HRA Analyzer

User Guide

Version 2.0

DIGITAL science

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Introduction

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Introduction to HRA Analyzer (members only)

HRA Analyzer is the online tool for the members-only grants database.

HRA members contribute their grants data through a continuous process. The grants data is then aligned across funders, cleaned, and enriched. The resulting database can be explored through the HRA Analyzer tool. This database also feeds other HRA tools such as HRA Open.

Since other HRA online tools exist, it is important to note the HRA Analyzer's focus is for HRA members to explore the members-only grants database.

Access to the HRA Analyzer is available to full time employees of any HRA member organization. To log in, visit https://hra.dimensions.ai/login

Introduction to Digital Science

HRA Analyzer is provided by Digital Science using the Dimensions user interface and some of the Dimensions data enrichments, which are just a small part of the Dimensions suite of tools, data, and services available from Digital Science for the research community.

Digital Science is a technology company serving the needs of scientific and research communities at key points along the full cycle of research. We invest in, nurture and support innovative businesses and technologies that make all parts of the research process more open, efficient and effective. We believe that together, we can change research for good. Visit www.digital-science.com.

Introduction to this guide

The intent of this guide is to quickly get you started using HRA Analyzer (members only). This guide does not include every feature and use, but supports many of the common uses.

For specific situations, please contact us, supporthra@dimensions.ai. We are here to help.

This user guide is organized by three themes:

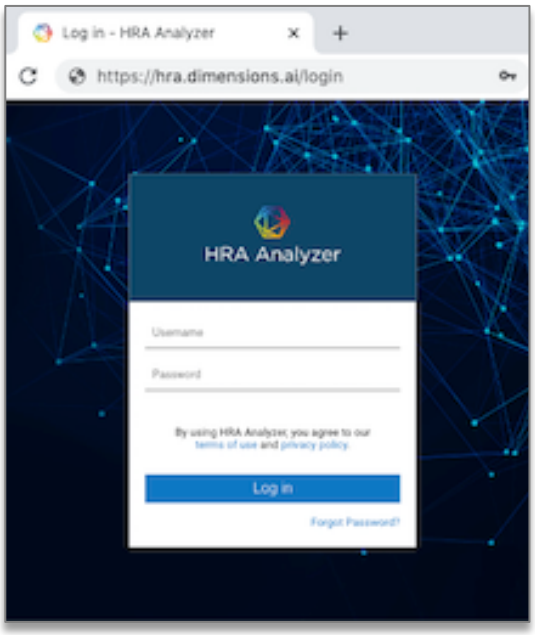
- HRA Analyzer (members only) - getting started
- HRA common uses
- *Dimensions for Funders* full User Guide for more information on analysis tools, etc.
    - **NOTE: Some items in *Dimension for Funders* User Guide may not apply to *HRA Analyzer (members only)*.**

Getting Started

Get Access

To get a username for anyone in your organization, please email us an “HRA Analyzer (members only) new user request” including the new user’s name, email address and your organization’s name to:

supporthra@dimensions.ai



Logging In

Users are generally provided login credentials directly from Digital Science, and the username will be your email address. A link to the login page will be provided with the login credentials.

URL: hra.dimensions.ai

Forgotten password / change password feature is provided from the login page.

Training & Support

Digital Science provides all users with introductory training sessions, typically in groups via web conferencing. Follow-on group and individual trainings are provided as necessary, especially just prior to expected heavy usage; for example, just after an award cycle. Support is also available to users on an individual question basis.

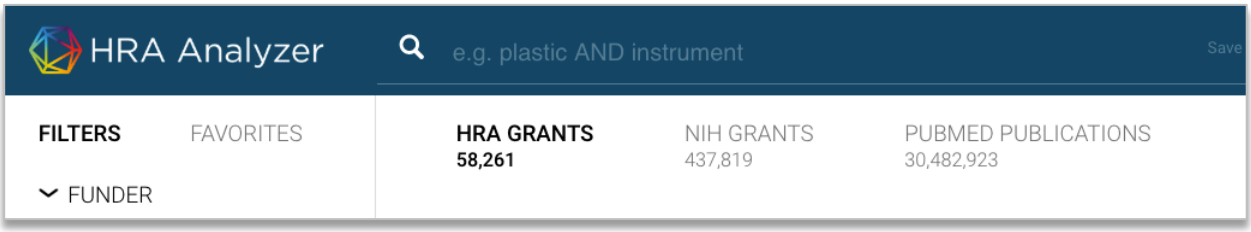
To ask a question: Click “Support” in the upper right corner of HRA Analyzer (members only), or email us at supporthra@dimensions.ai.

Some examples of support requests include:

- Custom HRA Analyzer (members only) training for your organization.
- Help with login troubles.
- Help with how to search or use the other tools via the ‘contact’ button.

About HRA Analyzer Data

HRA Member Grants, NIH Grants (via NIH ExPORTER), and PubMed Publications are the available data sources. Most features can be used with each set of data. You can choose which data set is being used just below the search bar.



HRA Member Grants

In order to support the most uses and flexibility, there are two versions of the HRA database:

- An 'online version' provided in the HRA Analyzer (members only) platform. This data contains basic grant data like title, abstract, amount, start & end dates, etc.
- An 'offline version' which is maintained with more data points (for example gender and race/ethnicity) that are used for further analysis such as the HRA infographic.

How do we contribute our data into HRA Analyzer (members only)?

The intention of HRA and Digital Science is to reduce the burden on members, while providing an even more useful data analysis tool.

Options to submit data:

Note: The column header names do not need to match exactly (i.e. Description vs Abstract) to the HRA data model in the template.

1) Email supporthra@dimensions.ai an export from your grants management system (or other database). We have a data feed from proposalCENTRAL post award, please let us know if you would like to discuss this option.

2) Submit your data using the HRA Data Template! **Note**: If you are providing more than 1 researcher per award please contact us for a different template.

3) Contact us at supporthra@dimensions.ai to arrange other methods.

It is best practice to submit ALL of your organization's awards with EACH submission. This allows for changes and transparency.

