

MORE+BRAINS

It's "ORCID and...", not "ORCID or..."



How researcher identifiers work together to help researchers, build a better picture of research, and streamline administrative tasks



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Photo Credit: Alexas Fotos: <https://www.pexels.com/photo/white-jigsaw-puzzle-17770333/>

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Introduction

ORCID, the Open Researcher and Contributor Identifier,¹ is an open and trustworthy persistent identifier (PID)² for all who contribute to research. Since it was launched in 2012, ORCID has grown to become the de facto standard for researcher identification in scholarly research and beyond, with 9.63 million active records at the time of writing.³ ORCID's interoperability and its 'person-centered' approach differentiate it from the many other researcher identifiers that have evolved to serve different contexts – whether geographical, disciplinary, or system-related. These include identifiers that are heavily curated, or that focus on works or lists of works, rather than people. Far from being a replacement for these identifiers, ORCID is designed to complement them.

The ORCID organization's mission is “to enable transparent and trustworthy connections between researchers, their contributions, and their affiliations by providing a unique, persistent identifier for individuals to use as they engage in research, scholarship, and innovation activities.”⁴

ORCID identifiers (iDs) help to connect research systems together, both directly (through close to 6,200 active integrations between ORCID and institutional, funder, publisher, and other research systems⁵) and via the vast amount of interoperable, reusable metadata associated with ORCID records. ORCID supports more accurate and complete discovery of research outputs. It helps make more contributions to research visible – and, therefore, recognized and rewarded – by including service and other professional activities in ORCID records.⁶ It serves every discipline, by supporting a wide range of relevant output types from biomedicine to the humanities.⁷ And it enables interoperability between the many systems and platforms used by researchers and their organizations.

Critically, the sources of information on ORCID records are clearly shown, including trust markers that indicate when that information has been added by a trusted organization, such as a researcher's university, or where a researcher has added a verified institutional email domain.⁸ This enables trustworthy use and reuse of the information.⁹

Background and context

ORCID's original purpose was to address the name ambiguity problem in scholarly research. In a world where researchers are rewarded based on their work, which is typically linked to

¹ <https://orcid.org>

² <https://support.orcid.org/hc/en-us/articles/360006971013-What-are-persistent-identifiers-PIDs>

³ <https://info.orcid.org/resources/orcid-statistics/>

⁴ <https://info.orcid.org/what-is-orcid/>

⁵ <https://info.orcid.org/resources/orcid-statistics/> (numbers correct at the time of writing)

⁶ <https://info.orcid.org/documentation/integration-guide/admin-guide-to-affiliations/>

⁷ <https://info.orcid.org/uFAQs/what-work-types-does-orcid-support/>

⁸ <https://info.orcid.org/trust-markers-in-orcid-records-verified-email-domains/>

⁹ <https://info.orcid.org/interpreting-the-trustworthiness-of-an-orcid-record/>

them by their name, misattributions are common – think, for example, how many C. Wangs or A. Smiths appear in author lists. Global, multidisciplinary, and interoperable by design, ORCID is now helping to solve this and many other challenges in the research ecosystem.

To help meet the need for a fully-networked global research community, ORCID works with a wide range of research-related organizations around the world that are building ORCID into their systems and sharing their data (with their researchers' permission). ORCID's active member community enables connections between thousands of integrations and supports over 100 million individual contributions to research. These connections are stable and sustainable because ORCID is built on a set of values that commit it to working with all stakeholders in the research ecosystem with openness, inclusion, and trust.¹⁰ Without trust there can't be meaningful collaboration or inclusion; without collaboration and inclusion, the openness that is so central to ORCID's mission is meaningless.

This white paper includes three brief case studies of how ORCID complements other types of researcher identifiers. It shows how ORCID enables global collaboration by extending the coverage of national systems; how it supports disciplinary inclusion and partnerships by working with subject-based infrastructures; and how it underpins interoperability by working openly with proprietary services.

