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Annual call for board nominations



[Lucy Ofiesh](#) – 2022 May 31

In [Board](#), [Member Briefing](#), [Governance](#), [Elections](#), [Crossref Live](#), [Annual Meeting](#)

The Crossref Nominating Committee is inviting expressions of interest to join the Board of Directors of Crossref for the term starting in March 2023. The committee will gather responses from those interested and create the slate of candidates that our membership will vote on in an election in September.

Expressions of interest will be due Friday, June 24th, 2022.

About the our board elections

The board is elected through the “one member, one vote” policy wherein every member organization of Crossref has a single vote to elect representatives to the Crossref board. Board terms are for three years, and this year there are five seats open for election.

The board maintains a balance of seats, with eight seats for smaller members and eight seats for larger members (based on total revenue to Crossref). This is in an effort to ensure that the diversity of experiences and perspectives of the scholarly community are represented in decisions made at Crossref.

This year we will elect four of the larger member seats (membership tiers \$3,900 and above) and one of the smaller member seats (membership tiers \$1,650 and below). You don’t need to specify which seat you are



Good to know

- Please mute yourself
- We are recording this
- Introduce yourself in the chat
- Ask any questions in the chat as we go
- Share @CrossrefOrg with [#ResearchNexus](#)
- Stay for the discussion!

Speakers & facilitators

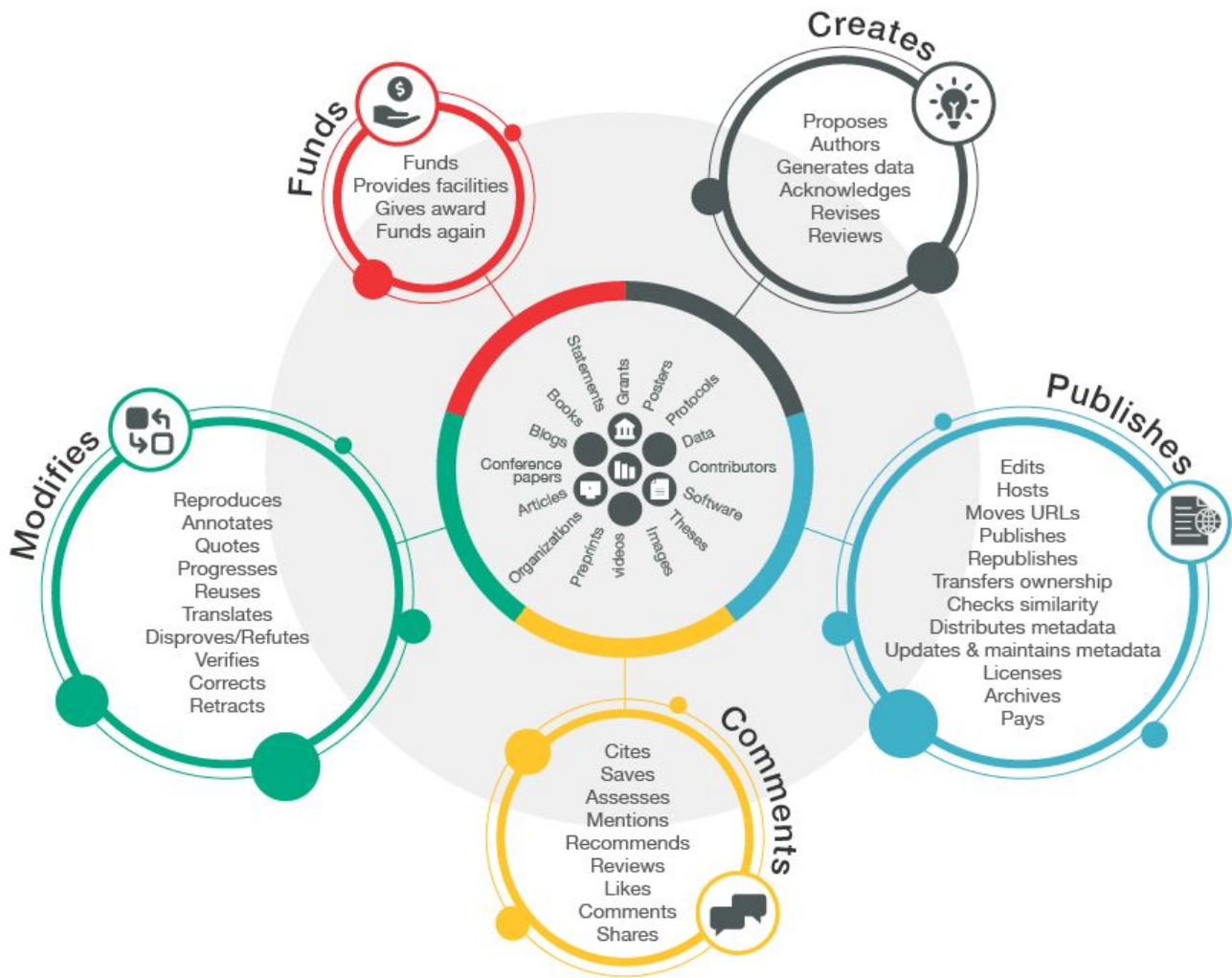


Like others,

“we envision a rich and reusable open network of relationships connecting research organizations, people, things, and actions;

a scholarly record that the global community can build on forever, for the benefit of society.”

Research Nexus vision



Metadata & relationships

- That an object or entity **exists**
- Information **about** an object or entity
- Information about how the objects/entities **relate** or interact
- Information about what happens to the record **over time**
- Information about an object or entity **asserted** by the community
- Information previously assumed **administrative** (private or not interesting) like payments, depositors, maintenance, hosting



“This suggests that the scholarly record is evolving to incorporate a deep contextual layer around traditional published outcomes and their equivalents. The result is a scholarly record that is a much more complete documentation of scholarly inquiry than what we have historically retained.”

Figure 1. The Evolving Scholarly Record

Lavoie, Brian and Constance Malpas. 2015. *Stewardship of the Evolving Scholarly Record: From the Invisible Hand to Conscious Coordination*. Dublin, Ohio: OCLC Research. <https://doi.org/10.25333/C3J63N>.

Key points

- Reflection of where the community is heading
- Identifiers are necessary but they are not sufficient
- What we think of as metadata is expanding, and the notion of ‘content types’ is evolving
- The research nexus vision belongs to all of us

A landscape photograph of a herd of black cows in a field, overlaid with colorful geometric shapes. The background shows rolling hills and mountains under a cloudy sky. The foreground is a field of dry grass with a small stream. The text is overlaid on the left side of the image.

