ORCID FOR **FUNDING ORGANIZATIONS**

OUTPUT REPORTING

ORCiD | ORBIT FUNDER REPORTING
SURVEY REPORT

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# 1.0 DOCUMENT BACKGROUND AND PURPOSE

This document summarizes responses to an ORBIT Working Group survey of the grant reporting data needs of 13 participating research funding bodies. The report incorporates comments from the group and has been endorsed for publication as an output of the group.

# 2.0 EXECUTIVE SUMMARY

The first phase of the ORCID Reducing Burden and Improving Transparency (ORBIT) project focused on workflows associated with applying for, reviewing, and awarding grants. Our analysis of these workflows indicated that there is a significant opportunity to streamline the process of adding factual information about past investigator activities and outputs to grant applications and to reviewer profiles. We have focused the first group of ORBIT pathfinder integrations on the re-use of data associated with ORCID iDs to reduce repetitive, manual data entry for researchers during the grant application process.

In planning the second phase of ORBIT, the project team gathered information about the systems, workflows, and processes currently used by funders for research reporting and evaluation. We sought to identify inefficiencies in data-gathering to help prioritize a second set of pathfinder projects to test, refine, and assess solutions.

Our information-gathering took the form of an initial survey of members of the ORBIT Funder Working Group, which was also shared with a network of United States Federal funders and the Belmont Forum, to widen the reach of our investigation.

This report summarizes the survey results, which clearly indicate that there are challenges with the current research reporting and evaluation process used by funders. Thirteen ORBIT funders from nine countries in six continents participated, ranging from national, multidisciplinary research funding bodies to discipline-focused philanthropic funders. Survey questions are listed in Appendix 1.

The ORBIT Funder Working Group recommends the funding community consider each of the pain points highlighted in the survey, as set out below, and review the options available to address them. The group will use the findings to establish future priorities for the ORBIT project.

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**THE HEADLINE FINDINGS OF THE SURVEY ARE:**

• The primary challenge reported by funders is connecting grants to subsequent research activities and outputs

• While most funders state that the majority of their reporting requests are fulfilled, much of the information reported is provided late or of low quality and requires time-consuming cleanup

• More than 50% of funders interact with researchers during the reporting process, suggesting that ORCID could be integrated into reporting workflows

**THE KEY RECOMMENDATIONS OF THIS REPORT ARE:**

• Funders, publishers, and identifier registries need to work together to develop, implement, and socialize workflows that use identifiers to create and share transparent connections between people, funding, and research activities in grant and publication workflows

• Funder reporting systems should implement digital reporting workflows that reduce reporting burden, by enabling researchers to populate web forms with information from other systems, including ORCID records, without rekeying or manual data entry

• Funders should partner with publishers to leverage identifiers for organizations, grants, and people, to enable compliance with funder open access and data-sharing requirements
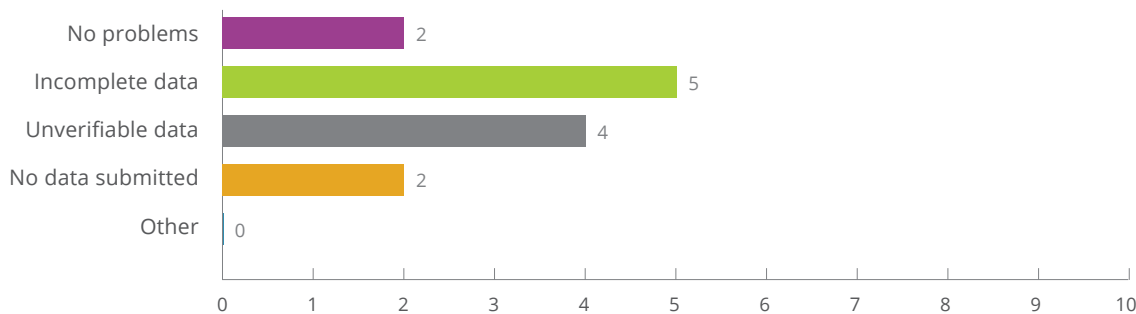
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# 3.0 KEY FINDINGS

## 3.1 DATA QUALITY

Most respondents state that a majority of their reporting requests are fulfilled, with 60% stating that more than 90% of their reporting requests are fulfilled. However, reports are often delivered late and require substantial staff time to clean up.

