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Understanding ORCID adoption among academic researchers

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Abstract
Just over a decade ago, the ORCID (Open Researcher and Contributor Identifier) was created to provide a unique digital identifier for researchers around the world. The ORCID has proven essential in identifying individual researchers and their publications, both for bibliometric research analyses and for universities and other organizations tracking the research productivity and impact of their personnel. Yet widespread adoption of the ORCID by individual researchers has proved elusive, with previous studies finding adoption rates ranging from 3% to 42%. Using a national survey of U.S. academic researchers at 31 research universities, we investigate why some researchers adopt an ORCID and some do not. We found an overall adoption rate of 72%, with adoptions rates ranging between academic disciplines from a low of 17% in the visual and performing arts to a high of 93% in biological and biomedical sciences. Many academic journals require an ORCID to submit a manuscript, and this is the main reason why researchers adopt an ORCID. The top three reasons for not having an ORCID are not seeing the benefits, being far enough in the academic career to not need it, and working in an academic discipline where it is not needed.

Keywords ORCID · Researcher identifier · Bibliometrics

With over nine million active users representing 1,363 organizations across 250 countries, the ORCID (Open Researcher and Contributor Identifier) provides a unique digital identifier for researchers (Shillum et al., 2023). Now in its eleventh year, it is designed to track researchers as they move between institutions and/or funding sources, as well as to provide a comprehensive record of researcher activity that allows users to connect their identifier with their affiliations and contributions (ORCID, 2023a; Shillum et al., 2023). In cases where names are common, identifying what research belongs to whom can be challenging. One researcher (Leopold, 2016) used the example of the most common names in China and America—Smith and Zhang—and found they were linked to nearly 50,000

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manuscripts on PubMed. ORCID usage also makes it easier for researchers to locate their own publications and facilitates networking among university colleagues (Rosenzweig & Schnitzer, 2015).

Being able to track researchers and research activity provides other benefits as well. ORCID has the potential to track grants, prevent duplication of research efforts, connect researchers to create collaborative opportunities, and promote scientific output (Heusse & Cabanac, 2022; Schiermeier, 2015). Disambiguating their identities prevents merging of identities and is promoted by funding agencies and scholarly journals alike. ORCID membership organizations include university and research institutions; publishers, associations, and conferences; funders and facilities; policy makers and government; and services and vendors; membership has proven especially beneficial to organizations with many publishing researchers and/or a desire to track publications spanning decades (ORCID, 2023a; Powell et al., 2019). Researchers with an ORCID can also benefit from increased visibility in search engine results and rankings (French & Fagan, 2019).

As usage and interest has increased, ORCID has also become a tool for scientific research. Gomez, et al. (2020) used ORCID data to study the global mobility patterns of a hundred thousand scientists, while Kim and Owen-Smith (2021) used it to evaluate author name disambiguation at scale. Other studies have used ORCID data and/or its adoption to examine research information citizenship (Porter, 2022); individual-level data sharing activities (Sixto-Costoya et al., 2021); readiness for partially automated research reporting (Schnieders et al., 2022); its potential role in meta-research (Costas et al., 2022); and academic mobility (Yan et al., 2020).

Despite its growing importance for both individual researchers and the field of bibliometrics, we know little about why some researchers choose to adopt an ORCID and others do not. To address this, we use a nationally representative survey of faculty at US public research universities to investigate the ORCID option, why some faculty choose to adopt, and others refuse. Because there appear to be disparities in ORCID adoption by country (Youtie et al., 2017), this research also provides insight into boosting ORCID ratings in countries with low take-up.

Literature review

Research on ORCID is limited but growing. Much of the literature on ORCID simply explains what it is and its potential for the scientific community (e.g., Haak et al., 2012; Meadows, 2016). Others have examined ORCID adoption levels among faculty and research-related staff. Adoption rates in existing studies range from just 3% at the University of Bergen (Norway; Mikki et al., 2015) to 42% at institutions in the Toulouse area of France (Heusse & Cabanac, 2022), with an average adoption rate of 21% (see Table 1; note that these rates often include both faculty and non-faculty research-related personnel).

