

Roadmap for Open Science – University of Edinburgh Self-Assessment January 2022

The following table contains a self-assessment on the University of Edinburgh’s readiness for Open Research, based on the 37 criteria set out in the LERU Open Science Roadmap. This self-assessment has been carried out by staff in the Library Research Support (LRS) Team. This is a working document and we would welcome the views on the accuracy of the self-assessment and the recommendations made.

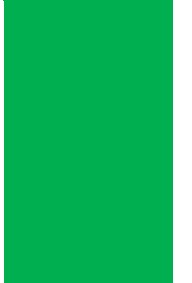
| | Topic | Question | Assessment of progress | Proposed next steps | RAG Status |
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| Cultural change | | | | | |
| 1. | Leadership | Has your university appointed a senior manager to lead Open Science approaches across all eight pillars of the Open Science debate identified by the European Commission? | <p>Dominic Tate (Head of Library Research Support) has been acting in the role of LERU Open Science Ambassador (OSA) but Dr. William Cawthorn (Lecturer, Centre for Cardiovascular Science, CMVM) has now taken on this role. Dominic Tate will continue to lead on Open Research for the Library.</p> <p>A number of other senior researchers have taken very active roles in areas of Open Science, including Andrew Millar, Malcolm McLeod (via the UK Reproducibility Network) and Emily Sena. In addition, as part of the recent REF submission, various School and Centres have identified a senior academic with a remit for open science.</p> <p>Grassroots networks of Open Research champions have emerged, such as the Edinburgh Open Research Initiative (EORI: @edinburgh_open, https://edopenresearch.com/) and ReproducibiliTea sessions, organised by interested postgraduate groups.</p> | <p>Schools and Colleges should consider engaging Open Research Champions at a local level</p> <p>The Open Research Co-Ordinator will create a network of Open Research champions from across the University. These will primarily be senior academics who have a responsibility for Open Research in their School, and school or college Research Support Staff who have a direct role in promoting and supporting Open Research. This network will work together to ensure coordinated action in designing and implementing strategies for advancing the University’s progress on the eight pillars. Dr. Cawthorn will Chair this network as part of his LERU Open Science Ambassador role.</p> <p>The Open Research Co-Ordinator will also identify any other researcher led Open Research work going on within the University. Once identified the Library will offer support to these groups as well as encouraging them to work</p> | |

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| | | | <p>with EORI and other existing groups so that they can learn from and support each other.</p> <p>Edinburgh Research and Innovations are involved in discussions and events focussing on research integrity and trust in science; they could be approached to catalyse researchers and reach senior academics in the Colleges.</p> | | |
| 2. | HR | <p>Has your university developed a programme of cultural change, which is necessary to support the changes in principle and practice which Open Science brings?</p> | <p>CAHSS formed a sub-group of College Research Committee to look at these issues, and there are a number of initiatives coming out of the College of Medicine and Veterinary Medicine.</p> <p>The Library is co-ordinating efforts on components of Open Science, e.g. Open Access publication, open data, open notebook science, software management and preservation of protocols and workflows.</p> <p>Human Resources has not yet been formally consulted about potential changes to recruitment, reward and progression with regards to Open Science.</p> <p>A Research Culture Working Group reports to Research Strategy Group, and this will pick up on some elements of Open Research.</p> | <p>The University might consider whether it wishes to make changes to criteria for recruitment and rewards to incentivise Open Research.</p> <p>We should work with the relevant committees to set out a timetable for consultation.</p> <p>The Research Culture Working Group established by Sara Shinton in IAD, and with representation from across the University, will be looking at how cultures across the University can be changed to prioritise and promote Open Research. This is part of a larger programme of work which will also look at other types of culture change required across the University.</p> | |
| 3. | Advocacy | <p>Does your university have advocacy programmes to identify the benefits of Open Science approaches, whilst being realistic about the challenges?</p> | <p>Robust outreach programmes exist in Open Access publication and Research Data Management. The Digital Research Services outreach project may help to address this as well. Additionally, Data and Software Carpentries are being used increasingly across the University. The Digital Curation Centre and the Software</p> | <p>Library Research Support to work with Colleges and the Institute for Academic Development (IAD) to develop new advocacy programmes on Open Research. These could include workshops/symposia (in-person and/or virtual). Support and input would also be welcomed from the group of Open Research Champions, once this has been established.</p> | |

