carry out algebraic operations that seem very mysterious to us, like adding the dead and live states of a cat. Combining two atoms to get a molecule, on the other hand, is multiplication. Quantum mechanics has provided a more or less satisfactory foundation for theorising about the basic constituents of matter. However, the constituency of spacetime itself, in which the matter sits, remains a mystery. This is referred to as the problem of *quantum gravity*.

There is broad agreement that a union of algebra and geometry is prerequisite to solving it. In short, it is quite plausible that a precise understanding of the duality between algebra and geometry will be crucial to answering fundamental questions about space and time.

Immanuel Kant, who features prominently (and rather negatively) in Professor Aitken's lecture, was a key figure in drawing attention to the difference between the world of perception and the unknowable world 'out there'. In fact, some of our reflections on the computer's grasp of geometry must apply equally well to the computations that occur in our own mind as we process stimuli and construct a sensible picture of the world [Figure 5].<sup>8</sup> The problem of quantum gravity forces us



Figure 5: The brain as a computer (picture by Open AI (2024), ChatGPT4 [large language model], 8 Oct version)

to ask an even more perplexing question that isn't only about our own perception. Given that algebra is sufficient to produce the logic of entities and relationships that we experience as geometric, how can we be sure there are shapes out there at all? In short, modern mathematics supplies a surprisingly precise framework for the kind of vague skepticism traditionally associated with philosophy.

One last point I will make about Professor Aitken's essay is that the status of logic has undergone many transformations in mathematics since his time. In his lecture, one detects still a spectre of Hilbert, Russell, and Gödel, the preoccupation with *absolute certainty* and its elusive nature that was the source of much consternation.<sup>9</sup> Such anxiety is no longer with us since most mathematicians are comfortable thinking of mathematical truth as attained in approximations and stages as with any other kind of knowledge about the world. However, at least some of the elaborate structures of mathematical logic are making a quite outstanding reappearance in the realm of computer science and its continuing influence on mathematics.<sup>10</sup> It is plausible that this influence will grow, maybe even dramatically, in the coming years.

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## About the Author

**M**inhyong Kim is Director and Sir Edmund Whittaker Professor of Mathematical Sciences at the International Centre for Mathematical Sciences in Edinburgh. He works on arithmetic geometry, the study of spaces built out of finitely-generated systems of numbers, and its interface with the part of mathematical physics known as topological quantum field theory. His main contribution to mathematics is the discovery of the non-abelian method of Chabauty, a theoretical framework for applying ideas of topology, especially homotopy theory, to the algorithmic resolution of Diophantine equations. Minhyong studied mathematics at Seoul National University, then received his PhD in Mathematics at Yale. He has held professorships at many institutions, including Purdue University, the Korea Institute for Advanced Study, University College London, and the University of Oxford. Before moving to Edinburgh, Minhyong was Christopher Zeeman Professor of Algebra, Geometry, and Public Understanding of Mathematics at the University of Warwick. Minhyong has published 12 books in Korea for the general public. His latest project is a series of illustrated children's books featuring a mathematician (who quickly disappears), his family (who search for him), and Schroedinger's cat (who does both).

## Notes

1. The calculator, in turn, uses a method that is said to go back to the ancient Babylonians.
2. *University of Edinburgh Journal*, Vol XVII No.4, pp. 213–228.
3. It is not at all clear how the strength of such a belief might have varied over time. It appears to have been quite strong in British education in the nineteenth century with its great emphasis on the classics. One finds evidence that the influence did much to hinder mathematical training, perhaps as much as the Euclidean dogmatism of Kant, criticised by Professor Aitken, obstructed the development of generalised geometries. For more information, see note 11.
4. E. Berlekamp, *Algebraic Coding Theory*, rev. edn (World Scientific Publishing Company, 2015).
5. A. Hatcher, *Algebraic Topology*, 1<sup>st</sup> edn (Cambridge University Press, 2009).
6. J. Lurie, ‘On the classification of topological field theories’, *Current developments in mathematics, 2008* (Somerville, MA: International Press, 2009), pp. 129–280.
7. A. Grothendieck, *Éléments de géométrie algébrique* (I. Le langage des schémas. Inst. Hautes Études Sci. Publ. Math., 1960), no.4, 228 pp.
8. T. Jorgensen, ‘Is the Brain a Biological Computer?’ <<https://press.princeton.edu/ideas/is-the-human-brain-a-biological-computer>> [Accessed November 2024].
9. Cultural historians have suggested that the sense of social anxiety associated with the changes of the early twentieth century may have played a role in the strong drive to attain certainty. For more information, see note 12.
10. *Homotopy Type Theory: Univalent Foundations of Mathematics* (The Institute for Advanced Study, 2013) <<https://homotopytypetheory.org/book/>> [Accessed November 2024].
11. G. Davie, *The Democratic Intellect*, 2<sup>nd</sup> edn. (Edinburgh University Press, 2013).
12. N. Engelhardt, *Modernism, Fiction and Mathematics* (Edinburgh University Press, 2008).