Fewer studies have examined ORCID adoption by rank and/or discipline. Boudry and Durand-Barthez (2020) found an overrepresentation of STEM disciplines among the 17% of researchers using ORCID at their institution, though the authors attribute this to the many STEM services that require an ORCID to register. They also found that senior researchers are more likely to have an ORCID than their junior counterparts, even though, as they assert, junior scholars have a greater need for the exposure and visibility that ORCID brings. Heusse and Cabanac (2022) assessed ORCID adoption rates in the

Table 1 Comparison of ORCID adoption rates. Adapted from Boudry and Durand-Barthez (2020)

Study	Population	*n*	Rate (%)
Haustein et al., (2015)	Bibliometricians (Int'l)	57	35
Mikki et al., (2015)	University of Bergen (Norway)	4307	3
Sandberg and Jin (2016)	Journal Contributors[1] (Int'l)	291	14.4
Tran and Lyon (2017)	Stony Brook University (USA)	335	15
Youtie et al., (2017)	ORCID, Web of science data[2] (Int'l)	1.6 m	26
Aman (2018)	Leibniz laureates (Germany)	193	21
Morgan and Eichenlaub (2018)	Florida Southern College[3] (USA)	50	12
Boudry and Durand-Barthez (2020)	University of Caen Normandy (France)	1047	17
Heusse and Cabanac (2022)	Toulouse (France) Scientific Area	6607	42

[1]These journals were: *Cataloging & Classification Quarterly* (Vol. 52), *Perspectives of New Music* (Vol. 52), and *IEEE Intelligent Systems* (Vol. 29)

[2]This study compared the share of Web of Science article records that included at least one ORCID

[3]Purposive sampling of the institutional repository "focused on the researchers with enough content to warrant having identifiers in external authority databases and requiring name authority control since they have multiple entries in the IR" (p. 114)

Toulouse area, and found that 42% of area faculty, researchers, and other staff had an ORCID, including 43% of faculty specifically. Yet, they found similar rates of adoption between junior and senior faculty (approximately 42–43% each) and junior and senior researchers (approximately 63–64% each). They also found that STEM faculty and researchers had much higher ORCID adoption rates compared to their humanities and social sciences counterparts: STEM faculty adoption rates ranged from approximately 48% in engineering, mathematics, and computing to over 60% of health, biology, and agronomy faculty, compared to roughly 35% in arts, humanities, and social sciences, and around 20% of law, economics, and management faculty (Heusse & Cabanac, 2022). The authors noted, however, that researchers were the top adopters for all disciplines except health, biology and agronomy, possibly because research institutes in encouraged ORCID adoption in those disciplines.

Adoption rates are much higher in countries where major agencies or institutions require an ORCID. The Portuguese national funding agency for science, research and technology began requiring it in 2014, and recent research shows an adoption rate of 90% among Arts and Humanities faculty at the University of Porto (Fernández-Marcial et al., 2023; Youtie et al., 2017). Research foundations in South Africa, Italy, Austria, and Sweden have made similar requirements for an ORCID that have led to, for example, an 80% adoption rate in Italy, while it is strongly encouraged by major university consortia in Denmark, the United Kingdom, Australia, New Zealand, Taiwan, and Germany (Youtie et al., 2017). Since 2016, more than 100 major publishers have committed to requiring ORCIDs in the publishing process for their journals, including Wiley, PLoS, IEEE, Springer Nature, Frontiers, The Royal Society, SAGE Publications, and Cambridge University Press (ORCID, 2023b). In the US, ORCID is required by the National Institutes of Health (NIH), the Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease Control and Prevention (CDC), and the National Science Foundation (NSF), with all other federal agencies expected to follow suit by the end of 2025, per the White House Office of Science and Technology Policy (OSTP; Emory Libraries, 2023; White House OSTP, 2022).