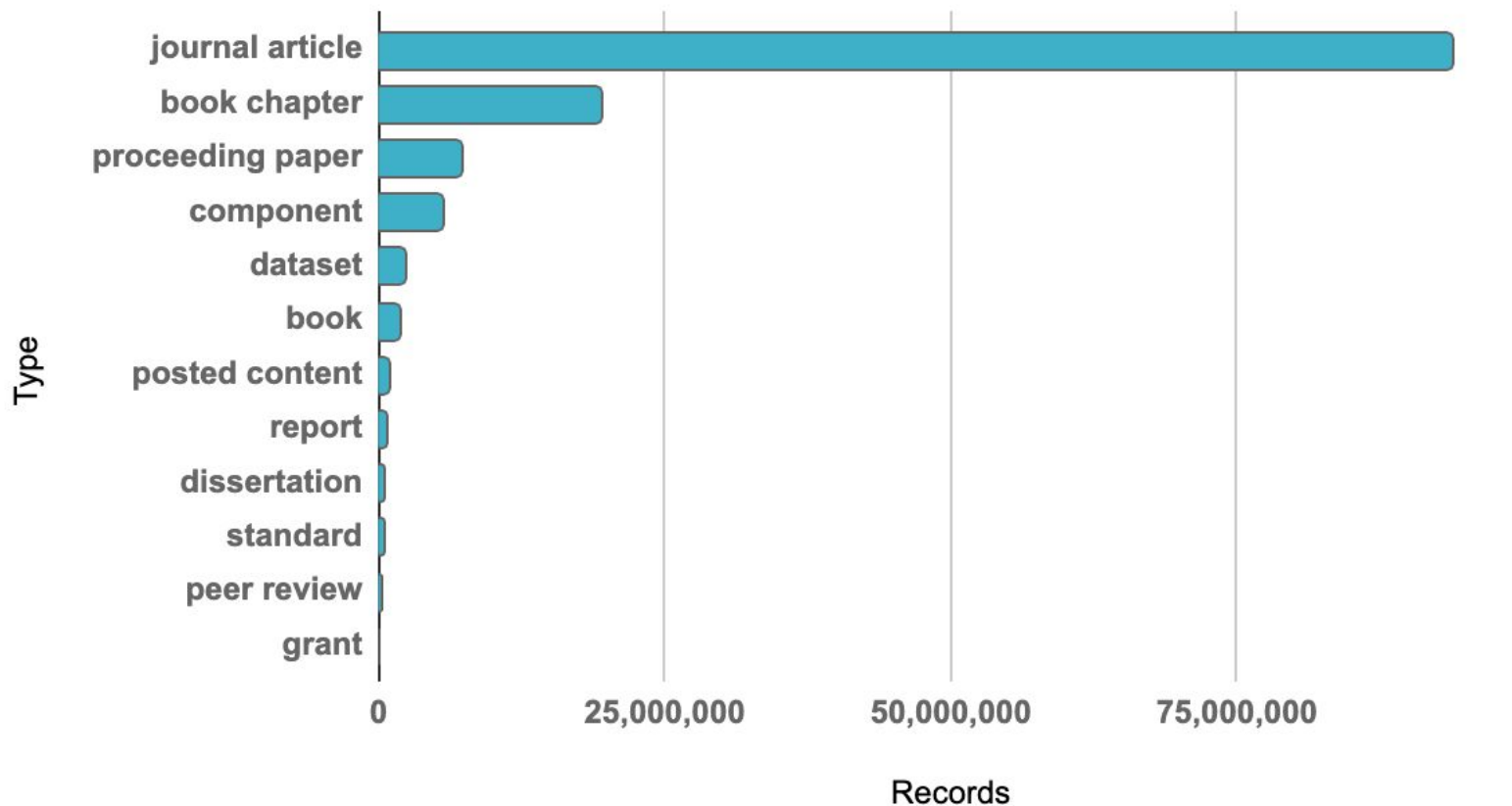
Introduction to relationships in metadata

Patricia Feeney
Head of Metadata

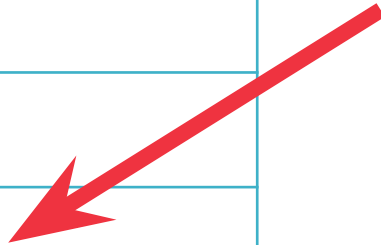
Relationships

- points of connection between two objects, can be explicit (supplied as relationship metadata) or implicit (a connection created by metadata such as a PID within a record)

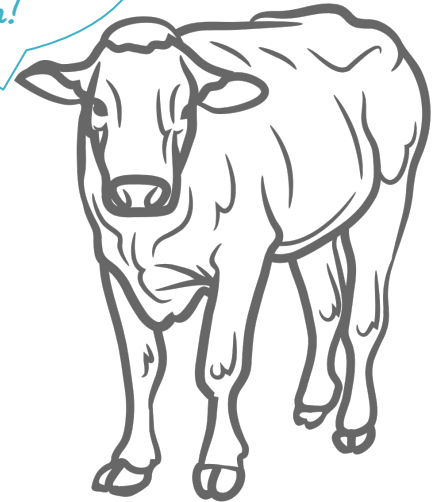
Records by model



type	2020	2021
journal articles	8%	7%
book	8%	10%
dataset	10%	86%
dissertation	22%	39%
posted content	183%	42%
report	2%	6%
proceeding papers	10%	6%
peer review	215%	80%



Wow that is some big growth!



Out of **135,124,748** metadata records:

- **44%** have references
- **42%** have license info
- **13%** have at least one affiliation
 - 8,863 with ROR IDs
- **12%** have an abstract | 6,648,152
- **6%** have at least one ORCID iD | 6,192,048
- **6%** have funder information | 4,131,097
- **1%** have a relationship | 762,637
- **>1%** have updates (via Crossmark) | 96, 045
- **>1%** have clinical trial numbers | 10,474

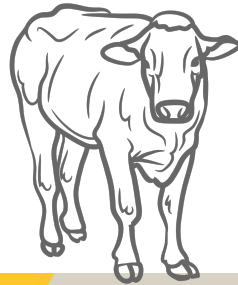
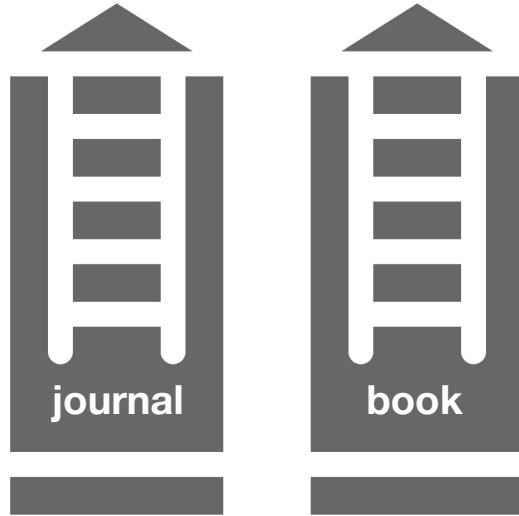
Out of **23,477,996** metadata records issued* **since 2019**:

- **52%** ~~44%~~ have references
- **52%** ~~42%~~ have license info
- **21%** ~~13%~~ have at least one affiliation
 - 8,863 with ROR IDs
- **28%** ~~12%~~ have an abstract
- **26%** ~~6%~~ have at least one ORCID iD
- **18%** ~~6%~~ have funder information
- **3%** ~~1%~~ have a relationship
- **>1%** have updates (via Crossmark)
- **>1%** have clinical trial numbers