ORCID *and* global collaboration

The need for national researcher identifiers

The location and context for where research happens shapes how it is conducted and funded, what priorities or approaches are emphasized, and how the research is evaluated. Most countries have an R&D strategy, which may, for example, emphasize strengthening the knowledge and innovation economy, as in the Czech Republic,¹¹ or boosting Gross Domestic Product (GDP), as in Malaysia.¹² Governments and funders in each country allocate their research funding to support their goals. They then need to collect accurate, reliable data about the activities that result from this funding, the impacts it creates, and the progress that is being made towards their national priorities.

In many countries, the largest single opportunity to gather information about research is through a national research evaluation exercise. While quality is the focus, the methods used vary from nation to nation – see, for example, the Research Excellence Framework (REF) in the UK¹³ or the Evaluation of Research Quality (VQR) in Italy.¹⁴ However, all these evaluation exercises share a common need for trustworthy and consistent information about national

¹⁰ <https://info.orcid.org/what-is-orcid/#founding-principles>

¹¹ <https://www.ris3.cz/en/about-ris3/national-dimension/national-research-and-innovation-strategy-for-smart-specialisation-of-the-czech-republic-2021-2027>

¹² <https://www.mida.gov.my/industries/services/research-development-rd/>

¹³ <https://www.ukri.org/who-we-are/research-england/research-excellence/research-excellence-framework/>

¹⁴ <https://www.anvur.it/en/research/evaluation-research-quality>

research activities and outputs, and for the correct attribution of contributions to the researchers who delivered them.

Information collected about research in a national context, therefore, contains a great deal of data that is unique and essential to that country's requirements. National identifier systems are a great example of this – with the added benefit of supporting local language(s) interfaces. Ensuring that each country's research information systems and processes meet the needs of nationally defined use cases, support the effective delivery of research, and enable researchers to thrive without an excessive bureaucratic burden often mean that a national identifier is essential for those involved in the research ecosystem.

The international context for research

That said, modern research is global. Funding, information, and talent flow across borders, and researchers everywhere are united by the need to keep on top of developments around the world – in both their own discipline and related research fields.

Researchers are globally mobile, and institutions and research teams often include international partnerships. Research by the Organisation for Economic Cooperation and Development (OECD)¹⁵ in 2015 identified scientific collaboration as a “major factor associated with the mobility of scientists.”¹⁶ Many countries rely on global funding and collaboration to extend the reach and capacity of their researchers as seen, for example, by the high levels of international funding and collaboration in the Republic of Ireland.¹⁷

Plus, of course, research communication is its own complex global network. Authors can publish anywhere in the world. Readers with an internet connection, wherever they are based, can explore content that is accessible via journals or platforms that may be hosted anywhere in the world.

International identifier systems are, therefore, essential to bring the patchwork of national systems together into a coherent whole. As a truly global identifier system for researchers – with users in every country in the world, and members in 63¹⁸ – ORCID works with national ID systems, enabling accurate identification, attribution, recognition, and support for all participants in the global research network.

Both ORCID and national identifiers are enriched by enabling interoperable and trustworthy information to flow between them: ORCID and national researcher IDs bring the global picture into local focus.

¹⁵ <https://www.oecd.org/en.html>

¹⁶ Appelt, S. et al. (2015), “Which factors influence the international mobility of research scientists?”, OECD Science, Technology and Industry Working Papers, No. 2015/02, OECD Publishing, Paris, <https://doi.org/10.1787/5js1tmrr2233-en>

¹⁷ National Open Research Forum, MoreBrains Cooperative. Efficiency and insight: a cost-benefit analysis for a central service to support persistent identifier implementation in Ireland. Text [Type]. Digital Repository of Ireland (2024) [Publisher]. Digital Repository of Ireland [Depositor]. <https://doi.org/10.7486/DRI.nz80kt123>

¹⁸ <https://info.orcid.org/resources/orcid-statistics/>

A national identifier case study: CIÊNCIA ID

The Portuguese CIÊNCIA ID¹⁹ is a great example of this approach in action. CIÊNCIA ID enables anyone involved in the Portuguese research system, whether or not they are citizens of Portugal, to access science services and to share and reuse information across reporting and administrative systems. It is used by researchers, teachers, administrators, and technicians across Portugal, and it connects institutional accounts and national authentication systems with ORCID. This allows data to be shared across multiple Portuguese repositories, and enables researchers' ORCID records to be populated with this data, making it easily available for re-use anywhere in the world. At the time of writing, the CIÊNCIA ID/ORCID integration has resulted in approximately:

