Terms and Resources

Below are definitions of common terminologies that will be used throughout the workshop Publishing in the Age of Open Science: Workshop for Researchers, Institutions, and Publishers. Various articles and perspectives are included at the end to provide participants with supplemental resources.

Article Processing Charge (APC): A fee applied to authors in order for their article to be published open access under a Creative Commons license.
Source: "Journal Pricing FAQs | Open Research | Springer Nature." n.d. www.springernature.com. Accessed February 14, 2024. https://www.springernature.com/gp/open-research/journals-books/journal-pricing-faqs.

FAIR: Findability, Accessibility, Interoperability, and Reproducibility
Source: Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. Sci Data 3, 160018. https://doi.org/10.1038/sdata.2016.18

Metadata: Information describing the characteristics of data including, for example, structural metadata describing data structures (e.g., data format, syntax, and semantics) and descriptive metadata describing data contents (e.g., information security labels).
Source: Computer Security Resource Center, Content. n.d. "Metadata - Glossary | CSRC." National Institute of Technology. Csrc.nist.gov. https://csrc.nist.gov/glossary/term/metadata.

Public Access Article: Free availability of federally funded scholarly materials to the public. This is often used as a policy term.
Source: Office of Science Technology Policy (OSTP). (2023). Report to the U.S. Congress on Financing Mechanisms for Open Access Publishing of Federally Funded Research. Office of Science and Technology Policy, Washington, DC, USA. https://www.whitehouse.gov/wp-content/uploads/2023/11/Open-Access-Publishing-of-Scientific-Research.pdf.

Open Access Article: A broad set of publication sharing principles and practices as adopted by the research and publishing communities. Open access (OA) publishing generally refers to a publishing model whereby digital articles are made available to readers at no cost, in contrast to subscription or other models that require payment to access and use content locked behind paywalls.
Source: OSTP. (2023). Report to the U.S. Congress on Financing Mechanisms for Open Access Publishing of Federally Funded Research. Office of Science and Technology Policy, Washington, DC, USA.https://www.whitehouse.gov/wp-content/uploads/2023/11/Open-Access-Publishing-of-Scientific-Research.pdf.

Open Research Data: that include, among others, digital and analogue data, both raw and processed, and the accompanying metadata, as well as numerical scores, textual records, images and sounds, protocols, analysis code and workflows that can be openly used, reused, retained and redistributed by anyone, subject to acknowledgement. Open research data are available in a timely and user-friendly, human- and machine-readable and actionable format, in accordance with principles of good data governance and stewardship, notably the FAIR (Findable, Accessible, Interoperable, and Reusable) principles, supported by regular curation and maintenance.

Source: UNESCO [7240] and Canadian Commission for UNESCO [7240]. 2022. An Introduction to the UNESCO Recommendation on Open Science. SC-PBS-STIP/2022/OSB/1. https://doi.org/10.54677/XOIR1696.

Open Source Software: software whose source code is made publicly available, in a timely and user-friendly manner, in human- and machine-readable and modifiable format, under an open license that grants others the right to use, access, modify, expand, study, create derivative works and share the software and its source code, design or blueprint. The source code must be included in the software release and made available on openly accessible repositories and the chosen license must allow modifications, derivative works and sharing under equal or compatible open terms and conditions. In the context of open science, when open source code is a component of a research process, enabling reuse and replication generally requires that it be accompanied with open data and open specifications of the environment required to compile and run it.
Source: UNESCO [7240] and Canadian Commission for UNESCO [7240]. 2022. An Introduction to the UNESCO Recommendation on Open Science. SC-PBS-STIP/2022/OSB/1. https://doi.org/10.54677/XOIR1696.

OSTP 2022 Public Access Mandate: In accordance with the memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:

1. Update their public access policies as soon as possible, and no later than December 31st, 2025, to make publications and their supporting data resulting from federally funded research publicly accessible without an embargo on their free and public release;
2. Establish transparent procedures that ensure scientific and research integrity is maintained in public access policies; and,
3. Coordinate with OSTP to ensure equitable delivery of federally funded research results and data.

Source: Nelson, Alondra. (2022). "Memorandum for the Heads of Executive Departments and Agencies." Office of Science and Technology Policy, Washington, DC, USA. https://www.whitehouse.gov/wp-content/uploads/2022/08/08-2022-OSTP-Public-access-Memo.pdf

TRUST Principles: Transparency, Responsibility, User Focus, Sustainability, Technology. To be *transparent* about specific repositories services and data holdings that are verifiable by publicly accessible evidence. To be *responsible* for ensuring the authenticity and integrity of data holdings and for the reliability and persistence of its service. To ensure the data management norms and expectations and *target user* communities are met. To *sustain* services and preserve data holdings for the long-term. To provide infrastructure and capabilities (*technology)* to support secure, persistent, and reliable services.
Source: Lin, D., Crabtree, J., Dillo, I. et al. (2020). The TRUST Principles for digital repositories. Sci Data 7, 144. https://doi.org/10.1038/s41597-020-0486-7

Resources:

1. Abdullah, Abrizah, Subbiah Arunachalam, Dominique Babini, Michael Barbour, Ahmed Bawa, Geoffrey Boulton, Amy Brand, et al. 2023. “The Case for Reform of Scientific Publishing.” International Science Council. https://council.science/wp-content/uploads/2023/11/The-Case-for-Reform-for-Scientific-Publishing_2023.pdf.
2. Clarke & Esposito. (2023). "Out of Reach." https://www.ce-strategy.com/the-brief/out-of-reach/.