Adoption rates are only one small part of the ORCID picture, however, as some have noted limitations with ORCID. Researchers have found between 32 and 79% do not list any publications at all (Boudry & Durand-Barthez, 2020; Morgan & Echenlaub, 2018; Sandberg & Jin, 2016; Youtie et al., 2017) and the average number of publications per researcher is generally lower on ORCID than that found on Scopus (Boudray & Durand Barthez, 2020). The latest available data from ORCID (December 2023), shows that this percentage of empty profiles has dropped dramatically, but is still common: 49% of active records now include publication data, while 42% provide affiliation data (employment, education), and 32% provide both (ORCID, 2023a). Despite the decline in empty profiles, the utility of the service is greatly diminished if researchers do not have an exhaustive list of publications linked to a unique identifier (Boudry & Durand-Barthez, 2020).

A relatively small portion of the literature has focused on ORCID data itself as a tool for scientific research. This includes, for example, its benefits on tasks such as name disambiguation and its roles in establishing an overarching information infrastructure (Kim & Owen-Smith, 2021; Meadows et al., 2019). Some (Kim & Owen-Smith, 2021) argue that ORCID has the potential to be used at scale to uniquely identify researchers, but the database does not include the full population of researchers. This may in part be because of the ongoing issue described above regarding empty or severely underutilized ORCID features and profile sections (e.g., affiliation, publications). Meanwhile, others (Meadows et al., 2019) argue the benefits of adopting a persistent identifier such as ORCID, including the ability to be uniquely identified and connected between entities and researchers, which in turn could result in improved information access, reduced administrative overhead, more opportunities for collaboration. The authors admit, however, that this requires significant community commitment, especially via transparent source information and continued use of persistent identifiers by funding organizations, journals, and other consortia. Porter (2022) echoes this sentiment, arguing that "social and cultural change" in the form of "sustained community investment and collaboration around the development of ORCID and related infrastructures" is required for ORCID or any other persistent identifier to fully achieve its goals.

Many researchers have now used ORCID data to study academic mobility and to aid in research evaluation. Researchers (Gomez et al., 2020) used ORCID data to study the global mobility patterns of over 100,000 scientists and found that researchers making international moves often do so by moving only short distances. Another study (Zhao et al., 2020) used ORCID to examine research disruptions resulting from research mobility and found that the more times a scientist moved, the more they were inclined to co-author with previous collaborators, but that cross-country mobility disrupts research collaboration stability more than domestic mobility (p. 199). Others have used ORCID data to study patterns and dimensions of academic mobility based on institutional and personal characteristics (Raghupathi et al., 2023; Yan et al., 2020), and to track researchers and their outputs (Youtie et al., 2017). Haak et al. (2018) have even used ORCID data to demonstrate how it can aid in research program evaluation.

While many agree that ORCID has far-reaching benefits, some express some concerns. For example, researchers have suggested ethical concerns regarding journals and funders requiring ORCIDs, arguing that it infringes on authors' rights and academic freedom (Texeira da Silva, 2020, 2022). potential for surveillance and evaluation. Others raise concerns about the inappropriate use of ORCID for surveillance and evaluation (Houghton & Foster, 2024a, 2024b), exacerbated by concerns about data quality (Texeira da Silva, 2020). Some have cited the workload to maintaining an updated profile and verifying records as a downside to ORCIDs (Houghton & Foster, 2024a). Finally, pointed to security

concerns regarding personal data sharing (Houghton & Foster, 2024a, 2024b). All of these concerns may create skepticism about ORCID and its uses.

Very little research, however, has examined users' perceptions of the benefits ORCID offers and/or their reasons for (not) joining. As highlighted above, name disambiguation is a major exception to this, and is even the top reason given for joining ORCID according to the platforms 2019 Member Survey Report (Meadows, 2019). Still, there is a dearth of research that looks in depth at user (and non-user) perceptions, especially by rank and discipline, as our research does. Although researchers have highlighted potential benefits of ORCID, including avoiding duplicate funding and identifying opportunities for collaborative research, few, if any, have explored this possibility at an individual (user) level. And, while research (French & Fagan, 2019) suggests that faculty with more profiles in identifier registries (like ORCID) are more visible in search engine results and are ranked more highly in Google, we know little about faculty's perceptions of this or other benefits. In addition, research (Powell et al., 2019) suggests that ORCID benefit organizations seeking to track members' scholarly productivity, it is not clear whether individual researchers see similar benefits. This is where our research comes in.