# Lives Launched: Celebrating the Edinburgh Experience

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**Editorial Note:** The University of Edinburgh Graduates' Association's ultimate purpose is to encourage Edinburgh alumni to keep in touch with each other. Accordingly, we invited two freshly graduated student orators to share their speeches through the pages of the *University of Edinburgh Journal*. Their inspirational responses follow below.

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## Giulia Guasoni's Graduation Address

Ladies and gentlemen, esteemed faculty, and fellow alumni. I first want to extend my gratitude to the faculty and administration of the University of Edinburgh. Your steadfast support has been invaluable, especially at the beginning of our academic journey during the COVID-19 pandemic. To the families and friends who've joined us today: your presence magnifies this occasion, and we are deeply thankful. And to my fellow graduates: your resilience has brought us to this momentous day, and I am honoured to stand before you.

Five years ago, when we were preparing our UCAS applications, I don't think any of us could have predicted starting this journey during a global pandemic—it surely wasn't advertised on any of the promotional material. The daunting tasks of adapting

to a new city, navigating online lectures, and forging new friendships all while trapped behind a computer screen seemed insurmountable. Yet, here we are, in the grandeur of the McEwan Hall, having prevailed within these unique circumstances.

In reflecting on my time here, two key lessons crystallised. First: always be curious. ‘Why are my results so strange?’ ‘How did this happen?’ ‘Why did my experiment fail—again?’ As future scientists, it is not just our job, but it is our obligation to embrace child-like curiosity and always ask questions. Aside from the scientific and academic applications of curiosity and critical thinking, these are necessary tools for life, increasingly vital in navigating an era rife with ambiguity and technological change. We must remember not to accept information at face-value but to question, analyse, and discern truth from noise.



Second: persistence is key to success. Throughout our studies, particularly during our final projects, many of us faced the urge to give up when faced with failed experiments, crashing software, and baffling results. Yet, we never saw quitting as an option. Every setback taught us that to advance, we must dust off our lab coats, delve into the reasons for our failures, and move forward. Persistence, therefore, is not merely a strategy for academic survival, but a fundamental skill for life.

Equipped with these lessons, we stand on the threshold of what’s next—whether it be furthering our education, entering the workforce, starting a family—or all the above. We leave today not only with our diplomas, but with a set of skills, life-long friendships, and a choice: how will we use our talents? Will we bury them out of fear, or invest them boldly for the betterment of society?

I would like to conclude by recalling the words of Charles Darwin, a fellow Edinburgh alumnus: ‘It is not the strongest of the species that survives, nor the most intelligent [...] It is the one that is most adaptable to change’.

When we began our journey here, the world was in the throes of a pandemic. Today, as we graduate, we face a landscape marked by a rise in the cost of living, geopolitical unrest, and the unexplored territories of artificial intelligence. While these realities may seem daunting, our time here at university has armed us to navigate such uncertainties. Each generation faces its own challenges, and now it is our turn. We may fail, but we will adapt, we will persist, and then we will succeed.

Congratulations, Class of 2024. Today is a testament to all the hard work we have dedicated over the past four years, and I am proud to stand with you. Here is to the next great adventure!

## About the Author

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**G**iulia Guasoni graduated from the University of Edinburgh with a BSc(Hons) in Biomedical Sciences in July 2024. She is interested in understanding the biological basis of diseases. During her degree, Giulia sought to explore several topics: in the summer of 2022, she worked with the Family Genomics Team at Maynooth University on a review regarding the heritability of autism spectrum disorders. The following summer, she worked in the Centre for Discovery of Brain Sciences with the support of a scholarship from the Biomedical Teaching Organisation at the University of Edinburgh's Summer Research Placement Programme. There, she studied the effects of a probiotic on microscopic worms in the Doitsidou Lab. While working on her undergraduate dissertation, Giulia grew more interested in data analysis, and is now pursuing an MSc in Bioinformatics, and she is excited to see where this new path leads.

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## Adam Blyth's Graduation Address

**G**ood afternoon, esteemed faculty, proud parents, family members, and my fellow graduates. I'm honoured to speak on behalf of the class of 2024. Today, we're here to celebrate our achievements and to reflect on the journey that brought us to this moment. This day is a testament to our hard work, resilience, and the continued support of those who believe in us.

