

Guide To Set Up A University Open Source Program Office (OSPO)



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Introduction

Introduction

Goals

As open source software becomes more prevalent in academia; universities, and academic institutions are seeking to build and support open source capacity, including the creation of an open source programs office (OSPO). This guide is intended to provide recommendations and resources for individuals or institutions seeking to establish an OSPO in the university context.

This guide is being produced by OSPO++ in partnership with HELIOS¹, the Higher Education Leadership Initiative for Open Scholarship. HELIOS emerges from the work of the National Academies of Sciences, Engineering, and Medicine's Roundtable on Aligning Incentives for Open Science.²

Defining an OSPO

For the purpose of this guide, an open source program office or OSPO is defined as an organizational construct that acts as a convener, community steward, and center of competency for open source software. In the university context, OSPOs need to account for the specific mission and cultural context. The overarching goal of a university OSPO is to maximize the social and economic impact of open source software for research, education, translation (impact of research and education beyond the university), and community engagement.

The OSPO++ community and network emphasize OSPO-to-OSPO partnerships as a means for achieving impact at scale, particularly as it relates to open source software as a key component of digital infrastructure.

¹ <https://www.heliosopen.org/>

² <https://www.nationalacademies.org/our-work/roundtable-on-aligning-incentives-for-open-science>



Guide Overview

This guide is broadly organized into four stages of engagement for individuals or institutions seeking to establish an OSPO:

1. Getting Started - "We are newcomers to OSPOs and want to know where to begin?"
2. Ready to engage - "We are ready to engage with leadership or stakeholders"
3. Focused OSPOs - "We have a specific interest or project in mind"
4. Comprehensive OSPOs - "We want to build a comprehensive OSPO"

These stages are not meant to be linear, sequential, or hierarchical. Institutions may adopt different strategies or actions, depending on their level of open source related research, education, student engagement, and interest in translation or dissemination beyond the university. The level of open source related research, education, student engagement, and interest in translation or dissemination beyond the university will influence specific institutional strategy and tactics.

The guide begins with a brief description of the background and context regarding guides for building OSPOs. Subsequent sections of the guide focus on each of the aforementioned stages of engagement. Throughout the guide, there are links to additional resources such as case studies, webinars, etc., and modules to be developed that will explore more deeply specific topics or themes (e.g., OSPO and Technology Transfer).

Community-Developed Document

This guide is intended to be a community-developed, living document with input from a range of stakeholders. While OSPO++ will steward the initial development, this document will hopefully inspire others to create and share their own resources and expertise. This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.



Background and Context

Background and Context

Open source software is becoming increasingly important in the university context, as it is one of three major research outputs alongside articles and data. This section is not intended to be exhaustive or definitive but provides background and context on OSPOs and the organizations that foster them.

Importance of Open Source in a University Context

Before delving into OSPOs specifically, it is worth noting the importance of open source software in the university context. Open source software is a vital component for fostering reproducibility and addressing security concerns in research. Moreover, researchers tend to be more willing to ask for assistance with software management rather than article or data management. Therefore, opportunities for engagement around open source exist in perhaps unique ways.

This guide reflects the expertise, experience, understanding and tacit knowledge of individuals who have direct experience with open source and OSPOs within universities. One of the key attributes of OSPO++ is direct engagement with individuals and institutions that have not been typically represented in other OSPO forums. Rather than being viewed as an extension of the other OSPO resources referenced, this guide represents an affirmation of the importance of understanding the specific context, culture, mission, and way of working within universities.

National Academies of Science, Engineering, and Medicine

OSPO++ updated the primer on “Code and Software” from the National Academies of Science, Engineering, and Medicine Roundtable on Aligning Incentives on Open Science. The updated version is available using a CC-By Attribution 4.0 International license.³ This primer provides useful background, context, resources, and recommendations for universities considering the creation of an OSPO and also describes the value of open source software in the university context.

Coalition for Networked Information

At the December 2022 Coalition for Networked Information membership meeting, Sayeed Choudhury provided a lightning talk that highlighted the value of open source software and OSPOs in the context of the 2022 US Office of Science and Technology Policy (OSTP) memo

³ <https://osf.io/tzfnx>

(aka “Nelson memo”)⁴. The memo provides policy guidance to federal agencies with research and development expenditures on updating their public access policies related to public access of federally funded research. Choudhury’s talk begins at 35 minutes, 25 seconds into this video clip from the December 2022 CNI membership meeting and can be accessed directly at:

<https://www.cni.org/topics/ci/guide-to-set-up-university-open-source-programs-office-ospo>

OSPO Resources

Linux Foundation’s TODO Group

Danese Cooper, one of the organizing team members of OSPO++, launched the first OSPO while at Sun Microsystems. Since then, the corporate sector has continued to build resources and capacity for OSPOs, most notably through the Linux Foundation's TODO group⁵, which provides a useful set of resources and guides.⁶ Recently, the TODO group has published two OSPO-related reports: The Evolution of the Open Source Program Office (OSPO)⁷ and A Deep Dive into Open Source Programs Offices: Structures, Roles, Responsibilities, and Challenges.⁸

These resources offer useful advice for any OSPO but they reflect the corporate composition and focus of the TODO group. For example, The Evolution of the OSPO publication features case studies from Bloomberg, Comcast, and Porsche. Of the 87 general members⁹ listed, only 2 of them are universities: Rochester Institute of Technology (RIT) and University of California, Santa Cruz (UCSC), both of which are also members of OSPO++. The TODO group formed OSPOlogy to expand its coverage and published a Mind Map¹⁰ that covers responsibilities, roles, behavior, and team size.