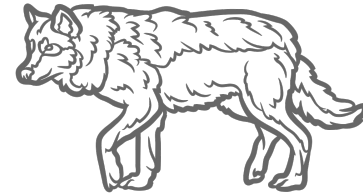
* issued = earliest publication/created/posted date provided

Where we are:

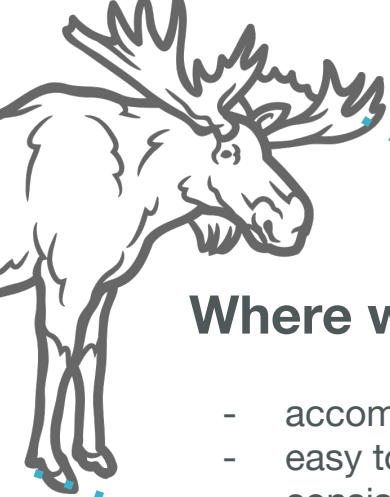
- content silos
- some inconsistencies
- hard to adapt or expand
- rigid hierarchy



I would like to be identified and cited correctly

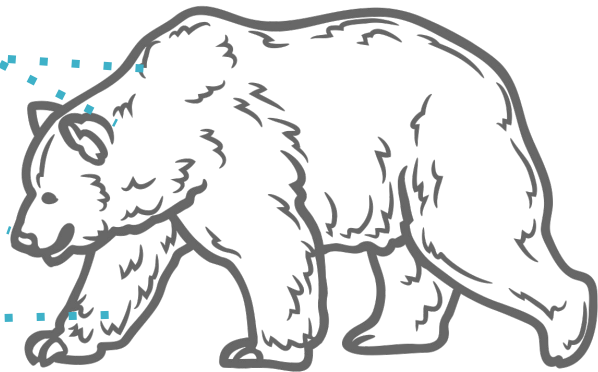
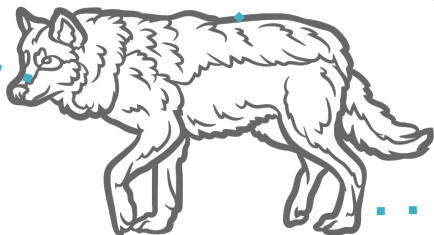


Same, DOIs are great but I need to be identified accurately



Where we'll be:

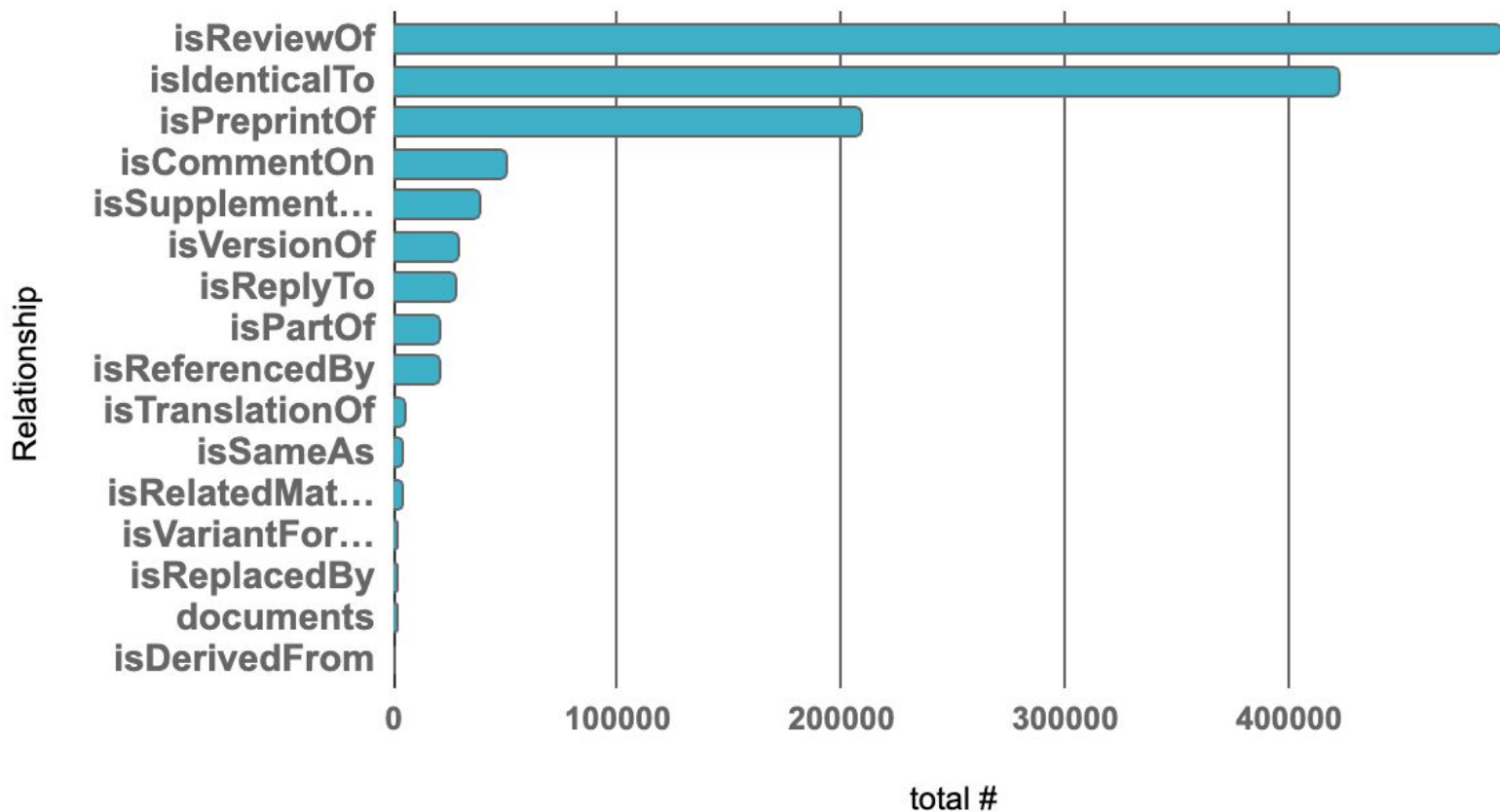
- accommodates a range of objects
- easy to expand
- consistent across content types
- relationships give us flexibility