## Reflect on the Past

**T**hinking back on our time here at the University, we've shared countless experiences that have shaped us. We've spent long hours in the library, tackled challenging assignments, and enjoyed living in the beautiful city of Edinburgh. Whether it was spending a peaceful moment in the Meadows, or procrastinating in some other way, the memories of the past four years will stay with us forever—some more hazy than others.

Our first year at university in 2020 will always be particularly memorable due to the COVID-19 pandemic. How we spent our time studying at home, or in secluded sections of the library, primarily interacting online for our group projects throughout the year. Navigating this new environment tested our perseverance but also brought us closer together in unexpected ways.

I remember lecturers slowly working out how to unmute themselves on Microsoft Teams, doing late-night video calls to brainstorm ideas, and sharing screens to troubleshoot problems so we could support each other in the new virtual world. These experiences taught us the true value of community, collaboration, and resilience.

We have faced our share of challenges, from self-isolation rules and rearranged online exams, to resurfacing at the other end of the pandemic and having to relearn how to ‘do university’. Yet, we adapted, supported each other, and emerged stronger. These trials have prepared us to face whatever the future holds with confidence and determination.

## Personal Reflections

Standing here today is surreal for me, as I never expected to attend university. Edinburgh University has given me an amazing opportunity that has transformed my life.

During my time here, I have discovered a passion for teaching and volunteering with students who hope to attend university. These experiences have been incredibly rewarding, showing me the impact education can have on individuals and communities. I’m deeply grateful for these opportunities and for the chance to inspire others to pursue their dreams.

## Celebrate the Present

Today is about celebrating our achievements and the growth we’ve experienced. We’ve become more than just students; we’ve become thinkers, innovators, and leaders. Our time here has equipped us to take on the world with confidence and purpose.

I’d like to take a moment to express gratitude to our professors who pushed us to think critically and reach our potential; to our families who provided unwavering support; and to our friends who stood by us through it all—thank you.

## Look to the Future

We also celebrate moving forward with a new chapter in our lives, filled with both excitement and uncertainty. But I’m confident we’re ready for it. The skills and knowledge we’ve gained will be our foundation as we embark on new adventures.

Let’s embrace the unknown with courage and optimism. Whether we continue our education, start our careers, or pursue our passions, let’s do so with purpose and a commitment to making a positive impact.

The University of Edinburgh has a long tradition of producing graduates who go on to make a difference. Now it’s our turn to contribute to that legacy to the best of our abilities. Let’s carry forward the values of this great institution and strive to make a meaningful impact on the world.

## Conclusion

In closing, let's remember that our actions and choices from here on will shape our future and the world around us. Let's make those choices count. Congratulations to all my fellow graduates. Thank you, and best of luck to everyone.

## About the Author

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Adam Blyth is a fifth-year medical student who entered university through the SWAP Access to Medicine college course. He began his medical studies at the age of 29, having previously lacked the qualifications to apply earlier in life. Since then, he has completed an intercalated degree in BMedSci (Hons) Health Science with a focus on surgical science, deepening his knowledge of medical research and healthcare. He has been actively involved in the University of Edinburgh's community and served as a Surgical Skills Manager for the student Surgical Society, where he taught basic surgical techniques to fellow students. This year, he will take on the role of Senior Vice President of the society, overseeing the organisation of the revision weekend for final-year students. In addition to his academic and extracurricular commitments, he has volunteered with LEAPs, encouraging high school students to pursue higher education, and served as a student ambassador for the medical school, welcoming new students and participating in alumni events. He is committed to pursuing a career in surgery and holds a keen interest in medical education.





# University of Edinburgh Journal

## Volume 51, 2023–24

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## Contributions to the *Journal*

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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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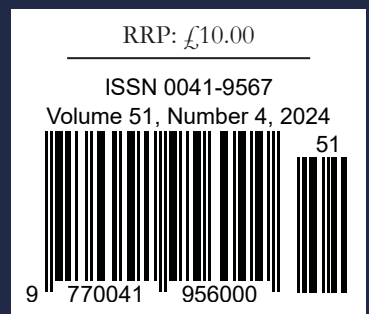
The cover artwork of this issue of the *University of Edinburgh Journal* shows a portion of the *Temple of Fame* mural by William Mainwaring Palin that adorns the interior of the McEwan Graduation Hall at the University of Edinburgh.

The central dome depicts thirteen figures representing the Arts and Sciences, one of which (Mathematics) is used to illustrate the article by Professor Minhyong Kim in this issue of the *Journal*.

Around the base of the dome reads the biblical inscription:  
‘Wisdom is the principal thing, therefore get wisdom, and with all thy getting, get understanding. Exalt her and she shall bring thee to honour.’ (Proverbs 4:7)



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