

PRODUCT REVIEW / ÉVALUATION DE PRODUIT

Product: Dimensions (the free version)

URL: <https://app.dimensions.ai/discover/publication>

Cost: Dimensions is free. The price for Dimensions Plus and Analytics is negotiated for each institution.

Purpose and Intended Audience

Dimensions is a tool from Digital Science, the parent company of a variety of research tools that includes altmetric.com, figshare, and über research. Dimensions supports article discovery and provides citation data and metrics. It brings together data from many sources including articles, citations, and altmetrics. Please note that this product review is for the free version of Dimensions, intended for individual researchers. Researchers, academic administrators, and librarians concerned with measuring research productivity and enhancing research are the target audience for the subscription versions of Dimensions Plus and Dimensions Analytics.

Product Description

Dimensions contains and provides connections between the following sets of data:

- Almost 100 million publications
- Data gathered from Crossref, PubMed, Europe PMC, bioRxiv)
- Altmetric scores from altmetric.com
- Data on times cited data is gathered by full text web scraping of articles

Essentially, Dimensions combines data from research articles with data from a variety of other tools (e.g. figshare, altmetrics, über research) in an attempt to provide a more complete picture of research products, research impact, and connections between research and researchers. Natural language processing and machine learning classifies the subject area of each article based on the Fields of Research (FOR)

from Australia and the New Zealand Standard Classification (ANZSRC). Institutional disambiguation is done using Digital Science's GRID database, which is also used by ORCID. Name disambiguation occurs through ORCID.

Dimensions can provide the following analytics:

- Article-level Altmetric data
- Article-level citation data and metrics:
 - Citation count
 - Relative Citation Ratio (RCR) score for PubMed articles that are at least 2 years old and published since 1980
 - Field Citation Ratio (FCR) score for articles that are at least 2 years old and published since 2000. Fields are determined using machine learning and the Australia and the New Zealand Standard Classification (ANZSRC)
- Downloading of data for up to 500 items (need to create a free account)

Usability

Dimensions is intuitive to use. The interface is simple and not overwhelming. The ability to retrieve and analyze data is centered around a faceted search function. When you open Dimensions, users are presented with the entire data set (Figure 1). Users can then refine the data they wish to explore by using filters (Figure 2), or by using the main search box.

The following filters are available:

- Publication year
- Researcher (author)
- Fields of research
- Publication type (article, chapter, proceeding, monograph, or preprint)
- Source title
- Journal list (limits to publications appearing in Norwegian register, ERA 2015, PubMed, or DOAJ)
- Open access (limits to journals that are closed, any type of open access, gold, or green)