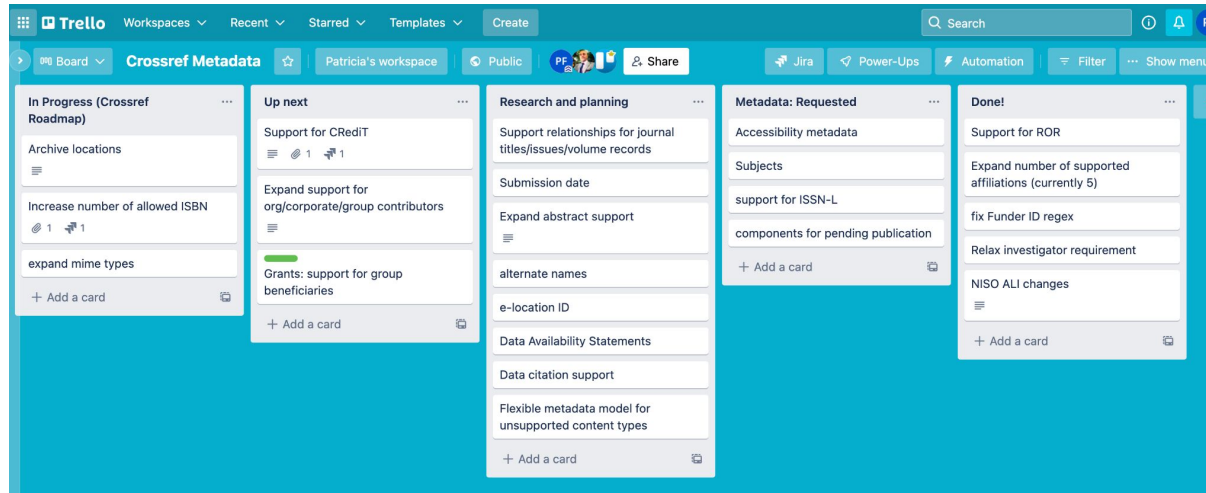
- compiles | isCompiledBy
- continues | isContinuedBy
- documents | isDocumentedBy
- hasComment | isCommentOn
- hasDerivation | isDerivedFrom
- hasPart | isPartOf
- hasRelatedMaterial | isRelatedMaterial
- isBasisFor | isBasedOn
- references | isReferencedBy
- hasReply | isReplyTo
- requires | isRequiredBy
- finances | isFinancedBy
- isReviewOf | hasReview
- hasExpression | isExpressionOf
- hasFormat | isFormatOf
- hasManifestation | isManifestationOf
- hasManuscript | isManuscriptOf
- hasPreprint | isPreprintOf
- hasTranslation | isTranslationOf
- hasVersion | isVersionOf
- isReplacedBy | replaces
- isOriginalFormOf | isVariantFormOf
- isIdenticalTo
- isSameAs

24 relationship types!

Relationships



Metadata development



<https://trello.com/b/JaB7xxgw/crossref-metadata>

Poll time



A landscape photograph featuring a herd of black cows in a field of dry, golden-brown grass. In the background, there are rolling hills and mountains under a cloudy sky. The image is overlaid with several large, semi-transparent geometric shapes in shades of purple, green, and blue. The text is overlaid on the purple and green shapes.

Delving into the Research Nexus

Martyn Rittman
Product Manager

Data citation

The screenshot shows the Karger website interface. At the top, there are navigation links for JOURNALS, BOOKS, COURSES, COLLECTIONS, and SUBJECT GUIDE. Below this is a header for 'International Archives of Allergy and Immunology' and 'Clinical Allergy – Research Article'. The main title of the article is 'Which Is the Best Biologic for Nasal Polyps: Dupilumab, Omalizumab, or Mepolizumab? A Network Meta-Analysis'. Below the title, there is a list of authors: Wu Q.^{a,b}, Zhang Y.^a, Kong W.^a, Wang X.^a, Yuan L.^c, Zheng R.^a, Qiu H.^a, Huang X.^{a,b}, Yang Q.^{a,b}. There are also links for 'Author affiliations', 'Keywords', and 'Network meta-analysis'. At the bottom, there are social media icons for Facebook, Twitter, LinkedIn, and Email. On the right side of the article, there is a sidebar with 'Article Tools' (Get Permission, PubMed ID, Citation Download, Web of Science Citations: 1, Add to my Reading List) and 'Article Details' (2022, Vol.183, No. 3, February 2022). A red box highlights the 'Free Supplementary Material' link in the Article Details section.

The screenshot shows the PubMed search results page. At the top, there is a search bar with the text 'Search on Karger Publisher...' and a 'Log in' link. Below the search bar, there is a table with the following content:

PubMed
1. nasal polyps[MeSH Terms]
2. (((nasal polyp*[Title/Abstract]) OR (nose polyp*[Title/Abstract])) OR (nasal papilloma[Title/Abstract])) OR (nasal papilloma[Title/Abstract])) OR (nasal polyposis[Title/Abstract])
3. #1 OR #2
4. sinusitis[MeSH Terms]

Below the table, there is a link to the supplementary material: 'Supplementary Material for: Which Is the Best Biologic for Nasal Polyps: Dupilumab, Omalizumab, or Mepolizumab? A Network Meta-Analysis'. The link is highlighted with a red box. Below the link, there is a footer with the text 'figshare: credit for all your research.'

Table 1. Search strategies

PubMed
1. nasal polyps[MeSH Terms]
2. (((nasal polyp*[Title/Abstract]) OR (nose polyp*[Title/Abstract])) OR (nasal papilloma[Title/Abstract])) OR (nasal papilloma[Title/Abstract])) OR (nasal polyposis[Title/Abstract])
3. #1 OR #2
4. sinusitis[MeSH Terms]

<https://api.crossref.org/works/10.1159/000519228>

```
"relation": {  
  "is-supplemented-by": [  
    {  
      "id-type": "doi",  
      "id": "10.6084/m9.figshare.16729009",  
      "asserted-by": "subject"  
    }  
  ]  
}
```

Policy documents, technical documents, and patents

Reducing peatland emissions



Overview

- Where waterlogging prevents the decomposition of plant matter it accumulates as a peat store of carbon.
- This stored carbon is emitted as greenhouse gases from peat soils when they are drained to lower water levels and managed for land use such as agriculture and forestry.

Services: [Science, Policy and Practice](#), Cambridge University Press.

3. United Nations Environment Programme (2021). [Economics of Peatlands Conservation, Restoration, and Sustainable Management - A Policy Report for the Global Peatlands Initiative](#).
4. CCC. [2021 Progress Report to Parliament](#). *Climate Change Committee*.
5. Joosten, H. 2021. [International Mire Conservation Group - Bulletin, Issue 03 21](#). p.20-23
6. Page, S, et al. (2020). [Societal Impacts Report - March 2020.pdf](#). CEH
7. Lindsay, R. *et al.* (2019) [Peatlands: the challenge of mapping the world's invisible stores of carbon and water](#). UNASYLVA, Vol 70, 12.
8. IUCN UK Committee Peatland Programme (2014). [Impacts of Artificial Drainage on Peatlands, Briefing Note 3.pdf](#).
9. IPCC. 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands - IPCC-TFL.
10. Evans, C. *et al.* (2017). [Implementation of an Emissions Inventory for UK Peatlands](#). Centre for Ecology and

s

[i_brief_system](#)