OSPO.Zone and Good Governance Initiative

Following engagement with OSPO++, the Eclipse Foundation launched the OSPO.Zone¹¹ as a platform for sharing materials of the OSPO Alliance, most notably the Good Governance Initiative¹² led by OW2. As outlined on the Good Governance Initiative website: “The OSPO Alliance is built out of the OSS Good Governance Initiative (or GGI) blueprint developed by an European open source organization, OW2, to help implement corporate-wide open source policies, and set up OSPOs.”

⁴ <https://www.whitehouse.gov/wp-content/uploads/2022/08/08-2022-OSTP-Public-Access-Memo.pdf>

⁵ <https://todogroup.org>

⁶ <https://todogroup.org/guides/>

⁷ <https://linuxfoundation.org/tools/the-evolution-of-the-open-source-program-office-ospo/>

⁸ <https://www.linuxfoundation.org/tools/a-deep-dive-into-open-source-program-offices/>

⁹ <https://todogroup.org/members/>

¹⁰ <https://github.com/todogroup/ospology/tree/main/ospo-mindmap>

¹¹ <https://ospo.zone>

¹² <https://ospo.zone/ggi/>

The Good Governance Initiative provides a methodology to implement professional management of open source software in an organization. It addresses the need to use open source software properly and fairly, safeguard the company from technical, legal and IP threats, and maximize the advantages of open source. It outlines a high-level framework of five stages, mapped to Maslow's hierarchy of behavioral motivation: usage, trust, culture, engagement, and strategy.

The GGI document makes the important point that building a community and contributing to (the European FOSS) ecosystem are key advantages for building an OSPO. The GGI document mentions that it can be used by any organization ranging from “SMEs to large companies and not-for-profit organisations, from local authorities (e.g. town councils) to large institutions (e.g. European or governmental institutions).” It is worth noting that the list of 16 contributors includes only 2 individuals representing a government (City of Paris) and a non-profit organization (Free Software Foundation Europe). The introduction notes: “The framework provides building blocks for a strategy and hints for its realisation, but *how* the activities are executed depends entirely on the program’s context and is up to the program manager. It may prove helpful to look for consulting services and to exchange with peers.”

OSPOs in the Public Sector

Over the past number of years, we have seen an increase in interest in the concept of an OSPO from public sector organizations. OSPO++ collaborated with OpenForum Europe in the creation of their guide on “The OSPO: A New Tool for Digital Government.”¹³ Some examples of public sector OSPOs are included below.

European Commission’s OSPO

On October 21st 2020, the European Commission approved its Open source software strategy for 2020-2023. The first concrete action by the European Commission was to set up an Open Source Programme Office (OSPO)¹⁴ as “as facilitator for all activities outlined in the strategy and the action plan”.

The OpenForum Europe Guide outlines how the EC OSPO is a tool for culture change within the Commission. It works “to reinforce and extend the open-source working culture.” It is housed within the Directorate General for Informatics. The OSPO is currently working to remove identified legal and technical barriers so that the Commission will, with the support of the OSPO, make more of its solutions publicly available.

¹³ <https://openforumeurope.org/wp-content/uploads/2022/06/The-OSPO-A-New-Tool-for-Digital-Government-2.pdf>

¹⁴ <https://joinup.ec.europa.eu/collection/open-source-observatory-osor/news/ec-ospo-heralds-new-ish-way-managing-open-source>

City of Paris OSPO

The creation of the City of Paris OSPO was announced in November 2021. Its most important aim is to be the interface between public administration, community users and other projects and initiatives. More details of how the City of Paris has been instrumental in enabling open source collaborations for social impact can be found in the OSPO++ case study on St. Francis Neighborhood Center.¹⁵

WHO's OSPO

The World Health Organization (WHO) announced their OSPO¹⁶ in March 2022, highlighting the importance of organizational context, culture, and mission. It also reflects one of the core principles of OSPO++: open source as a powerful means of developing partnerships between sectors for novel forms of community engagement and social impact.

The WHO announcement notes organizational dimensions or functional areas to consider, including legal, policy and procurement, technical (technology), technical (programmatic), internal culture, and economic and social. The announcement also notes more equitable access to open source employment, digital public goods, and more transparency and opportunities to collaborate as examples of such considerations.

¹⁵ <https://ospoplusplus.org/resource/st-francis-neighborhood-center/>

¹⁶ <https://socialimpact.github.com/insights/world-health-organization-OSPO-launch/>



Getting Started

Getting Started

For individuals or organizations that are beginning their exploration of open source software and OSPOs, it may be daunting to consider where to begin. This section outlines a set of questions, actions, and offices within a university that are useful in this newcomer context. Before considering the specific questions, there are a couple of key framing points to consider for universities and open source software.

