DRYAD

Annual report '23

For the fiscal year July 1, 2022 to June 30, 2023

Reflections

From the Chair of the Board of Directors

It is my pleasure to chair Dryad's Board of Directors for the second time. I am grateful for the opportunity this position provides to work alongside Directors and staff who are among the brightest and most passionate advocates for the power of curated open data.

As we enter a phase of scientific research in which artificial intelligence is poised to fulfill some long-awaited promises, the core propositions of Dryad gain increased significance. At the heart of Dryad is curation, and for curation to be valuable, it must extend beyond mere metadata standards and vocabularies. It is critical that our curation process is guided by our organizational values, which include commitment to responsibility, inclusion, openness, and trustworthiness. These values are animated through our relationships with our members and are reinforced when we reflect their interests, needs, expertise, and opinions.

Our goal is to continue enhancing this relationship in ways that influence even the technical details of our efforts. By doing so, we ensure that the scientific contributions resulting from our endeavors align with our values.

I hope this report provides insights into our opportunities and challenges and heightens your enthusiasm to support the ongoing work. This work is how we will positively shape the future.

With gratitude,

Jason Williams
Assistant Director for External Collaborations
Cold Spring Harbor Laboratory DNA Learning Center
Chair, Board of Directors (October 2022-)

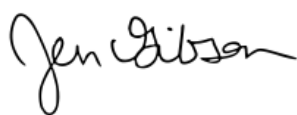June 10, 2024

From the Executive Director

The most significant changes to happen at Dryad between these two summers are the hardest ones to see. We work hard to create visibility around our support for new data-sharing policies and services for journals, but we're altogether too modest about the fabulous and talented team that has assembled around Dryad in this time.

It's a powerful testament, I think, to the reputation Dryad has built over the last 16 years that professionals of such caliber have committed themselves to our community. Our founders and predecessors did an incredible job pioneering our curation process, our connection to the journal workflow, our institutional membership program, our integration of PIDs, and more. On top of all this, Dryad – as we've learned from you – is valued because of the special place we occupy in the community: a place of trust, integrity, non-partisanship, commitment to the interests of research, and ready collaboration.

So, when our experts (in community engagement, non-profit administration, institutional relations, publishing, research data, software development, open research and more) filled out the team this year, it was easy for them to thrust Dryad into center stage, to be seen and appreciated by the expanding audience interested in more fully leveraging research data.

The impact of their work is clear from this year's report, where you'll read about now-weekly updates to the Dryad blog, a quarterly newsletter *and* monthly highlights from published data, regular participation in community fora, even more members joining, expert wrangling of the curation queue, and steady and important improvements to business practices as well as the platform itself.

It's all made possible with your support. Thank you for standing with us.

Jennifer Gibson
Executive Director

June 10, 2024

Governing board

The following Directors were in office at the start of the Board term in October 2022.

Andrew Beckerman, University of Sheffield (UK)

Barbara Ebert, German Federation for Biological Data e.V. (Germany)

Scott Edmunds, GigaScience (CHN)

Brooks Hanson, American Geophysical Union (USA)

Kristi Holmes, Northwestern University (USA)

Devika Madalli, Indian Statistical Institute (IN)

Ian Mulvany, British Medical Journal (UK)

Fiona Murphy, MoreBrains Cooperative (UK)

Johan Nilsson, Oikos Editorial Office (Sweden) (Ex-officio)

Iratxe Puebla, ASAPbio (UK)

Judy Ruttenberg, Association of Research Libraries (USA)

Caroline Sutton, STM (The International Association for Scientific, Technical and Medical Publishers) (NOR)

Jason Williams, Cold Spring Harbor Laboratory (USA) (Chair)

Günter Waibel, California Digital Library (USA)(Ex-officio)

Dryad Board Members past and present are recognised on our website.

Data publications

Dryad published 6,883 datasets between July 2022 and June 2023. While we also publish data submitted directly by researchers, independently of research articles, this year our data was released in connection with publications in 787 different journals.