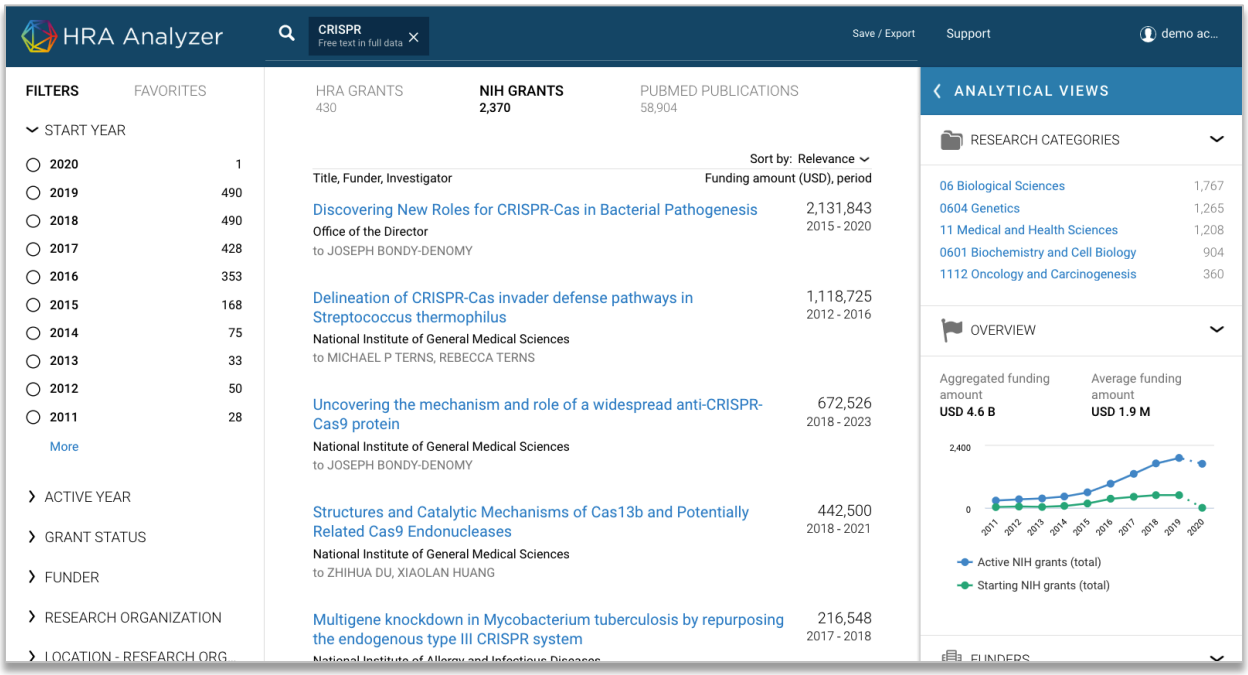
Other Data Sources

Other data sources include NIH Grants, sourced through NIH ExPORTER and PubMed Publications. All data provided in HRA Analyzer is enriched by Dimensions, cleaned, and then standardized with the organizations disambiguated. Data is further refined with topical categorizations and geographical information.

Quick Start to Exploring

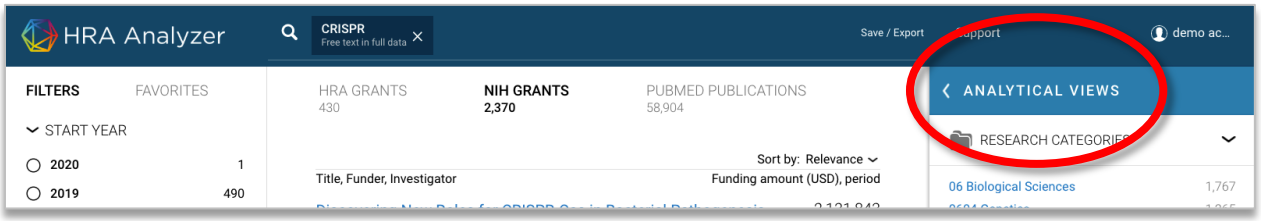
Basic exploration with keywords is easy within the main view - the initial screen that appears after login.

You may enter a Boolean keyword search in the search bar and see the results list or layer on filters from the left menu to further limit the search parameters.



Analytical Views

For any search in HRA Analyzer, the "Analytical Views" slider can be used to instantly interpret the results. While doing a search in Dimensions, click on any aspect of the "Analytical Views" on the right-hand side of the browser window to open this area by sliding across to the left of the screen, displaying the selected visual. The search terms and filters may still be changed with the left-hand-side filters or keywords in the main search box, and these changes will then be reflected by changes in the visualizations seen.



The "Analytical Views" section is divided into different headings on the left-hand side, corresponding to different aspects of the information (e.g. Funders, Researchers, Research Organizations etc.). Select one of these to group the results from your search by this attribute and to access the various visualizations associated with these to quickly provide you with analytical information at a glance. All of the data and visualisations in the Analytical Views are also available to download and use offline for reports or further analysis.

There are five different ways in which data can be visualized (not all of these are present in all Dimensions versions), as well as a results list being displayed:

- bar chart
- timeline
- heatmap
- geomap
- compare

The **bar chart** visual displays the number of results for each research category using the Fields of Research (FOR) classification system (and others, in Dimensions Analytics only). Clicking on the displayed top-level FOR group will then produce the lower level 4-digit FOR classifications.

The **timeline** visual displays the trend in the results for the last ten years, and new categories/funders etc. can be added or removed at the bottom. The time range displayed on the timeline graph can also be changed

The **heatmap** visual displays a grid of two different elements in a topic area, such as funder and research organisation, related to the area of the search.

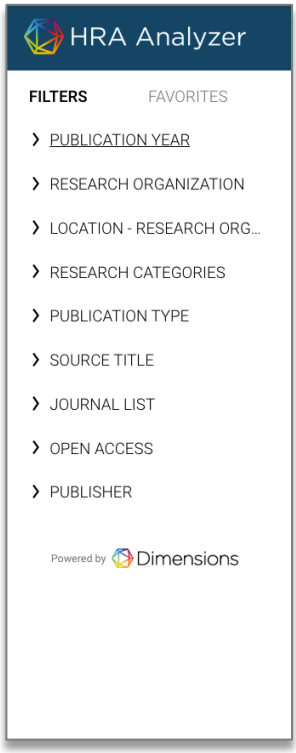
The **geomap** shows the geographical distribution of the results in a results list, and can be viewed on a global scale, or in Canada, USA and Australia on a state/territory basis.