There is no inherent reason why launching an OSPO would generate interest or engagement. However, noting that open source software is a primary research object or output (in addition to being a tool for research) has the useful effect of activating offices and individuals within the university. Some universities have launched open science programs or initiatives that already focus on papers and data; adding open source software is a natural extension of such open science efforts. Even for newcomers, it may be useful to focus on the point made earlier in this guide: “The overarching goal of a university OSPO is to maximize the impact of open source software for research, education, translation (i.e., the impact of research and education beyond the university) and community engagement.” Framing open source software and the OSPO in this overall context and mission of a university is a useful approach when asking the following questions.

Getting Started

Questions to Ask

- OSS activity & interest in my university?
- Existing capacity?
- Existing Open Science Program?
- University’s institutional Goals?
- Who might be concerned?
- How to build an open source community

What is the state of open source software in my university?

As obvious as it may seem, the first question to ask: is what is the state of open source software in my university? While this question may seem obvious, the answer is not. Most companies might have some sense of their open source software activity but, within a university context, developing an inventory of open source software may be one of the foundational goals for an OSPO.

There are multiple individuals or offices within a university who can offer a high-level or initial answer to this question including:

- Vice President (or Vice Provost) for Research or equivalent positions
- Technology Transfer Office
- Office of the CIO or Computing Services
- Department of Computer Science or Department of Information Systems (or more broadly, the School or Division that encompasses it)
- Library
- Research centers or high-performance computing facilities
- Student groups (particularly those that organize hackathons)

While it is unlikely that any of these groups will provide a clear, comprehensive response, each of the groups can provide insights into the existing and desired level of activity, interest, and engagement with open source software. It is also worthwhile to conduct a search using as many variants of the university's name (e.g., Carnegie Mellon and CMU) within GitHub, which might identify additional points of contact.

What is the existing capacity to manage or curate open source software?

The next question builds upon the first by exploring current institutional capacity. Answers may include technical resources (e.g., GitHub Campus account), advice (e.g., set of engineering practices, open source license choices), policies (e.g., an intellectual property policy that includes open source software), and curation services (e.g., use of ACM Digital Library archiving service, Software Heritage membership). It is worth noting that a university may have well developed resources in one area while other areas remain completely unexplored, which can identify potential areas of emphasis for an OSPO.

While this question could be asked of the same set of individuals or offices within a university identified for the first question, it is unlikely that the Department of Computer Science or student groups will assume responsibility for university-wide services. For this second question, the following individuals or offices within a university might provide insights:

- Vice President (or Vice Provost) for Research or equivalent positions

- Technology Transfer
- Office of the CIO or Computing Services
- Library
- Research computing (which is sometimes part of the Office of the CIO)

It is worth noting that there may be institutes, centers, etc. that provide open source software management or curation services for their specific research group. The next question may help identify some of these organizations.

Does the university have an open science program or initiative? If so, what is its current scope and goals?

Within the United States, two memoranda from the White House Office of Science and Technology Policy (OSTP) – first in 2013 and now in 2022 – have affirmed the importance of public access to the outputs from federally funded research. It is worth noting that the 2022 memo moves the official OSTP stance more towards an open access posture (e.g., removal of the 12 month embargo period for papers). Additionally, the US National Academies of Science, Engineering, and Medicine have convened a Roundtable and more than one working committee focused on open science.

There is an opportunity to align a university OSPO with existing interest and activity focused on open science, particularly given the observation that open source software is a primary research object or output. Arguably, universities have expended more effort toward articles and data than software and researchers are more familiar with the ecosystem for articles and data so they may be more amenable to support for open source software. Typically, the university Provost charges a group such as a faculty committee or the university libraries to lead their open science program. When considering how to position an OSPO, it is worthwhile to speak with the leadership of the open science program (either the Provost, Chair of faculty committee or Dean of Libraries/University Librarian).

Open science is not an end unto itself but rather a means to translate or disseminate the impacts of university research and education beyond the university, particularly as it relates to societal impact. One of the most promising and differentiating characteristics of university OSPOs is their ability to support novel forms of impact through new partnerships and engagement. OSPO++ specifically considers these new forms of translation as one of its key considerations when supporting OSPO to OSPO partnerships. Consequently, it is worth asking the next question, explicitly.

What are my university's goals for new forms of societal impact, particularly as it relates to community engagement?

Many universities have offices focused on government relations or community relations and programs such as workforce development within their home cities. These offices could be useful resources in terms of identifying existing connections or projects with the local community. Student groups may also have existing connections or projects with the local community though many of these engagements tend to be short-term (e.g, hackathons) or tied to the academic calendar (e.g., semester or summer length internships).

