

---

# **PIDs 101**

## A Beginners' Guide to Persistent Identifiers

*\*adapted from Pidapalooza 2021 PIDs 101*

---

**What is a persistent identifier?**

# **persistent identifier**



an organization  
made a promise  
to keep it alive

globally unique  
string of  
characters

(known as PIDs to their friends)

# PIDs for people, places, and things in the research community

PIDs for people (researchers) include ISNIs and ORCID iDs



PIDs for places (research organizations) include GRID and ROR



PIDs for things (research outputs/inputs like grants, reviews, preprints, projects, etc.) include Crossref and DataCite DOIs, IGSNs, RAiDs, and more



**Provenance**

**Metadata**

Who's who?

What's what?

Can you tell me more about it?

What?

Who's who?

Who?

A persistent identifier is a long-lasting reference to a digital resource

How long is long?

Where can my machine find it?

Where can I find it?

How do I know?

**Machine-readability**

**Policies and Guarantees**

---

**What can PIDs *\*do\** and why  
are they important?**

---

## PIDs disambiguate

# Robin Dasler

## ORCID iD

 <https://orcid.org/0000-0002-4695-7874>

 [Print view](#) 

## Also known as

RH Dasler, RL Dasler, RL Howard,  
Robin Howard

## Other IDs

[ResearcherID: N-9035-2013](#)

---

# PIDs support linking

## References

[Abd Ellah and Abouelmagd, 2016](#) N.H. Abd Ellah, S.A. Abouelmagd

**Surface functionalization of polymeric nanoparticles for tumor drug delivery: approaches and challenges**

Expert Opin. Drug Deliv., 1–14 (2016),

[10.1080/17425247.2016.1213238](https://doi.org/10.1080/17425247.2016.1213238)

[Google Scholar](#)

[Abouelmagd et al., 2016](#) S.A. Abouelmagd, F. Meng, B.-K. Kim, H.

Hyun, Y. Yeo

**Tannic acid-mediated surface functionalization of polymeric nanoparticles**

ACS Biomater. Sci. Eng. (2016), p. 6b00497,

[10.1021/acsbiomaterials.6b004](https://doi.org/10.1021/acsbiomaterials.6b004)

[Google Scholar](#)

[Ahmed et al., 2016](#) S. Ahmed, S. Annu, S.S. Yudha

**Biosynthesis of gold nanoparticles: a green approach**

J. Photochem. Photobiol. B: Biol., 161 (2016), pp. 141-153,

[10.1016/j.jphotobiol.2016.04.034](https://doi.org/10.1016/j.jphotobiol.2016.04.034)

[Article](#)  [Download PDF](#) [View Record in Scopus](#)

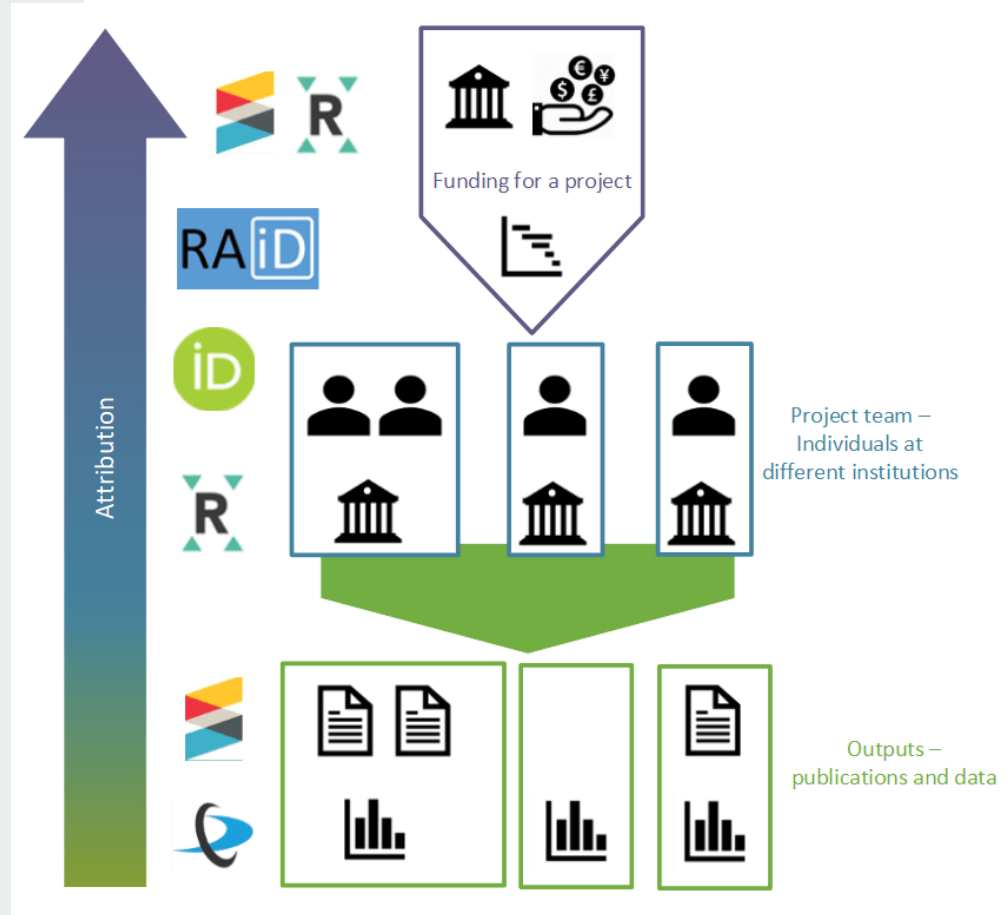
[Google Scholar](#)

