



Funder Perspectives on Open Infrastructure

Executive Summary

In March, 2019, the Open Research Funders Group (ORFG) issued an open call for participation in a survey to better understand funder perspectives with respect to supporting open infrastructure. Sixteen funders completed the questionnaire, evenly split between ORFG members and other funding organizations. The vast majority of respondents (four in five) have some form of open access position, nearly evenly split between policies and recommendations. Beyond open access, however, there is very little consensus on other open activities. Data sharing is the only other activity supported by more than half of the respondents (four data sharing policies and six data sharing recommendations). Publication of null results, protocol sharing, and code sharing are each in play at roughly a third of responding foundations.

Several indicators demonstrate support for open initiatives. Approximately two-thirds of respondents have funded open science or open access programs, with the majority of these spending more than \$250,000 to do so. Within the cohort of respondents that have not funded these types of initiatives, 60% have discussed doing so. Specific to ORFG members, the median interest in receiving details of infrastructure funding opportunities is 3.5 on a zero-to-five scale. Members are evenly split as to whether open science infrastructure should be an average priority or one of the highest priorities for ORFG, but none indicated it should be a low priority. Among all survey participants, the median interest for providing financial and/or human resources in support of open science infrastructure projects/research is a three on a zero-to-five scale. This appetite is tempered, however, by a number of reservations. Primary among them are a desire to avoid competing or redundant open initiatives (10 respondents, and further underscored by two-thirds of respondents preferring to support existing rather than new projects), concern that materials made open by such projects are not widely used (eight), possible resistance from funded researchers (eight), ensuring that funding support is finite (seven), and uncertainty as to how internal organizational support can be marshalled (seven).

Survey respondents expressed a modest-to-positive level of interest (median three on a zero-to-five scale) in supporting research/market intelligence to better understand the current landscape and opportunities with respect to open science and open infrastructure. Stronger consensus (median four) could be found for a specific bit of research - collecting and analyzing information about how open data is being used by others.

Focusing specifically on the ORFG, members expressed the most interest in coordinating co-funding opportunities among members with common interests (five respondents very interested and three somewhat interested). All of the proposed possible areas of focus for the ORFG met with some support, which underscores the finding that half of responding ORFG members see our biggest open infrastructure challenge as agreeing on priorities. Half of ORFG survey participants indicated that our organization should play a leadership role in the open science infrastructure space, while 37.5% felt we should play an advisory role.

Suggested Actions

The survey results are most clear in defining how the ORFG should approach open infrastructure issues, and less clear as to what specific opportunities should be our focus. As an organization, there is some enthusiasm for concentrating on projects that (1) are not redundant in the landscape, (2) have some track record, (3) require a finite (as opposed to ongoing) commitment; and (4) are straightforward to pitch to internal funder stakeholders and grantees. The means by which the ORFG financially supports such projects remains unsettled. Members appear amenable to a range of options, including pulling from dues, creating a dedicated pot of ORFG money, or opting into opportunities as individual funders.

From the open-ended comments, it is clear that funders are committed less to a specific aspect of open science (e.g., protocols, null results) and more to any and all aspects of open science that help them further their organizational missions. This means that the ORFG should consider any open infrastructure project from which we can draw a bright, straight line to our members' *raison d'être*. This type of connection might be most easily forged within open data. Given the relative awareness of, and interest in, this topic among funders, one area of focus could be projects that demonstrate the efficacy of data sharing. Open infrastructure centered on open data could increase the understanding and adoption of data sharing policies.

The ORFG infrastructure working group can further explore the above considerations and present a proposed set of concrete next steps by the end of q2, 2018.

Detailed Survey Responses

Respondents

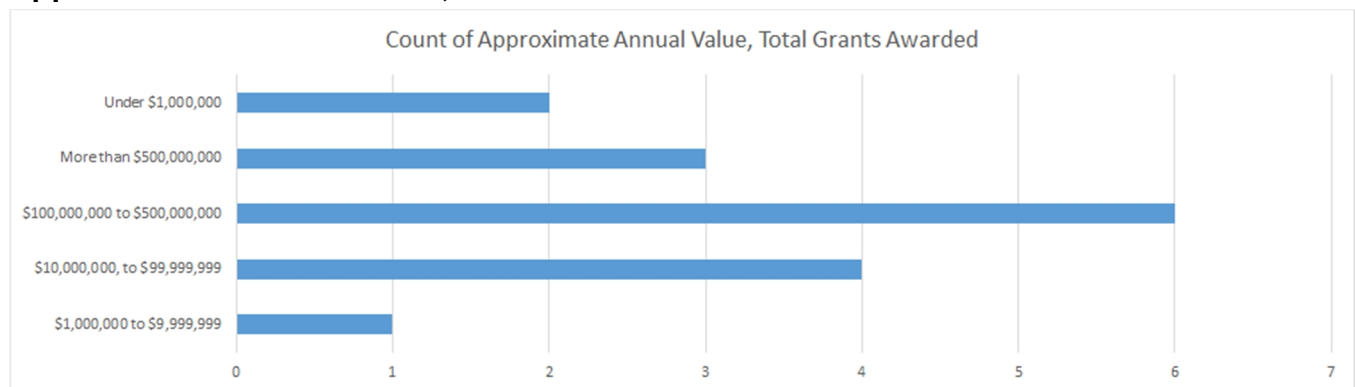
Eight ORFG members:

Arcadia Fund
Bill & Melinda Gates Foundation
Helmsley Charitable Trust
James S. McDonnell Foundation
Laura and John Arnold Foundation
Robert Wood Johnson Foundation
Sloan Foundation
Wellcome Trust

Eight non-members:

Alex's Lemonade Stand Foundation
Andrew W. Mellon Foundation
Austrian Science Fund
Community Foundation for the Twin Tiers
Kenneth Rainin Foundation
Siegel Family Endowment
Tuberous Sclerosis Alliance
William and Flora Hewlett Foundation

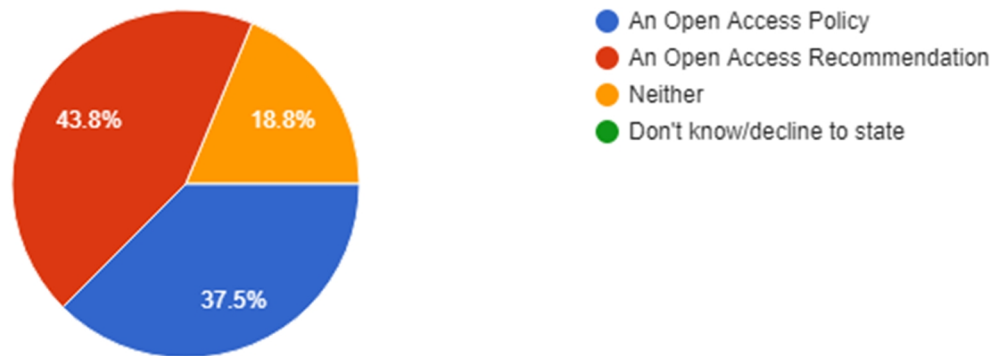
Approximate Annual Value, Total Grants Awarded



Current Policies

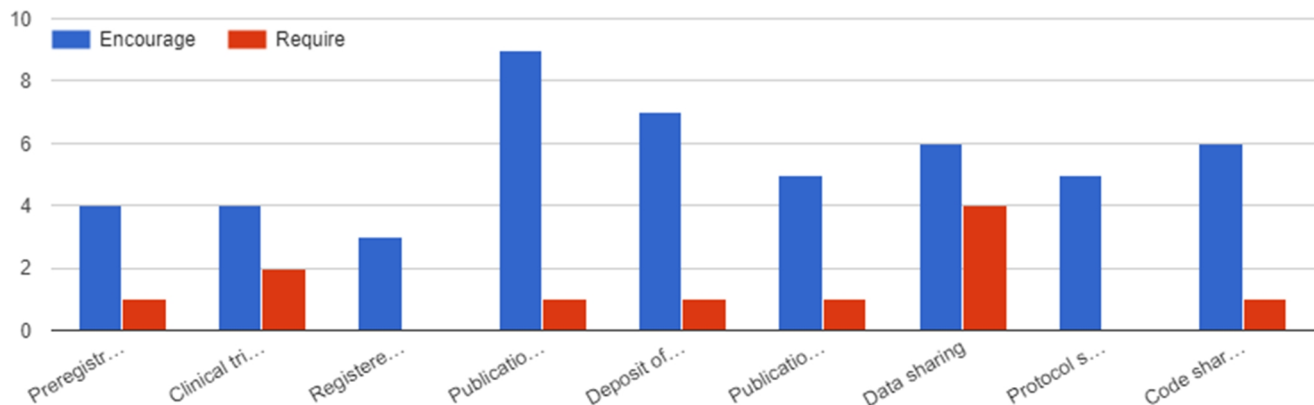
Does any program within your organization have:

16 responses



Other Open Science Activities

Does any program within your organization require or encourage any of the following open science activities: (check all that apply)