However, it is important to note that open source software “as a verb” or means for partnerships has demonstrated new opportunities and novel forms of impact. The Johns Hopkins University OSPO has worked with the City of Paris OSPO and a local community center to support its digital strategy and set the foundation for initiatives such as participatory budgeting.¹⁷

At the heart of these new types of partnerships is the fundamental belief that the university and local community are equal. The local community possesses unique, tacit knowledge that can augment academic research and while universities bring significant capacity to such partnerships, local communities also offer a different type of capacity that can be fostered by open source software. Perhaps most importantly, working together on open source software supports transparency that can ultimately develop trust, which is essential for sustained engagement.

The last point relates to the potential points of “tension” regarding the OSPO since it is still a new concept for universities and could represent new ways of working within a university. It is difficult to launch a new office or concept within any organization but universities present their own unique challenges. For this reason, it is worth asking the following question.

Who might be concerned or perhaps even anxious about a new OSPO?

This question is not intended to be asked explicitly of anyone or any specific office although it may come up during conversations related to the previous questions. Universities have not dedicated as much effort toward managing and sharing open source software as open articles or open data so it's natural that some groups might view an OSPO as a “competitor” rather than a complementary resource. It is critical to know the landscape to the extent possible and identify such individuals or offices to create a strategy and plan for the OSPO that helps everyone achieve shared goals.

For example, a technology transfer office might have existing plans or resources for choosing open source licenses. If the OSPO does not clearly identify how it wishes to engage and

¹⁷ <https://techonomy.com/how-open-source-software-makes-cities-more-livable/>

support this process, a technology transfer office might understandably assume the OSPO will make it harder to achieve a university-wide strategy. OSPO++ plans to create a guide specifically focused on OSPOs and technology transfer based on experiences at Trinity College, University of California, Santa Cruz, Johns Hopkins University and Carnegie Mellon University that will include more detail. John Whelan from Trinity College has cited the “as open as possible; as closed as necessary” mindset from the perspective of technology transfer. However, it is important to note that other offices or individuals in a university may also have concerns about a new OSPO.

What is the best path forward toward building an open source community within the university?

The last question attempts to weave together each of the previous questions (and responses) as a starting point for the next section (“We are ready to begin”). The OSPO can be an impactful convener, clearinghouse or center of competency within a university for open source software, which may best manifest itself as community steward. Fundamentally, how to begin rests upon whether one is joining an existing community, helping to organize an existing community, advancing the goals of an existing community, or fostering and maintaining a new community (that may be composed of existing individuals and offices). In any of these cases or different starting points, the long-term success of an OSPO will depend on its ability to be seen as a credible community steward. Before describing how to begin, it is worth mentioning that initial conditions matter. If an OSPO is only focused inwardly, it will make different decisions and choices, particularly related to capacity building, than if it explicitly embraces external partnerships and engagements from the onset.

The background is a solid dark purple color. Overlaid on this are several concentric, semi-circular bands of a lighter shade of purple. These bands are arranged in a way that they appear to be part of a larger circular structure, possibly a stylized gear or a series of overlapping rings. The bands are of varying thickness and are positioned to create a sense of depth and movement.

Ready to Engage

Ready to Engage

Ready to Engage

Identify Stakeholders

- Where might a new OSPO cause disruption?
- What benefits might an OSPO create?
- Who could it serve?
- Who needs to interpret or manage volumes of data?
- Libraries can be strong and politically neutral source of support for an OSPO.

Securing Support

Given that Provosts (or Chancellors in the US or their equivalents in other nations) are sometimes thought of as “chief academic officers”, they are uniquely positioned to support a new OSPO as a university-wide initiative. As mentioned earlier, connecting the OSPO to an existing open science program (also often charged by the Provost) would reinforce this notion.

Where to Locate an OSPO?

However, Provost’s offices do not typically provide services directly so it would be important to consider an organizational home for the OSPO. Given that libraries often play an important (and even leadership) role with open science initiatives and offer existing related services (e.g., research data management), an OSPO within a library is worth considering. Libraries’ mission of curation aligns well with the maintenance and sustainability of open source software and their neutrality within a university can be a useful feature. Given the profile of specific universities, it may be appropriate to consider another service group with wide remit such as the research computing group or an educational group or department.

OSPO Roadmap

Even with Provost support (with or without funding), an OSPO will need to consider the sequencing and pacing of its offerings and engagements with other offices within the university. Unless an OSPO has immediate substantive funding and resources, it is unlikely that it can address all of the needs identified through the environmental scan with the questions in the previous section. Having an organizational road map is as important as having a plan for offering technological support.

Securing Resources

In any case, it is essential to identify a group that can allocate resources or make a compelling case for new resources from the base budget. While grant funding can initiate or generate specific activities for an OSPO, it can run the risk of a path dependence that could limit the (at least perceived) value of the OSPO or make it difficult to sustain programs after an initial burst of activity. Nonetheless, there are instances where such funding (either through grants or base budgets) can provide the impetus to move forward with at least the beginnings or components of an OSPO. The next section describes some early case studies of these specific interests or projects that span research, education, translation, and community engagement.