- 111.7k connected ORCID iDs
- 83k updated ORCID records
- A total of 3.64M trust markers added to ORCID records via:
 - 3.33M work items added
 - 82.8k personal identifiers items added
 - 226.4k funding items added

Notably, CIÊNCIA ID's ORCID integration contributes to annual savings of more than 154 hours per researcher of time spent on data entry and rekeying information into multiple systems.²⁰

In combination with the PTCRIS²¹ syncing framework, which has been operating since 2015, Portuguese researchers, institutions, and the general public can rely on a sophisticated and robustly integrated system for capturing and sharing research information, which can be displayed and linked via the CIÊNCIA VITAE hub.²² Per a recent PTCRIS blog post: "FCT maintains a leading role in the promotion and adoption of unique identifiers, ensuring that Portugal continues to lead the way globally in the use of ORCID by funded researchers. This commitment is essential to ensure an unequivocal link between authors, funding, projects and scientific output, promoting a more transparent and efficient science."²³

Other national approaches

The Portuguese system has been operating very successfully for over a decade, but there are also other approaches to integrating ORCID with national identifiers.

While researchers control and are responsible for managing their CIÊNCIA VITAE, German researchers benefit from an 'authority file' model provided by the Deutsche Nationalbibliothek (DNB)²⁴ via their Integrated Authority File (GND).²⁵ Skilled staff curate the

¹⁹ <https://www.ciencia-id.pt/CiencialD/HomePage.aspx>

²⁰ <https://orcid.filecamp.com/s/d/PPC5q4j0vcxVRZ8k>

²¹ <https://ptcris.pt/en/>

²² <https://ptcris.pt/en/servico/cienciavitae/>

²³ <https://ptcris.pt/en/portugal-lider-na-adocao-do-orcid/>

²⁴ https://www.dnb.de/EN/Home/home_node.html

²⁵ https://www.dnb.de/EN/Professionell/Standardisierung/GND/gnd_node.html

authority files, and researchers can import that information into their ORCID records for re-use in international systems. They can also authenticate and link their ORCID iDs to their GND file, enabling the GND to import data from ORCID records and vice versa, increasing the re-use of trustworthy information.

For researchers based in Germany, the time of writing, the DNB/ORCID integration has resulted in approximately:

- 68.7k connected ORCID iDs
- 23.9k updated ORCID records
- A total of 164.1k trust markers added to ORCID records via:
 - 151.6k works items added
 - 12.5k personal identifiers items added

Leveraging established services is a great approach to maximizing the benefits of connecting a national researcher identification system with ORCID. However, in some cases, ORCID alone may be enough. For example, The Netherlands opted to discontinue their national Digital Author Identifier (DAI) and instead focus on ORCID adoption and integration across their national network,²⁶ supplemented with the use of ISNIs²⁷ for author names beyond scholarly communications.

ORCID and national identifiers

These differing approaches to author identification in different national contexts are typically a response to specific legal or cultural needs, the availability of centralized or distributed national infrastructures to support services, or the perceptions and preferences of the local researcher community. The critical lesson from all these examples is that, while national IDs play an important role, they can't meet the global needs of a national community.

Complementing national researcher identifiers with ORCID – ORCID and national IDs, not ORCID or national IDs – delivers much more, by enabling the sharing of trustworthy information from both systems, nationally and internationally.

ORCID *and* disciplinary inclusion

Supporting disciplinary communities

Academic disciplines represent international communities of practice, with shared terminology, their own collections of journals, channels of communication, conferences, and more. They act as key hubs for activity and innovation, and have evolved in response to the

²⁶ Pablo de Castro, Ulrich Herb, Laura Rothfritz, & Joachim Schöpfel. (2023). Adoption of the DAI in the Netherlands and subsequent superseding by ORCID/ISNI. Zenodo.