Despite its growing importance in scientific research, we know little about why some researchers adopt an ORCID and others do not. To address this, we used a nationally representative survey of faculty at US public research universities to investigate the ORCID option, why some faculty choose to adopt, and others refuse. Because there appear to be disparities in ORCID adoption by country, (Youtie et al., 2017), this research also provides insight into boosting ORCID ratings in countries with low take-up.

Methodology

We conducted an email survey of tenured and tenure-track faculty at 31 U.S. public research universities in Spring 2021. We constructed our sampling frame by first randomly sampling 100 of the U.S. public universities with either R1 (very high research activity) or R2 (high research activity) status in the Carnegie Classification of Institutions of Higher Education. We then submitted individual public records requests in late fall of 2020 to each of the sample institutions, asking for the first name, last name, email address, rank, job title, and department of primary appointment, for all currently employed full-time, tenure-track or tenured faculty at the institution. Thirty-one institutions provided faculty rosters, resulting in a sampling frame of over 24,000 faculty.

Table 2 compares all R1 and R2 institutions, the institutions we asked for rosters, and the institutions who provided faculty rosters in response to our request. The institutions that provided rosters appear very similar to the population of public universities with R1 or R2 status. The one difference is that roster institutions have slightly larger student bodies.

We cleaned the sampling frame by examining job titles and removing anyone with an administrative title such as Department Head. We conducted a pilot study in April 2021 with a random sample of 2,000 faculty to test the survey and examine answers to open-ended responses to *other* categories to revise question response categories. The revised survey took place in May 2021, sending one email with three email reminders to nonrespondents. We counted faculty as a respondent if they had progressed about 40% of the way through the survey. The response rate based on this definition is 16%. We note that this definition is consistent with American Association of Public Opinion Researchers standards, but researchers still commonly report a response based on whether someone

Table 2 Descriptives for sampling frame and Roster Universities

	All	Sample frame	Provided rosters
Carnegie classification			
R1	51%	50%	52%
R2	49%	50%	48%
Total	100%	100%	100%
Mean admission rate	69%	69%	68%
Student body size			
< 5000	2%	4%	3%
5000–9999	9%	9%	6%
10,000–19,999	29%	23%	19%
20,000 +	60%	64%	71%
Total	100%	100%	100%
Mean in-state tuition	$10,826	$10,768	$10,724
Total FTE staff	5286	5111	4956
n universities	184	100	31

The underlines are lines under that set of numbers to emphasize the number below the underline is a total

begins a survey, regardless of progression. Thus, our response rate may appear lower when compared to other studies.

We did not include age, gender or race/ethnicity in our roster requests, because institutions do not consider these data elements as directory information and would decline to provide them. Instead, we have two pieces of information from the rosters that we can use to assess representativeness at the individual level, academic rank and the broad disciplinary area of the department (we coded all departments into 11 categories). We can also use publicly available data to compare faculty demographics at the institutional level to the faculty demographics in our sample. Table A1 in the Appendix shows that the sample is slightly overrepresented by assistant professors; the sampling frames consists of 26% assistant professors, while our respondent sample consists of 32% assistant professors. Table A2 shows that the sample is representative in terms of gender and race/ethnicity, with a slight overrepresentation of females. Table A3 shows that the sample is representative in terms of broad academic disciplines. In general, our sample appears broadly representative of tenure-track and tenured faculty at U.S. public research universities.