Focused OSPOs

Focused OSPOs

The Alfred P. Sloan Foundation¹⁸ has funded the list of institutions below (except for Trinity College) to launch university OSPOs. The OSPO++ team has developed a set of case studies to give an overview of each university OSPO. You can find all the OSPO++ case studies on the resource page of the OSPO++ website.¹⁹ Each of these case studies provides ideas about specific projects or interests that are relevant for university OSPOs.

Carnegie Mellon University

Carnegie Mellon University Libraries

This OSPO is based within the [CMU Libraries](#). Situating the office within the libraries conveys the importance of curating open source software as a primary research object that crosses divisional and departmental boundaries.

The primary functions of the OSPO are to act as a community convener and center of competency for identifying and building open source capacity within CMU. The office also aims to maximize social impact on a global scale based on CMU's research, teaching and policy expertise.

Core objectives:

- Explore open source software and its impact as an underlying component for automated science.
- Examine how both US Federally Funded Research and Development centers (FFRDCs) and University Affiliated Research Centers (UARCs) can develop open source policies, processes and programs.
- Support wider university services such as student internships and open source educational efforts.
- To build the university's capacity to curate, manage and share open source software.

¹⁸ <https://sloan.org/>

¹⁹ <https://ospoplusplus.org/resource/>

Johns Hopkins University



The JHU OSPO²⁰ is a university-wide unit anchored in the Sheridan Libraries' [Digital Research and Curation Center](#). Its mission is to promote the use of open source software for research, education, and technology transfer.

Core activities include:

- Building awareness of the value and impact of open source within the university.
- Providing resources, tools, and engineering support to promote the use of open source within the university's academic community.
- Supporting the participation of faculty, staff, and students in open source through educational programs, information sharing, and guidance on best practices.
- Encouraging the translation of academic discovery into products and services that generate social impact in addition to commercial success.

²⁰ <https://ospoplusplus.org/resource/johns-hopkins-university-ospo/>

Rochester Institute of Technology



Rochester Institute of Technology's (RIT) [Open@RIT office](#)²¹ was launched in 2020 but their programs in Open Work date back to 2009 with its first course offering in Humanitarian Free and Open Source Software, which grew to be the only [academic minor](#) in the subject anywhere.

Open@RIT is a Key Research Center and is based within the Office of the Vice President of Research.

Core activities include:

- Provision of advice, information, mentoring and best practice materials.
- Educational programmes:
 - A generalized immersion course in open source.
 - Minor in Free and Open Source Software and Free Culture (emphasizing community membership and contribution).
 - The [LibreCorps programme](#), which initially provided co-operative education placements in humanitarian and civic organizations for students interested in open source. With the support of the Alfred P. Sloan Foundation, LibreCorps has supported 25 faculty research projects across six different colleges in two years.
- Practical assistance for faculty and staff in the design and sustainability of Open Research that demonstrates clear alignment with both funding and university requirements.
- Formal and applied research in Open Work, including Ford Foundation-funded qualitative studies of Open Communities, FOSS education, and the creation of Open Platforms for deaf education.

²¹ <https://ospoplusplus.org/resource/open-rit/>

Saint Louis University



SAINT LOUIS
UNIVERSITY™
— EST. 1818 —

While the office is based within the Computer Science department in the [School of Science and Engineering](#), Open Source with SLU²² is a resource for the entire university and broader regional community.

Core activities include:

- A student program that offers practical experience of software development in a realistic setting.
- Writing and maintaining open source software and in particular, software that supports research.
- Advising SLU departments on Open Scholarship and open source software in Open Scholarship.
- Working with SLU's Office of the VP of Research to foster Open Research.
- Working with SLU Libraries to support open data initiatives.

²² <https://ospoplusplus.org/resource/open-source-with-slu/>

Trinity College Dublin



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

Trinity College Dublin's (TCD) OSPO²³ was launched in 2020 and is one of the first OSPOs in a university in Europe. The office is a division of Trinity Innovation within the university. The OSPO's primary function is the empowerment of researchers to execute on their open source and open data strategies.

Core activities include:

- Liaising with external stakeholders and creating partnerships to enable TCD's academic community to engage in research commercialization, technology transfer, and to affect social change.
- Supporting open source and open data strategies amongst campus companies.
- Promoting knowledge transfer.
- Provision of advice and guidance on open source licenses and alignment with funding conditions.
- Issue of template agreements for engagement with industry partners.

²³ <https://ospoplusplus.org/resource/trinity-college-dublin-ospo/>

University of California, Santa Cruz



The OSPO UC Santa Cruz²⁴ is the first OSPO in the UC system and also one of the first public university OSPOs in the United States.

Once established, it is anticipated that the OSPO will become part of the Office of Research and be situated alongside research development and the technology transfer departments.

Core activities include:

- Promoting open source literacy and best practice.
- Provision of information, advice, and mentoring to students.
- Developing a “marketplace” of open source software projects across the UC system and associated national labs that bring mentors, students, sponsors, and open source stakeholders together.
- Establishing a postdoctoral “incubator fellowship” which will enable fellows to grow communities around their research prototypes.
- Organizing a yearly undergraduate “Open Source Research Experience”, a UC-wide mentor organization that works with Google Summer of Code and other global outreach efforts and engages with industry, government, and foundation sponsorships.
- Creating partnerships with innovative open source teaching initiatives inside and outside the UC system.
- Promoting industry engagement with academic research and open source ecosystems.
- Establishing programs and infrastructure to track open source research activities throughout the UC system, including open source research funding, to estimate the value of open source projects and communities to the university.