Page 5

31. Gabbatiss, J. (2021). [Analysis: How will England's strategies for trees and peat help achieve net-zero by 2050?](#) *Carbon Brief*.
32. Wilson, D. *et al.* (2016). [Greenhouse gas emission factors associated with rewetting of organic soils](#). *Mires and Peat*, 1–20.
33. Ash, E. H. (2016). [Reclaiming a New World: Fen Drainage, Improvement, and Projectors in Seventeenth-Century England](#). *Early Science and Medicine*, Vol 21, 445–469.
34. Johnson, S. *et al.* (2019). [Productive Lowland Peatland.pdf](#).
35. Graves, A. and Morris, J. (2013). [Restoration of Fenland Peatland under Climate Change. Report to the Adaptation Sub-Committee of the Committee on Climate Change](#). Cranfield University.
36. Wilson, L. *et al.* (2011). [The effect of blanket bog drainage on habitat condition and on sheep grazing: evidence from a Welsh upland bog](#). *Biological Conservation*, Vol 144, 193–201.
37. IUCN UK Commission of Inquiry on Peatlands Summary of Findings.
38. Natural England. (2010). [England's peatlands: carbon storage and greenhouse gases - NE257](#).

Greenhouse gas emission factors associated with rewetting of organic soils

D. Wilson¹, D. Blain², J. Couwenberg³, C.D. Evans⁴, D. Murdiyarto^{5,6}, S.E. Page⁷, F. Renou-Wilson⁸, J.O. Rieley⁹, A. Sirin¹⁰, M. Strack¹¹ and E.-S. Tuittila¹²

¹ Earthy Matters Environmental Consultants, Donegal, Ireland

² Environment Canada, Gatineau, Canada

³ University of Greifswald / Greifswald Mire Centre, Greifswald, Germany

⁴ Centre for Ecology and Hydrology, Bangor, Wales, UK

⁵ Center for International Forestry Research, Bogor, Indonesia

⁶ Bogor Agricultural University, Bogor, Indonesia

⁷ University of Leicester, Leicester, England, UK

⁸ University College Dublin, Dublin, Ireland

⁹ University of Nottingham, Nottingham, England, UK

¹⁰ Institute of Forest Science, Russian Academy of Sciences, Uspenskoe, Russia

¹¹ University of Waterloo, Ontario, Canada

¹² University of Eastern Finland, Joensuu, Finland

SUMMARY

Drained organic soils are a significant source of greenhouse gas (GHG) emissions to the atmosphere. Rewetting these soils may reduce GHG emissions and could also create suitable conditions for return of the carbon (C) sink function characteristic of undrained organic soils. In this article we expand on the work relating to rewetted organic soils that was carried out for the 2014 Intergovernmental Panel on Climate Change (IPCC) *Wetlands Supplement*. We describe the methods and scientific approach used to derive the

News websites

FUTURE What is BBC Future? Future Planet Follow the Food Family Tree Immune Response Change Agents More 



By **Zaria Gorvett**  10th January 2022

For millennia, people slept in two shifts – once in the evening, and once in the morning. But why? And how did the habit disappear?

It was around 23:00 on 13 April 1699, in a small village in the north of England. Nine-year-old Jane Rowth blinked her eyes open and squinted out into the moody evening shadows. She and her mother had just awoken from a short sleep.

Mrs Rowth got up and went over to the fireside of their modest home, where she began smoking a pipe. Just then, two men appeared by the window. They called out and instructed her to get ready to go with them.

As Jane later explained to a courtroom, her mother had evidently been expecting the visitors. She went with them freely – but first whispered to her daughter to “lye still, and shee would come againe in the morning”. Perhaps Mrs Rowth had some nocturnal task to complete. Or maybe she was in trouble, and knew that leaving the house was a risk.

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AMERICAN JOURNAL OF
HUMAN BIOLOGY

ORIGINAL RESEARCH ARTICLE

Segmented sleep in a nonelectric, small-scale agricultural society in Madagascar

David R. Samson  Melissa B. Manus, Andrew D. Krystal, Efe Fakir, James J. Yu, Charles L. Nunn

First published: 09 February 2017 | <https://doi.org/10.1002/ajhb.22979> | Citations: 20

Funding information: Duke University and BASS Connections

Read the full text >

 PDF  TOOLS  SHARE

Abstract

Objectives

We studied sleep in a rural population in Madagascar to (i) characterize sleep in an equatorial small-scale agricultural population without electricity, (ii) assess whether sleep is linked to noise levels in a dense population, and (iii) examine the effects of experimentally introduced artificial light on sleep timing.

Methods

Using actigraphy, sleep–wake patterns were analyzed for both daytime napping and nighttime wakefulness in 21 participants for a sum total of 292 days. Functional linear modeling was used to characterize 24-h time-averaged circadian patterns and to investigate the effect of experimentally introduced mobile field lights on sleep timing. We also obtained the first polysomnography (PSG) recordings of sleep in a traditional population.

Results

In every measure of sleep duration and quality, the Malagasy population experienced



Volume 29, Issue 4
Special Issue: Humans in
Marginal Environments
July/August 2017
e22979



Recommended

[Esworth Sleepiness Scale and sleep studies in patients with obstructive sleep apnea syndrome](#)

Hisakazu Furuta, Reizo Kaneda, Kazuto Kosaka, Hideki Arai, Joh Sano, Yoshifumi Koshino

Psychiatry and Clinical Neurosciences

[Sleep onset rapid-eye-movement episodes in narcolepsy: REM sleep pressure or non-REM-REM sleep dysregulation?](#)

MEHDI TAFTI, ERIC VILLEMEN, BERTRAND CARLANDER, ALAIN BESSET, MICHEL BILLIARD

Journal of Sleep Research

[Selective REM sleep deprivation in narcolepsy](#)

MANH HOANG VU, CHRISTOPH HURNI, JOHANNES MATHIS, CORINNE ROTH, CLAUDIO L. BASSETTI

Journal of Sleep Research

#ResearchNexus

Social media



めがらいサムネバカ

@Glasses_Lion

ネットで見れるすごい論文

● YouTuberの動画における視聴者に選択されるサムネイル画像とタイトルの研究

[jstage.jst.go.jp/article/jjske/...](https://jstage.jst.go.jp/article/jjske/18/1/139-145)

● 視聴回数とサムネイルの設計との関係のペイズ統計による解析

[jstage.jst.go.jp/article/jceek...](https://jstage.jst.go.jp/article/jceek/18/1/139-145)

● 顔の魅力に及ぼすサムネイル効果

[jstage.jst.go.jp/article/hps/40...](https://jstage.jst.go.jp/article/hps/40/1/139-145)

[Translate Tweet](#)



4:11 AM · Mar 29, 2022 · Twitter Web App

The screenshot shows the J-STAGE article page for the paper 'YouTubeの動画における視聴者に選択されるサムネイル画像とタイトルの研究'. The page includes the J-STAGE logo, navigation links, and search options. The article title is prominently displayed in a dark blue header. Below the title, there are links for '資料トップ', '巻号一覧', 'おすすめ記事', and 'この資料について'. The article details include the authors (佐藤 亮介, 田村 良一), keywords (YouTube, Thumbnail images, Titles), and publication information (2019年18巻1号 p. 139-145). A DOI link is provided: <https://doi.org/10.5057/jjske.TJSKE-D-18-00038>. The page also features a 'PDFをダウンロード' button and a list of download options (RIS, BibTeX, etc.).