Table 3 Prevalence of ORCID by faculty characteristics

	All faculty	Gender		Race/ethnicity					Rank		
		Female	Male	Asian	Black	Hisp.	White	Other	Asst	Assoc	Full
Yes	72	72	74	78	64	75	72	78	80	67	71
Not sure	9	10	8	7	12	11	9	6	7	11	9
No	19	19	18	15	24	14	19	16	13	21	20
n	3,968	1,739	2,005	481	154	186	2,701	115	1,184	1,194	1,497

Numbers are percentages responding to the question, "Do you have an ORCID?" Percentages may not sum to 100 due to rounding. Gender differences are not statistically significant ($\chi 2 = 2.1$, $p < .35$) but race/ethnicity differences ($\chi 2 = 18.2$, $p < .02$) and rank differences ($\chi 2 = 49.5$, $p < .001$) are

We asked faculty to identify their academic discipline using the U.S. Department of Education's Classification of Instructional Programs (CIP), a taxonomy of fields of study in postsecondary education in the United States that assigns each academic field a unique six-digit code. The taxonomy starts with almost 50 broad categories using the first two digits of the code, divides into more detailed categories with the next two digits, and then even finer categories with the final two digits.

We first presented faculty with a list of broad disciplinary areas using the field names identified by the first two digits (see Table 3). Once a broad area was chosen, faculty were then asked to choose a field using the fields classified by the next two digits of the CIP code. As an example, *Social sciences* is one of the disciplinary areas identified by the first two digits of the code. Respondents choosing this option were then presented with the list of 14 fields identified by the next two-digits of the CIP code for the social sciences, such as *Criminology*, *Economics*, *Political Science*, and *Sociology*. However, we did not ask respondents to look at fields identified by the last two digits of the code, e.g., for *Political Science* these would be *American Government*, *Canadian Government and Politics*, or *Political Economy*.

Results

Table 3 shows the rate of ORCID adoption by various faculty characteristics. Overall, 72% of faculty reported having an ORCID, with 19% reporting no ORCID and 9% unsure. Males and females have similar adoption rates, with some differences by race and ethnicity; only 64% of Black faculty have an ORCID compared to approximately three-quarters of other groups (Asian 74%, Hispanic 75%, and White 78%). Adoption also varied by rank. Assistant professors are more likely to have an ORCID (80%) compared to associates (67%) and full professors (71%), either due to their ease with technology or their greater need for self-promotion in the quest for tenure.

Adoption rates varied widely across disciplines, from a high of 93% to a low of 17%. Table 4 shows adoption rates by discipline as defined by the first two digits of the CIP code. Faculty in biology, engineering, the library sciences, medicine and health-related fields, the physical sciences, and psychology all had adoption rates greater than 80%. In contrast, faculty in some arts and humanities disciplines adopt ORCIDs at a much lower rate. For example, the majority of faculty in Foreign languages, literatures, and linguistics (47%), Legal professions (39%), Area, ethnic, cultural, and gender studies (36%), history (32%), English language and literature/letters (24%), and Visual and performing arts (17%) do not have an ORCID.

Why do faculty have an ORCID?

For those faculty who have ORCIDs ($n = 2870$), Table 5 lists where they first learned about the ORCID. Over half of the respondents (52%) reported learning about ORCIDs via the journal publishing process, as either an author (42%) or reviewer (10%), suggesting that journals requiring ORCIDs have been a primary driver of researchers adopting an ORCID. The third most common choice was institutional communication requesting they register for an ORCID, with 10% of respondents choosing this source of information, suggesting that efforts by university libraries have been effective in encouraging ORCID adoption. Only 6% of faculty mentioned grant applications.

Table 4 Prevalence of ORCID by academic discipline

Two-digit CIP code discipline title	%			*n*
	Yes	Not sure	No	
Biological and biomedical sciences	93	4	3	383
Physical sciences	91	5	4	308
Psychology	89	7	4	180
Library science	88	9	3	33
Medical residency programs	87	3	11	38
Health professions and related clinical services	85	7	8	288
Engineering	85	8	7	319
Natural resources and conservation	81	10	10	31
Public administration and social service professions	80	6	14	51
Health-related knowledge and skills	77	10	13	70
Education	76	7	16	289
Mathematics and statistics	75	9	16	131
Business, management, marketing, and related support services	74	9	17	212
Agriculture, agriculture operations, and related sciences	71	14	15	66
Social sciences	70	14	16	472
Computer and information sciences and support services	69	11	20	95
Architecture and related services	67	9	24	33
Philosophy and religious studies	65	12	22	49
Communication, journalism, and related programs	61	13	26	104
Liberal arts and sciences, general studies and humanities	55	7	38	56
Foreign languages, literatures, and linguistics	47	16	37	104
Legal professions and studies	39	15	46	41
Area, ethnic, cultural, and gender studies	36	18	45	22
History	32	16	52	117
English language and literature/letters	24	17	59	101
Visual and performing arts	17	11	72	176