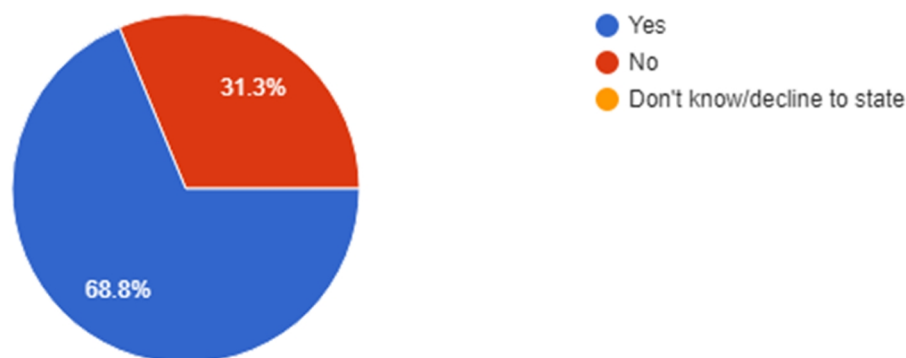


- Preregistration of research plans
- Clinical trial registration
- Registered reports for non-clinical trials
- Publication in open access journals
- Deposit of publications in open access repositories
- Publication of null results
- Data sharing
- Protocol sharing
- Code sharing

Funding of Open Initiatives

Does your organization currently fund, or has it previously funded, (directly or indirectly) any open science or open access initiatives?

16 responses



Specific Activities Supported

- Funding to the COS to study the impact of Registered Reports
- several, see: <http://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-publication-models/>
- We supported six projects focused on different aspects of OA. Each is funded between \$200,000 and \$600,000 and between 18 and 24 months. More about each of the projects can be found here: https://www.rwjf.org/en/culture-of-health/2016/09/help_us_make_research.html
- We have paid for articles that are especially important to the patient community to be published OA.
- Mozilla Science Lab - grant funding, meeting space, publishing
- PubPub (OA journal) @ MIT Press - grant funding
- P2PU - grant funding, thought-partnership
- Plan to add others to our portfolio this year (pending board approval)
- The portfolio of the Digital Info Tech program, plus targeted disciplinary initiatives
- Grants to Creative Commons, Internet Archive, Public.Resource.org, Digital Public Library of America and various university libraries.
- We are supporting some research on registered reports at COS
- OA: We provide funding to cover OA costs - spending around £6m a year on this activity. We also fund Europe PMC - a repository for our OA content - in partnership with 27 other research funders. We have also funded the development of eLife (around £15m over the period 2012-2021) and now support the Wellcome Open Research publishing platform.

Open science: we have a "Biomedical Research Resources" funding scheme <https://wellcome.ac.uk/funding/biomedical-resource-and-technology-development-grants> and though this is not just for the use of Open science, this has been used to fund initiatives like Ensembl.

Open Research. Wellcome has established a dedicated team to progress the open research

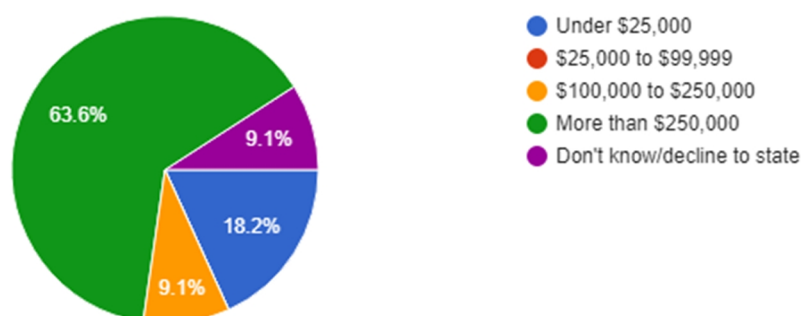
agenda. Within this programme of work we have launched a new scheme for our grant holders to enrich their research (in an open research way - see: <https://wellcome.ac.uk/funding/research-enrichment-open-research>) and within the next few months - with RWJ - we will launch the "open Research Fund" -- another funding scheme to encourage and promote open science

- We have supported the creation of tools/infrastructure to facilitate open research practices as well as projects to change incentives to support these practices. In addition to directly funding such initiatives, we also ask our grantees to follow open research practices.

Funding of Open Initiatives, \$\$ Value

What is the estimated amount of funding your organization has allocated to these open science or open access initiatives?