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| | | | <p>Sustainability Institute could be utilised internally to help spread the word.</p> <p>In June 2019 a symposium on FAIR Science was held at the Queen’s Medical Research Institute, attracting over 100 attendees from across the University. A key outcome was raising awareness of Open Research approaches and challenges.</p> <p>A key aim of the Edinburgh Open Research Initiative (EORI) is advocacy and awareness, for example by organising workshops. However, the COVID disruption has prevented anything from being organised so far.</p> <p>The Edinburgh ReproducibiliTEA group has held monthly or fortnightly meetings to discuss Open Research approaches. These have continued throughout the pandemic via their Teams channel (with ~60 members).</p> | <p>An Open Research Co-Ordinator has been appointed and in addition to creating the network of Open Research Champions they will work with IAD, ERO, and other interested groups to ensure that Open Research is supported and promoted in all areas of Research Support and conduct.</p> | |
| 4. | Communication | <p>Does your university have communication strategies which enable the whole university body to become familiar with Open Science practices?</p> | <p>The REF Open Access Policy and process ensures University-wide communication about OA publication. The Research Data Support team has developed and maintains a communications plan and provides training and outreach for data management and sharing, including open data.</p> <p>The Library has set up a new “Open Research” webpage on the University web estate. This will link out to various policies, initiatives and sources of help.</p> <p>The Edinburgh Open Research Newsletter has now been launched with the 1st issue published in September 2021. All issues will carry a mixture of material from the Library and from grass-roots OR initiatives. These grassroots groups will be</p> | <p>The narrative should shift towards “Open Research” rather than “Open Access” or “Open Data”. Communications should start to reflect the bigger picture of openness.</p> <p>Communications within the University of Edinburgh are encouraged to use the more inclusive term “Open Research” over “Open Science”.</p> <p>The Library will not set-up its own Open Research Twitter account but will instead work closely with EORI and use their well established and far reaching social media account.</p> <p>The library will however update its own Open Research webpages on a regular basis and</p> | |

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| | | | <p>encouraged to promote and report on events and activities and there will be regular articles by Open Research Champions.</p> <p>EORI communicates Open Research developments regularly via its Twitter account (~500 followers) and other channels, such as the fortnightly newsletter of the Centre for Cardiovascular Science (CMVM).</p> | <p>publish a regular Newsletter and Blog to promote all Open Research activities</p> <p>Consider formalising the communication of Open Research via Twitter and other social media channels, e.g. by adopting the EORI account as an official University of Edinburgh Open Research channel.</p> <p>Workshops/symposia should also be organised (as described above, point 3) as another effective approach for communicating Open Research practices.</p> | |
| The future of scholarly publishing | | | | | |
| 5. | Compliance | Does your university have institutional mandates to support the move to full Open Access and does it monitor implementation of these mandates? | <p>Yes. The University currently has a ca. 92% compliance rate with the REF open access mandate.</p> <p>We are aware of forthcoming requirements regarding Open Access to monographs, which provides an opportunity for Edinburgh University Press.</p> <p>Library Research Support has led a review of the University's Research Publications Policy, and is in the advanced stages of implementing a new policy to support Plan S.</p> | University to adopt new Research Publications and Copyright Policy, with a soft launch in 2022. | |
| 6. | Planning | Can relevant stakeholders work together to deliver a roadmap for how they, or specific groupings, can develop agreed plans for the future of scholarly publishing in their institution? | Open Access for journal articles is well-established however we are looking at other research outputs, for example monographs and data papers. A paper has been presented at Research Policy Group (RPG) looking at how the | The Library will review staffing to deal with the additional workload in scholarly communications caused by Plan S. | |

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| | | | <p>University can support OA monographs for the next REF.</p> <p>“Plan S” changes the landscape considerably with regards to journal publication across all subject areas. Workshops about Plan S have been held, both in-person (before COVID) and virtually (post-COVID) to raise awareness and planning strategies for researchers.</p> | | |
| 7. | Advocacy | Does your university advocate the use of author identifier systems such as ORCID across the institution? | <p>ORCIDs are integrated with Pure (our Current Research Information System, or CRIS) and Library Research Support is investigating how to increase adoption rates. It is on the RDM Roadmap to integrate ORCIDs in Edinburgh DataShare (institutional data repository).</p> <p>The University’s Research Publications & Copyright Policy (2021) strongly advocates for the use of ORCIDs.</p> | The recommendation to use ORCIDs should be included in mandatory training for researchers, e.g., the ‘Managing your Research Teams’ training for PIs and incorporated into the Concordat to Support the Career Development of Researchers. | |
| 8. | Innovation | Has your university considered supporting new forms of scholarly publishing from third parties, such as OpenEdition and Knowledge Unlatched, which are dedicated to Open Access approaches? | <p>LRS is a supporting member of several Open Access publishing initiatives, including, amongst others, Open Library of the Humanities and Knowledge Unlatched.</p> <p>LRS offers a journal and book hosting service (Edinburgh Diamond) which is normally free to use within the University.</p> <p>LRS is working with SCURL to put in place new infrastructure for monograph publishing in Scotland.</p> <p>Edinburgh University Press offers paid Open Access options for journals and monographs.</p> | The Library should work with the Colleges and Schools (in particular in CAHSS) to consider how funding mechanisms might work for open monograph publishing. Advocacy and communication strategies should also address emerging innovation in scholarly publishing, for example Review Commons (for open peer review) and the use of Registered Reports. | Library to investigate further investment in Edinburgh Diamond. |

