**OSPO Explainer Transcript: Digital Object Identifiers**

**URL: https://ospo.library.jhu.edu/ospo-explainers/**

Slide 1: Hello, and welcome to the Johns Hopkins University Open Source Programs Office Explainer Series, a collection of bite-sized videos tackling a variety of open-source essentials. New topics are added regularly, check out ospo.library.jhu.edu to see what's coming up, or drop us a line at ospo@jhu.edu to make a request. Today's explainer? Digital Object Identifiers.

Slide 2: Research software is the collection of tools, code, or code libraries that allow a researcher to generate new data or analyze and make meaning of existing data.[1]

Slide 3: Software is foundationally important to scientific and social progress; however, traditional acknowledgement of the use of others' work has not adapted in step with the rapid development and use of software in research.[2]

Slide 4: One way to improve acknowledgement of software is to create (also known as "minting") and include a persistent identifier or PID in your code citation. The Digital Object Identifier, or DOI, is the persistent identifier most commonly used for research outputs in the scholarly communications ecosystem.

Slide 5: The DOI system is governed by the DOI Foundation, and the numbers are allocated and registered by organizations referred to as "registration agencies." Well-known registration agencies include Crossref, which focuses on scholarly content, and DataCite, which focuses on datasets.

While DOIs are appropriate for research software, different scholarly contexts use different types of persistent identifiers; for example, ISSNs for journals and ORCiDs for individual researchers.

Slide 6: Key benefits of persistent identifiers include:[3]

- They can help put research into context by providing standard information around authorship
- They can promote research trust and transparency

[1] "Research Software Programs." Accessed March 14, 2024. https://researchsupport.harvard.edu/research-software-programs

[2] Bouquin, Daina, Ana Trisovic, Oliver Bertuch, and Elena Colón-Marrero. "Advancing Software Citation Implementation (Software Citation Workshop 2022)." arXiv, February 15, 2023. http://arxiv.org/abs/2302.07500.

[3] Scholastica, "A PID's Life: What Journals and Scholars Need to Know," accessed October 15, 2024,https://blog.scholasticahq.com/post/pid-life-what-journals-scholars-need-to-know/.

- They can help streamline the flow of information by enabling automated metadata transmission across scholarly communication tools and systems
- They can improve research tracking by making it easier for research institutions to monitor works from their authors and for authors to track their own impacts
- And they can improve research discoverability and accessibility by making it easier to link verified locations of research records and outputs, including any open access versions

Slide 7: How can I get a DOI or PID for my code?

Slide 8: One way is to deposit your code with the JHU Research Data Repository. The Data Services team will work with you to create a software deposit and mint a DataCite DOI for a specific version of your code.

https://dataservices.library.jhu.edu/archiving/

Slide 9: You can also deposit your code with other open access repositories.

- Figshare integrates with GitHub, and provides a DataCite DOI
- Open Science Framework (OSF) provides a DataCite DOI
- Software Heritage provides a Software Heritage Identifier which is persistent and unique, but not a DOI
- Zenodo integrates with GitHub and provides a CrossRef DOI

Slide 10: You can also publish your code in a software-specific journal, such as the Journal of Open Source Software, the Journal of Open Research, and others. Published papers are assigned a DOI that can be used in your software citation. Note: DOIs should be minted for either the paper or the code, not both.

Domain-specific journals are also beginning to accept software papers. An updated list of which journals accept software papers is maintained by the Software Sustainability Institute:

https://www.software.ac.uk/top-tip/which-journals-should-i-publish-my-software

Slide 11: Once your software is assigned a DOI or other PID, be sure to update the citation file in your code repository. Not sure how? View the OSPO's Citation Explainer!

Slide 12: Have any questions about what you've just learned? Ask the JHU Open Source Programs Office for more information. You can reach out to us online at ospo.library.jhu.edu or send an email to ospo@jhu.edu.