Other examples

Credit, kudos, and annotation

Grant funding

People and institutions

Translation, republishing, reworking

Educational materials

Poll time



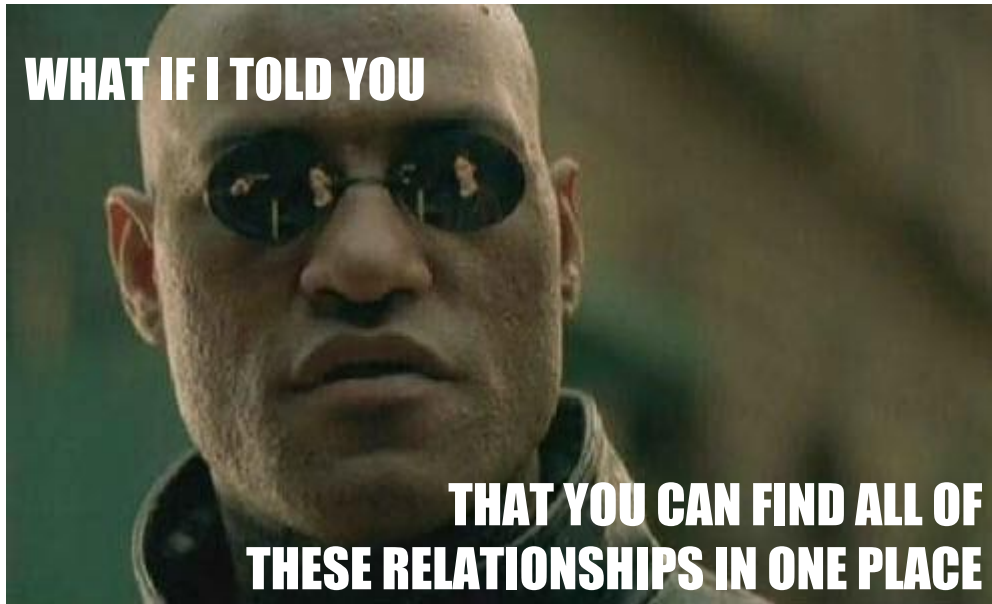
Poll time

Which of the following would be at the top of your wish list? Links between your works and...

- Datasets and software
- Policy and technical documents
- News articles
- Social media posts
- People and institutions
- Educational materials
- Other (please specify)
- None

Get first and second choices?

A Relationships API



A data model

Rethink everything as a relationship?

Article → references → Article

News article → mentions → Article

Funder → funds → Article

Article → has publication date → 1 June 2021

Website → doesn't mention → Article

A Relationships API endpoint



Query for an item (e.g. a DOI), get back relationships to other items.

Crossref relationships

<https://api.crossref.org/works/>

+

Event Data

<https://api.eventdata.crossref.org>

+

Cited-by

<https://doi.crossref.org/servlet/getForwardLinks>

Where are we heading?

Show me everywhere online that has mentioned my article, from citations to tweets.



Which Wikipedia pages mentioned articles from this journal last year?

How many preprints from this Crossref member have associated datasets?

Show me citations where Crossref added the DOI.

Do this author's papers get mentioned on Twitter and news websites?

A landscape photograph of a herd of black cows in a field, overlaid with colorful geometric shapes. The background shows rolling hills and mountains under a cloudy sky. The foreground is a field of dry, golden-brown grass. Several black cows are scattered across the field, some looking towards the camera. The image is overlaid with large, semi-transparent geometric shapes in shades of purple, green, and blue. The text is white and bold, positioned in the upper left and lower left areas.

How are we building the Research Nexus?

Joe Wass

Head of Software Development

Technical debt

Day to day decisions over 20 years.

From small bugs through to system architecture.

**Every organization has it.
It becomes a problem when it slows you down.**



Where *are* we heading?

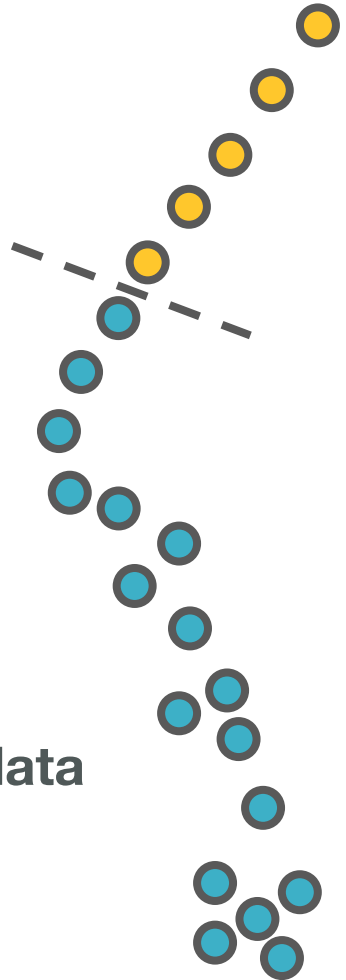
Drawing the line between old code and new.

Evaluating technology in the light of Research Nexus.

Containers, Cloud-native, PostgreSQL, JSON Schema, Kotlin, Automated Tests.

Building on REST API and Event Data code and data model.

Open source.



That's not all

Continuing bug fixes, improvements and features.

Technical foundations for self-service, including new front-end and authorization frameworks.

Bigger picture planning, and methodology improvements. Kanban, Epics, dependencies between tasks.

Crossref is embedded in the research ecosystem. So are our systems.

Consistent representation of identifiers.

Single Item Graph.

Evolvable schemas.