*"Manual clean-up of information (e.g. duplicate, erroneous tagging under a program ID, etc.) is time-consuming"*

### ROUGHLY WHAT PERCENT OF REPORT REQUESTS ARE FULFILLED?
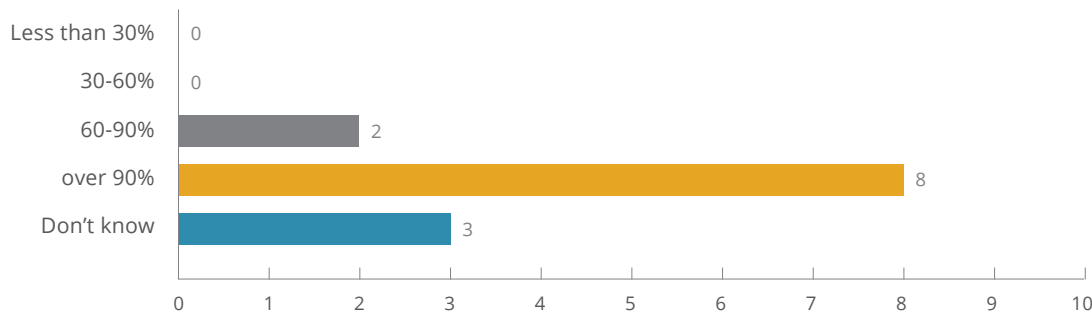
| Category | Value |
|---|---|
| Less than 30% | 0 |
| 30-60% | 0 |
| 60-90% | 2 |
| over 90% | 8 |
| Don't know | 3 |

### DESCRIBE THE PROBLEMS (IF ANY) YOU ENCOUNTER OBTAINING REPORTS FROM THE PRIMARY REPORTING CONTACT AND THE ACTIONS REQUIRED TO FIX THEM. (SELECT ALL THAT APPLY)

| Category | Value |
|---|---|
| No problems | 2 |
| Incomplete data | 5 |
| Unverifiable data | 4 |
| No data submitted | 2 |
| Other | 0 |

*"Researchers have many competing demands on their time and are likely to dedicate a limited amount of time to reporting"*

The problem isn't that researchers don't report, rather that their reports are incomplete, inconsistent, missing information, or include poor quality or misattributed information. This, in turn, requires funders to perform time-consuming manual clean-up of information, such as removing duplicates, fixing erroneous connections with grants, adding identifiers, and the like.

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This sentiment was echoed in many of the free-text survey responses. Reporting remains a chore, as does eliciting reports from grantees. Problems contacting researchers for corrections to submitted reports were mentioned multiple times by respondents.

To encourage reporting, six respondents said that they withhold future funding if reporting is not completed.

*"It remains a professional nagging exercise as PIs see it as an admin burden"*

DO YOU REQUIRE THE REPORTING CONTACT TO REPORT AS A CONDITION OF SUBSEQUENT FUNDING?

| Response | Value |
|---|---|
| Yes | 6 |
| No | 2 |
| Don't know | 1 |
| No answer | 4 |
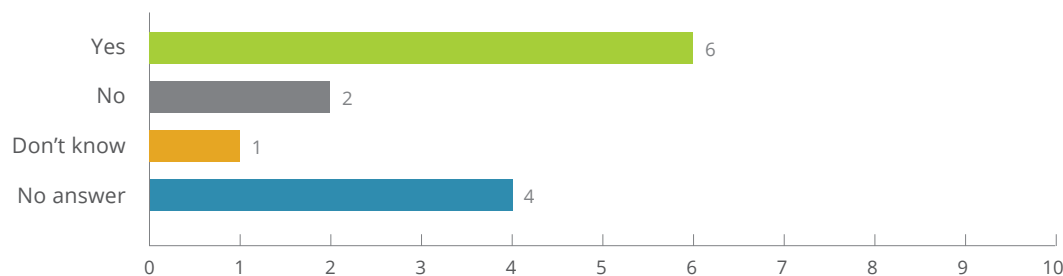
There were widespread issues with inconsistency between data within systems internally and externally. Some of this is because processes are still paper-based, and repetitive data entry and transcription or manual data reconciliation often result in mismatches with other systems.