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| 9. | Innovation | Where appropriate, has your university established new mechanisms for scholarly publishing based on the good practice identified in this chapter? | <p>L&UC run a service for hosted OA journals using the Open Journal Systems (OJS) platform. Currently there is a portfolio of 20 journals with more in the pipeline.</p> <p>Edinburgh University Press has an option for open access journal publications and plans to introduce a model for open monographs.</p> | - |  |
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| FAIR data | | | | | |
| 10. | Institutional policy | Has your institution a research data policy or strategy? | <p>Yes, the first policy was passed by Court in 2011 and has been the basis for the development of the Research Data Service.</p> <p>An updated policy is in place from January 2022.</p> <p>See https://www.ed.ac.uk/is/research-data-policy</p> | Review every 12 months. | |
| 11. | Institutional policy | Does your institution research data policy or strategy include FAIR principles? | The current policy predates the FAIR principles, but we do have two “Quick Guide” documents to provide researchers with brief introductions to FAIR data and FAIR software. | Library Research Support will update the University’s Research Data Policy, as stated above. | |
| 12. | Institutional support | Has your institution established a dedicated service to provide data stewardship to its researchers? | Yes, as part of the Research Data Service. Edinburgh DataShare and DataVault are well-established and popular long-term data archives. The University also has a subscription to the protocols.io service, an online platform for the creation, management, and sharing of research protocols or methods. This is available to all staff and students of the University. | <p>Continue to develop these tools and support researchers to use them.</p> <p>A new training course is being developed by the Research Data Support team which will address issues of data appraisal and selection of data, choosing an appropriate repository, and other aspects of long-term data preservation and sharing. This should be launched in 2022.</p> | |
| 13. | Infrastructure | Does your institution provide access to an infrastructure storage and publication of research data? If it does not, does your institution inform its researchers of available infrastructures that follow the FAIR principles? | Yes, we have services for active management of data as well as publication and long-term retention as part of the Research Data Service. Edinburgh DataShare is FAIR-compliant but it could be made more obvious. | Library should add a “FAIR” banner to the DataShare homepage, together with CoreTrustSeal logo when it is awarded. | |
| 14. | Data | Does your institution gather information about the data archived and published by its research community? | Yes, we provide regular reports to our academic-led steering group, and download statistics are freely available and accessible on Edinburgh DataShare. There is a knowledge gap, however, in | Propose running a project to examine recent research publications, identify which include Data Access Statements, and where the underlying datasets have been deposited. | |

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| | | | that we do not collect statistics about where our researchers archive their data when it is not with us. | | |
| 15. | Metadata | Does your institution publish all metadata about research data generated or obtained within its research community? | <p>Yes, we use Pure, our CRIS as a data asset register, so there is metadata about data items in DataShare, DataVault and external repositories. There is a small but growing uptake of use of Pure to record externally deposited or locally held datasets, but there is not much incentive unless OA compliance officers create the records.</p> <p>We do not hold any records about 'active' data, and are unlikely to in the medium term, unless researchers start to demand it.</p> | This has been addresses in the latest revision of the Research Data Management Policy. | |
| 16. | Assessment | Does your institution include research data as a valuable output in research assessments? | We understand that datasets tend only to be presented for assessment in certain groups, such as Informatics. However, in other fields (e.g. biomedical research) there is increasing awareness and practice of depositing source data when manuscripts are published (some publishers require this). | <p>Further input from the Colleges is required. Given the stakes involved, incentives may be required. Communication and advocacy is also important for raising awareness about the benefits and platforms available for making research data openly available.</p> <p>The Research Data Support team will ensure that the value of Open Data as part of research assessments is emphasised in all courses and whenever we speak with researchers.</p> | |
| The European Open Science Cloud | | | | | |
| 17. | Infrastructure development | Has your university established a data repository, or does it have access to a 3rd party repository/repositories which can interact with the EOSC? | Yes, Edinburgh DataShare is well-established. It is not yet understood how to interface with EOSC but it is built on standard open source repository software (DSpace) that is generally interoperable. | Keep infrastructure performance under regular review. | |