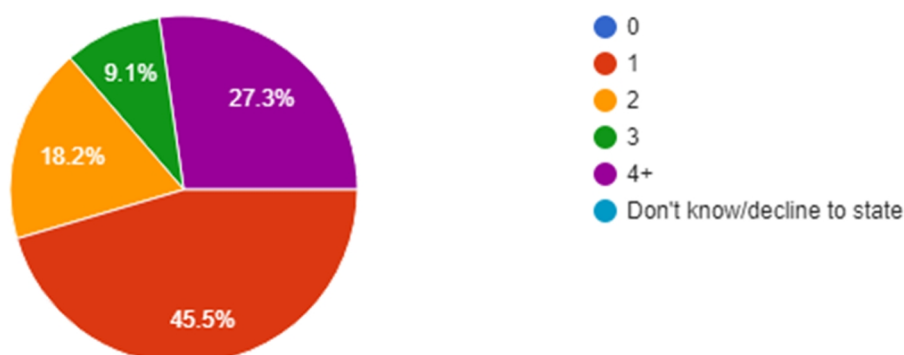
11 responses



Staff Working on Open Initiatives (not f/t)

How many staff (part-time or full-time; does not need to be primary role) work on the open science or open access initiatives your organization supports?

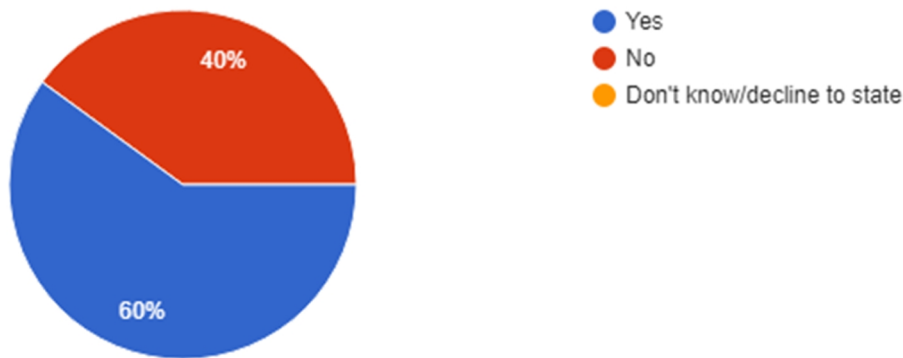
11 responses



Discussion of Support for Open Activities (non-funding cohort)

Has your organization ever discussed funding open science or open access activities?

5 responses



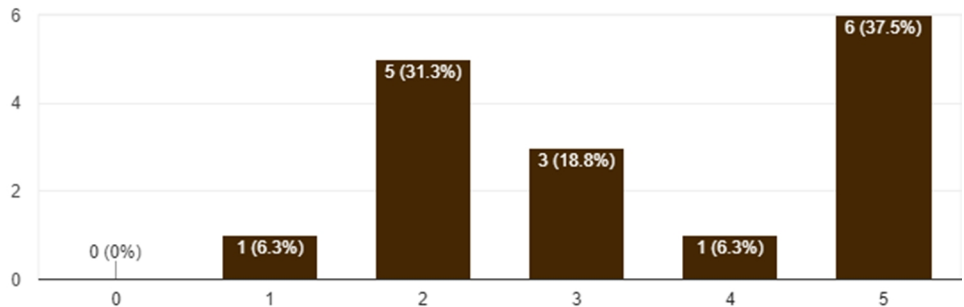
Reasons for Not Pursuing (non-funding cohort)

- Not appropriate to require open access
- We are currently considering how and when to develop an open science policy. It's something we intend to do, but have not yet determined the specifics.
- We have not discussed directly funding open initiatives; however, we have discussed how to make the science that we fund more open.
- Difficulty obtaining a grant budget and a grant strategy

Going-Forward Interest in Open Infrastructure

Going forward, how interested is your organization in supporting (defined as providing financial and/or human resources, as well as promoting within the funder community) open science infrastructure (defined above) projects or research?