The **compare** function shows a direct comparison between two research organizations or funders across one of the standard classification systems, restricted to just the results from the search.

Filters

The filter bar appears throughout *HRA Analyzer* on the left side of the screen - as a way to search and filter information. Users can filter by Funder, Research Organization, and Active Year to name a few. Filters can be selected individually as a way to search or layered in combination to narrow the results.

For example, “Johns Hopkins University” from the Research Organization filter can be combined together with the “NCI” filter from the Funder section to give only those results which apply to both categories.



Categories are also provided in the filters bar. For more information, please see the *Dimensions* User Guide section “About Categories”

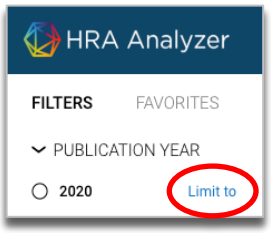
Note: Filters and results are on the documents (Grants, Publications), which may contain more than one attribute, in the case of co-authors and the like. For example, when adding a filter of Country to publications, results will likely contain other countries in the case of co-authors from different countries.

Adding filters to your search

There are two ways to add a filter:

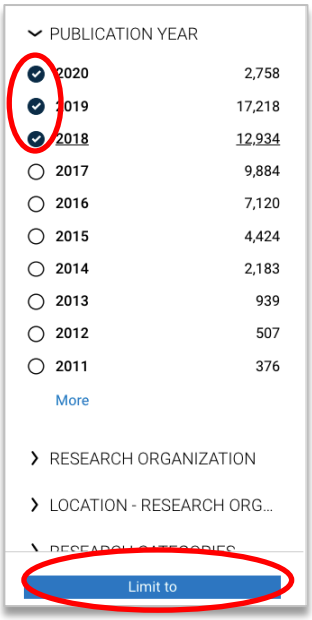
Layer on a single filter with an AND relationship

For example, you may want to limit a Publications search to a single year. To do this, find the filter you would like to add and select ‘Limit to’.



Add multiple filters with an OR relationship

For example, you might want to view your Publications search with those published in any of the last 3 years. To do this, select the checkbox next to each of the filters you wish to have an OR relationship. Then choose ‘Limit to’ at the bottom of the screen.



Common HRA Uses

In this Section:

Common Starting Points

Common starting points for using HRA Analyzer (members only) in the Dimensions platform include:

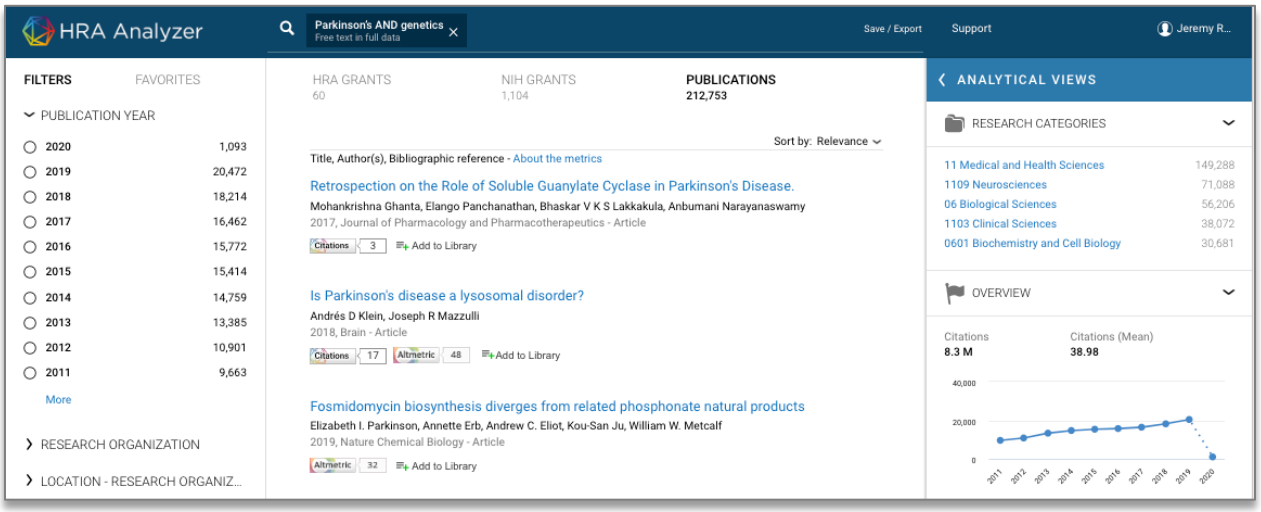
- Keyword search
  - What have we and others (including NIH) funded in X?
- Abstract search
  - What funding and projects and people are similar to this abstract?
- Use existing Categories
- Summary views
- Trends over time

The following are descriptions of just a few ways in which you can use HRA Analyzer (members only). As well as being an instructive guide, these examples may also be useful for getting to know the software.

Explore funding on a specific topic

To explore funding for a specific research topic, first ensure that 'Grants' is selected as the document type, found in the top center of the screen.

In the search box in the main window, type the topic of interest and then press enter.



Boolean terms are usable in this search (see the 'Boolean Usage' section below). For example, if we were interested in the genetics of Parkinson's Disease, we would search for 'Parkinson's AND genetics'. The results list is then displayed below with other 'Analytical Views' available to the right.

The results can then be exported for use outside of the software. To do this, click the link that says 'Save' and 'Export as Excel' in the top right corner, to download a file of the results.