3. Clarke & Esposito. (2024). "Peak Special Issue?" https://www.ce-strategy.com/the-brief/peak-special-issue/.
4. Council of Science. (2024). "Charting the Future of Science: Reforming scientific publishing for a new era of open knowledge." Council of Science. https://council.science/current/blog/reforming-scientific-publishing/.
5. Hanisch, RJ; Kaiser, DL; Yuan, A; Medina-Smith, A; Carroll, BC; Campo, EM. (2023). NIST Research Data Framework (RDaF) Version 1.5. National Institute of Standards and Technology, Gaithersburg, MD, NIST Special Publication (SP) 1500-18r1. https://doi.org/10.6028/NIST.SP.1500-18r1
6. Holdren, John P. (2013). "Memorandum for the Heads of Executive Departments and Agencies." Office of Science and Technology Policy, Washington, DC, USA. https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf.
7. Kennedy, Mary, and Cynthia Vitale. (2022). "Identifying Collaboration Priorities for US-Based Research Data Organizations: Questionnaire Results." Retrieved February 13, 2024, from https://www.arl.org/wp-content/uploads/2022/11/Identifying-Collaboration-Priorities-for-US-Based-Research-Data-Organizations%E2%80%94Questionnaire-Results.pdf.
8. Koley, Moumita. 2024. “A Promising Year Ahead for Science Publshing.” *International Scientific Council* (blog). January 30, 2024. https://council.science/current/blog/a-promising-year-ahead-for-scientific-publishing/?utm_source=International+Science+Council&utm_campaign=4e696222e1-January+2024&utm_medium=email&utm_term=0_6e20810dfd-4e696222e1-206478554&mc_cid=4e696222e1&mc_eid=17bbc1b03f.
9. Lander, Eric S. (2021). Letter to Senate and House Appropriation Committee. Office of Science and Technology Policy, Washington, DC, USA. https://www.whitehouse.gov/wp-content/uploads/2022/02/2021-Public-Access-Congressional-Report_OSTP.pdf
10. Lin, D., Crabtree, J., Dillo, I. et al. (2020). The TRUST Principles for digital repositories. Sci Data 7, 144. https://doi.org/10.1038/s41597-020-0486-7.
11. Lynch, Iseult, Antreas Afantitis, Thomas Exner, and Anastasios Papadiamantis. (2023). "Worldfair Project (D4.1) Nanomaterials Domain-specific Fairification Mapping". Zenodo. Retrieved February 13, 2024, from https://doi.org/10.5281/zenodo.7887341.
12. McEwen, Leah, and Ian Bruno. (2023). "Worldfair Project (D3.1) Digital Recommendations for Chemistry FAIR Data Policy and Practice". Zenodo. Retrieved February 13, 2024, from https://doi.org/10.5281/zenodo.7887283.
13. National Research Council. (2005). Are Chemical Journals Too Expensive and Inaccessible?: A Workshop Summary to the Chemical Sciences Roundtable. Washington, DC: The National Academies Press. https://doi.org/10.17226/11288.
14. Nelson, Alondra. (2022). "Memorandum for the Heads of Executive Departments and Agencies." Office of Science and Technology Policy, Washington, DC, USA. https://www.whitehouse.gov/wp-content/uploads/2022/08/08-2022-OSTP-Public-access-Memo.pdf
15. Office of Science Technology Policy (OSTP). (2023). Report to the U.S. Congress on Financing Mechanisms for Open Access Publishing of Federally Funded Research. Office of Science and Technology Policy, Washington, DC, USA. https://www.whitehouse.gov/wp-content/uploads/2023/11/Open-Access-Publishing-of-Scientific-Research.pdf.

16. Papadiamantis, Anastasios, Iseult Lynch, and Antreas Afantitis. (2023). "Worldfair (MS11) Nanomaterials Prototype". Zenodo. Retrieved February 13, 2024, from [[invalid URL removed]]([invalid URL removed])
17. The National Science and Technology Council, Desirable Characteristics of Data Repositories for Federally Funded Research, 2022, DOI: https://doi.org/10.5479/10088/113528
18. UNESCO [7240] and Canadian Commission for UNESCO [7240]. 2022. An Introduction to the UNESCO Recommendation on Open Science. SC-PBS-STIP/2022/OSB/1. https://doi.org/10.54677/XOIR1696.
19. Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018. https://doi.org/10.1038/sdata.2016.18.