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| 18. | Infrastructure development | Does your university have a search and discovery service, enabling users to find what research data is available, and where it is located? | Yes, Edinburgh Research Explorer allows searching on datasets. Also, we have a Finding Data portal for external datasets as part of the Research Data Service. | | |
| 19. | Policy development | Has your university signed the EOSC Declaration as a statement of commitment at a local level? | Yes. (We would appreciate if EOSC would include our statement on their website.) | Contact EOSC to request that our statement is included on their website. | |
| 20. | Co-operation and collaboration | Will your university develop their research data management offering so that it is aligned with the principles of engagement with the EOSC, once the latter are agreed and available? | Yes. This work is being undertaken by staff across Information Services. | Progress should be reviewed every 12 months. | |
| Education and skills | | | | | |
| 21. | Training | Does your institution offer skills training specifically in Open Science (in all or certain of the eight areas, or other Open Science aspects)? | <p>Currently no centrally provided training addresses the 8 pillars in the EC or LERU papers. Data and software carpentry training does address tools and methods for making research reproducible.</p> <p>Comprehensive training is already available for both Research Data Management and Open Access and research Publication. Ad hoc workshops have also been delivered, e.g. the FAIR Science workshop (June 2019) and workshops on "Planning for Plan S".</p> | Library Research Support will work with Colleges and IAD to develop new discipline-specific Open Research courses. Training could also be incorporated in existing mandatory courses and assessments, e.g. for Principal Investigators via the training on 'Managing your research teams'; for postgraduate students as part of their first-year review (i.e. it should be mandatory to attend University of Edinburgh course(s) on data management); and (for postdoctoral and other researchers) via the Concordat to Support the Career Development of Researchers. | |
| 22. | Audience | Is any Open Science skills training mandatory, and for which categories of staff/researchers/students? | To date, we have not mandated Open Research training at Edinburgh but have favoured a grassroots, peer-led evolution. Communicating benefits and incentivising compliance | Work is ongoing to find out what level of Research Data Management training is mandated for PGRs in their school, DTP, or DTC, this could be expanded to ask about OR more generally. | |

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| | | | <p>Open Research courses could be made mandatory for certain groups of students, such as PGRs.</p> <p>The speed at which the move the Open Research is happening means we should now consider compulsory training.</p> | <p>This research should provide a baseline against which we can measure future improvements in OR awareness and good practice.</p> <p>All teams within the LRS will need to work together to embed OR training and good practice at all levels of the University.</p> | |
| 23. | Assessment | Does your institution monitor or assess the provision, uptake and impact of Open Science skills training? | <p>Yes, we monitor attendance at RDM and scholarly communications training.</p> <p>We would continue to report on attendance at Open Research training sessions.</p> | Bring together all types of OR training under a single banner and measure attendance and feedback in same way to improve quality of information. | |
| Recognition and rewards | | | | | |
| 24. | HR policy | Does your institution integrate Open Science in its HR and career frameworks as an explicit element in recruitment, performance evaluation and career advancement policies? | No, but we understand that UCL has provided an exemplar of this being put into practice in a UK HEI. | Such a change would require consultation. Feedback required from Colleges in consultation with staff. | |
| 25. | Assessment | Does your institution assess the extent to which individuals, teams or units integrate Open Science in their daily practice? And does it recognize and/or rewards them for this? | Monthly OA compliance reports are compiled by school for RPG. But no recognition or reward follows. There are challenges around recognition and reward, due to inconsistencies in recording compliance data in the schools. | This would be picked up as part of any work taken forward to develop new HR policies to incentivise Open Research. | |
| 26. | Communication | Does your institution make information about its policies on researcher evaluation open and easily accessible? | The University is a highly devolved institution, and researcher evaluation is carried out differently in the three constituent Colleges. | The Library could seek to work with HR and the three Colleges to gain a clearer understanding of existing policies, and potentially seek to influence their future development. In addition, as part of the recent REF submission, each school/college has identified a senior academic with a remit for open science; these individuals could be contacted to collate information on existing policies within each school/college. | |