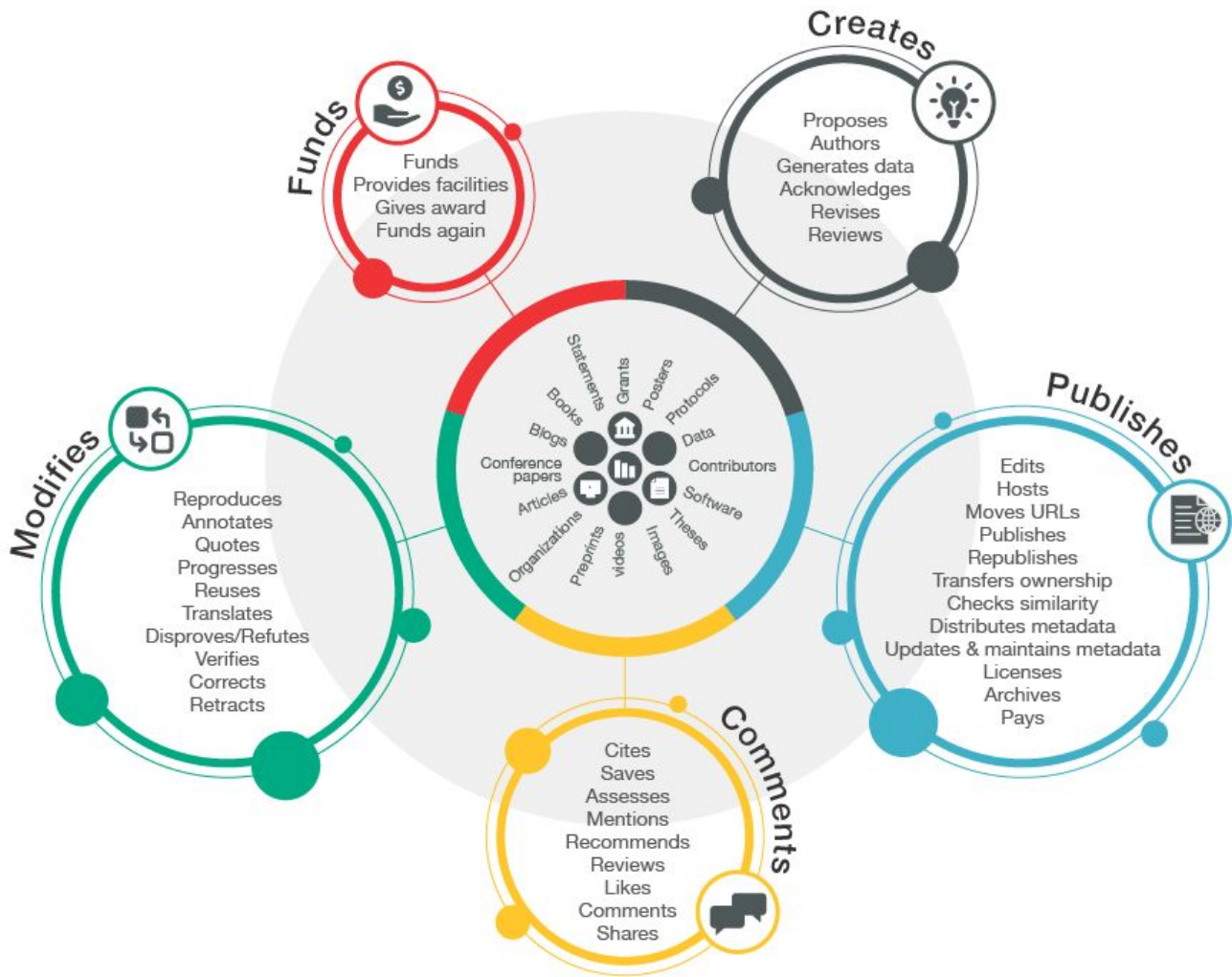


A landscape photograph featuring a herd of black cows in a field of dry, golden-brown grass. In the background, there are rolling hills and mountains under a cloudy sky. The image is overlaid with several large, semi-transparent geometric shapes in shades of purple, green, and blue. The text is overlaid on the purple and green shapes.

Your part in achieving the Research Nexus

Rachael Lammey
Director of Product

Research Nexus vision



What Crossref members can do now

- Cite related work, including data
- Collect and include ROR IDs with affiliation metadata
- Provide funding and grant information



Cite data in your metadata

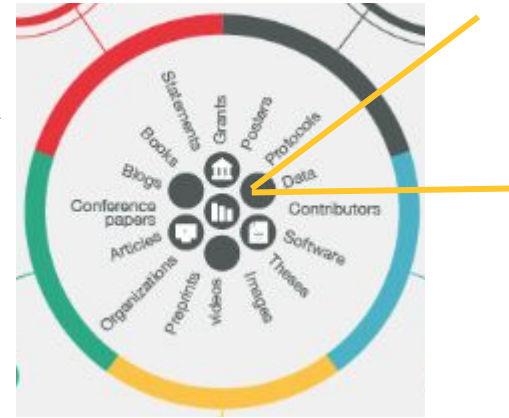
Qu: Why?

Ans: Transparency and reproducibility, reuse, credit.

Qu: How to cite data in your Crossref metadata?

Ans: Deposit data & software links by adding them directly into the standard metadata deposit. This is part of the existing Content Registration process.

We amplify this via Event Data & our Scholix endpoint to help populate links between articles and data throughout the research ecosystem.



Benefits of ROR for different (and interconnected) groups



- It makes it easier for institutions to find and measure their research output by the articles their researchers have published, or perhaps make it easier to track the grants they've received.
- Funders need to be able to discover and track the research and researchers they have supported.
- Academic librarians need to easily find all of the publications associated with their campus.
- Journals need to know where authors are affiliated so they can determine eligibility for institutionally sponsored publishing agreements.
- Editors can use more accurate information on author and reviewer institutions during the peer review process, which can help avoid potential conflicts of interest.

Connect funding and grants with research outputs

Funders started to register grants with Crossref in 2019. This stands to create a host of benefits to funders and the wider community.

But one of the biggest benefits is being able to track outputs related to specific grants in a more automated way.

We set ourselves a research question. Of the 38,326 grants we had registered (as of March 2022), how many of these can we see cited in other items that our members have registered with us?

<https://www.crossref.org/blog/follow-the-money-or-how-to-link-grants-to-research-outputs/>



20,834 links between research outputs and registered grants, involving 17,082 research outputs and 3,858 grants.
This =10% of all registered grants.

Follow the money, or how to link grants to research outputs



Dominika Tkaczyk - 2022 March 22
In [Grants](#), [Linking](#), [Crossref Labs](#)

The ecosystem of scholarly metadata is filled with relationships between items of various types: a person authored a paper, a paper cites a book, a funder funded research. Those relationships are absolutely essential: an item without them is missing the most basic context about its structure, origin, and impact. No wonder that finding and exposing such relationships is considered very important by virtually all parties involved. Probably the most famous instance of this problem is finding citation links between research outputs. Lately, another instance has been drawing more and more attention: linking research outputs with grants used as their funding source. How can this be done and how many such links can we observe?

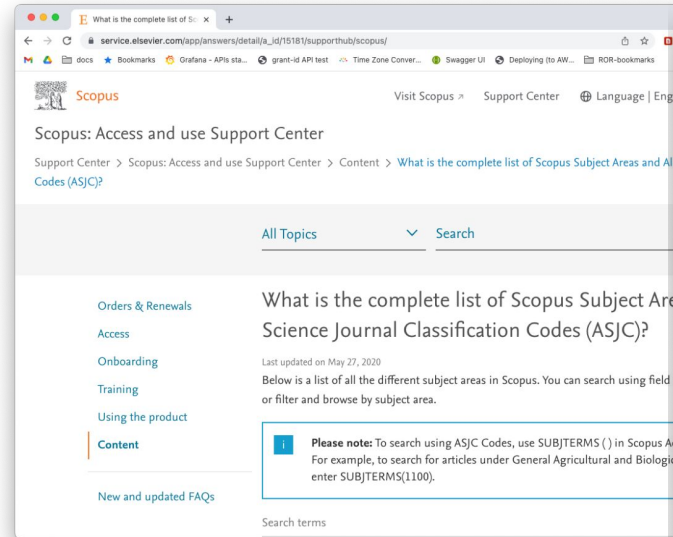
TL;DR

- We looked for links between research outputs and grants registered with Crossref.
- Grant DOIs alone are not enough for linking research outputs with grants, because the funding information in research outputs typically does not contain grant DOIs (yet). Award numbers alone are also not enough because they are not globally unique.
- We used either grant DOIs (if available) or the combination of award number and funder information to match grants to research outputs.
- In total, we found 20,834 links between research outputs and registered grants, involving 17,082 research outputs and 3,858 grants (10% of all registered grants)¹.
- Erroneous and incomplete metadata, especially involving award numbers, is the main factor that prevents linking research outputs to grants.