The 10 journals from which we received the most datasets were:

➔   Ecology and Evolution (John Wiley & Sons, Inc)
➔   Proceedings of the Royal Society B (The Royal Society)
➔   eLife (eLife Sciences Publications Ltd)
➔   PLOS ONE (Public Library of Science)
➔   Royal Society Open Science (The Royal Society)
➔   Global Change Biology (John Wiley & Sons, Inc)
➔   Functional Ecology (British Ecological Society)
➔   Molecular Ecology (John Wiley & Sons, Inc)
➔   Evolution (Society for the Study of Evolution)
➔   Journal of Applied Ecology (British Ecological Society)

The 10 institutions from which we received the most data were:

➔ University of California, Davis
➔ University of California, Berkeley
➔ University of California, Santa Barbara
➔ Chinese Academy of Sciences
➔ Yale University
➔ Colorado State University
➔ Stanford University
➔ North Carolina State University
➔ Michigan State University
➔ University of Wisconsin-Madison

Show me the data!

Dryad publishes thousands of datasets from across research disciplines every year. Here are just a few. To get the latest open data delivered to your inbox, sign up to the Dryad Open Data Digest.

Large-scale neural recordings with single neuron resolution using Neuropixels probes in human cortex
Data from a study reporting on a new device and techniques to simultaneously record over 200 neurons in the human brain during neurosurgical procedures.

Risky decision and happiness task: The Great Brain Experiment smartphone app
Is there a "happiness equation?" Data from this study correlates neural signals with changes in happiness. The study was covered widely in the media.

Global data on crop nutrient concentration and harvest indices
This aggregated dataset was prepared for a meta-analysis of nutrient concentration in crops around the world.

Recorded plant sounds from: Sounds emitted by plants under stress are airborne and informative
This data underlies a study that received news coverage under headlines such as, "No, you can't hear your plants scream."

Monocentric retrospective cohort of 30,423 COVID-19 patients
Data from a widely criticized and discredited study on hydroxychloroquine use for COVID treatment.

Juxtaposition of climate change contrarians and scientists in the media using Media Cloud data
Update to a dataset published on Dryad in 2019. The related article reported that climate-change deniers receive outsize media coverage.

[PLOS ONE publication and citation data](#)
Updated data from a bibliometric study of PLOS ONE revealing decision bias in selecting which manuscripts to publish.

[Release of cognitive and multimodal MRI data including real-world tasks and hippocampal subfield segmentations](#)

Multimodal MRI dataset of hundreds of hippocampi collected to examine the [neural basis of individual differences](#).

[Data for: A high-performance speech neuroprosthesis](#)
Dataset of neural activity recorded by [mind-reading computers](#) designed to turn brain activity into speech.

[Curcuma kakchingense (Zingiberaceae), a new species from northeast India](#)
Data describing a newly discovered species related to turmeric and ginger.

Highlights from the year

Meeting the need for open, community-supported infrastructure

Dryad selected for SCOSS funding

The Global Sustainability Coalition for Open Science Services (SCOSS) selected Dryad for its fourth funding cycle, citing Dryad's ease of use, not-for-profit status and community governance, standards-compliance, and support for multidisciplinary data. SCOSS brings together a global network of institutions united around the common goal of investing in open infrastructure to support the future of open science. The SCOSS community identified "FAIR Open Access repository services" and "open research data infrastructure and services" as two of the three top funding priorities for the 2022 cycle. Dryad's advanced data curation and publishing services are well-aligned with these priorities. In 2023, we were also able to [announce](#) pledges from SCOSS-participating institutions.

[Learn more](#)

Aligning fee structures

We spent a lot of this period studying Dryad costs and beginning to better align our fees with what's needed to support a healthy operation. Our society and publisher members were wonderfully supportive and flexible as we developed and rolled out a new [membership + data publishing fees model](#) that would help with the double challenge of covering cost and supporting growth.

We're also very grateful to our members and collaborators among academic and research institutions, who have given us feedback on our institutional member model and a pilot for volume-based fees. This essential input is informing our work in FY24.

And, finally, we did also increase our fee for individual authors submitting to Dryad without the financial support of their home institution or journal. We at the same time extended our waiver policy to acknowledge that authors may have limited funds for a number of important reasons.