16 responses

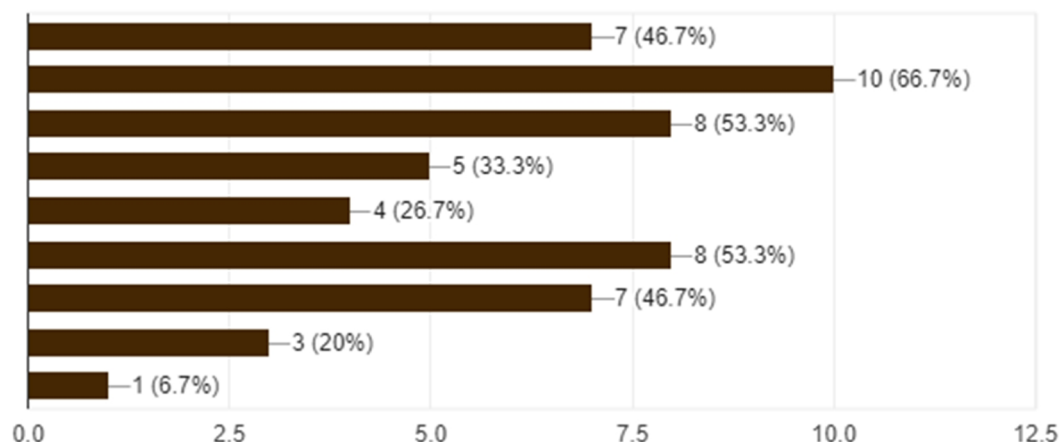


Median = 3

Open Infrastructure Concerns

What concerns does your organization have about open science infrastructure projects? (check all that apply)

15 responses



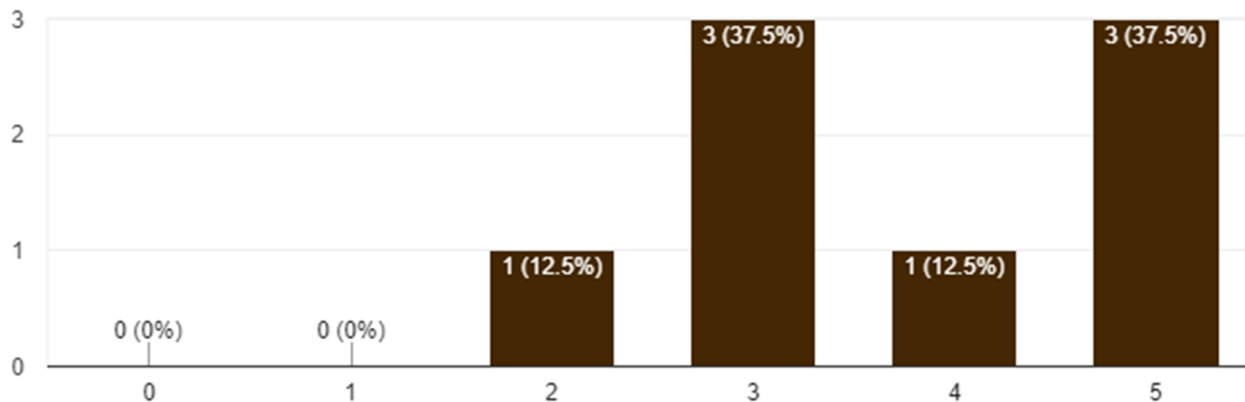
- A. Ensuring that our funding support is finite and not open-ended
- B. Avoiding competing or redundant open initiatives
- C. Concern that materials made open by such projects are not widely used
- D. Inability to prioritize funds for these types of projects over direct research grants
- E. Confusion over what represents best use of funds/return on investment in this space
- F. Resistance from funded researchers that sharing data or materials may result in negative consequences (e.g., being scooped on scientific findings)
- G. Marshaling organizational support, both financially and structurally, for these projects
- H. Perceptions of the organization to prospective/current grantees (e.g., policies could deter grant proposal submissions)
- I. Still building our knowledge of the field and how we can best serve it as a new funder

NOTE: A= top bar, I = bottom bar

Interest in ORFG-Forwarded Funding Opportunities

When open science infrastructure funding opportunities are forwarded by email to the ORFG, how interested is your organization in these types of opportunities?