²⁴ <https://ospoplusplus.org/resource/ospo-uc-santa-cruz/>

University of Vermont



Two departments have joint responsibility for VERSO²⁵ - UVM's [Howe Library](#) and the [College for Engineering and Mathematical Sciences](#). VERSO's primary aim is to create, promote and enable open work.

Its objectives are to:

- Build an effortless open source ecosystem.
- Grow an open source community on and off campus and document the development of the VERSO community as it emerges.
- Work alongside the UVM [OCEAN](#) research team to investigate research questions related to open source ecosystems.
- Build organizational infrastructure and systems at UVM allowing VERSO to store, share, and facilitate the creation of open source software and research.

²⁵ <https://ospoplusplus.org/resource/university-of-vermont-verso/>



Comprehensive OSPOs

Comprehensive OSPOs

OSPO for Open Scholarship

For universities that wish to create a comprehensive OSPO, it would normally be important to have explicit support from central administration or the leadership of a division that provides the services (e.g., Dean of University Libraries). As mentioned previously, such support would reflect the OSPO's role within a broader strategy or program focused on open scholarship.

Open scholarship (sometimes called “open science” or “open research”) is an expansive term meant to encompass the rapid and widespread sharing of a range of scholarly activities and outputs, across disciplines. Open scholarship promotes inclusivity, transparent and trustworthy research, innovation, and collaboration.

The Higher Education Leadership Initiative for Open Scholarship (HELIOS)²⁶ uses the following definition: “Open scholarship (sometimes called “open science” or “open research”) is an expansive term meant to encompass the rapid and widespread sharing of a range of scholarly activities and outputs, across disciplines. Open scholarship promotes inclusivity, transparent and trustworthy research, innovation, and collaboration.”

On January 11, 2023, the Biden Administration issued a fact sheet²⁷ with the following definition of open science: “The principle and practice of making research products and processes available to all, while respecting diverse cultures, maintaining security and privacy, and fostering collaborations, reproducibility, and equity.”

Other relevant definitions or perspectives include the Berlin Declaration on Open Access²⁸ and the Rochester Institute of Technology's Open Work definition.²⁹ These definitions stress three pillars of universities of research, teaching or learning, and translation.

One of the important realizations of open source software is that it offers new forms of translation, particularly as it relates to community engagement and social impact. One might consider “translation” more broadly to encompass technology transfer, knowledge transfer and

²⁶ <https://www.heliosopen.org>

²⁷ <https://www.whitehouse.gov/ostp/news-updates/2023/01/11/fact-sheet-biden-harris-administration-announces-new-actions-to-advance-open-and-equitable-research/>

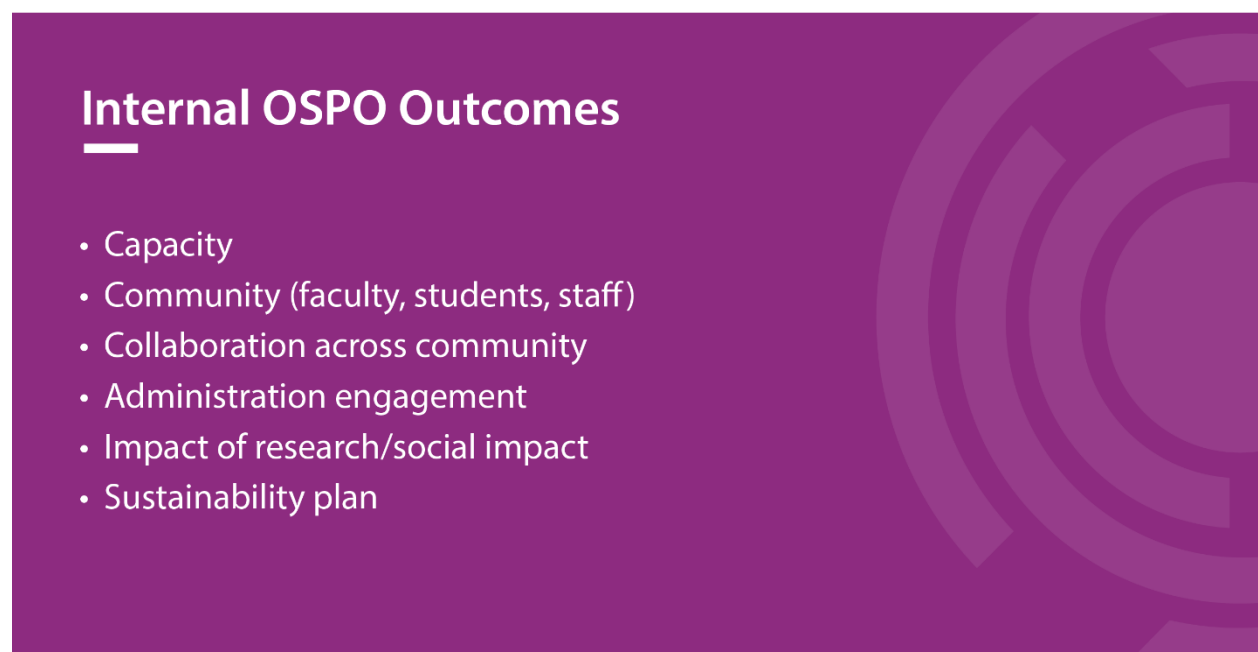
²⁸ <https://openaccess.mpg.de/Berlin-Declaration>