Essential administration

The success and vitality of organizations like Dryad is also dependent on strong back-end processes for finance, accounting, human resources, and administration – not to mention navigating tax and legal obligations. Dryad relies heavily on partners at Cxore for extensive and responsive support. With Cxore, and with leadership and expert guidance from our Head of Business Operations Mark Kurtz, we were able to carry out a complete revision to Dryad's chart of financial accounts in FY23. The importance of this work is difficult to overstate; clear account codes are essential for documenting and tracking every form of revenue and expense, for clear and accurate reporting, and for enabling the type of transparency and accountability the community and Dryad aspire to.

Cheering for data-sharing policies

This was an incredibly busy period in the policy sphere, and it's only thanks to the talent and expertise of our formally named Head of Community Engagement, Sarah Lippincott, that we were able to express as much as we did about Dryad's strong alignment with emerging data-sharing policies. In FY23, we wrote about: our support for the Canadian Tri-agency policy, which took effect in March 2023; our role with the U.S. NIH's new Policy for Data Management and Sharing; new data sharing mandates and the role of academic libraries; our alignment with the National Science and Technology Council's Desirable Characteristics of Data Repositories for Federally Funded Research; and, of course, we write our welcome of the OSTP memorandum on ensuring free, immediate, and equitable access to federally funded research.

We also showcased one of many talks from our partner Ted Habermann of Metadata Gamechangers, on the importance of continually improving metadata to support discovery and reuse as standards emerge and evolve, entitled: Responding to the Nelson Memo: repository re-curation for open science. Ted makes a compelling case.

Working with the community

Our community engagement effort really took off this year, as you can tell from the fantastic volume of posts to our blog. We participated in a wide variety of community fora, to talk

about a wide variety of topics, including [connecting global communities through open data publishing](#), how we're making [data in Dryad more data science-friendly](#), and how researchers, librarians, data curators, and publishers [collaborate across the open data lifecycle](#).

Explore this year's webinars, open houses, feature updates and more in the recordings at https://blog.datadryad.org/category/webinar-recording/.

You can also get a sense of the types of events happening around the community at https://blog.datadryad.org/category/meetings/

What's not reflected here are the many trainings our team is increasingly asked to offer to educate researchers on best practices for data sharing and complement the educational initiatives being offered by academic institutions and publishers. In addition to the frequently requested session introducing the Dryad platform and open data sharing principles, we hope to offer more tailored sessions that build upon our expertise, on Finding and evaluating data for reuse, Making your data more usable with README Files, Data sharing in the humanities, Simplifying data sharing with Dryad and your electronic lab notebook, Openly sharing clinical trial data, Using the Dryad API for data science and much more.

Support for researchers

Making Dryad more data science friendly

The Dryad team was able to increase the rate of improvements to the platform with support from the CDL partnership, especially after relaunching the site in 2019. From 2020, in outdoor meetings during lockdowns, we explored how to make Dryad even more researcher friendly, and to enhance data quality and data reuse. Having focused heavily on the submission experience (with publisher integrations, partnering with Zenodo for software and supplementary information deposit, and tabular data checks with Frictionless data), it was time to focus on researcher reuse of Dryad datasets.

See how we plan to do that, in [this post](#) from Daniella Lowenberg and Karthik Ram.

Good data practices: Removing barriers to data reuse with CC0 licensing

Authors who submit data to Dryad are asked to consent to the publication of their data under the The Creative Commons Public Domain Dedication, more commonly known as CC0. In doing so, authors are being asked to confirm that any materials that have been previously published by another author or working group were published under conditions compatible with CC0 and that they agree to novelly publish any previously unpublished materials under this waiver.

Given the continually evolving research landscape, our curation team frequently receives questions about what CC0 means in relation to their data. In this May 2023 update from Dryad Curator Bryan Gee, we review the advantages of CC0 as well as some common concerns and misconceptions that we encounter to guide researchers in data sharing and to explain why we only publish data under CC0.

Learn [more](#).