Numbers are percentages responding to the question, "Do you have an ORCID?" Percentages may not sum to 100 due to rounding. CIP is the Classification of Instructional Programs created by the U.S. National Center for Educational Statistics

We next asked these faculty why they chose to obtain an ORCID (see Table 6). The most frequent reason was identified by respondents was that it was required for a journal article submission (29%). A quarter of respondents with an ORCID originally obtained it because they believed it benefits them professionally. Nine percent reported having an ORCID as a requirement for grant submission, followed by 8% stating it was required for review for a journal.

Finally, we asked faculty with ORCIDs to rate the benefits of having an ORCID. Table 7 lists the proportion of faculty choosing either *moderately beneficial* or *very beneficial*. The top-rated benefit was allowing others to find my research, with almost a third of respondents rating this moderately or very beneficial. This is followed by finding my research in citation databases (29%), tracking my peer reviews using ORCID (19%), finding others' research articles (19%) and the tracking of individuals for bibliometric research purposes (19%) (see Tables 1 and 2).

Table 5 Where first learn about ORCID?

	%	*n*
Submitting manuscripts to a journal	42	1207
Reviewing manuscripts for a journal	10	298
Institutional communication	10	273
From a colleague	7	193
Submitting grant applications	6	161
ORCID communication	3	77
Communications with colleagues (e.g., listservs, social media)	2	70
Other	3	81
Don't remember	18	507
Total	100	2867

Responses are to the question, "How did you first learn about ORCID?"

Table 6 Why originally obtain an ORCID?

	%	*n*
Required for a journal article submission	29	1135
Benefits me professionally	25	976
Required for grant submission	9	350
Required to review for a journal	8	309
Required within department/institution	6	220
Required for non-journal publications	2	67
Someone signed up for me	1	49
Don't remember	10	413

Responses are to the question, "Why did you get an ORCID? Check all that apply."

Table 7 Rating of ORCID Benefits

	%	*n*
Allowing others to find my research	32	867
Finding my research articles in citation databases	29	797
Tracking my peer reviews using ORCID	19	517
Finding others' research articles	19	510
Tracking of individuals for bibliometric research purposes	19	505
Providing me with networking opportunities (similar to LinkedIn)	8	213

Responses are to the question, "Thinking about the benefits of having an ORCID, please rate the extent to which the following are beneficial:" Response scale is *not at all beneficial*, *slightly beneficial*, *somewhat beneficial*, *moderately beneficial*, and *very beneficial*. % column is the percentage choosing either *moderately beneficial* or *very beneficial*

Why do faculty lack an ORCID?

For those faculty who responded *not sure* ($n=364$) or *no* ($n=734$) to the question, "Do you have an ORCID?", we asked whether they had heard of the ORCID before taking our survey. The difference in responses between the two groups of faculty are stark: 67% of *not sure*'s had heard of the ORCID, versus only 32% of the *no*'s (see Table 8). The high recognition rate among the *not sure's* suggests that many of these respondents likely have ORCIDs, and the numbers in Tables 3 and 4 may, in fact, be lower-bound estimates of adoption rates. The low recognition rate among the no-ORCID respondents suggests that a major reason for failure to adopt an ORCID may be a lack of information about the ORCID and its professional benefits (see Tables 5, 6, 7).

For the 32% of the no-ORCID faculty who were aware of the ORCID ($n=233$), we asked them, why they did not have an ORCID? Forty-two percent stated that they see no benefits to the ORCID (see Table 8). Twenty percent stated they were far enough along in their career that they did not need one, also suggesting that they do not see a benefit in the latter stages of their careers. Not surprisingly, full professors were much more likely to choose this response than other faculty ranks. Sixteen percent said they are in an academic field where they do not need an ORCID, and only 12% said they were concerned about privacy and data collection.