Much of the highest value data is qualitative. Analyzing this data is the most consistently time-consuming activity, but this is seen as more acceptable than spending a significant portion of staff resource on data-cleaning, because it is viewed as an investment rather than a simple cost. Funders see a need to automate "everything else" so that the limited time and effort researchers have can be focused on describing impacts, relationships between activities, funding, and subsequent activities rather than providing simple factual data. Better links between investments and outputs are a 'keystone' to resolving the automation issue.

*"The inconsistency in reporting makes it difficult to use the dataset as a whole. Instead, we are limited to using most of the data as a repository of qualitative information"*

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## 3.2 STREAMLINING REPORTING

Reporting is an exercise in connecting people, funding, and research activities and contributions, to better understand the impact of investment and to monitor compliance with Open Access or research data-sharing policies. Survey respondents indicated that their major challenges are connecting these points, whether due to lack of data or poor data quality.

*"The most significant problem is linking any outputs back to the original investment"*

Seven respondents told us that their primary reporting contact is the investigator; four said that it is the institution; and of the two who answered "other," one stated that they are both contacts, and the other said that it is usually the PI. Respondents pinpointed identifiers for funding, activities, and outputs as an opportunity for capturing links between outputs and investments, as well as generating lists of activities (as opposed to outputs). Contacting researchers to verify these connections has been difficult, if not impossible, without using identifiers.

WHO IS YOUR PRIMARY REPORTING CONTACT?
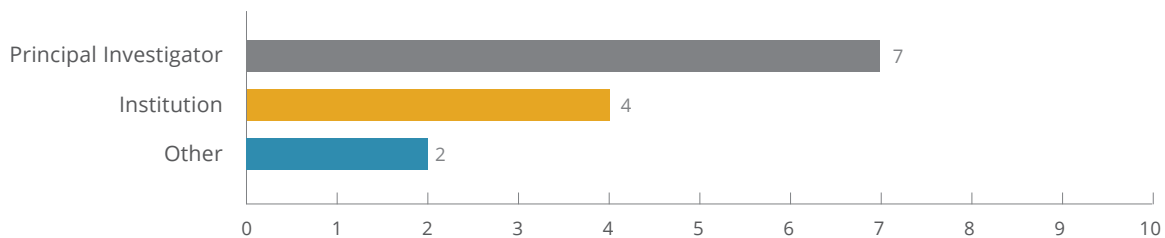


| | |
|---|---|
| Principal Investigator | 7 |
| Institution | 4 |
| Other | 2 |

WHEN AND HOW OFTEN DO YOU ASK THE PRIMARY REPORTING CONTACT TO REPORT ON THEIR FUNDED ACTIVITY DURING PROJECTS? (SELECT ALL THAT APPLY)



| | |
|---|---|
| Annually | 7 |
| End of grant period | 5 |
| End of fiscal year | 2 |
| Other | 0 |

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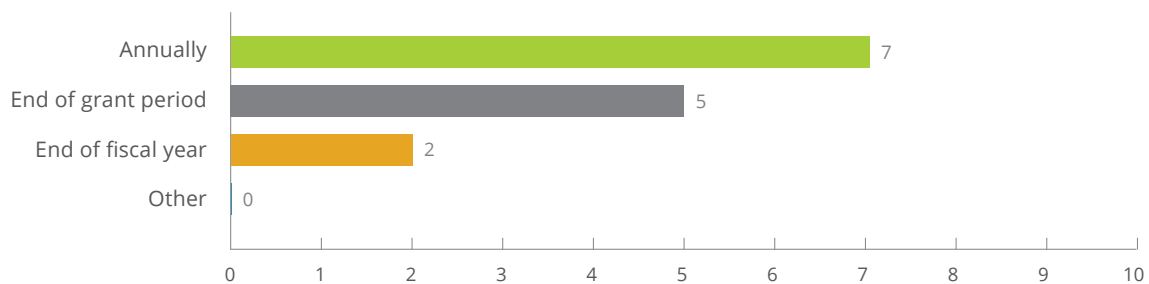
## 3.3 REPORTING SYSTEMS IN USE

All funders reported data interoperability problems at some level: mapping between internal and external systems, and between metadata formats remains a real problem. Of the respondents, 10 had already integrated or are working to integrate ORCID into internal systems in part to address this issue.