Support for publishers and journals
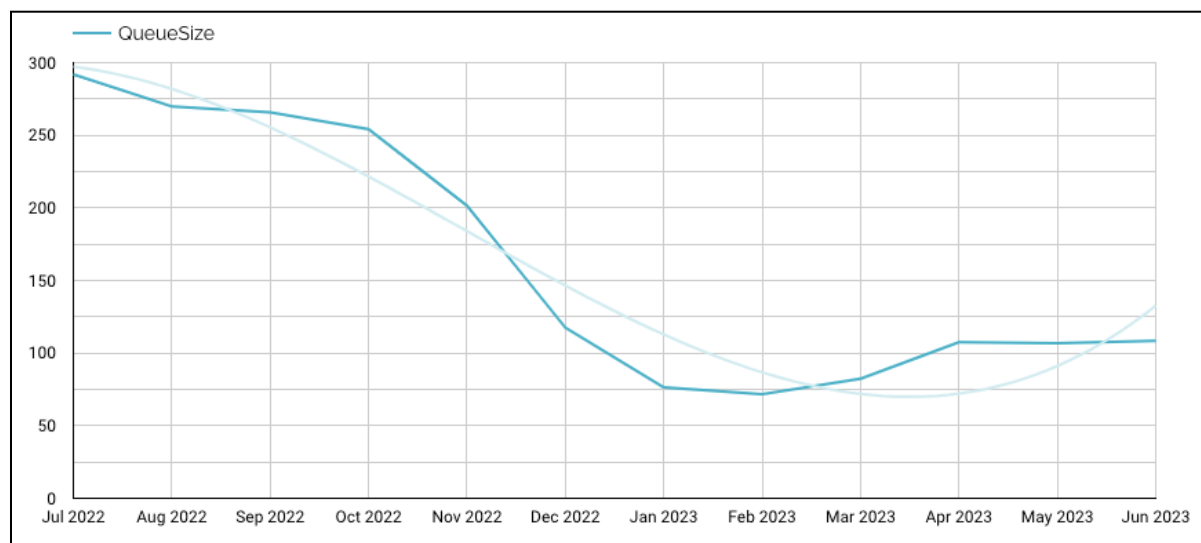
Benefits of our Private for Peer Review mode

In February 2023, we touted this established feature for Dryad-connected journals.

Many journals rely on Dryad to publish data connected to research articles. We make it simple for editors to ensure underlying data is accessible through submission and peer review with Private for Peer Review. With this functionality, at the point of submission, authors can choose to keep the data package private, hidden from public view, until a final decision on the related manuscript is rendered by the journal office.

[Take a look at four benefits of using this feature](#).

Curation management

Our skilled curators are expert wranglers and were able to bring the queue to a manageable level mid-way through this period. As a result, authors and journal managers are experiencing faster response times and shorter times from submission to publication, though we are yet to report on that. The chart displays the volume of datasets awaiting curation in a day.

New to Dryad

Our dynamic, multi-stakeholder community continues to grow. In addition to supporting data publication in connection with the 787 journals referred to above, and helping 25 publishing organizations to cover costs for their authors, we were so pleased to welcome these institutions and publishing organizations as members with Dryad.

- Colorado State University (USA)
- Ecological Society of America (USA)
- Macalester College (USA)
- Massachusetts institute of Technology (MIT) (USA)
- Rockefeller University Press (USA)
- State University of New York (SUNY) (USA)
- Stony Brook University (USA)
- University at Buffalo (USA)
- University of Nevada, Reno (USA)
- University of Pennsylvania (USA)
- University of Washington (USA)

Finance update

Summary position

Revenue, expense and net assets years ended June 30, 2022 and 2023 [1]

		FY 2022	FY 2023
Revenue			
	Contributions and grants	390,347	648,806 [2]
	Program service revenue	732,393	805,044 [3]
	Investment income	35	274
	Other revenue	0	0
	Total income	1,122,775	1,454,124
Expense			
	Grants and similar amounts paid	0	0
	Benefits paid to or for members	0	0
	Salaries, other compensation, benefits	487,333	529,274
	Professional fundraising fees	0	0
	Other expenses	435,929	967,362
	Total expense	923,262	1,496,636
	Revenue less exenses	199,513	(42,512)
Net Assets or Fund Balances			
	Total assets	1,117,044	1,110,469
	Total liabilities	305,549	326,087
	Net assets or fund balances	811,495	784,382

[1] Dryad's accounting is accrual based, thus income values reflect accrued income. Data is from Dryad's accounting system.