Poll time



Labs project: classifications



Scopus: Access and use Support Center

Support Center > Scopus: Access and use Support Center > Content > What is the complete list of Scopus Subject Areas and Science Journal Classification Codes (ASJC)?

All Topics Search

Orders & Renewals
Access
Onboarding
Training
Using the product
Content
New and updated FAQs

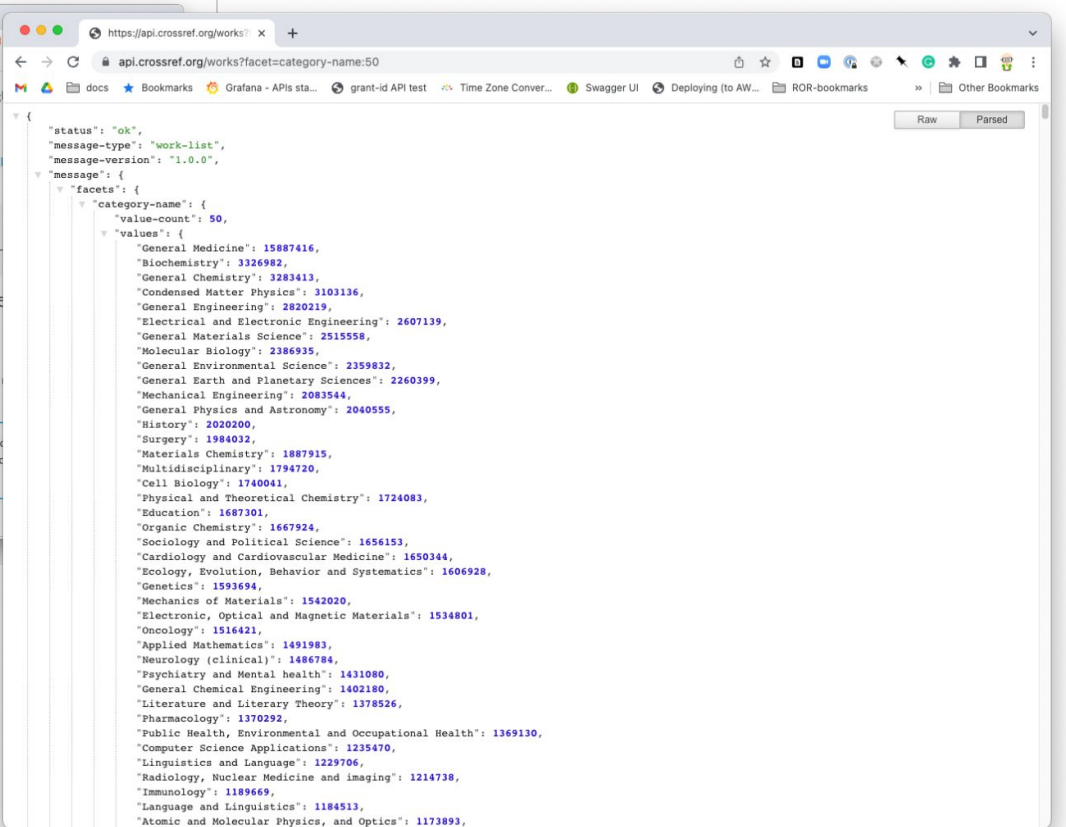
What is the complete list of Scopus Subject Areas and Science Journal Classification Codes (ASJC)?

Last updated on May 27, 2020

Below is a list of all the different subject areas in Scopus. You can search using field or filter and browse by subject area.

Please note: To search using ASJC Codes, use SUBJTERMS() in Scopus API. For example, to search for articles under General Agricultural and Biological Sciences enter SUBJTERMS(L1100).

Search terms



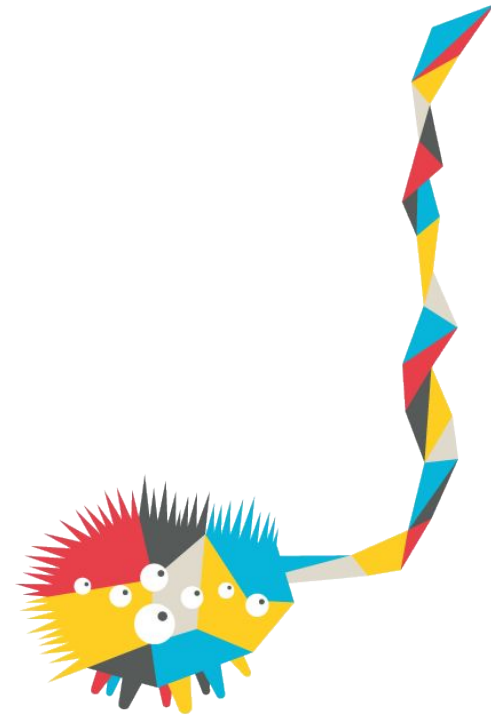
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          "Cardiology and Cardiovascular Medicine": 1650344,
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          "Electronic, Optical and Magnetic Materials": 1534801,
          "Oncology": 1516421,
          "Applied Mathematics": 1491983,
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          "Psychiatry and Mental health": 1431080,
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          "Pharmacology": 1370292,
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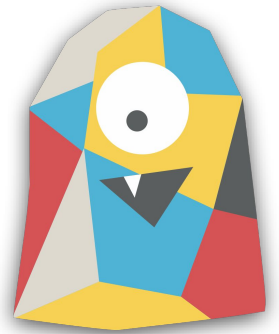

Issues

- ISSN overlap (or lack thereof)
- ISSN race condition
- Only applied to serials
- Applied to wrong resource
- Not updated*
- Not widely used



R&D project

- Cross-discipline
- Container level
- Open
- Fill-in the gaps



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Group discussion





Some takeaways we prepared

- Identifiers are **necessary** but they are not **sufficient**
- What we think of as metadata is expanding, and the notion of ‘content types’ is evolving
- This is a **shared** vision - collaboration is key to realising the Research Nexus, which belongs to all of us



Thank-you

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- [Victorinox Swiss Army Champion Plus](#)
- [Image of Laurence Fishburne](#), Youtube