Fig. 1 Dimensions search interface

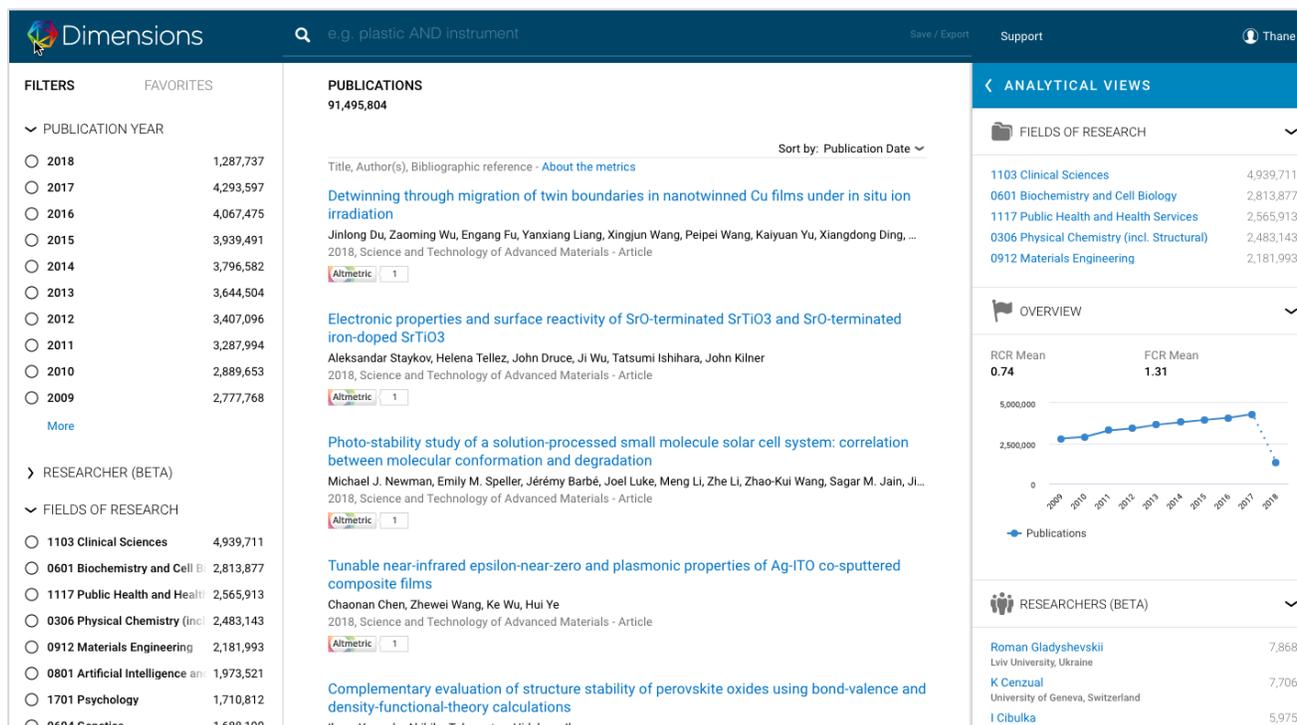
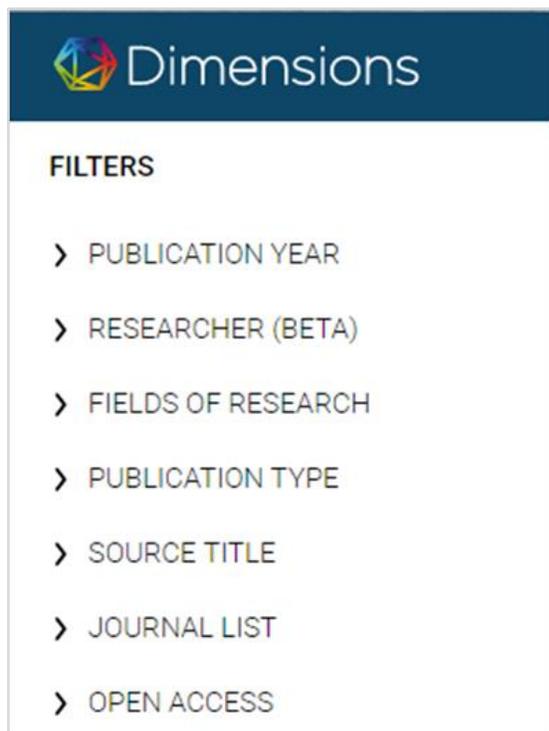


Fig. 2 Dimensions filter options



Using the Researcher filter

Individual authors can be searched for by clicking on the Researcher option and then searching for relevant authors. It is possible to retrieve all publications in Dimensions for authors with complete and updated ORCID profiles as Dimensions is integrated with ORCID. Searching for all publications for authors without a complete ORCID profile requires some knowledge of the authors, such as the different ways their names appear in publications (e.g., Shannon Scott, S.D. Scott, Shannon D. Scott) and their institutional affiliation(s). Digital Sciences has indicated that name disambiguation is a key area that will be further developed. In the meantime, author disambiguation was surprisingly not as problematic as expected, but still not perfect:

- When searching for a colleague, Sandy Campbell, I was not sure if I should search for Sandra Campbell or Sandy Campbell. When I chose Sandra Campbell, I was given a choice of 3 different Sandra Campbells, none of whom were correct. Success was found when I searched for Sandy Campbell. It was great to

see such a full record of Sandy's publications, including health and library publications and a large number of children's book reviews she has authored. I would not have been able to retrieve a full record of Sandy's publications in Scopus or Web of Science, neither of which includes the children's book reviews.

- When searching for health researcher Shannon D. Scott, I had to search for both Shannon D Scott and Shannon Scott Findlay to retrieve all of her publications in Dimensions.

Using the main search box

Searching in the main search box at the top of the page is restricted to only two options: *full data* or *title and abstract only*. The ability to retrieve data by restricting to funder, institution, or nation is not available. On the positive side, capitalized Boolean operators (AND, OR, NOT), using quotations for phrase searching, and British/American spelling variations are included, and exact term searching appeared to work by including terms in quotes. Articles can be sorted by relevance, publication date, RCR, citations, and Altmetric Attention Score.