[2] Includes membership dues and grants.

[3] Includes revenue earned by providing curation, publication and preservation services.

Analysis of revenue

Dryad categorizes multiple streams of revenue into two classes in our chart of financial accounts:

1. Contributions and grants – which, as above, includes membership dues, grants, and other types of contribution. Grants may be for operational or project support. Contributions may include donations or in-kind and encompasses investments from SCOSS. In FY 23, we were also supported by a partnership with California Digital Library (CDL), whose in-kind investment in product management, platform development, the preservation repository behind Dryad (Merritt), and grants management has been made in the context of an ongoing and formal collaboration that was initiated in 2018. ([Learn more](#))

2. Program service revenue – includes data publication fees from members covering the cost of data-sharing for their affiliated researchers, or individual researchers, and funding for projects with a specific scope or set of deliverables.

In the 2023 fiscal year:

- Membership revenue increased due to staffing of recruitment positions.
- Individual DPC revenue decreased, following a historical trend.
- Grant revenue increased largely in connection with the U.S. National Science Foundation (NSF) Sustaining Award and an anonymous grant in the amount of $50,000.
- Program service revenue increased due to reclassifying the U.S. National Institutes of Health Generalist Repository Ecosystem Initiative (GREI) as program service revenue rather than as grant revenue (on the advice of our CPA).
- Contributions and in-kind increased due to contributions from SCOSS institutions.

Analysis of expenditure

Other expenses include contractor services, management and general expenses, platform fees, marketing and travel, fundraising costs, program service and other administrative expenses.

- Personnel expense increases are due to the addition of staff positions.
- Platform expenses increased due to the regular increase in the size of Dryad's archive.
- The increase in administrative expenses reflect reclassification of expenses associated with the new Chart of Accounts.
- Program service expense reflects DataCite participation in the NIH GREI initiative as a Dryad sub-awardee.

Grants, contributions and program service revenue

National Science Foundation Sustaining Award #1933812, to the California Digital Library ($870,922), "Enabling the Access, Publishing, and Preservation of Curated Research Data at Dryad", 2019-2023 (after no-cost extension)

- Dryad has received a subaward from the California Digital Library to sustain our curation program and ongoing operations.
- We reported $208,866 in revenue for the 2023 fiscal year.

NIH Generalist Repository Ecosystem Initiative (GREI) Other Transaction #1 OT2 DB000005-01, "to support a seamless repository ecosystem to ensure that data and other digital objects resulting from NIH research can be stored and shared with the research community", November 2021 - February 2024, with the potential to renew for two additional years. DataCite is a sub-awardee for Dryad.

- We reported $372,606 in revenue for the 2023 fiscal year.

Templeton World Foundation, FAIR Workflows project, grant to DataCite (304.963 €) – aimed at building and implementing an exemplar FAIR and Open research workflow based on the reality of an entire research lifecycle. Partners: California Digital Library, Crossref, DataCite, Stanford University, Australian Research Data Commons, Dryad, Max-PlanckInstitut für empirische Ästhetik, ChronosHub, Center for Open Science. October 1, 2021 - September 30, 2024. (Source: DataCite 2021 Annual Report).

- We reported $19,441 in revenue for the 2023 fiscal year.

The Global Sustainability Coalition for Open Science Services (SCOSS) selected Dryad for its fourth funding cycle in 2022. "Through SCOSS, institutions can commit funding to Dryad that will allow us to grow our outreach and promotion efforts and bring new members into our community; increase community engagement with current members and users; and stay at the forefront of best practice for data-sharing and building best practice for data reuse." Dryad's funding target for SCOSS is €889,061 – January 1, 2023 to December 31, 2025.

- We reported $51,422 in revenue from SCOSS contributions in the 2023 fiscal year.

Dryad is a U.S.-registered tax-exempt, non-organization 501(c)3) and our annual Form 990 is posted publicly by the Internal Revenue Service. A copy is also available here.