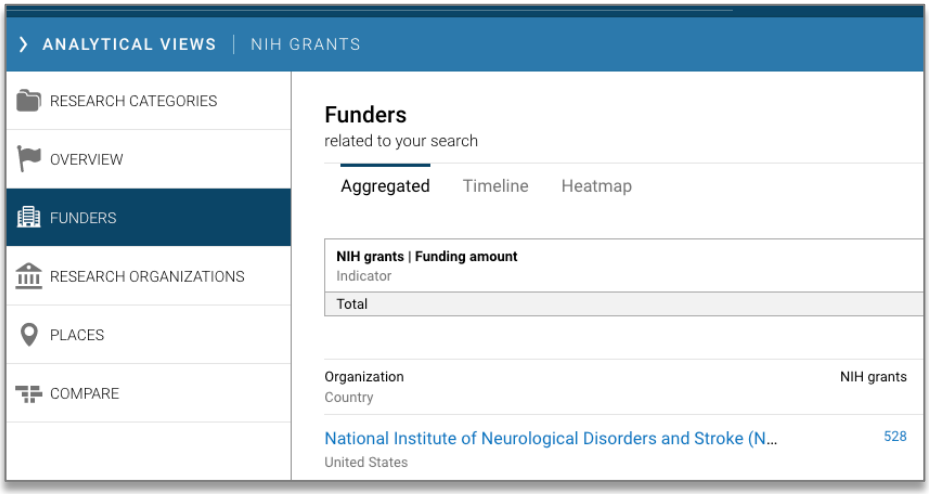
Depending upon the search terms, the number of Grants found could be very large, and from here it is useful to view the data in different ways.

Viewing the data in different ways

Viewing by Funder

Viewing results by funder is a good way to easily identify the main funders of a certain research topic.

With the initial list of results, select the 'Analytical Views' and then the 'Funders' Tab. This then displays the results grouped by the Institutions funding the grants, giving the number of grants and the total funding amount this represents on the right side.



Selecting the Funder name adds that Funder as another filter in the search. So, in the example of 'Parkinson's AND genetics' adding NINDS (National Institute of Neurological Disorders and Stroke) as a filter will return you to a list of results of only those grants which were both in the original 'Parkinson's AND genetics' search and that are funded by NINDS.

The same can be done by selecting NINDS from the 'Funder' option on the left side panel – it has the same effect as clicking the 'add as filter' button.

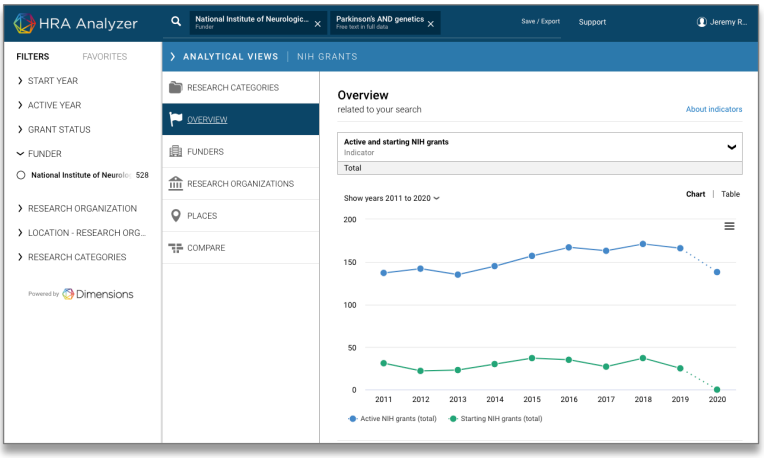
Viewing by Organization

The same principle can be applied to viewing the results of a search by Organization as with viewing by a Funder. Selecting the 'Research Organizations' Tab (within 'Analytical Views') organizes results by Organization, starting with those with the largest amount of aggregated funding (this is the default setting – to change to listing by the number of Grants, click the Grants header).

Again, to add an Organization as a filter in the search and only return grants at that Organization, you can either select the Organization in the ‘Research Organization’ tab on the left, or click ‘Add as filter’ in the Organizations tab results list.

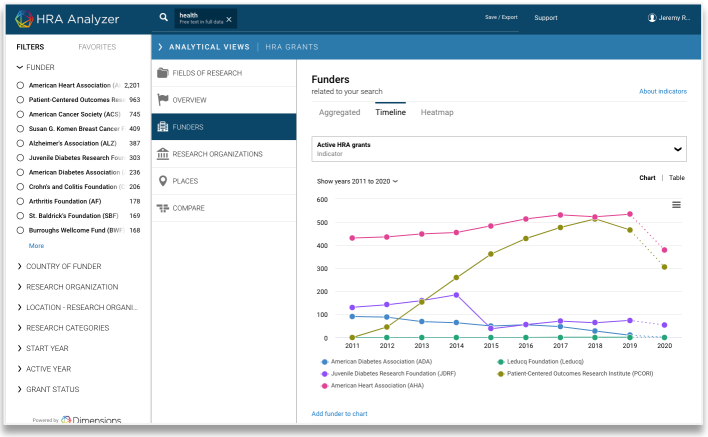
Viewing data over time

Viewing results from a search in relation to the time at which the funding was awarded is also possible in *HRA Analyzer (members only)*. Within a particular results list from a search (like ‘Research Organization’ above), click the ‘Timeline tab’.



This displays a graph of both the number of active grants in any given year, and the number of grants starting in each year. For example, a grant that is listed as 2012-2015 will be present in active grants in 2012, 2013, 2014 and 2015, but will only be present in 2012 results for the starting grants.

This can be very useful when comparing other aspects such as funders or organizations. For example, to compare funded grants from several funders over time, in the ‘Funders’ tab click the ‘Timeline’ option. You will see the top Funders displayed on the graph by default. Next you can choose to remove or add Funders at the bottom of the chart.