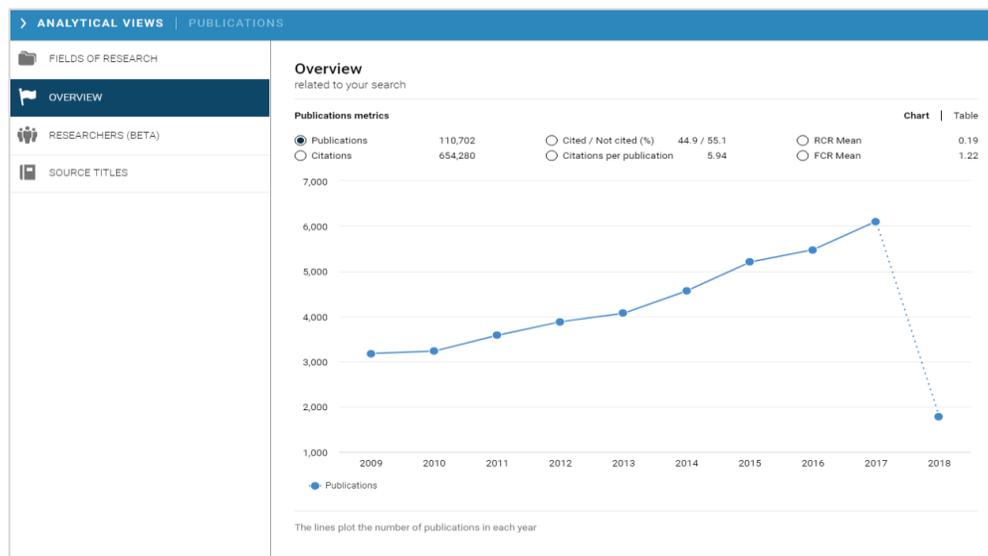
Health librarians are likely to be frustrated by the search functionality in Dimensions. Searching Full Data means that the entire PDFs is searched. This will likely lead to large numbers of irrelevant items being

retrieved as it also searches the references list of articles. After speaking to Sara Rouhi from Digital Science, I found out that full data also searches the full text of pdfs that partner publishers (e.g., Wiley, Wolters Kluwer) have deposited into another Digital Science product, ReadCube. In addition, the only fields that search terms can be restricted to are both title and abstract together. Other search limitations are not being able to search by MeSH or other controlled vocabulary. Author keywords could be searched if the full text of the PDFs is included within ReadCube and the author keywords are located within the article itself, but again a large number of irrelevant citations will also be retrieved.

Analytics

The Analytic Views that is available on the right hand side of the screen provides some interesting information about articles (Figure 3). Users can view the Fields of Research that articles have been classified, a citation overview of the articles, a list of authors, and journals. I conducted a title and abstract search for "information seeking" then limited the journals to well-known library and information studies journals and using the analytical views was able to quickly identify key researchers in this area. Other searches for individual journals revealed citation overviews that are not as easily available through other free tools such as Google Scholar.

Fig. 3 Analytical view



Comparison with Similar Products

Despite the limited searching options when compared to paid products such as Scopus and Web of Science, the free version of Dimensions is intended for individual researchers and these restricted search options may serve that group well, or at least well enough.

This product definitely has some advantages over Google Scholar, another free product that includes citation data. Specifically, Dimensions offers:

- Transparency over how data is gathered
- Ability to easily download data
- Subject classification of articles
- Inclusion of a normalized citation metrics (FCR and RCR)
- Integration with ORCID and GRID which are proactive approaches for author and institutional disambiguation
- One of the strengths of Google Scholar is its subject coverage. Dimensions also has wider subject coverage than Scopus and Web of Science
- Includes altmetric and citation level in one platform

Strengths and Weaknesses

For a free product, Dimensions is very strong. It has an excellent breadth and scope, representing a wide range of academic disciplines. There were some issues with the machine learning classification with some articles receiving unexpected classifications. Despite this, the article level indexing does provide some interesting aspects for field weighted citation scores, as individual articles' fields are determined at the object level rather than at the journal level. In Scopus and Web of Science, field weighted citation scores are determined by how the entire journal is classified. The readily and easily available citation and altmetric indicators are a definite strength, as is the ability to download data for up to 500 items for further analyses. I strongly feel that Dimensions would be a useful product for researchers seeking information on their research strength. Dimensions would also be useful for researchers needing articles on an interdisciplinary topic if they do not have access to Scopus or Web of Science.

Compatibility Issues

None were identified. Dimensions was tested on Safari, Chrome, and Firefox.

Currency

Contains records from 1665 to the present.

Cost/Value

Dimensions is free. The price for Dimensions Plus and Analytics is negotiated for each institution.

Contact Information

To discuss your institution's needs, please contact: <https://www.dimensions.ai/widgets/modal/get-in-touch/>

Acknowledgement

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Statement of Competing Interests

No competing interests declared.

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