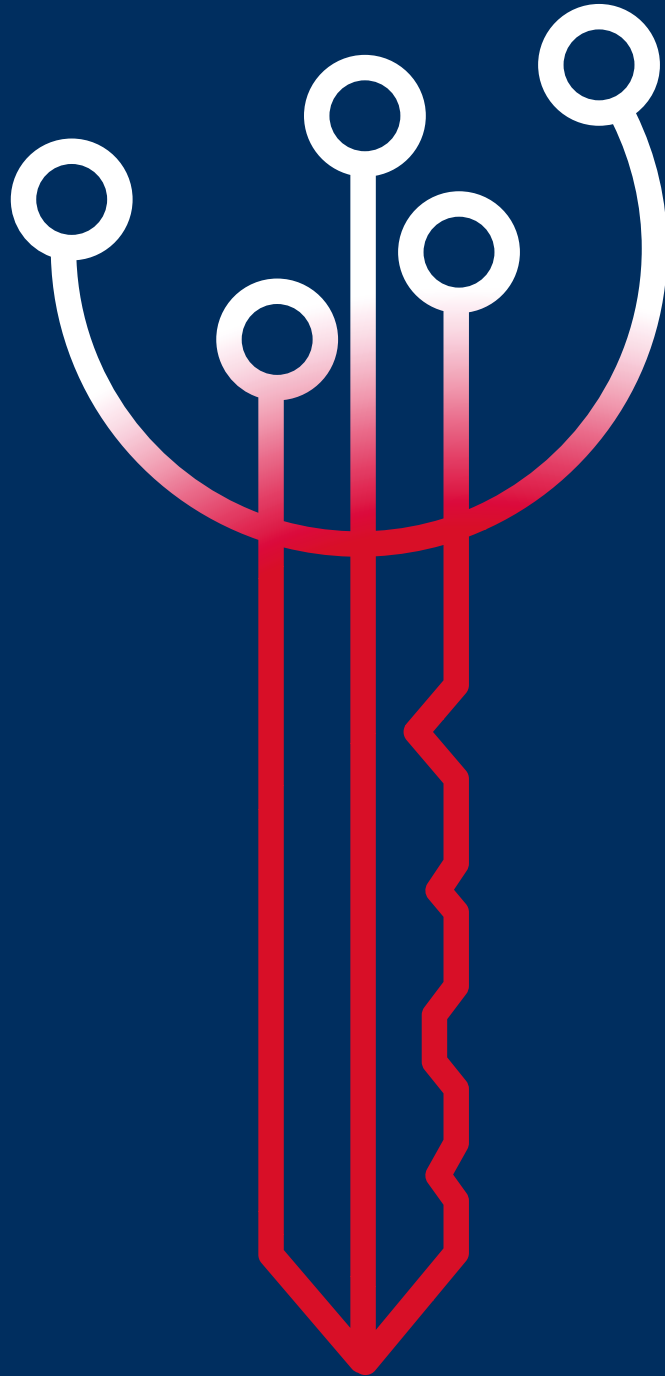THE UNIVERSITY *of* EDINBURGH

College of Arts, Humanities and Social Sciences

College of Arts, Humanities & Social Sciences

Open Research Strategy | College Research Committee

The Open Research agenda is transforming the way we design, carry out and share our research

The University of Edinburgh
CAHSS College Research Committee (2018)

Open Research (also referred to as Open Science) denotes research that is conducted in an open and transparent manner, in which the processes followed, the data collected, and the outputs produced, are available openly and freely. It implies ways of working that make research more transparent, inclusive, open, collaborative and efficient.[1] The agenda towards openness in research has been driven by a combination of cultural and technological changes, including digitisation and the availability of big data, the internationalization and standardization of research methods, the drive to improve the rigour and integrity of research, and the commitment to ensuring data and outputs are freely available to all researchers. It is being actively promoted by major UK and EU funders and by the REF.

The Open Research agenda directly links to the University of Edinburgh's core vision and mission: to deliver impact for society and discover, develop and share knowledge. Indeed, the University has been at the forefront of the Open Research agenda.

Our Research Data Service provides cutting-edge infrastructure for data processing, storage and sharing (see Appendix A). The University has participated in a number of 'early adopter' initiatives including the UK Scholarly Communications Licence and Model Policy.

The University has been successful in implementing Open Access for outputs, consistently surpassing RCUK/UKRI targets. Various types of support and training for aspects of Open Access, data management and sharing are available (see Appendix A). And many of our colleagues and research groups/centres in CAHSS are at the forefront of Open Research, including our work in Digital Scholarship, across the digital humanities, arts and social sciences.

It is vital that CAHSS continues to engage pro-actively with the Open Research agenda in its broadest sense, and that we ensure our particular discipline-specific needs are understood at a University level. We need to adapt our processes, practices and infrastructure to ensure we support staff in harnessing the benefits of Open Research. This reflects our commitment to the values of Open Research: the desire to promote rigour, transparency, availability and re-usability of our methods, data, findings and outputs.

At a more practical level, Open Research will improve the accessibility of our research, widening visibility and impact. Open Research will also be an increasingly important component – and condition – of UK and EU funding, and UK research assessment. For example, the recently published draft guidelines for the REF2021 require submissions to show evidence of how units are 'progressing towards an open research environment'.[2]

However, we recognise there are a number of challenges the College faces in driving forward the Open Research agenda.
Not all colleagues are comfortable with embracing new approaches to data sharing or open access, for a range of ethical and practical reasons. Others may not be familiar with changing expectations about Open Research in the higher education environment, or they may not be aware of the support available at School, College or University level. And those at the forefront of the agenda may not feel recognised or supported in their endeavours. There is also a need to ensure that issues specific to the arts, humanities and social sciences are taken into account in Open Research practices.

This paper sets out a College strategy for advancing the Open Research agenda. It aims to:

- Set out the opportunities and challenges for CAHSS research opened up by the Open Research Agenda
- Map existing support and infrastructure available for supporting Open Research, and identify key gaps
- Consider how we can help lead and shape the agenda, at School, College and University level

The intention is that Schools will then take this approach forward, elaborating and implementing discipline-tailored strategies and policies for their staff.

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[1] https://www.vitae.ac.uk/doing-research/open-research-and-open-researchers/what-is-open-research.
The European Union defines Open Science as 'the practice of science in such a way that others can collaborate and contribute, where research data, lab notes and other research processes are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods'

[2] http://www.ref.ac.uk/news/2018/draftguidanceandcriteriasetoutdetailedarrangementsforref2021.html
REF 2021 Draft guidance and criteria (July 2018)

Definitions and Scope

For the purposes of this strategy, we break down Open Research into three main components.

Open Access
Open Access to outputs – most notably journal articles – is now well established in the arts, humanities and social sciences and has increasingly become a requirement for funding bodies and for the REF. However, Open Access to monographs is less mature and less well understood, and raises a number of challenges for scholars and publishers, which we will consider in this paper.

Open Data
The College defines research data as entities that are collected, observed, created or reused, to produce, validate and enrich research findings and conclusions. Research data includes the transformed or original information created by researchers at the University.

Data can take many forms, including (but not limited to):

- Still images, video and audio
- Survey results and interview transcripts
- Experimental observations
- Text corpuses
- Notebooks and lab books
- Models and software
- Can be created in a digital form
- Can be analogue that is converted to a digital form

Open data promotes the sharing of, and access to, such data as one of the key inputs to research. Open data presents some particular challenges in the arts, humanities and social sciences. There is no common understanding of what data are, and there is a wide range of processes and skills involved in data management. Our data tend to be less voluminous, but more complex and varied, than those commonly collected in the physical or medical sciences.

Open Research Methods
Research often involves unique software, designs and other tools that not only help to produce innovative findings, but can also constitute original methods for application to similar or related research. Open source access to these tools not only provides transparency, but promotes scientific progress by allowing others to build on the work, improving and adapting it as appropriate.

Challenges for the arts, humanities and social sciences

The Open Research agenda presents some particular challenges for our disciplines. Significant amounts of our research involves work with sensitive or personal information, creating concerns about the ethical implications of data sharing. Much of our more qualitative work can involve forms of data that are practically difficult to share, and may be seen as highly specific to particular research questions and thus of limited value for other researchers.

In other cases, our research draws on original material that is subject to copyright or other restrictions that might limit the ability to be fully open. There is a growing body of work which is now available in digitised formats from galleries, libraries, archives and museums, raising new possibilities for data sharing. However, there remain challenges to accessing and integrating these sources into research undertaken and published in the arts, humanities, and social sciences, for example regarding formats, licenses, and permissions.

These issues should not limit our ambitions. They will, however, require careful management and support for researchers in balancing often competing demands. It is essential that the College and University support and protect researchers whose research falls into these categories.

Section 1

Open Access

Open Access norms and requirements are now well-established across all disciplines within the College for journal outputs, with the College meeting or exceeding funder targets. Indeed, the College has adopted a policy for Open Access that goes beyond REF requirements, requiring all outputs published since January 2015 to be recorded in PURE in compliance with relevant OA conditions of the outlet.

In relation to journal articles, College has made very good progress, and we will continue to promote publication in open access journals, or through journals where a compliant green option is available (pre-print publication on Edinburgh Explorer following a specified embargo). In a limited number of cases, the College will also fund publication of articles in exclusively gold journals where this is justified as the only appropriate outlet for the article, and subject to availability of funds.[3] However, we recommend ceasing payments of article charges where a compliant green option is available (publication in so-called 'hybrid' journals). Whichever model emerges from current debates, College is committed to ensure OA works for all our researchers regardless of seniority or levels of funding.

There are more considerable challenges in relation to other outputs, notably monographs and non-textual outputs, including practice outputs such as displays, performances, objects and designs. It is expected that funders will look to introduce requirements for monograph outputs in the near future[4] and in the next REF exercise (expected in 2027). In anticipation of this, the College should incrementally move towards a requirement for Open Access publishing of monographs where this is appropriate (see caveats below), just as we did for articles.

1.1

To facilitate OA publication of monographs, we will support publishing in open monograph presses, including through the University Library and in Edinburgh University Press (EUP).

EUP is currently exploring models for an OA monograph series, and we will support staff in making use of this outlet where appropriate.

1.2

We recognise that staff may prefer to target other publishers, for a variety of reasons (e.g. esteem/reputation, thematic focus and audience, existing relationship with a publisher). We will explore the viability of a subsidy scheme to support OA monograph publications, in line with discussions currently underway in the University Library and Information Strategy Committee.

This may include, e.g., allocating university funding to support OA monograph publication, including offering match funding in grant applications to part-cover OA monograph publication (with funding bodies covering the remaining costs); and encouraging Schools to support (partial) funding of OA monograph publication through research support budgets. We will continue to support OA monograph publications in areas (such as History of Art) where OA is not viable due to restrictions such as copyright and illustration rights.

[3] https://www.ed.ac.uk/information-services/research-support/publish-research/open-access/request-apc-payment
[4] https://www.timeshighereducation.com/news/ref-funders-running-out-time-open-access-monographs and https://re.ukri.org/blog/helen-snaith/open-access-and-monographs/

1.3

Assist authors in discussions with publishers on retaining the right to deposit complete versions in PURE. There is often scope for publishers to allow authors to retain more rights over their work, to enable publication to be shared and re-used, either in part or in full. The aim should be that our authors have the right to reuse figures, tables, data, and text from their published work without permission or payment.[5]

1.4

Promote and assist authors in selecting publishers with more open practices. We will compile and make available lists of publishers which allow more open publication practices, such as open licencing to enable re-use.
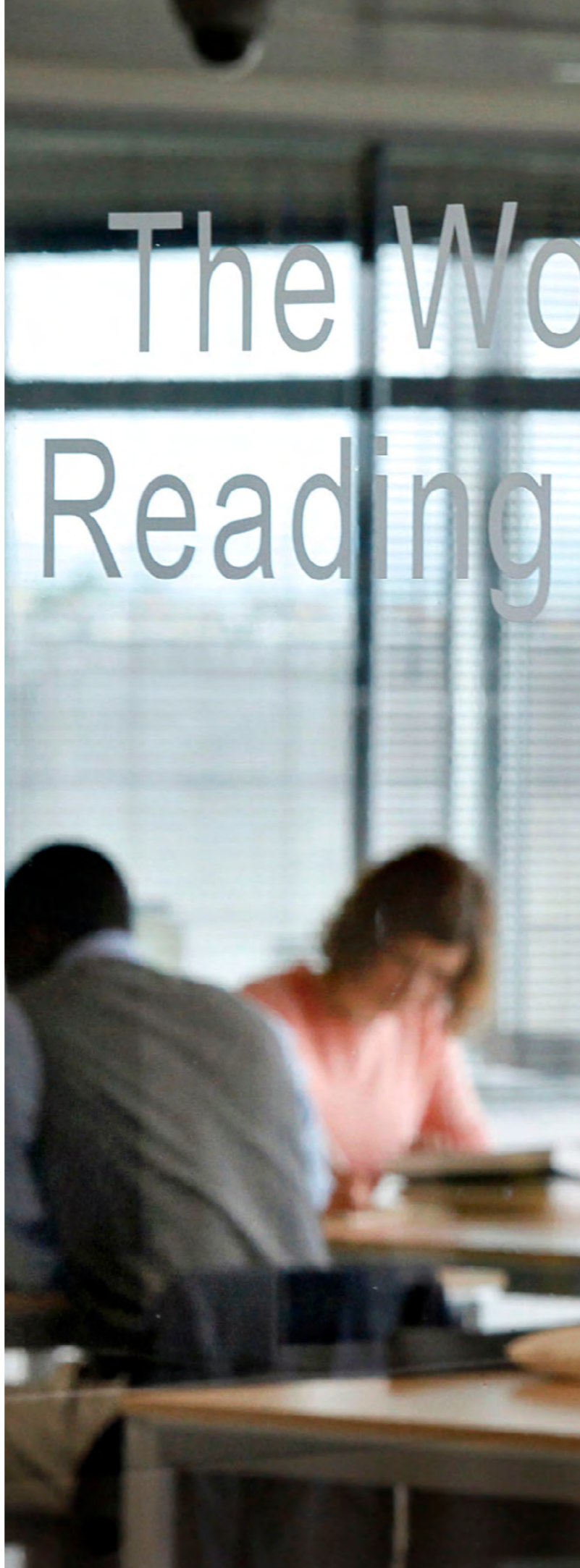
1.5

Investigate methods of presenting representations of physical outputs, performances, recordings and so on in an open manner. We already have many of the tools available to deliver this, but further work is needed to encourage researchers to engage with this area. In addition, the training courses available from Digital Scholarship, in conjunction with other training available via Information Services, will provide the core skills sets for staff in CAHSS to navigate the changing information environment.

1.6

We appreciate the concerns over OA publication of monographs involving the publication of art, film, designed artefacts, and so on, including in relation to how OA might affect business models for publication. We also appreciate the needs of researchers in areas such as Creative Writing (a major growth and recruitment area at UG and PG level in disciplines such as English Literature) to publish novels, scripts, and poetry commercially, in order to recruit the best researchers in the field and maintain the attractiveness of those programmes to students. We will closely follow and actively engage in ongoing discussions about how these challenges should be addressed in our College and the wider sector.

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[5] https://senate.universityofcalifornia.edu/_files/committees/ucolasc/scholcommprinciples-20180425.pdf

1.7

The College aims to ensure that every researcher in the College has a persistent digital identifier (ORCID), and for this to be recorded in PURE. This will allow us to support researchers in using tools to raise awareness of all their research outputs, and will assist us in measuring the resulting impact.

We encourage Schools to launch information campaigns and provide guidance to support staff to deliver this goal.

To achieve these ambitions, support from colleagues across the University professional services groups will be required.

The College will ensure this support, guidance and advocacy is in place and directed accordingly (see Appendix A).

Section 2

Open Research Data

There continues to be ongoing movement towards open research data, emanating from funders, publishers and most recently the REF. At present, all UKRI funders and a growing number of other funding bodies require Data Management Plans. These plans not only cover how data will be recurred and structured, but also plans for long-term data archiving and sharing. In most cases, the expectation is that all data created in the course of funded research will be made open at completion of the project, and in some cases even while the project is live and data analysis still ongoing. Many funders also require the deposit/publication of data through the lifecycle or at the end of projects – for example the ESRC UK Data Archive curates and provides access to social sciences and humanities data for its funded projects.

The forthcoming REF has highlighted the value of open data as part of the assessment criteria for the research 'environment'. The current draft guidelines state that submissions should include evidence of 'wider activity to encourage the effective sharing and management of research data, as appropriate to the discipline'.[6] CAHSS anticipates that this expectation will continue to grow into a set of formal requirements for some or potentially all types of research in subsequent REF exercises.

While predominately a concern for quantitative researchers until now, the creation of replication and/or open data for published work in many scholarly journals and academic presses continues to grow. In some instances, publishers have instituted norms for the sharing of qualitative data or, when that is not possible, the reproduction of associated metadata such as codebooks and interview schedules.

There are cases where it may not be possible to make all data completely open due to ethical, legal, economic, or resource restrictions, particularly stemming from concerns about confidentiality (as mentioned earlier).[7] However, we will work towards a principle of 'as open as possible, as closed as necessary'.[8]

2.1

Advocacy is needed across the College to promote a broad understanding of data, in line with the wider definition provided above, and to consider the ramifications of this broader definition for the Open Research agenda in our disciplines.

This may benefit from the organisation of a workshop, or series of workshops, to help understand the range and diversity of research outputs that constitute research data within the College.

2.2

GDPR, or General Data Protection Regulations, came into effect on May 25, 2018. It fundamentally shifted the data protection landscape, placing additional requirements on the University to manage personal data it processes, and asks others to process on our behalf.

In line with these new requirements, the University mandates two online training courses for all staff; Information Security Essentials and Data Protection.

Appendix B contains a flowchart to assist researchers in deciding the level of impact on their research. As a legal requirement, and given that the potential reputational and financial damage to the University is substantial, all researchers need to become familiar with the additional requirements. Fortunately the University provides substantial support and guidance. For this strategy to be a success, it will be important to protect against the presumption that GDPR precludes open research – with appropriate consideration the two can co-exist comfortably.

2.3

In order to achieve the ambition of 'as open as possible, as closed as necessary', specialised support is needed to help researchers overcome ethical and practical barriers to data sharing. This should include advice on selecting data for archiving or publishing, help with metadata generation, copyright and open licence advice, training in anonymising datasets, securely making data available to collaborators, and encryption techniques from specialist professional services including Research Data Support. Such support may be offered via face-to-face training or desk-based learning.

The University's Information Services provide regular training courses on 'Working with personal and sensitive research data' as well as more general training on 'Managing your research data: why is it important and what should you do?', 'Good practice in research data management' and 'Creating a data management plan for your grant application'. The Research Data Support team offers written advice on dealing with sensitive data,[9] and the University's Records Management section also provides guidance on anonymisation of personal data.[10] Beyond the University, the UK Data Archive provide guidance on legal and ethical issues, including consent.[11] Staff should be encouraged to discuss complex ethical issues with their School academic lead for research ethics.

2.4

Researchers would also benefit from guidance on norms and processes for managing open data (and open methods – see below) in research teams. For example, it would be useful to develop guidance on the respective roles of the data collection team in the context of open access data; respective authorship rights and responsibilities of team members; and the management of potential ethical issues in cases where data is misused.

6   http://www.ref.ac.uk/news/2018/draftguidanceandcriteriasetoutdetailedarrangementsforref2021.html
     REF 2021 Draft guidance and criteria (July 2018)
7   https://www.jisc.ac.uk/blog/open-science-is-all-very-well-but-how-do-you-make-it-fair-in-practice-12-jul-2018
8   https://www.ukdataservice.ac.uk/media/605101/ukds_accesslicensing.pdf
     The EU Horizon programmes use this formulation. UK Data Service proposes something similar: 'open where possible – closed where necessary'

2.5

Schools are also encouraged to carry out a census of major/significant data sets already owned by researchers, and ensure that these data are appropriately stored, managed and shared. This will be especially important for externally funded projects, as well as for data underpinning REF impact case studies.

2.6

Schools may also want to consider identifying and publicising good practice in data sharing amongst their staff/projects. We should show-case good examples of researchers sharing unusual data sets (e.g. different types of qualitative data), or sharing resources to help understand or access data (see also below on open methods).

A useful resource for this is Social Science Protocols, a peer reviewed OA online journal founded in 2018 in the University, which offers unique support for open science through publishing protocols in the social sciences. Published research protocols are treated as independent academic contributions that are ascribed a DOI and listed on academic databases. This ensures transparency and documentation of research processes, allows for critical and constructive feedback, enables interaction with ongoing studies, and helps improve the standards of social science research.

Section 3

Open Research Methods

Open research methods refer to the act of making code, processes, and designs associated with our research available and open for reuse. Within the Open Research movement, sharing the results of research, via open access. However, there is a movement towards open research methods in order to promote transparency and accountability of research approaches, and to allow reproducibility of results given known research methods. Making the tools to create research data publicly available makes the research methodology explicit, and allows for the replication of processes in subsequent exploratory research.

There is currently no mandate at the University of Edinburgh, or from UKRI, to provide research tools alongside research outputs, and in practice there are many obstacles to doing so. However, open source policies are likely to lead to better quality tools and more robust research. In addition, some publishers are mandating that data, code, research tools and other digital research materials should be accessible to referees at the point of submission, and publicly available if research outputs are published (for example, Royal Society Open Science).

Here are our proposals for promotion of open research methods.

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[9] https://www.ed.ac.uk/information-services/research-support/research-data-service/working-with-data/sensitive-data
[10] https://www.ed.ac.uk/records-management/guidance/data-protection/anonymisation
[11] https://www.ukdataservice.ac.uk/manage-data/legal-ethical

3.1

Researchers who are developing their own tools for research need more support to make these tools available to others under suitable open licensing models (subject to constraints, such as funder requirements, industry partners, or ethical risks).

We should endeavour to provide all digital assets in an open manner through appropriate mechanisms (for example, JupyterHub, DataShare or GitLab).

Finally, we need to foster discussions and enable a culture of code sharing and reuse across the researcher, research software engineer, research technologist and professional services community in the College.

3.2

We should ensure that all outputs covered by the above definition are stored in an appropriate storage or archive platform provided by the University.

Outputs should also preferably be made open through an open licence (e.g. Creative Commons CC-BY), and we should ensure that researchers are supported and guided to enable this.

Next steps

This document has focused on policies, provisions and initiatives at the University and College level; but much of the implementation will reside with Schools, subject areas and centres within the College. School academic leads and professional services are more closely involved in research support, covering pre- and post-award, IT and infrastructure, mentoring and guidance, and ethics review. As noted, different Schools also face distinct challenges in delivering Open Research, related to the particular research methods, topics and publication strategies employed in their disciplines.

As a next step, we are now supporting Schools to build on the principles and proposals set out in this document to develop a School strategy on Open Research.

We would expect these School plans to:

- Elaborate on how the School plans to promote Open Research across the three dimensions (outputs, data and methods), in line with disciplinary needs and research culture
- Explore how staff can be supported in pursuit of Open Research, including through accessing the various support services outlined in the document and Appendix A
- Highlight and build on any areas where the School/ its staff have been at the forefront of, or forged 'good practice' in, Open Research
- Set out any particular needs and challenges that should be addressed at College or University level going forward

In order to support this process, we are convening an Open Research Committee, which will meet through 2019, composed of representatives from our 12 Schools. The Committee will coordinate and exchange good practice in this area; oversee the development of School-level strategies; and agree College responses to ongoing developments in the area of Open Research.

College Open Research Working Group

Christina Boswell	Dean of Research
Shaun Bevan	Deputy Director of Research (Data), SSPS
Laura Jeffery	Outgoing Associate Dean, Research Ethics and Integrity
Jacq McMahon	Manager of College Research Office
Fraser Muir	College Chief Information Officer
Melissa Terras	Director, Edinburgh Centre for Data, Culture & Society
Corinne Reid	Associate Dean, Research Ethics and Integrity

Appendix A

University systems and services that support the strategy are listed here with a link to further information where available.

Research Data Service
The University's Research Data Service provides tools and support for writing data management plans, storing data, making data available to collaborators, and sharing data at the end of a project in an open access data repository. Edinburgh DataShare is the University's open access research data repository, with over 300 datasets, images, sound, software code or video items deposited from members of the College. Each item is assigned a unique digital object identifier (DOI) and has its own web page with a citation and other metadata. An embargo feature allows depositors to hide the data files until a given date, such as the date of publication of a corresponding publication.

www.ed.ac.uk/information-services/research-support/research-data-service/about-the-research-data-service

DataStore
DataStore is file storage for active research data, and is available to all research staff and postgraduate research students (PGRs). DataStore provides a free individual allocation for each researcher, as well as shared group spaces. Additional capacity of virtually any size is available.

DataShare
Edinburgh DataShare is an online digital repository of multi-disciplinary research datasets produced at the University of Edinburgh.

DataVault
The DataVault is an archive storage service where you can safely store your research data for the long term. Your data will be kept safe from accidental deletion and, when combined with a record of the dataset in PURE, will fulfil the expectations of research funders who require long term storage of research data.

Data can be copied into the Data Vault from your DataStore, and when a retrieval request is made, a copy will be placed back into your DataStore. Using the Data Vault will allow you to archive old data from your DataStore, to free up space for new research. The Data Vault also makes a good location for storing specific versions of your data, for example at the end of a grant.

Version Control Service (Subversion and Gitlab for Researchers)
Subversion is a version control tool which allows users to store code. It is also available as an extension called SourcEd which provides a web based collaboration tool integrated with your repository. Suitable for larger projects that require centralisation or granular access control.

DMP Online
DMP Online is a tool created by the UK's Digital Curation Centre (DCC) to help researchers write a Data Management Plan (DMP).

dmponline.dcc.ac.uk

DataSync
DataSync is a tool to synchronise and share research data with collaborators. It has an app to synchronise data to computers and mobile devices, and a web interface to allow access to data from any web browser. Data can be shared with anyone who has an email address, via the web interface.

Data Safe Haven
A Data Safe Haven facility provides remote access to project data on a secure server, removing concerns about proliferation of copies of data, when warranted. For projects requiring advanced security, the Data Safe Haven (DSH) provides a controlled and secured service environment for undertaking research using sensitive data.

The DSH service provides robust controls and safeguards to enable the secure transfer of sensitive data into a protected technical environment where it can be securely stored, manipulated and analysed by approved members of a research team.

The DSH service is currently being piloted.

Notable
The Noteable service is the University of Edinburgh's deployment of Jupyterhub providing access to Jupyter notebooks via your browser. These notebooks allow you to create and interact with documents containing code in a variety of programming languages without any need to install anything. The Noteable project seeks to leverage this tool into teaching within the University.

noteable.edina.ac.uk/home

Library resources
Institutional software repository using GitLab for Researchers

GitLab is an open-source, locally hosted, web-based Git-repository manager with wiki, issue-tracking and CI/CD pipeline features. Suitable for distributed development or where branching and merging is a common operation.

git.ecdf.ed.ac.uk/groups/CAHSS/

Digital research facilitators
The University is in the process of implementing a small team of facilitators with experience in a range of disciplines to:
support researchers in accessing digital research services throughout the research project life cycle
maintain close relationships between active researchers and the providers of digital services
provide support for researchers and administrative staff in developing funding proposals including such services.

The team's initial priorities will be to understand service usage across the College, reach out to research communities and develop our understanding of needs and activity in Schools and Centres and explore how we best work with research support staff across different Schools.

Appendix A

Scholarly communications services
The Scholarly Communications team look after the University's research output and, where appropriate, make it available to the global community. As well as providing general advice and guidance on all aspects of open access to publications, the team manage the PURE and ERA archives.

www.ed.ac.uk/information-services/research-support/publish-research/scholarly-communications/about

Open journal system
The Library's Open Journals service provides a hosting platform for academic and student-led journals to publish Open Access journals. All journals hosted by the Library are fully Open Access and use a Creative Commons licence.

Journals on the platform are published using Open Journal Systems (OJS). OJS is open source and used by at least 8,000 journals worldwide. It can be used to manage the editorial workflow from submission to publication and can support multiple languages. The Library works with the Journal's editorial team to customise the look and feel of the journal and provides training and support using OJS.

journals.ed.ac.uk

Copyright advice and guidance
The Library offers a copyright enquiries service, which is staffed by a team of experienced professionals from a range of different backgrounds, to offer help and support with any copyright-related queries. The team offers bespoke advice based on the circumstances of the enquirer and draws upon its wealth of expertise to provide practical, useful support to staff and students. The service can offer impartial advice on most situations where copyright impacts academic teaching and research.

www.ed.ac.uk/information-services/library-museum-gallery/library-help/copyright/copyright-enquiries-service

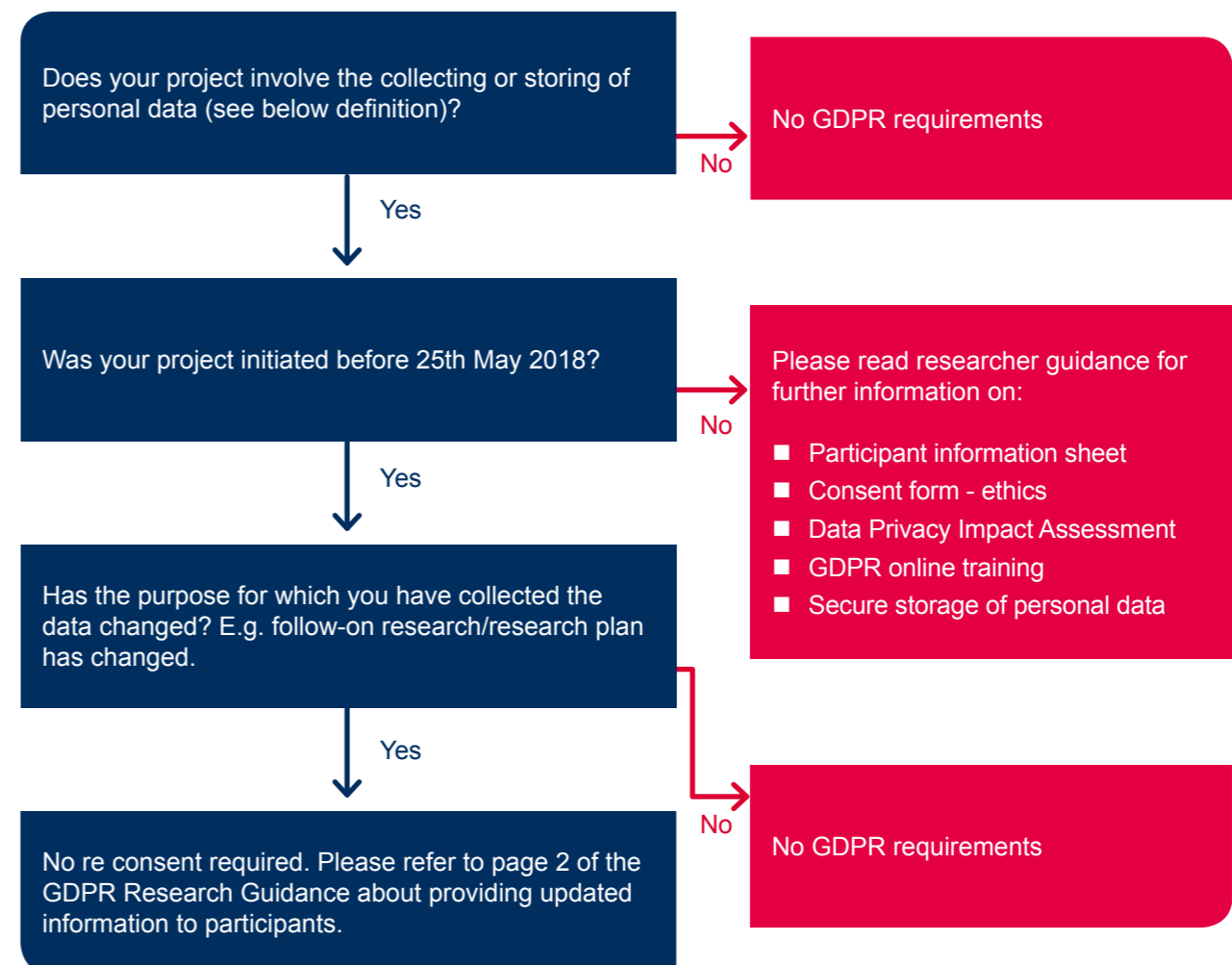**Information security and governance training and advice**
Supported by a small team within Information Services and led by the Chief Information Security Officer, the University provides support and guidance to researchers on how to protect personal and sensitive data appropriately.

www.ed.ac.uk/infosec/information-protection-policies/procedures-guidance

Appendix B

Personal data definition: Data about living people from which they can be identified. As well as data containing obvious 'identifiers' such as name and date of birth, this includes some genetic, biometric and online data if unique to the individual. Data that has been pseudonymised (with identifiers separated), where the dataset and identifiers are held by the same organisation, is still personal data. MRC, 2018

GDPR flowchart for researchers

Does your project involve the collecting or storing of personal data (see below definition)? — No → No GDPR requirements

Yes ↓

Was your project initiated before 25th May 2018? — No → Please read researcher guidance for further information on:
- Participant information sheet
- Consent form - ethics
- Data Privacy Impact Assessment
- GDPR online training
- Secure storage of personal data

Yes ↓

Has the purpose for which you have collected the data changed? E.g. follow-on research/research plan has changed. — No → No GDPR requirements

Yes ↓

No re consent required. Please refer to page 2 of the GDPR Research Guidance about providing updated information to participants.

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