<https://doi.org/10.5281/zenodo.7327505>

²⁷ <https://isni.org>

unique needs of each community, their histories of collaboration, the locales of major funding sources, and, of course, the specific demands of each type of research. Medical research requires very different techniques, tools, and norms from philosophical research, for example, and the types of outputs and resources underpinning each are correspondingly varied.

Disciplines are often supported by social systems and theoretical frameworks that help their communities communicate effectively, discover shared resources, and locate their work in the wider range of sub-specialisms in their domain. Subject taxonomies – controlled vocabularies used to describe, annotate, and classify activities, concepts, and outputs – are a good example of this. The Medical Subject Headings (MeSH),²⁸ for example, is the US National Library of Medicine vocabulary used to index articles in PubMed.²⁹

Disciplinary communities sometimes also share common infrastructures, like the open repository arXiv,³⁰ which enables the sharing of early versions of articles and reports ahead of their formal review and publication (preprints) – initially in physics, and now in a wider range of fields. Similar shared resources – including discipline-specific researcher identifiers – exist in a wide range of other fields.

These infrastructures help to address discipline-specific challenges or practices, such as the long-standing culture of preprint sharing in physics, and the mapping (and recognition) of mathematical mentorships throughout history via the AMS/North Dakota State University Mathematics Genealogy Project.³¹ But over time disciplines change and merge, and new areas of inquiry evolve into new disciplines in their own right. There has also been an increase in interdisciplinarity, making it difficult to say where one discipline ends and another begins. As a result, there is a need for discipline-focused infrastructures and systems to also work well with multidisciplinary ones.

ORCID and disciplinary identifiers together help map the ever-changing disciplinary landscape.

Leveraging established researcher identifiers in individual disciplines and systems, and linking them to ORCID, which spans the entire research landscape, enables connections to be drawn across fields, cross-disciplinary collaborations to be highlighted, and new and emerging trends in research to be tracked.

A disciplinary identifier case study: INSPIRE HEP

The INSPIRE HEP³² platform has been the main information hub for the high-energy physics community for almost 50 years.³³ It is hosted at CERN, the European Organization for

²⁸ <https://www.ncbi.nlm.nih.gov/mesh/>

²⁹ <https://pubmed.ncbi.nlm.nih.gov>

³⁰ <https://arxiv.org>

³¹ <https://www.mathgenealogy.org/>

³² <https://inspirehep.net>

³³ <https://info.orcid.org/cern-a-top-data-contributor-to-orcid-through-inspires-integration-for-high-energy-physics-community/>

Nuclear Research,³⁴ in partnership with DESY,³⁵ Fermilab,³⁶ IN2P3,³⁷ IHEP,³⁸ and SLAC.³⁹ CERN alone represents one of the world's largest scientific collaborations; factoring in the physicists, engineers, computer scientists, and other contributors to research across all the partner organizations, there are a great many people to keep track of.

The physics community is known for its 'hyper-authorship' of papers. INSPIRE HEP contains numerous articles with thousands of authors, many of whom have similar or identical names and/or the same affiliation; its 100,000 author profiles are connected to over 1 million articles. Linking their existing physics-focused author identification system to ORCID in 2013, therefore, made sense for INSPIRE HEP and its users, in order to keep track of all the attributions.

One of the reasons why archives like INSPIRE HEP exist is to support knowledge diffusion. Because it is integrated with ORCID, works can now be linked to author ORCID records wherever they are published, and accurate updates about new activities can be quickly and easily shared.

INSPIRE HEP has, to date, contributed over 1.9 million trust markers to ORCID records via their ORCID integration.

The complexity of the science and innovation described in the articles hosted in INSPIRE HEP is borne out in the range of disciplines represented in it. Particle physics operates at the cutting edge of numerous disciplines, many of which may not look to high-energy physics as the logical first place to find out about developments in their fields. But, by linking INSPIRE HEP and ORCID, the contributions in both systems are made visible and can then be linked to other systems, enabling widespread updates on developments.