8 responses



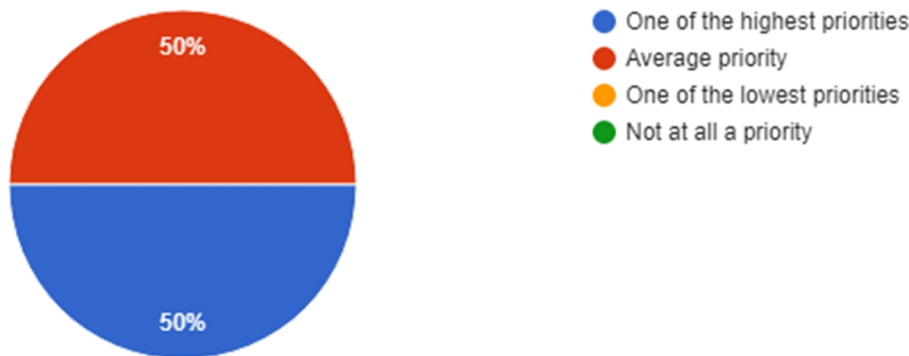
Median = 3.5

- Often the forwarded opportunities are not a good fit for the organization or its programmatic funding priorities.
- I would say those of us working on open issues at RWJF are interested; at an organizational level, there is less enthusiasm. We are in the middle of a strategic shift and focused on issues more so than tactics, so less thought has been given institutionally to open access.
- Very useful to have opportunities flagged (and to be able to flag opportunities to others). I'd actually love to see this become a more structured feature/email...
- Interested, but the infrastructure or tools have to be cross-disciplinary including some or all of AHSS disciplines, not just strictly science-only infrastructure.
- The challenge is that these opportunities aren't always a great fit for our programmatic goals. There's also, at times, a mismatch between the project and available funding.
- I'm open to considering infrastructure projects, but it isn't clear how big of a priority it will be for us to support going forward (beyond the projects we already support).

Open Infrastructure as ORFG Priority

How much of a priority do you believe open science infrastructure projects should be to the ORFG?

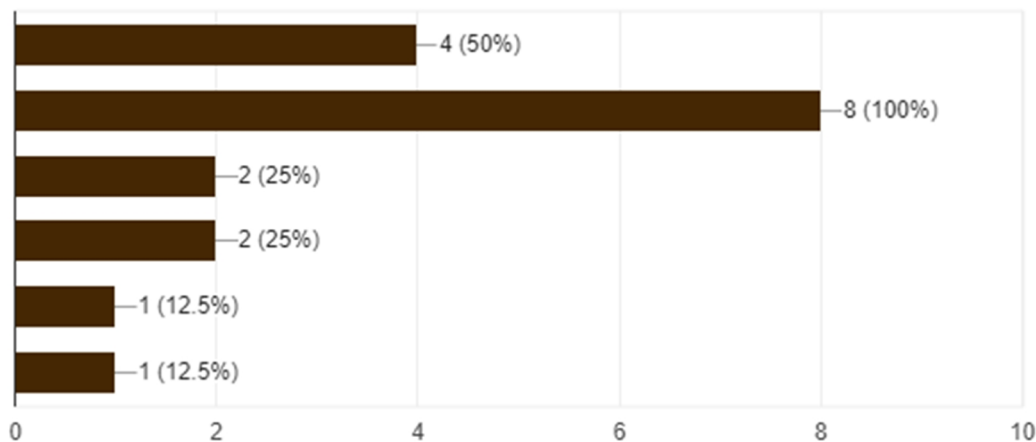
8 responses



ORFG Open Infrastructure Challenges

What do you see as the challenges the ORFG faces as it engages in the open science infrastructure space? (check all that apply)

8 responses

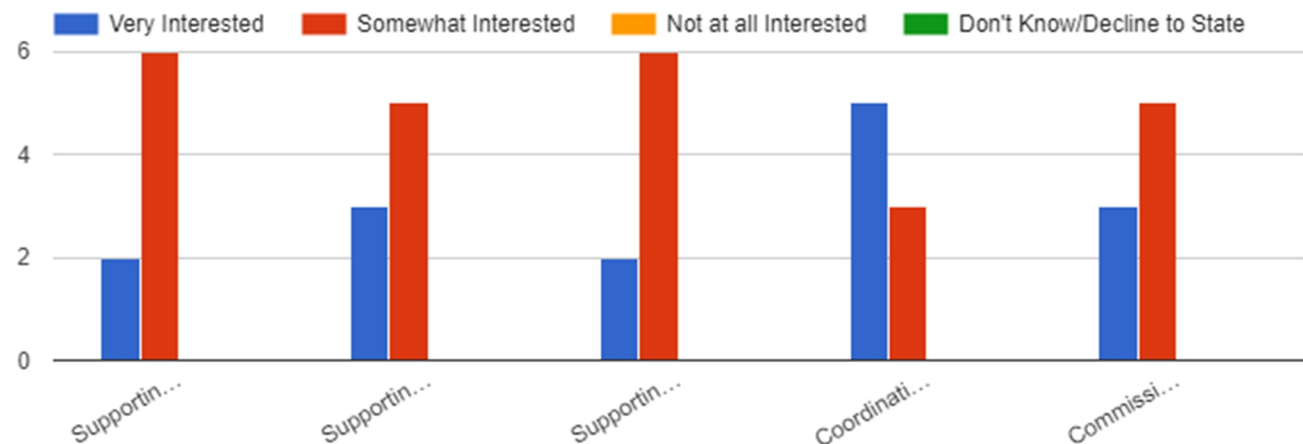


- A. Limited funding resources
- B. Agreeing on priorities
- C. Time constraints
- D. Identifying clear areas of need
- E. Reconciling perceived needs of different disciplinary/community silos