Twenty-seven percent chose *other* as a response ($n=63$) and were then prompted to describe their reason. We coded these responses into broad categories (see Table 9). Some faculty reported not understanding the ORCID and its benefits. Others mentioned practical issues around obtaining an ORCID, such as being too busy, not being prompted to get one, or planning to get one but have not yet obtained one. A few faculty stated they had a unique name and were therefore not worried about needing an ORCID to make sure their research was identifiable. Others raised concerns about the use of data

Table 8 Faculty with no ORCID: awareness and reasons why no ORCID

	Had heard of ORCID before this survey?			
	%		*n*	
Have ORCID?	No	Yes	No	Yes
Not sure	33	67	121	243
No	68	32	501	**233**
If no: why do you not have an ORCID?			%	n
Do not see any benefits			42	99
Far enough along in my career that I do not need it			20	46
In an academic field where I do not need it			16	38
Concerned about my privacy and data collection			12	28
Other			27	63
Total				**233**

Responses to the questions, "Before taking this survey, had you heard of ORCID?" and "Why do you not have an ORCID? Check all that apply:" Respondent group in the bottom panel are faculty who said they did not have an ORCID but had heard of ORCID before taking the survey ($n=233$)

Bold indicates the bottom panel of the table is a subset of the sample listed in the top panel

Table 9 Reasons why faculty do not have an ORCID: "other" responses

Lack of understanding:
Don't understand the benefits in my field
Don't understand its purpose
Time constraints:
Too many steps to set up
Just haven't made the time yet
Lack of prompting:
Never been prompted to get one
Haven't needed it yet
Plan to get one:
I plan to get it
Will make one eventually
Uniqueness of name:
Name is completely unique
Not concerned about having a similar name to others
Resistance to digitization:
Orwellian; in the humanities, we see people as people, not numbers or data
Sounds like another nonsense "digitification" of academic research
Transition or retirement:
In transition back to research after administrative service as associate dean
I'm "dead wood" and close to retirement, so I don't have a reason to have one

Based on responses from the $n = 63$ from Table 7 who chose "Other" when asked why they did not have an ORCID. These respondents were then prompted to please describe the reason

to classify scholars, which we label "resistance to digitization." Finally, some faculty are at the stage of their career where they do not need an ORCID.

Discussion

While ORCID take up is relatively high in the US with 72% reporting having an ORCID, the utility of ORCID is limited if the population of US researchers do not sign on. ORCID penetration can largely be attributed to the journal submission and reviewing process, which is where over half first learn about it and nearly a third sign up because they are required to do so to submit their article. While journals are an important driver of ORCID registrations, our study points to several possible avenues to increase subscribership.

Our findings suggest a cost–benefit analysis that faculty are undergoing when deciding whether to get an ORCID. It is clear that a large portion of faculty without an ORCID do not see the benefits, either broadly or because they are in a field where they do not see its value or are at a career stage where they do not believe it is necessary. These faculty would benefit from hearing about the benefits of ORCID, including those identified here, such as allowing others to find their research, finding their own research articles and citations, tracking peer reviews, providing networking opportunities, and finding others work. In addition to touting the benefits of ORCID, those seeking a more universal adoption may be useful to highlight the relative ease of signing up for an ORCID.

Given the perceived benefits, Black faculty, who have lower levels of adoption in our study, may missing an opportunity for reputation and connection building afforded by ORCID. Universities may make special efforts to reach out to their Black faculty and graduate students and explain the benefits of ORCID encourage them to sign up. Likewise, special efforts might be made to recruit those in the arts and humanities. As previous research suggests (Boudry & Durand-Barthez, 2020), we find that STEM faculty are more likely than their arts and humanities peers to adopt an ORCID.