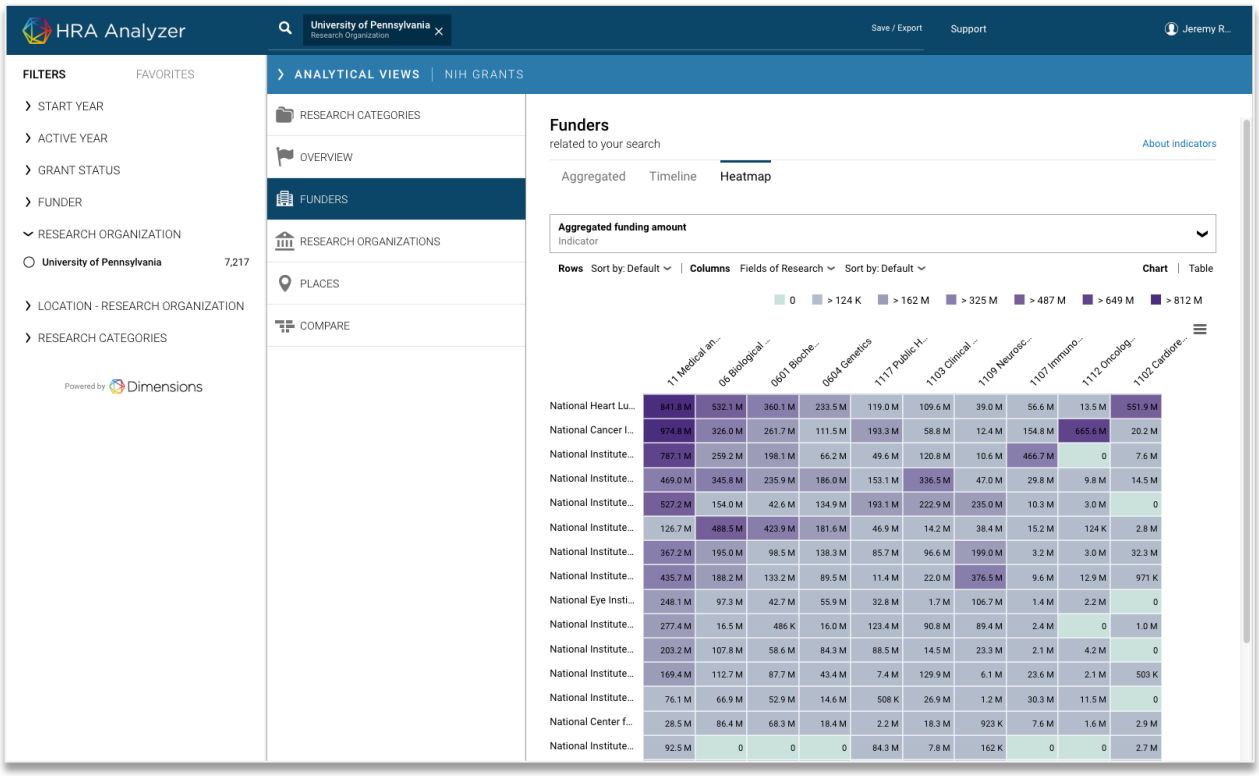
It is important to note that this visualization does not affect the overall search, but only displays grants which are relevant to the Funders selected. The original search results can be returned to by clicking the ‘Aggregated’ link at the top left side.

Data can also be filtered by year. Again, this can be done either by start year or active year (see above). For example, to display only those grants active in 2015, go to the ‘Active Year’ section at the bottom of the left side menu bar. By clicking on this, the options are given for a year to select. If the year required is not displayed, click ‘more’ at the bottom.

The same process can be used for searching for only grants starting in a selected year by using the ‘Start year’ section.

At an institution, what are the well-funded research topics?

One example approach is to view funding activity at a specific institution. For example, we can see which topics are being funded and by which funders at University of Pennsylvania. Within the Analyze slide, select Funders and then 'Heat Map'. Then choose University of Pennsylvania on the left filter bar under 'Research Organization'. The rows and columns of the Heat Map can be configured to show topics, for example, the FOR (Fields of Research) classification system was chosen in this scenario on the columns and funders in the rows.



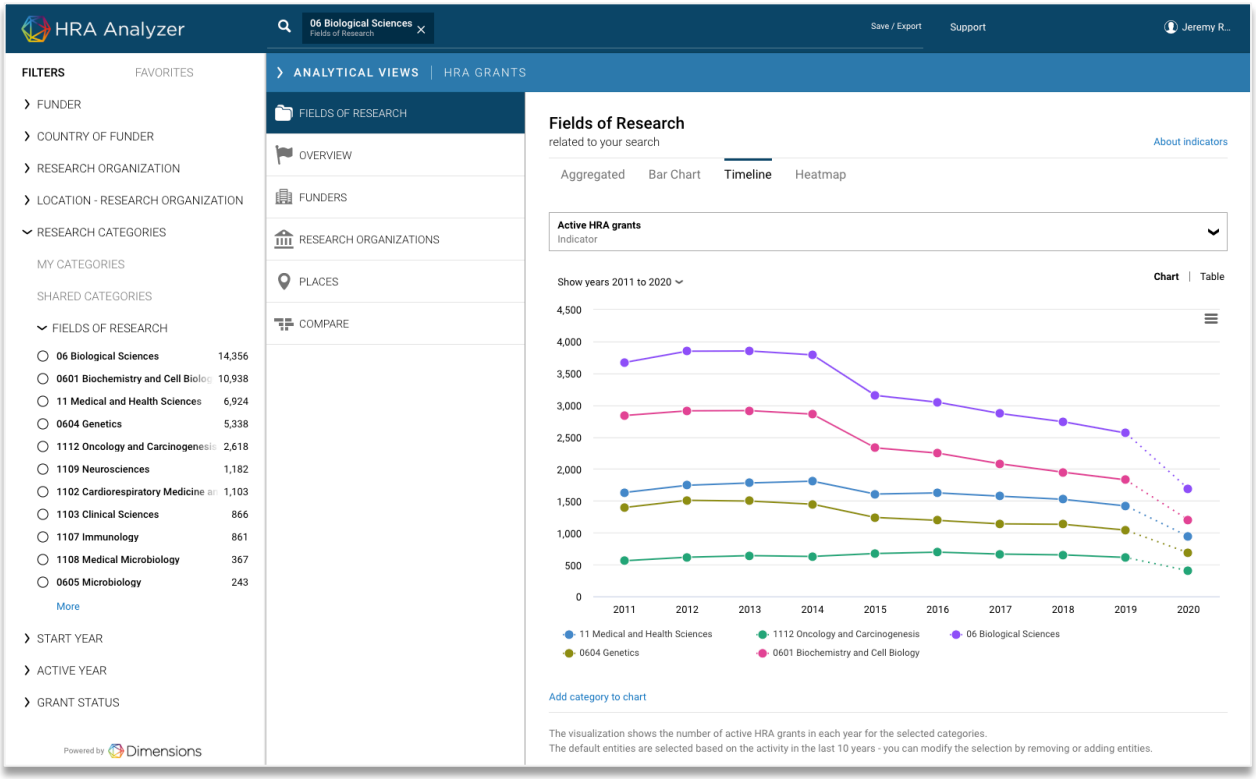
Discover: View trends by topic

What topics or subtopics are getting increased funding?

What topics/subtopics are getting less funding?

We need to provide data-supported responses to - why didn't we fund more of X?