*"The main challenges that we encounter are: mapping data between systems and absence of unique ID of people and organisations"*

HAVE YOU INTEGRATED ORCID INTO ANY OF YOUR EXISTING SYSTEMS?
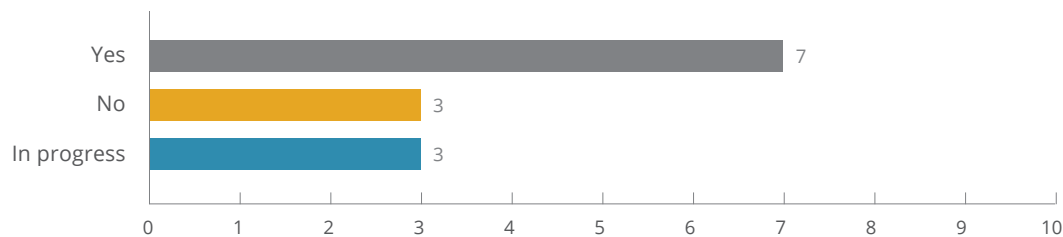


Nine respondents use an in-house system for research reporting. Seven use a vendor system for decision support or analytics. Over half of these systems already support ORCID.

DO YOU USE AN IN-HOUSE DEVELOPED (CUSTOM) SYSTEM FOR RESEARCH REPORTING?
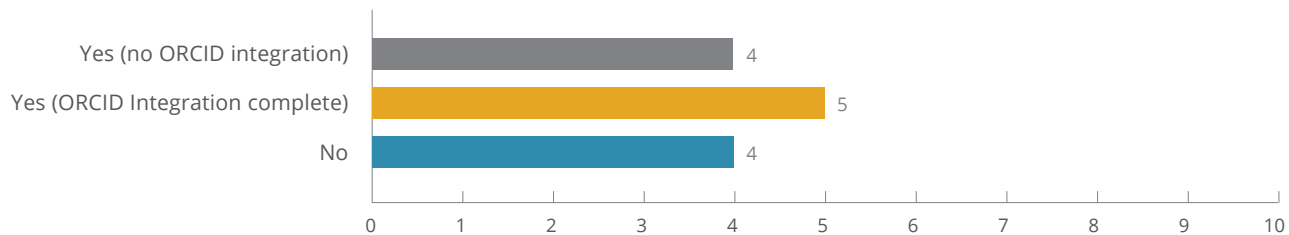


DO YOU USE ONE OR MORE VENDOR SYSTEMS OR SERVICES FOR RESEARCH REPORTING/ DECISION SUPPORT/METRICS?
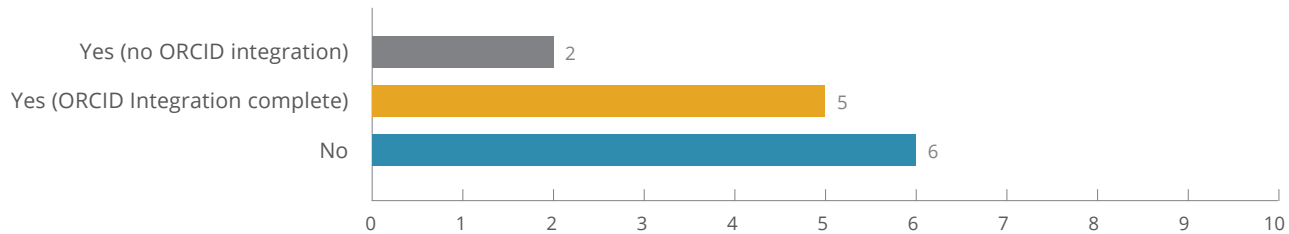
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## 3.4 FUNDER PRIORITIES

When asked to rank the value of various options for improving reporting information workflows in their organization overall, the highest ranked priority — adding pre-prints as a work type in the ORCID Registry — is now in place. The second and third ranked priorities were: "Helping researchers and others match up openly available items… to the publisher 'version of record' in their ORCID record," and "Improving the re-use of grant award data in ORCID records in publishing workflows." The latter is one of the drivers for the ORBIT ORCID and Grant DOI interaction recommendations document.