ORCID and disciplinary identifiers

Enabling interoperation within and across disciplinary communities and their infrastructures is a key benefit of a mixed approach to researcher identifiers. Exchanging this information across disciplinary boundaries, and ensuring it is trustworthy, helps to solve some of the key information challenges in fields that are both complex and highly collaborative. These are just some of the reasons why it makes sense to use ORCID *and* disciplinary IDs, not ORCID *or* disciplinary IDs.

³⁴ <https://home.cern/>

³⁵ <https://desy.de/>

³⁶ <https://www.fnal.gov/>

³⁷ <https://www.in2p3.cnrs.fr/en>

³⁸ <https://www.in2p3.cnrs.fr/en>

³⁹ <https://slac.stanford.edu/>

ORCID *and* openness

Limited by design

It's a common misconception that all persistent identifiers are open when, in fact, this is not the case. For example, some identifier systems have licensing constraints that mean they cannot be openly reused. Others, like the internal identifiers developed by some service and system providers, are proprietary and are designed to support a specific product or service. While they may be public-facing, they have limited applications outside of their original context.

Two examples of proprietary identifiers can be found in the research information systems provided by Clarivate⁴⁰ and Elsevier,⁴¹ both of which have developed their own researcher identifier. These are designed to be used throughout their suites of products, to enable consistent attribution and to match data across their various systems. Because these identifiers are each owned by a single company, they focus on optimizing the user experience for that company's portfolio of services or tools. However, few organizations exclusively use systems from a single vendor, so these proprietary identifiers have limited utility in terms of being able to integrate data with internal systems or with those of other providers.

Because of these constraints, use of these identifiers outside of their originally intended context is similarly limited. When Thomson Reuters⁴² (who spun Clarivate out as a separate company in 2016⁴³) launched ResearcherID in 2008, it soon became clear that it wasn't going to achieve the level of global acceptance originally envisioned. Individuals and organizations were reluctant to depend on a single company for researcher identification because of uncertainty around the ResearcherID's long-term persistence and potential limits on its widespread adoption. As a result, there was low buy-in to the service, making it challenging to deliver on its original goals.

Thomson Reuters therefore decided to donate the ResearcherID source code to the nascent ORCID initiative,⁴⁴ speeding up the development of this new, open researcher identifier. Why did they help to create an open, community-governed competitor to their own service? The answer is simple: Thomson Reuters (and the other ORCID launch partners⁴⁵) recognized that the 'glue' of a globally adopted, trusted identifier to bring information together would enable a more interoperable information landscape, creating a shared foundation on which everyone would be able to build better services.

⁴⁰ <https://clarivate.com>

⁴¹ <https://www.elsevier.com/en-gb>

⁴² <https://www.thomsonreuters.com/en>

⁴³ <https://en.wikipedia.org/wiki/Clarivate>

⁴⁴ https://info.orcid.org/wp-content/uploads/2022/11/R2_Orcid-10th-Ann-Booklet-FOR_WEB.pdf

⁴⁵ <https://info.orcid.org/orcid-community/orcids-historical-community/>

A proprietary identifier case study: ResearcherID

ResearcherID was built as part of the Web of Science ecosystem, which includes a number of other services provided by Clarivate, such as InCites and EndNote.⁴⁶ It helps match authors across all these products, solving author identity issues, building accurate links between authors and their publications, and sharing information across services to build up more complete profiles. This fills gaps in the metadata and boosts the accuracy of analytics such as citation metrics.

ResearcherID's value for both Clarivate and its users is obvious. Better still, Clarivate's systems are also integrated with ORCID, so that author records can be matched to publications using both the ResearcherID and the ORCID iD, wherever one of these is available. This enhances the accuracy of these matches and it also means that, where an ORCID iD is linked to a ResearcherID, the information associated with that ORCID record can be incorporated reliably into Clarivate's systems – and vice versa.

At the time of writing, the Web of Science integration has resulted in:

- 787.6k connected iDs
- 504.6k updated records
- A total of 17.91M trust markers added to ORCID records, via:
 - 9.43M work items
 - 8.23M peer review items
 - 245k personal identifiers

Using both ORCID iDs and ResearcherIDs also enables interoperability with other researcher and research information systems. For example, researchers can use their ORCID iD to align their Clarivate data with information in their institution's internal systems. If they use other vendors' systems, the shared reference of the ORCID iD can be used to match metadata records. Given the number of services and external platforms used by many researchers to share data (such as unique reporting systems for multiple separate funders), this additional interoperability allows institutions to get much more value from their investment in proprietary services.