NOTE: A= top bar, E = bottom bar

Ongoing Interests

How interested is your organization in the following:

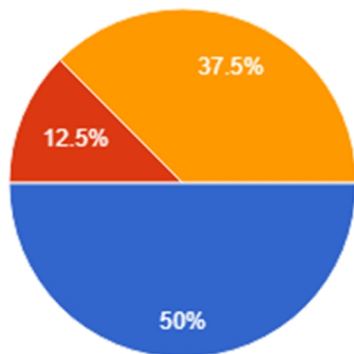


1. Supporting open science infrastructure projects as part of the ORFG
2. Supporting a small scale project using funds drawn from ORFG dues
3. Supporting a group funding initiative (like an RFP)
4. Coordinating co-funding among specific ORFG members that share interests
5. Commissioning research projects that help answer open questions related to open science infrastructure

ORFG as Difference Maker

Where do you believe the ORFG can make the most difference in the open science infrastructure space?

8 responses

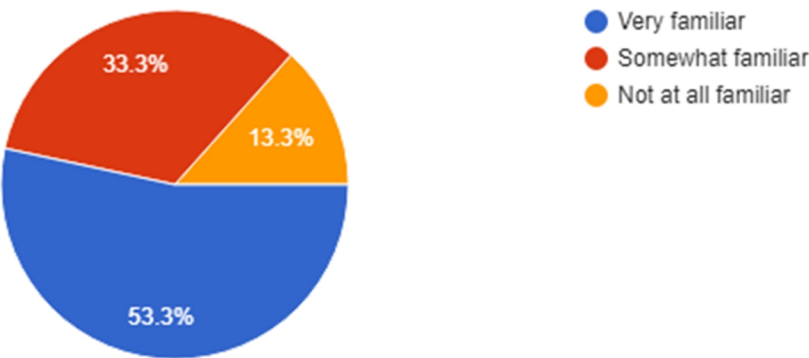


- Initiating / leadership role – there are clear needs or pain points in the open science infrastructure space that are not (or cannot be) addressed by cu...
- Supportive role – there are existing open science infrastructure systems in place that can be expanded and improved upon.
- Advisory role – there are recommendations that can be provided to other funders; for exam...

Familiarity with Open Infrastructure Systems

How familiar are you with open infrastructure systems like the Open Science Framework?

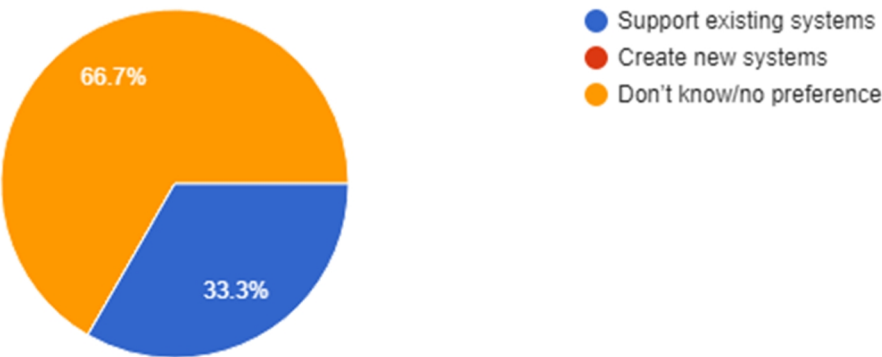
15 responses



Existing vs. New Systems

Would your organization prefer to support existing open science infrastructure systems or consider supporting systems that do not yet exist?