RANK THE VALUE OF THE FOLLOWING DEVELOPMENTS WHERE 1 IS MOST VALUABLE AND 5 IS LEAST VALUABLE.
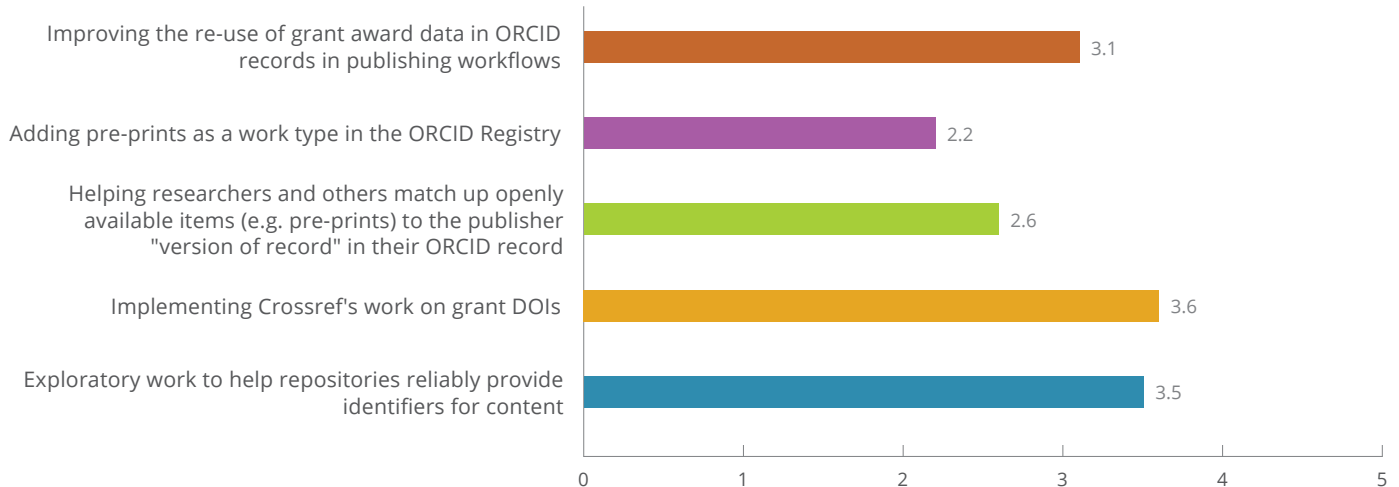


In addition, respondents had specific suggestions about how challenges might be addressed. To facilitate automation, the majority of funders expressed support for links between outputs and the grants that funded them. These links will help improve data quality, reduce the manual effort funders and reporters spend on processing reports, and minimize the reliance on those doing the reporting (usually the principal investigator).

*"In order to support the work of funders, ORCID would need to ensure that there are linkages to specific grant awards. The researchers we support will receive funding from multiple sources, so it is necessary to be able to attribute specific elements of an individual's ORCID profile to specific funders and specific awards (noting that many outcomes are likely to be attributable to multiple funders and multiple awards)"*

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Interoperability and information-sharing across stakeholders is seen as useful for capturing outputs and creating transparent connections to underpin effective reporting.

Persistent identifiers for additional output types, including conferences and lab notebooks, would be helpful. More interoperable publication formats and better sharing of early-stage work helps funders assess how projects have evolved. Alongside this, more automation with more systems is needed — specifically automatic updates to ORCID records.

Qualitative information within reports is of great value to funders. They would prefer that reportees spend their effort on providing this kind of information, rather than on repetitive, time-consuming, administrative-style reporting that could be provided through automation. As qualitative work is difficult or impossible to automate, solutions should focus on what can be done to ease the administrative side.

*"Any level of integration with publishers and conference organizers would greatly streamline the process and permit greater efficiency in reporting scientific progress"*

*"Advances which reduce the amount of time and effort involved will free up time for the researcher to provide qualitative information that cannot be gathered from any other source (e.g. a description of the benefits of a specific collaboration, details on the impact of a dataset). This qualitative information is often of particular value to the funder"*

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# 4.0 RECOMMENDATIONS AND NEXT STEPS

We have identified three main areas of recommendations from the survey results.

## 4.1 LINKING GRANTS AND OUTPUTS

Consistently linking grants and outputs is mentioned by most respondents as the best way of improving the reporting process. The ORCID and Grant DOI interaction recommendations document encapsulates how identifiers for grantees and grants can enable better reporting. In short, funders, publishers, and identifier registries need to work together to develop, implement, and socialize workflows that utilize persistent identifiers to create connections.