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| Next-generation metrics | | | | | |
| 27. | Policy development | Will your university develop a bibliometrics policy grounded in the principles outlined in this paper, with the aim of changing the culture in the academic community about research assessment? | The University is a signatory to DORA and has developed a policy on responsible metrics. There are several examples of this being successfully implemented, e.g. the Centre for Cardiovascular Science newsletter no longer includes journal names when reporting recent publications from its researchers. | Excellent progress has been made with DORA, governance for which is managed by the Responsible Research Metrics Group. Progress should be reviewed annually to judge school level progress. | |
| 28. | HR | Will your university embed the new forms of research evaluation in its internal processes for promotion/reward and research evaluation? | Too soon to say. This would be considered as part of any work to review processes for promotion and reward. Embed changed into ESAT processes so that DORA is followed. | This would be picked up as part of any work taken forward to develop new HR policies to incentivise Open Research. | |
| 29. | Best practice guidance | Will your university, via appropriate internal bodies, construct guidance for research administrators and academics on good and bad practice in the use of traditional bibliometrics and in the development of new metrics, working with the scientific community in this endeavour? | The University is a signatory of DORA and has a policy on responsible metrics. William Cawthorn, the University of Edinburgh LERU OSA, is also a member of the LERU ad hoc group on next-generation metrics. | Library Research Support will seek to highlight the responsible metrics policy as part of researcher training. Examples of best practice should be identified, e.g. by the Open Research Champions (for practices within University of Edinburgh) and by William Cawthorn (for practices at other LERU institutions). These practices can then be communicated across the University of Edinburgh community. | |
| 30. | Training for early career researchers | Will your university give particular focus to early career researchers, particularly those embarking on a course of doctoral study, providing training to enable them to embrace the change of culture and practice which the responsible use of metrics brings? | The Edinburgh Open Research Initiative and ReproducibiliTEA groups involve numerous early career researchers; we will continue to support these initiatives and develop Open Science training in conjunction with the Institute for Academic Development and other internal bodies. | Library Research Support will continue to work with the Colleges and IAD to develop new discipline-specific Open Research courses aimed at early-career researchers. See 12, 22, & 23 | |

| Research integrity | | | | | |
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| 31. | Communication | Does your institution promote awareness amongst the research community of how Open Science can ensure the highest standards of research? | Courses on research ethics and integrity mention the benefits of openness, as do Scholarly Communications and Research Data training. | Library Research Support will work with IAD to ensure that we give a consistent and coherent message about the benefits openness can bring to research ethics and integrity, and the systems and services already in place to support this. | |
| 32. | Policy | Does your university have a research integrity code which embraces the principles of Open Science? If not, does your institution abide by the European Code for Research Integrity (ALLEA Code) and the Open Science provisions it contains? | <p>Yes, the University has actively endorsed the UK Research Integrity Office Code of Practice. This underpins the Universities UK Concordat for Research Integrity. See https://www.ed.ac.uk/governance-strategic-planning/research/research-integrity/policies</p> <p>The ALLEA Code is endorsed as an external policy. See https://www.ed.ac.uk/governance-strategic-planning/research/research-integrity/external-research-integrity-policy-docs</p> | Our own internal policies will be updated to include more specific references to Open Research in the next round of revisions. | |
| Citizen science | | | | | |
| 33. | Policy | Does your university recognise citizen science as an evolving set of research methods, as well as its societal and educational benefits? | The Data Driven Innovation programme funded by the Edinburgh City Region deal has a strong citizen science programme, and there are leaders and experts for citizen science within schools and ISG. | <p>Outreach programmes will continue to emphasise the benefits of Citizen Science.</p> <p>Research will be undertaken by the Library, with support from Edinburgh Research Office, to identify citizen science projects ongoing at the University. The Outputs of the research will then feed into the development of the Citizen Science website</p> | |
| 34. | Communication | Is there a single point for citizen science within your institution? | Not currently, but we plan to create a citizen science website and publicise it. | Create a citizen science website, pointing to current initiatives and emphasising the societal and educational benefits at all levels from primary school upwards. | |

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| 35. | Communication | Does your university raise awareness amongst researchers of criteria for successful citizen science? | Unknown. | <p>The above-mentioned website could include (e.g.) the list at https://www.researchgate.net/publication/256101395 The role of citizen science in monitoring biodiversity in Ireland/figures?lo=1</p> <p>Awareness of citizen science should also be communicated through other advocacy and communication activities, e.g. the Newsletter and Workshops for Open Research (point 4), and in any training for PIs, postgraduate and postdoctoral researchers.</p> | |
| 36. | Assessment | Are citizen science contributions assessed and research evaluation and reputation systems adapted accordingly? | Unknown. REF guidelines might address this as part of impact. | We will examine the REF guidelines closely to determine whether this is relevant and appropriate at this time. | |
| 37. | Policy | Do proposals for granting bodies for citizen science projects include long-term commitment for infrastructures and data repositories? | This will vary from funder to funder. It is not a well-understood landscape, but there may be existing studies. | The University will work with projects involving citizen science to gain a better understanding of the landscape, | |