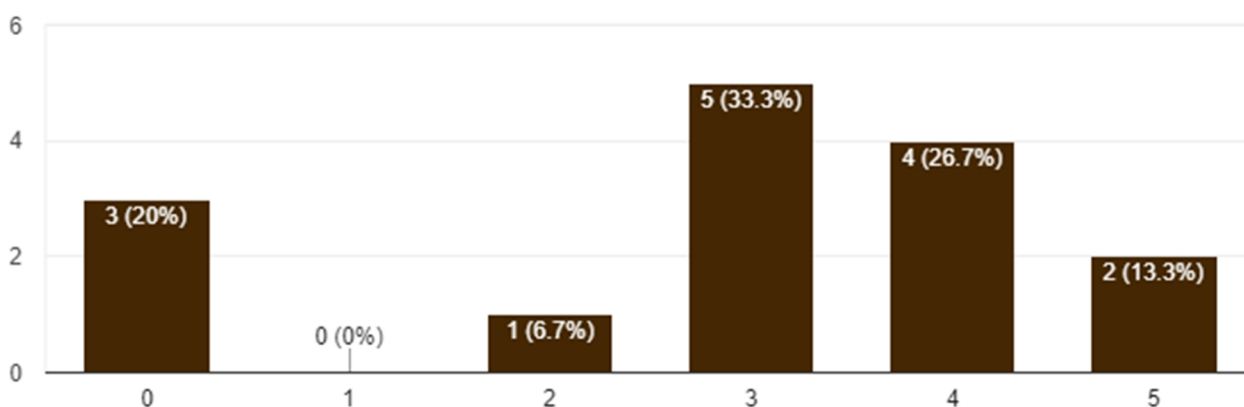
15 responses



Market Intelligence Activities

How interested is your organization in supporting research/market intelligence to better understand the current landscape and opportunities with respect to open science and open infrastructure? Support is defined as providing financial and/or human resources, as well as promoting within the funder community.

15 responses

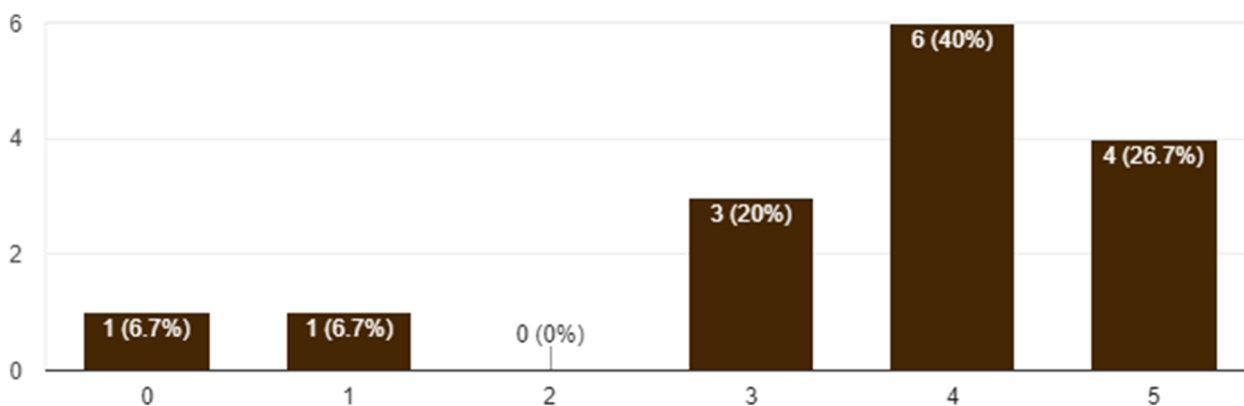


Median = 3

Use of Open Data

How strongly do you agree with the following statement: "While research data may be open and available through open infrastructure systems/platforms, we need to collect and analyze information about how open data is being used by others."

15 responses



Median = 4

ORFG's Role in Increasing Use of Open Data

- Someone mentioned recently that the open access advocacy movement had ended. I'm not sure this is true, but it raises questions about the advocacy needed around open data and the limits therein. Use cases will help to increase utilization, standards will help to increase effectiveness. Perhaps there is a role for ORFG is shepherding and issuing standards for open data practice(s).
- Produce materials on how to convince board, executives, donors, and other stakeholders that this is something worth investing in.

- Depend on the type of data, but two things that immediately came to mind were:
 - (1) Define archetypes of "customers/clients" (users) of the open data and understand their motives, barriers to entry, and skill level
 - (2) Ensure open data platforms are human-centered, "low floor" (easy to learn), user-friendly, and tailored to "client" use cases
- We would be happy to discuss using some of our programs as test cases to evaluate the extent to which open science improves the underlying scientific process. However, we are not really set up to support research/market intelligence as it does not fall within our central mission (childhood cancer research). This is in response to the question above where I had to mark "Not at all interested" despite our pro-open interests.
- Promote case studies of how open data has helped to tackle some of the grand challenges

Other Areas

- We're still working to educate our board about nuances within the open space, so many of our decisions and opinions have yet to be formed. But we're very eager to listen, reflect, and discuss.
- Our fundamental question, at the end of the day, is how can we best spend each dollar to help kids with cancer. If we knew that there was some multiplier effect where promoting open infrastructure would enhance our other grants then it might be something we could pursue internally. Without that evidence, it is hard for me to make the case. We are looking at how to promote openness within the community without direct grants though.