One example use is to quickly view topical trends with visualizations –add a Research Categories topic from the left filters panel, for example, 'Biological Sciences' from FOR. Then we can view subtopics within biological sciences in the Research Categories results tab. These Research Categories can be displayed with a visualization of the topics funded.



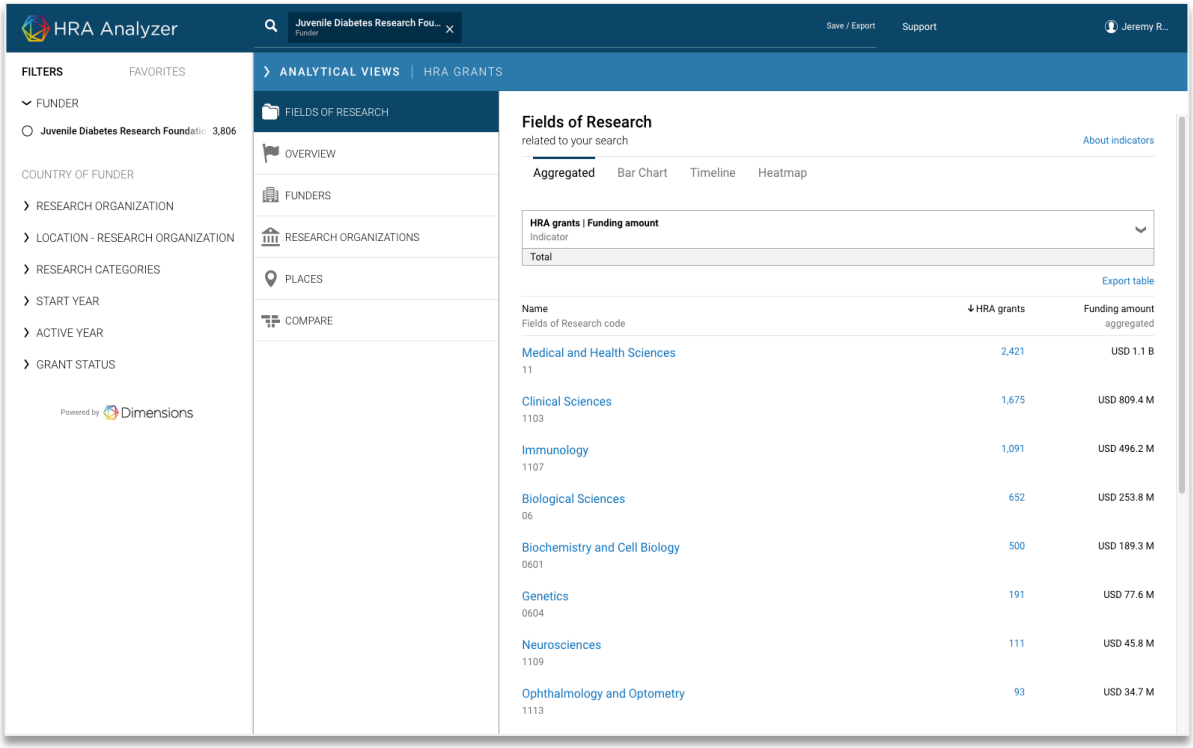
Discover: Viewing results by Categories

How can we visualize a funder portfolio by topic?
How can we view our portfolio classified by topic?
How can we compare our portfolio against other funders' portfolios?
How can we report automatically and consistently on our funding?
After entering a keyword search, or a search using categories, or other filters:

In this example we start by applying the funder filter to view the funder's full portfolio classified by topic.

With the initial list of results, selecting the 'Fields of Research' tab on the right organizes results by classification, starting with FOR (Fields of Research).

At this point you may further refine to see the results that are contained within one of the categories by clicking "add as filter" for one of the resulting categories.



Data Fields for HRA Analyzer (members only)

The intention of HRA and Digital Science is to reduce the burden on members, while providing an even more useful data analysis tool.

> *Providing ALL awards with EACH update will allow for the submitting organization several advantages, including a clear picture of which awards and how they will appear in the database, and the ability to easily edit or remove awards (in the case of extension or cancellation, for example).*

Email your data to supporthra@dimensions.ai a template is also available. Note: The column header names do not need to match exactly (i.e. Description vs Abstract).

Required or Recommended fields

General Award Fields:

- Funder Unique Project ID (Each listed award must have its own distinct project identifier, unique within the Funder's awards. Some funders use year and last name if a grant id is not used.)
- Title
- Abstract (Providing at least 200 characters required for classification)
- Start Date (can also be award date)
- End Date OR Duration ('End Date' preferred, both are not needed)
- Funding Amount
- Funder Name (the organization that pays the grantee)
- Partner Organization (can be whatever is needed, e.g. the funder administering the award)
- Award Program Name
- Support Mechanism* (controlled list, updated August 2017, see below.)
- Support Recipient* (controlled list, updated August 2017, see below.)
- Support Purpose* (controlled list, updated August 2017, see below.)
- Career Stage* (controlled list, updated August 2017, see below.)
- Eligibility* (controlled list, updated August 2017, see below.)
  *Can be collected retroactively per program and mapped forward and backward to all support from that program (unless HRA member organization notifies Digital Science or HRA of a program change.)

Award Recipient Fields:

NOTE: Multiple researchers per award is supported. If you would like to provide multiple recipients for ANY award, please list ALL recipients & columns on a separate tab (or file) with a Project ID column to tie each row back to main project sheet.