²⁹ <https://fossrit.github.io/open-work-definition/>

innovation. Furthermore, well managed and curated open source software can support the reproducibility goals within these definitions of open scholarship.

Open scholarship is an example of outcomes that the OSPO can support. The rest of this section is organized into outcomes for the OSPO itself, support for the university goals or priorities and network wide or externally facing effects. The section ends with a list of what the OSPO might not wish to do and potential problems or challenges with creating a comprehensive OSPO.

Internal OSPO Outcomes



Internal OSPO Outcomes

- Capacity
- Community (faculty, students, staff)
- Collaboration across community
- Administration engagement
- Impact of research/social impact
- Sustainability plan

An OSPO itself should focus on a set of outcomes for its own capacity building and support that includes the following:

- **Capacity:** Recruitment and talent development for OSPO staff
- **Community:** Community of practitioners for mutual support, which includes faculty, students, and staff
- **Collaboration:** Collaboration across this community of practitioners
- **Administration Engagement:** Engagement with university administration regarding the value of the OSPO
- **Research Impact:** Translation/impact of research and education beyond the walls of the university including social impact through community partnerships
- **Sustainability Plan:** Create a sustainability plan for the OSPO (including both internal and external funding) based on the characteristics of the outcomes mentioned above

OSPO Outcomes for University

University Outcomes

University Services

- Organisation OSS process support
- Catalog / tooling support
- License advice
- Policy support / development
- Advice re OSS procurement
- Support risk management (e.g. Security)
- Support sustainability of research

Research Translation

- Path for external collaborations
- "Attaché" for the university
- External funding activities
- Experimental translation projects
- Partnerships with other orgs (e.g. TTO)

OSS Support for Researchers & Students

- Support for research proposals
- Researcher Collaborations (interdisciplinary)
- Rewards & Incentives for contributors
- OSS reflected in promotion and tenure

Building OSS Skills

- Experiential OSS learning
- Awareness of OSS development lifecycle
- Culture of sharing and openness
- Support related best practices (e.g. InnerSource)

Given the diversity of universities, different cultural or social contexts, regional differences, etc., university-based OSPOs will vary in their strategy, execution, and engagement with university-wide outcomes. The list below is intended to provide a range of broader university outcomes that the OSPO may support or even lead, beginning with those which are arguably more common or foundational:

University Services

- Catalog of open source software used by and built by the university for security, tracking and remediation.
- Accessibility of open source software (and possibly other open scholarship).
- Guidance regarding license choices (without specifying them) and possible implications of those choices to both researchers and administrators
 - Partnership with other units such as Technology Transfer Office
 - Consideration of both FAIR³⁰ and CARE³¹ principles for use, sharing, and discoverability of open data and open source software
- OSS policy support or development.
- Risk management (e.g., security, license choices, memory safe programming languages) including education on security management for open source software dependencies.
- Sustainability support for research, extending its use and application
 - Preservation, archiving, curation and heritage – long term maintenance, use, etc. of software (includes provenance)
- Advice regarding open source software procurement and broader use, with the aim of raising awareness regarding superior functionality, flexibility, and value.

OSS Support for Researchers and Students

- Community building for researchers and students interested in open source.
- Support for research proposals including advice, resources, etc. for data and software management plans.
- Greater collaboration, particularly amongst interdisciplinary researchers.
 - Provision of a conduit and guidance to university participants (researchers, students, whomever) to understand what is required to collaborate openly with others outside of their immediate context, e.g. documentation, useful code comments, creation of commonly available and fully archived discussion channels (e.g., mailing lists).
 - Advocacy for open scholarship and works in non-STEM (science, technology, engineering and medicine) disciplines.

³⁰ https://en.wikipedia.org/wiki/FAIR_data

³¹ https://en.wikipedia.org/wiki/CARE_Principles_for_Indigenous_Data_Governance

- A culture of shared infrastructure and shared best practices for promoting the academic state of the art for all participants and not only “superstar” researchers who may build out their own infrastructures or labs.
- Minimization of systemic duplication of code and projects.
- Recognition and rewards for reuse of existing open source software, rather than only creation of new code.
- Appreciation for the impact of non-traditional contributors and social impact on users of open source software as important considerations for assessment, recognition, and rewards.
- Support for student open source contributors, possibly as a means to attracting and retaining students interested in community oriented development and social impact.
 - Clearing house for student projects and volunteers.
 - Advice on open source software opportunities such as internships or jobs.
- Recognition and rewards for open source software maintenance and education - often voluntary or under-recognized work asked of researchers and students.
 - Advocacy for both internal and external funding to support such contributors.
- Highlighting open source software in the context of promotion and tenure within university.
- Community building with partners beyond the university.