⁴⁶ <https://webofscience.help.clarivate.com/Content/wos-researcher-id.htm>

ORCID and proprietary identifiers

Proprietary identifiers have limited scope by design, while ORCID, as an open identifier, may not have the depth of integration or flexibility that a proprietary solution can provide. However, in conjunction with a proprietary ID, ORCID both adds value and enables interoperability.

This insight has not been lost on others in the research information ecosystem including Elsevier, whose proprietary researcher identifier, the Scopus Author ID, underpins their Author Profiles.⁴⁷

Like Thomson Reuters, Elsevier was an ORCID launch partner organization;⁴⁸

they demonstrated ORCID's value to their own services by building one of the first 'search and link wizards',⁴⁹ which was announced at the ORCID launch in October 2012.⁵⁰

Openness allows other systems – both open and proprietary – to benefit from shared infrastructure.

The fact that two of the biggest proprietary researcher identifiers in the world were not just quick to adopt ORCID, they actually helped to build it, shows that – when trust and interoperability are essential – the best option is ORCID and proprietary IDs, not ORCID or proprietary IDs.

Recommendations

While much progress has been made in terms of ORCID integrations with other types of researcher identifiers, there is still work to be done. We therefore recommend that ORCID continues to work with the identifier community on the high-value opportunities outlined below.

- **ORCID should proactively engage with providers of national and disciplinary identifiers.** Interoperability between ORCID and the identifiers currently preferred by some geographical and subject communities will benefit everyone. Engaging with those communities to better understand and address their concerns about integrating with ORCID is, therefore, critical. This could include:
 - Identifying key national, discipline-specific, and proprietary researcher identifier systems that are not yet integrated with ORCID and prioritizing them for engagement and outreach
 - Working with them on messaging for their researchers, highlighting ORCID's role as an open, neutral, and global identifier

⁴⁷ <https://www.elsevier.com/en-gb/products/scopus/author-profiles>

⁴⁸ <https://www.elsevier.com/en-gb/connect/new-orcid-id-aims-to-resolve-authorship-confusion>

⁴⁹ <https://info.orcid.org/documentation/workflows/search-and-link-workflow/>

⁵⁰ <https://info.orcid.org/orcid-launches-registry/>

- Developing targeted, relevant, and detailed case studies to help showcase the value of ORCID
- Making adjustments to ORCID's support, offerings, or membership model to facilitate adoption
- **ORCID should work with other researcher identifiers to improve their integrations.** These are not actions for ORCID alone; they will also require investment from partners to unlock the potential value. Some of these integrations were developed a long time ago and, in order to be of value to their user communities, they need updating, for example:
 - The International Standard Name Identifier (ISNI)⁵¹ integration with ORCID was developed as part of an EU-funded project, and is currently not functional. ISNI is a curated identifier for a broader range of contributors than ORCID, which is focused specifically on contributors to research. Unlike ORCID iDs, ISNI IDs can be assigned to fictional characters and historical figures, as well as performers, creative artists, and others. However, many ISNI records have been assigned to researchers and others who contribute to research, making it an invaluable complement to ORCID, especially in countries where ISNI is central to their identifier approach. The original work to build an ISNI2ORCID tool, and the subsequent version that was released in late 2017, were both supported by European Commission funded projects. If functioning, this tool would help researchers in many contexts to easily populate their ORCID records with trustworthy information. It would also aid librarians and others to better curate and verify ISNI records. And it would enable reliable links to be maintained between research activities and other named entities, especially after researchers are no longer active. This service should therefore be improved and placed on a sustainable footing
 - Given the increasing centrality of software to research across many disciplines, the recently announced⁵² integration of ORCID into Github⁵³ is welcome and should be expanded and developed further. The current agreement is an excellent first step, but the stated shared goal of engaging ORCID and Github's "respective communities and stakeholder groups on the specific use cases that would define this deeper integration and the data that could be exchanged between the two systems" should be fleshed out into a concrete plan of action at the earliest opportunity. Developing other shared goals between ORCID and Github, based on evidenced and prioritized needs, will help to manage expectations in the wider community. It will also encourage researchers to use this integration, as well as making it easier for employers and funders to recognize this ever-more valuable contribution to research