- Recipient First Name
- Recipient Last Name
- Recipient Organization Name
- Recipient Organization Country (helpful for disambiguation)
- Recipient Organization City (helpful for disambiguation)
- Recipient Organization State (helpful for disambiguation)
- Recipient Organization Zip (helpful for disambiguation)
- Recipient Middle Name (if collected)
- Recipient Maiden Name (if collected)
- Recipient Gender (if collected)
- Recipient Professional Degrees
- Recipient Race/Ethnicity fields (if collected)
- Recipient ORCID (encouraged)
- Recipient Role: "Lead" or "Collaborating" (if choosing to provide ANY multiple recipients, for EACH investigator)

SUPPORT MECHANISM (new)	Definition or examples
Grant	Funds granted to a person or organization to pay for specific work. ***Most HRA Analyzer (members only) entries will be grants.***
Endowment	Funds that are given to an organization to be invested to create a source of income for the organization.
Prize	Prize given to a person or organization to recognize achievements, including incentive prizes that are awarded after achieving a set of pre-specified goals.
Contract	A legally binding and enforceable agreement that protects the interests of each organization represented in the contract. In the terms of the contract each organization's specific obligations will be noted. The contract may be modified or canceled if either party does not meet the specific terms of the arrangement.
Cooperative Agreement	Similar to a grant with the distinction that it provides for substantial involvement between the funder and the recipient in carrying out the proposed activity.
Direct Research Support	Support for "intramural" research programs (including HHMI investigators.
Impact investment	Funds invested that aim to serve both a charitable purpose and achieve financial return.
Other	Place to fill in if none of the categories fit

Tables continue on next page…

SUPPORT RECIPIENT (new title and values but similar to Award Type in gHRAsp)	Definitions
Individual	Support for a project conducted by a single principal investigator (or co-PIs) or trainee. **Note that the grant itself may be awarded to an institution on behalf of the principal investigator.**
Team (within the same institution)	Support for a project conducted by a team of individuals. Note that the grant itself may be awarded to an institution on behalf of the investigative team.
Institution	Support made to an institution to support implementation of a research, educational, or training program.
Center	Support for multiple investigator-led projects and/or core activities within an institution
Consortium (more than one institution)	Agreements in which a grantee collaborates with one or more other organizations.
Industry	Research support to for-profit industry.
Other	Place to fill in if none of the categories fit.

Tables continue on next page…

SUPPORT PURPOSE (award purpose in gHRAsp)	Definitions (Acknowledging that training or career development support also aims to fund high caliber research)
Training	Support to prepare future investigators for careers in biomedical sciences. Training awards can be institutional training grants or individual fellowships. Trainees are typically still in school or in training positions immediately following receipt of an advanced degree. These positions include medical student and predoctoral fellowships, postdoctoral fellowships, residencies, and subspecialty fellowships.
Career Development	Support to develop the careers of researchers who have already earned their advanced degree (e.g., PhD or MD) and **completed** training (often but not always junior faculty.)
Research	Support for undertaking biomedical research (i.e. regardless of career stage or training environment).
Curriculum Development	Grants that support efforts to create, implement, evaluate, and disseminate new courses, curricula and educational approaches to train biomedical scientists and enhance advances in biomedical disciplines.
Acquisition or update of Equipment/Infrastructure /Resources	Grants or other research investments that provide for the acquisition or updating of research instrumentation, infrastructure, or other resources.
Other	Place to fill in if none of the categories fit.

Tables continue on next page…

CAREER STAGE (at time of commitment of research support)	Definition or examples
Not targeted	Support is not limited to a particular career stage
Predoctoral	Graduate student, medical student (possibly also high school or college)
Postdoctoral	An individual who has received a doctoral degree (or equivalent) and is engaged in a temporary and defined period of mentored advanced training to enhance the professional skills and research independence needed to pursue his/her chosen career path. (From NIH:) https://researchtraining.nih.gov/sites/default/files/pdf/Reed_Letter.pdf#
Junior Faculty	An individual who has just recently completed post-doctoral training (or equivalent) and is in the first stages of his/her permanent research career track.
Established Investigator	Someone who conducts independent research.
Other	Place to fill in if none of the categories fit.

Tables continue on next page…

ELIGIBILITY (degree requirements)	Examples (including of equivalent degrees)
Not applicable	
Candidate for Bachelor's degree or earlier	BS, BA
Candidate for Masters	MS, MSc, MA, MBA, etc
Candidate for PhD or equivalent	ScD, DPhil, EdD, etc
Candidate for MD or equivalent	DVM, DMSc, DO, FRACP, etc
Candidate for MD/PhD or equivalent dual clinical degree	DVM/PhD, MD;DrPH, etc
Candidate for any advanced degree	
PhD or equivalent	ScD, DPhil, EdD, etc
MD or equivalent	DVM, DMSc, DO, FRACP, etc
PhD or MD or equivalent	ScD, DPhil, EdD, DVM, DMSc, DO, FRACP, etc
MD/PhD or equivalent dual clinical degree	DVM/PhD, MD/DrPH, etc
Any research or health-professional advanced degree	
Other	PharmD, RN, JD, or if none of the categories fit

End of award type tables.

Altmetric

Altmetric badges are available free through April 2017 for HRA members, and via subscription thereafter. Altmetric provides information about attention from news, social media, policy docs, etc.

The Donut and Score Explained

The Altmetric donut visualization and score have been developed to help give an at-a-glance summary of the online attention an article has received. A higher score indicates a larger amount of attention, and the different colors of the donut represent the different sources in which the article has been mentioned.

How the Altmetric score is calculated

The Altmetric score is our quantitative measure of the attention that a scholarly article has received. It is derived from 3 main factors:

Volume	Sources	Authors
The score for an article rises as more people mention it. We only count 1 mention from each person per source, so if you tweet about the same paper more than once, A ltmetric will ignore everything but the first.	Each category of mention contributes a different base amount to the final score. For example, a newspaper article contributes more than a blog post which contributes more than a tweet.	We look at how often the author of each mention talks about scholarly articles, at whether or not there's any bias towards a particular journal or publisher and at who the audience is. For example, a doctor sharing a link with other doctors counts for far more than a journal account pushing the same link out automatically.

The score has an important limitation: if the article was published before July 2011, we'll have missed any transient mentions of it, tweets in particular. As such, its score won't be accurate, and will represent a lower bound of the attention received.

From time to time you might notice that the score for your paper fluctuates, or goes down. This can happen when the original author of the mentions deletes their post when we remove posts which have been flagged as spam, or occasionally when we add new sources so need to re-weight our scoring algorithm.

The Colours of the Donut

- Policy documents
- News
- Blogs
- Twitter
- Post-publication peer-reviews
- Facebook
- Sina Weibo
- Google+
- LinkedIn
- Reddit
- Faculty1000
- Q&A (stack overflow)
- Youtube
- Pinterest

For Mendeley and Citeulike we show counts of readers but they do not contribute to the donut or score

Data from most sources is updated on an hourly, or at least daily, basis. We text mine news sources for mentions of the journal title and author names, and cross-reference this with an external database to determine which article the news story is about. For all other sources for us to be able to pick up the mention automatically there needs to be an HTML link to the article page (the one with a DOI or other unique identifier on) in the main body of the text.