*"In order to support the work of funders, ORCID would need to ensure that there are linkages to specific grant awards"*

*"Unique linkages between the grants and the research output ... is what ORBIT aims to achieve"*

## 4.2 INCREASED REPORTING AUTOMATION

Enabling richer, more complete reports, and reducing the time spent by funder staff 'cleaning' reports is another priority identified by the respondents. Enabling researchers to share information from their ORCID record into grant, reporting, and publishing systems can help to reduce reporting burden and has the potential to improve data quality as well.

*"Tracking and reporting publications (including journal evaluation and citations) take the most effort. Receiving notices from publishers would remove quite a bit of the burden"*

*"A considerable amount of effort with research reporting is the compiling of research publications and output activities"*

## 4.3 HELP ASSESSING COMPLIANCE WITH FUNDER REQUIREMENTS

A majority of funders have implemented Open Access and data sharing requirements. Use of organization identifiers for funders and grant identifiers can help make compliance requirements more transparent to researchers, publishers, and repositories at key points in the research lifecycle, as can sharing grant award information with researchers in their ORCID record, so they can in turn share that with publishers and repositories at the time the data set and/or publication is submitted.

*"Being able to check for open access compliance (e.g. having PMCID numbers against publications) and also being able to attribute which funders contributed to the publications"*

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# 5.0 APPENDIX 1. SURVEY QUESTIONS

1. Organization name *(private)*

2. Respondent name *(private)*

3. Have you integrated ORCID into any of your existing systems?
   *[●] Yes [●] No [●] In progress*

4. Departments involved in research reporting *(Free text)*

5. Who is your primary reporting contact?
   *[●] PI [●] Institution [●] Other*

6. When and how often do you ask the primary reporting contact to report on their funded activity during projects? *(Select all that apply)*
   *[●] Annually [●] End of grant period [●] End of fiscal year [●] Other*

7. Do you require the reporting contact to report as a condition of subsequent funding?
   *[●] Yes [●] No [●] I don't know [●] No answer*

8. What post-project reporting do you currently track (or wish to in the future)? (e.g. Publications produced up to X years after project completion, longer-term impact analysis)? *(Free text)*

9. Roughly what percent of report requests are fulfilled?

10. Describe the problems (if any) you encounter obtaining reports from the primary reporting contact and the actions required to fix them *(Select all that apply)*

11. What do you do when the primary reporting contact fails to report and what would the consequences be for non-reporting? *(Free text)*

12. How would you improve the process of collecting reports? *(Free text)*

13. Any other comments on obtaining reports? *(Free text)*

14. Do you use an in-house developed (custom) system for research reporting?
    *[●] Yes (no ORCID integration) [●] Yes (ORCID Integration complete) [●] No).*

15. Do you use one or more vendor systems or services for research reporting/decision support/metrics?
    *[●] Yes (no ORCID integration) [●] Yes (ORCID Integration complete) [●] No*

16. Describe any challenges that you commonly encounter with system interoperability (such as technical incompatibility, lack of connections or difficulty mapping data between systems) *(Free text)*

17. Are any stages in the reporting process currently automated?
    *[●] Yes [●] No [●] Other*

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18. Which reporting processes would you estimate require the most manual effort and which would you regard as good candidates for automation? *(Free text)*

19. How do you think that ORCID can help to improve the data quality or interoperability of decisions support or analytics platforms? *(Free text)*

20. Describe any pain points that you are aware of that create administrative burden (with particular emphasis on each of the following stakeholder groups: funder administrator, policy staff/analysts, institutional staff, systems providers, investigators) *(Free text)*

21. What, in your opinion, would alleviate those pain points? *(Free text)*

22. Do you have a formal requirement for a data reporting, management,  and/or availability policy?
[ ● ] Yes [ ● ] No

23. How do you assess levels of compliance with your policy (e.g. coverage, completeness, timeliness)? Please describe any difficulties encountered collecting the information required to conform to your policies and the steps taken to overcome them (if any) *(Free text)*

24. What would do most to improve the process and completeness of reporting on policy compliance? *(Free text)*

25. Thinking about the challenges and opportunities for reporting workflows in your organization overall, please rank the value of the following developments where 1 is most valuable and 5 is least valuable. (Improving the re-use of grant award data in ORCID records in publishing workflows, Adding pre-prints as a work type in the ORCID Registry, Helping researchers and others match up openly available items (e.g. pre-prints) to the publisher "version of record" in their ORCID record, Implementing Crossref's work on grant DOIs, Exploratory work to help repositories reliably provide identifiers for content)

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