Research Translation

- A path of engagement for external parties who wish to collaborate with the university in a community context – coordinator or connector (“organizational API”) that emphasizes cooperation and partnership (“cultural ambassador”).
- “Attaché” for the university in terms of advising how the broader open source community might react to university actions or choices. This role can touch upon ethical and policy dimensions.
- New forms of translation and impact, particularly as it relates to local community engagement.
- External research funding directly led by or supporting the OSPO.

Building OSS Skills

- Experiential learning through open source software projects, not only for developers but designers, community managers, etc.
- Greater awareness about the full lifecycle of open source development and ongoing maintenance (and encouraging use and reuse) amongst researcher community.
- Point of entry with InnerSource (open source methods and practices within a university) along with best practices for successful implementation.

OSPO Outcomes for Broader Network or Community

OSPO Outcomes for Broader Networks & Communities

- Shared resources & code
- Community building with industry & government
- OSPO to OSPO cooperation
- Translation/impact such as knowledge transfer & innovation
- Coordinated, large scale funding initiatives
- Policy advice
- Connection to broader movements

In addition to supporting their host university outcomes or priorities, OSPOs can generate outcomes in the broader network or externally facing sense such as:

- Playbooks, patterns, shared code, community artifacts and guides – how to get there.
- Community building with industry and government.
- Shared university open source curriculum.
- OSPO to OSPO cooperation (a primary focus of OSPO++).
- Translation/impact in addition to technology transfer such as knowledge transfer and innovation.
- Coordinated, large-scale external funding.
- National or even global level policy advice.
- Connection to broader movements related to promotion and tenure such as Promotion and Tenure – Innovation and Entrepreneurship³² and leadership (e.g., Kathleen Fitzpatrick’s upcoming book “*Leading Generously*”).

³² <https://ptie.org>

What an OSPO might not do

What a University OSPO Might Not Do

- Authorizing open sourcing of software (corp does)
- Specifying license choice
- OSS maintenance - bug fixes
- Define official university OSS policies
- Enforcement or compliance
- Managing code of conduct committees (university-wide issues)
- PR / outreach around OSS



OSPOs for brand & PR purposes usually fail
Don't be a "tech shop" for only STEM disciplines

It is also important to consider what roles or outcomes a university-based OSPO might *not* engage with or support, at least without considerable resources and support from other parts of the university.

Some examples of what an OSPO might not do:

- Authorizing or declining which software may be open sourced, noting that funding requirements may stipulate specific choices
- Specific choices regarding licenses for open source software, though advice may be welcome, particularly in consultation with other units such as Technology Transfer or Research Administration
- Maintenance for open source software, which is a resource intensive commitment
- Enforcement or compliance, noting that advice on how to comply with licenses or policies could be useful
- Managing codes of conduct committees, actions against bad actors, or acting as an ethics board, but the OSPO can point to existing University resources or policies³³
- Official university statements or posture regarding open source software usage (including its intended purpose)
- Brand management or public relations
- OSPOs for brand & PR only will usually fail (Industry learned this).
- Become a "tech shop" that engages with only STEM disciplines or divisions

³³ <https://www.cmu.edu/policies/administrative-and-governance/code-business-ethics-conduct.html>

Potential OSPO Challenges

Potential OSPO Challenges

- Funding: from temporary (grants) to long-term sustainable funding
- Lack of awareness and understanding of OSS and OSPOs
- OSPO may become a “lightning rod” for strong opinions about OSS
- Insufficient agency, capacity or appetite for needed support
- Lack of clear roles

Finally, it is worthwhile to consider possible challenges or problems that a university OSPO might encounter either directly or indirectly:

- **Lack of Awareness:** Lack of awareness or understanding regarding OSPOs – the leader of an OSPO may be an even more unfamiliar role for universities that maintainers or community managers
 - Possible career risk for OSPO leader
- **Lack of Clarity:** Lack of clear role or delineation of roles – OSPO being drawn into conversations that have little, if anything, to do with open source software or, even more broadly, open scholarship
- **Insufficient Capacity:** - Insufficient agency, capacity, or appetite to provide needed support (or clout to get to the right answer) for researchers, contributors, etc.
- **Risk of Controversy:** - OSPO becoming a “lightning rod” for strong, perhaps conflicting opinions about open source, free vs. open source, etc.
- **Long Term Planning:** - Transitioning from temporary or fixed term funding (e.g., grant) to sustained, long-term funding

The background is a solid purple color with a series of concentric, semi-circular bands of varying shades of purple, creating a ripple effect that originates from the right side of the page.

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About OSPO++

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OSPO++ is a network and a community of collaborative open source program offices in universities, governments, and civic institutions. We're building resources to help create OSPOs, actively engaging in discussions on how to best manage and grow open source programs, and how to garden sustainable communities that last. You can find out more at www.ospoplusplus.org.