[Akhavan et al., 2011](#) O. Akhavan, R. Azimirad, S. Safa, E. Hasani

*Synthesis of Ag Nanoparticles by Green Method*



# PIDs enable interoperability



---

# PIDs help make research FAIR

Data should be <b>Findable</b>	<ul style="list-style-type: none"><li>F1. (meta)data are assigned a globally unique and persistent identifier (DOI)</li><li>F2. data are described with rich metadata</li><li>F3. metadata clearly and explicitly include the identifier of the data it describes</li><li>F4. (meta)data are registered or indexed in a searchable resource</li></ul>
Data should be <b>Accessible</b>	<ul style="list-style-type: none"><li>A1. (meta)data are retrievable by their identifier using a standardized communications protocol<ul style="list-style-type: none"><li>A1.1 the protocol is open, free, and universally implementable</li><li>A1.2 the protocol allows for an authentication and authorization procedure, where necessary</li></ul></li><li>A2. metadata are accessible, even when the data are no longer available</li></ul>
Data should be <b>Interoperable</b>	<ul style="list-style-type: none"><li>I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.</li><li>I2. (meta)data use vocabularies that follow FAIR principles</li><li>I3. (meta)data include qualified references to other (meta)data</li></ul>
Data should be <b>Reusable</b>	<ul style="list-style-type: none"><li>R1. meta(data) are richly described with a plurality of accurate and relevant attributes<ul style="list-style-type: none"><li>R1.1. (meta)data are released with a clear and accessible data usage license</li><li>R1.2. (meta)data are associated with detailed provenance</li><li>R1.3. (meta)data meet domain-relevant community standards</li></ul></li></ul>

---

# PIDs support a trustworthy research infrastructure



Image: University of Washington Office of Research

---

**How to support PIDs !?**

---

# Step 1: Get and use PIDs

Get an ORCID iD for yourself → <https://orcid.org>

Give DOIs to your data and software → <https://datacite.org>,  
<https://guides.github.com/activities/citable-code/>

Put your reports and white papers into a repository that gives out PIDs → <https://repositoryfinder.datacite.org> or your institutional repository

---

## Step 2: Tell your PIDs about your other PIDs

Include relevant related PIDs in the metadata for your software, dataset, and paper PIDs, even if your repository says they're optional.

In Zenodo (for example), it looks like this:

**Related/alternate identifiers** recommended ▾

Specify identifiers of related publications and datasets. Supported identifiers include: DOI, Handle, ARK, PURL, ISSN, ISBN, PubMed ID, PubMed Central ID, ADS Bibliographic Code, arXiv, Life Science Identifiers (LSID), EAN-13, ISTC, URNs and URLs.

**Related identifiers**   ×

[+ Add another related identifier](#)

**Contributors** optional ▶

---

## Step 3: With the community build an infrastructure supports PIDs!

Service and Infrastructure providers ENABLE PIDs!

The need for platforms, services and systems to integrate PIDs into operations and workflows is supported by you!



*Certification entitles service providers to benefits such as a reduced go-live time for ORCID members using the certified SP product.*



---

**Questions?**