HRA Analyzer (members only) Confidentiality Guidelines

Guidelines for HRA Member Organizations:
Sharing *HRA Analyzer (members only)* Data Beyond the HRA Membership

The Health Research Alliance brings together not-for-profit, non-governmental funders of health research and training to foster open communication and collaboration among member organizations, to provide comprehensive data and analysis about the funding of biomedical research and training by HRA members, to identify gaps in funding and facilitate innovative grantmaking, and to address issues key to accelerating research discovery and its translation. Among the five core organizational values the HRA Board adopted in late 2010 is collaboration, defined as open communication; sharing of information, experience and knowledge; and working together as partners to achieve shared goals.

Sharing information and knowledge is central to the mission of the Alliance, and is certainly one of the key reasons organizations join HRA – to benefit from the sharing of information that occurs at Members' Meetings, in other HRA-organized meetings, on the HRA website, through the HRA listserv, and via other modes of communication. Although it is expected that participants from member organizations will naturally want to share general learnings from participating in HRA events and activities beyond the HRA membership, there are certain types of information that should not be shared outside HRA.

With respect to sharing HRA member data in the ***HRA Analyzer (members only)*** (formerly collected in the gHRAsp database) this includes but is not necessarily limited to the following:

- Login credentials used to access *HRA Analyzer (members only)* may not be shared outside your organization
- Data and reports obtained with the use of login credentials for *HRA Analyzer (members only)*: Member organizations may view/run/download data/reports made available to member organizations on the *HRA Analyzer (members only)* site. Members may use data and reports for their own internal purposes only. Members may publish data/reports only upon approval by the *HRA Analyzer (members only)* Oversight Committee, which will request permission from any other member organization whose data is specifically identified in the proposed publication.

Those employed by, consultant to, or who are volunteers of HRA member organizations are expected to follow these guidelines.

Member organizations are encouraged to contact HRA (maryrose@healthra.org or annette@healthra.org) with questions or concerns about sharing HRA information beyond the membership of the HRA.

The HRA Board of Directors originally reviewed and approved the confidentially guidelines from which this wording was taken in December, 2011. In November 2016, the gHRAsp database was replaced by *HRA Analyzer (members only)* resulting in minor modifications to these guidelines. The Board may revise these guidelines from time to time, as necessary. The guidelines were distributed to the membership when adopted and will be distributed again whenever there are significant revisions. The guidelines are shared with all new member organizations at the time they are accepted for membership. The complete guidelines are referenced on the HRA website as well as the former gHRAsp site. Only the relevant portions of the guidelines are referenced in this *HRA Analyzer (members only)* User Guide.

Dimensions for Funders full User Guide

The Dimensions for Funders full User Guide is provided below. This guide is provided to provide more information about analysis and search tools available within HRA Analyzer (members only).

NOTE: Some items in *Dimension for Funders* User Guide may not apply to *HRA Analyzer (members only)*.

NOTE: Some items in Dimension for Funders User Guide may not apply to HRA Reporter.

User Guide

Version 3.0

Part of DIGITAL science

Dimension for Funders User Guide

Some items may not apply to HRA Reporter

NOTE: Some items in Dimension for Funders User Guide may not apply to HRA Reporter.

Table of Contents

Some items may not apply to HRA Reporter

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Introduction

In this Section:

Introduction to ÜberResearch

ÜberResearch is an information solutions company focused on helping research funders, publishers, and institutions. The ÜberResearch team has worked for over 15 years producing solutions that apply analytical technology like Natural Language Processing ("NLP") to academic and scientific content. These solutions include manuscript submission handling and reviewer identification for the world's largest publishers, portfolio analysis and categorization for the world's largest research funders, and expertise systems for the top global research institutions. For more information, please visit www.UberResearch.com

ÜberResearch is a part of Digital Science.

About Digital Science

Digital Science® is a technology company serving the needs of scientific and research communities at key points along the full cycle of research. We invest in, nurture and support innovative businesses and technologies that make all parts of the research process more open, efficient and effective. We believe that together, we can change research for good. Visit www.digital-science.com

Introduction to Dimensions

Dimensions® is a modern and innovative, linked research data infrastructure and tool, reimagining discovery and access to research: grants, publications, citations, clinical trials and patents in one place. The development of Dimensions has been triggered by the feedback from clients and partners of the Digital Science portfolio companies. As a result, Dimensions has been developed through a dynamic collaboration across Digital Science and six of its portfolio businesses (ReadCube, Altmetric, Figshare, Symplectic, DS Consultancy and ÜberResearch).

With each company focused on a different pain point within the research cycle and serving various stakeholders in the research ecosystem, these teams shared their true passion for innovation, and contribute their unique experiences, opinions, and values into Dimensions. Visit www.dimensions.ai

As well as a stand-alone tool, *Dimensions* and its underlying components (e.g. data and data enrichment) are the basis for a suite of custom services that ÜberResearch provides to our partners and clients. Additional features and customizations are available within *Dimensions*, or as on a separate service basis as a standalone or plugin tool.

For funders, *Dimensions* serves the merit review and peer review processes, as well as reporting, planning, and portfolio management.

Some items may not apply to HRA Reporter

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Some of *Dimensions* uses include:

- Exploring global research funding
- Identifying and matching reviewers, building committees/panels, screening for conflicts of interest
- Finding gaps and overlaps in funding
- Categorizing your awarded grants, and compare vs. others

Dimensions is a cloud-based solution from ÜberResearch, and our team works closely with clients to support their environments, their workflows, and their end-user solutions with our data and services.

The design and functions of *Dimensions* have been driven by considerable input and feedback from the research community, and we hope to continue to develop it in this way. We are continuously improving *Dimensions*, adding data and features, and if you have suggestions and comments we would love to hear from you.

Introduction to this guide

The intent of this guide is to get you started and share common questions and uses.

This guide does not include every feature and use, but is designed to support many of the common uses. For specific situations, please contact us. We are here to help.

This user guide is organized by three themes:

- Quick start
- Common uses
- In-depth on use and features

Additional information

Access the Support section of *Dimensions* located in the upper right corner of every page.

Contact us

Please contact us for support, training, and additional information:

1. