UNIVERSITY OF BRISTOL OPEN CODE SUB-POLICY AND GUIDANCE

1. ABOUT THIS SUB-POLICY AND GUIDANCE

This sub-policy and guidance provides practical advice on how to enhance the transparency, rigour, and reproducibility of your research.

The term **must** is used to denote actions that are compulsory or necessary, **should** denotes best practice and aspiration to lead by example.

2. MAKE NEW SOURCE CODE OPEN

You should make all new source code open and reusable and publish it under appropriate licences. Or if this is not possible, provide a convincing explanation of why this cannot be done for specific subsets of the source code.

3. WHAT SOURCE CODE SHOULD BE OPEN?

All new source code should be open and re-usable, regardless of its size or programming language. Small analysis scripts are just as valuable to the community as large, compiled programs. You should consider any source code you write to be potentially valuable to others, and so worthy of being made open source.

4. WHY IS IT IMPORTANT?

Publicly funded research depends on public money. So, unless there is a good reason not to do so, the code developed during research should be made available for the public to reuse and build on.

Open-source code can be reused by other researchers, either directly or to inform the development of new code, thereby avoiding duplication of work and reducing costs for everyone. Publishing source code under an open licence encourages collaboration and interdisciplinary working. It helps others build upon your research, which both increases your reputation as a researcher, and the wider societal impact of your research.

5. WHAT DOES IT MEAN IN PRACTICE?

5.1 RESPONSIBILITIES OF RESEARCHERS

Researchers should:

- Write code in the open from the start and publish it in an open repository - minus any sensitive information, like secret keys, credentials, personally identifiable data or sensitive data.

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- Keep ownership of the intellectual property of new source code that is created and make it available for reuse under an open licence.

5.2 RESPONSIBILITIES OF THE UNIVERSITY

To help researchers make their software open source the University will provide guidance on which code repositories would be suitable for their code and will invest in providing institutional access to code repositories.

The University will provide online training on how to publish software and use, for example, version control repositories, such as SVN.

6. WHEN CODE SHOULD *NOT* BE RELEASED

There are a few cases when you must not publish code in the open. For example, if you work in STEM areas, Export Control Regulations could be applicable. Please contact the Research Compliance Team if exporting anything prior to its being made open access.

You must also not release code that could compromise unreleased intellectual property, proper publication of research results, personal or protected data, or the security or integrity of your research infrastructure.

6.1 UNRELEASED INTELLECTUAL PROPERTY / RESEARCH RESULTS

If the code makes clear details of intellectual property or research results that have not yet been released, you must keep the code closed until the intellectual property and/or research results have been released.

However, you should develop the code as if it is already open and continue to follow good documentation, development and security practices. You should open the code as soon as possible after the intellectual property and/or the research results have been released.

6.2 PERSONAL AND PROTECTED DATA

You must remove any personal or protected data from any code that you make public. This includes any data governed via legislation such as GDPR (e.g., personally identifying data), and any data that is not publicly available via other means (e.g. trade secret data, commercially sensitive data etc).

6.3 SECURITY AND INTEGRITY OF RESEARCH INFRASTRUCTURE

You must be careful to not share code that reveals details of the security or sensitive configuration aspects of your research infrastructure. This includes sharing login tokens, passwords, or sensitive details of systems used to manage security or detect fraud or system compromises.

7. OPEN CODE

You should open all other code. This includes:

- Analysis scripts.
- Source code for compiled programs.
- Configuration data for running / managing the program.
- Database schema.
- Code to compile, test and/or package your software.
- Documentation to instruct others how to install, test and use your software.

8. HOW BEING OPEN WILL HELP YOUR RESEARCH

Publishing your code and data from the beginning of your research will encourage:

- Clearer documentation, making it easier to maintain it and track changes to it, and for others to use.
- Cleaner and well-structured code that is easier to maintain.
- Clarity around data that needs to remain protected and how that is achieved.
- Suggestions about how the code can be improved or where security can be improved.

9. REFERENCES AND FURTHER INFORMATION

- UK Government Service Standard and Open Source Guidance.
- Software Sustainability Institute Choosing an Open Source Licence
- UK Reproducibility Network Open Research Primers
- University of Bristol Open Research Policy
- University of Bristol Data Sharing Sub-Policy and Guidance

10. GLOSSARY

https://www.bristol.ac.uk/media-library/sites/staff/documents/open_research_glossary.pdf