⁵¹ <https://isni.org/>

⁵² <https://info.orcid.org/orcid-and-github-sign-memorandum-of-understanding/>

⁵³ <https://github.com/>

- **Providers of researcher identifiers should increase the presence of trust markers in ORCID records.** Integrating with ORCID will be more valuable to other researcher identifier systems if they understand how the trust markers they add to ORCID records are being propagated throughout other systems used by their communities. Continued investment by ORCID in ways to simplify and support this process will be required. In addition, it will be important to continue to lower the barriers to participation in ORCID, for example, for communities with fewer resources and/or less capacity. Existing examples of ORCID's work to support the addition of more trust markers to ORCID records include:
 - ORCID record summaries,⁵⁴ which highlight key information on ORCID records, displaying a count of how many works, peer reviews, and funding items, and clearly indicating which items have trust markers (i.e. they have been added by a trusted organization, such as the researcher's institution or funding organization)
 - The Global Participation Fund (GPF), which was launched in 2022 to remedy gaps in ORCID participation from organizations in the Global South, especially in countries with low- and lower-middle-income economies (as defined by the World Bank). The GPF currently provides competitive grants for Community Development and Outreach, and for Technical Integration⁵⁵
 - Member Equity Program Consortia Fees & Tiers provide more affordable membership options for consortia in lower-income and lower-middle-income countries⁵⁶
 - The Certified Service Provider program⁵⁷ supports trusted ORCID integrations by offering official (and free) certification to service providers that follow recognized best practices
 - Affiliation Manager,⁵⁸ which allows institutions to add affiliation data to their researchers' ORCID records quickly, without the need for a developer or specialized IT knowledge

⁵⁴ <https://info.orcid.org/documentation/integration-guide/summarizing-orcid-record-data/>

⁵⁵ <https://info.orcid.org/global-participation-program/global-participation-fund/>

⁵⁶ <https://info.orcid.org/membership/>

⁵⁷ <https://info.orcid.org/vendors-and-service-providers/become-an-orcid-certified-service-provider/>

⁵⁸ <https://info.orcid.org/affiliation-manager/>

Looking to the future

In some communities, where national, disciplinary, or proprietary researcher identifiers are well established and widely used, ORCID is seen as an 'extra' identifier, whose value is not always apparent. However, ORCID is most powerful in combination with these other identifier types. Integrations between ORCID *and* other types of researcher identifiers benefit everyone, by enabling trustworthy information – validated in one or both systems – to flow seamlessly across the many online tools and platforms used by researchers and their organizations.

As noted, there is still work to be done by both ORCID and its community of researchers and members to increase and better support these sorts of integrations – and ORCID alone cannot solve every problem associated with researcher identification. But, as a trusted, neutral, and global partner, it helps support the many other initiatives that are building better solutions to their own particular challenges.

The combination of ORCID and other researcher identifiers is more powerful than any one identifier alone.

Appendix

Researcher identifiers integrated with ORCID

All researcher identifiers that have integrated with ORCID as of the time of publication.

National ID Systems

ID	Country
Ciência ID	Portugal
GND	Germany, Austria and Switzerland
Researcher Name Resolver ID	Japan
Jordan Research Identification Number	Jordan
ID Dialnet	Spain
CTI Vitae	Perú
ID Lattes	Brazil
Vidwan ID	India
IdRef	France
IBI (Researcher Identification Number)	Serbia

Disciplinary ID Systems

ID	Discipline
INSPIRE-HEP	High Energy Physics
arXiv Author ID	Physics
dblp	Computer Science

Proprietary/Global ID Systems

ID	Organization
Scopus Author ID	Elsevier
Researcher ID	Clarivate Analytics
SciProfiles	MDPI
Loop profile	Frontiers
ISNI	OCLC
GitHub	GitHub
QID	Wikidata