Some have argued that ORCID pose some ethical problems. While requiring further investigation, our study did uncover some concerns about privacy and the perceived "Orwellian" nature of ORCID. ORCID does have user-defined privacy settings, but some (Coraś & Jaroszewska-Choraś, 2020; Houghton & Foster, 2024a, 2024b) have raised concerns about the linking and identifying capacity of ORCID and possibility of privacy and data security breaches. Scholars (Coraś & Jaroszewska-Choraś, 2020; Teixeira da Silva, 2020, 2021b) have criticized journals and higher education institutions that require ORCID because it violates academic freedom and choice. Making ORCID mandatory to engage in intellectual pursuits could limit where researchers choose to publish, submit grants, and review. While we recognize the vast benefits of ORCID, we also acknowledge these concerns and suggest they may be limiting faculty take up. Publishers and universities would be wise consider a more nuanced approach to adoption with these ethical concerns in mind.

Likewise, the utility of ORCID is limited without acceptance among the global scholarly communities. While this study focused on US faculty at research universities, some countries may have differing views of ORCID. More challenging are scholars from countries or institutions concerned about exposing research information and scholarly outputs. These countries create identifiers of their own to track faculty and their productivity. Some universities develop their own repositories for this information. In these countries, institutional and country repositories may provide data superior to ORCID.

Overlooking possible ethical and global arguments surrounding ORCID, some may argue that making ORCIDs mandatory will overcome problems associated with low take-up. This approach overlooks some of the problems researchers have identified with how some scholars have an ORCID but do not fully engage in the system. For example, researchers sometimes create multiple ORCID accounts due to forgotten login credentials or lack of awareness of recovery options, leading to redundancy and errors in author attribution (Baglioni et al., 2022). In addition, ORCID's open registration system allows the creation of fake accounts, as demonstrated humorously by the presence of fictitious researchers with names resembling vegetables and other non-human entities (Teixeira da Silva, 2023). Further limiting utility, a significant number of ORCID accounts are created solely for compliance with publisher or funder requirements but remain incomplete or inactive. These "ghost" profiles diminish the utility of ORCID for tracking researchers' academic trajectories and contributions (Teixeira da Silva, 2021a).

Despite these limitations, ORCID has the potential to be an effective tool for scientific research. If a greater number of researchers adopted ORCID and maintained their accounts, the potential to uniquely identify researchers and link them to their work has a myriad of possibilities for understanding scholarly work, including production, collaborations, and academic careers, to name a few. Our findings suggest that in some disciplines this may already be possible. In addition, the near ubiquity of ORCIDs among junior scholars in our study suggest the trend is likely heading toward widespread adoption.

Appendix

See Tables 10, 11, 12.

Table 10 Representativeness of respondents by rank

Rank	Sampling frame	Respondents	Difference
Assistant	26%	32%	6%
Associate	34%	31%	− 3%
Full	40%	37%	− 3%
	100%	100%	
n faculty	24,373	3968	

Table 11 Representativeness of respondents by demographics

	Public universities (source: IPEDS)			Respondents
	All	Sampled	Provided rosters	
% Female	39%	38%	38%	45%
% Asian	15%	15%	16%	13%
% Black	6%	6%	4%	4%
% Hispanic or Latinx	5%	6%	5%	5%
% White/Caucasian	65%	63%	65%	69%
% Other/no answer	10%	10%	10%	9%
n universities	182	99	31	
n faculty				3886

Table 12 Representativeness of respondents by departmental discipline

Department	Sample frame	Respondents	Difference
Applied sciences	21.4%	20.8%	− 1%
Business	4.9%	4.6%	0%
Computer science	2.2%	1.5%	− 1%
Education	1.0%	1.6%	1%
Formal sciences	3.9%	3.1%	− 1%
Arts and humanities	19.8%	19.6%	0%
Life sciences	6.5%	5.6%	− 1%
Medical sciences	10.2%	8.6%	− 2%
Physical sciences	9.0%	10.2%	1%
Social sciences	20.5%	23.6%	3%
University libraries	0.5%	0.9%	0%
	100.0%	100.0%	
n faculty	24,373	3968	

The underlines are lines under that set of numbers to emphasize the number below the underline is a total

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