Fact sheet on open research practices and institutional policy
Audience: Faculty and Academic Administration


**Innovation, Open Research Practices, and Institutional Policies**


Today's researchers are leveraging web technologies to enhance and communicate their work in novel ways. Research communication is moving beyond static formats, like the PDF article. Today, scientific outputs such as data and code are published, reused, built upon, and cited. New research communication practices and innovative tools make the research process more efficient and increase the impact of your institution's work.  However, institutional policies often do not reflect the changing landscape of publication, data sharing, and scholarly communication.

Any institutional policy that impacts data, code, scholarly communication, or researcher impact should be assessed for their relationship to modern and open research practices. This includes policies that govern intellectual property (IP), information technology policies, internal and external communication, as well as faculty promotion. Policies that support open research practices encourage innovation, maximize impact, and increase efficiency. When institutional policies do not keep pace with changes to the research landscape, they restrict researchers' ability to take advantage of new tools and are often ignored by researchers.


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**What is Open Research?**

Open Research is an umbrella term that encompasses the following:

- **Open Access**: Scholarly and scientific research that is freely available, i.e., not behind a paywall or accessed by subscription.
- **Open Data**: Data, code, and other research objects underlying published work that are managed and shared to enhance reproducibility, transparency, and reuse.
- **Open Education**: Shared and openly available curriculum, textbooks, and other resources reduces barriers to education and educational materials.
- **Open Source**: Source code that is freely shared and open to contributions.

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**Examples of Open Research practices today:**

Researchers are adopting tools and practices that make their work more impactful and efficient - open practices are now widespread.

- Posting preprint publications to repositories like bioRxiv
- Publishing in open access journals like PLOS and eLife
- Sharing code on platforms like GitHub
- Publishing citable datasets with data repositories like Dryad

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**Opening research data is one of the essential first steps a researcher can take to becoming more open: data is at the very core of everything we do. Enabling researchers**

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**to share data, publish data, use open data, and collaborate on data-driven research benefits both researchers and institutions:**

1. **Speeds discovery and reduces duplicate effort**

*Open data enables researchers working in parallel on similar problems to collaborate easily and transparently, and helps research [respond to time-sensitive problems](#) more efficiently.*

2. **Increases scholarly impact**

*Open data leads to [increased citations](#) and clear recognition of contributions. Open data protects researchers from 'scooping' because it provides provenance for their research outputs through dated digital records associated with their intermediate research products.*

3. **Saves time complying with funder and publisher open data policies**

*More funders and publishers are requiring data to be deposited alongside publications (example: [NSF](#)). When researchers plan for open data early in the research process, they save time, and avoid mistakes and information loss.*

4. **Protects your investment, ensuring that data are preserved.**

*Research outputs, like data, are the intellectual property of the university. However, research data management processes vary between research groups, and there is often little oversight of data stewardship. [There are horror stories](#) of data lost due to poor storage decisions. Working with archivists and librarians can prevent this. When data are made openly available in a data repository, archival preservation is handled by digital archiving professionals, ensuring that datasets remain accessible and reusable.*

5. **Encourages collaboration across disciplines**

*Open data helps researchers find collaborators working outside their institution or field area pursuing related work; these connections can [lead to new ways of approaching and solving problems](#).*

6. **Maintains accountability and increases public trust (and participation) in science**

*When data are shared, the conclusions resulting from those data can be verified and reused, [increasing public trust in research](#). When data is open and the findings are shared in a clear and accessible way, it increases public understanding, creates opportunities for public participation, and bolsters public support of research initiatives*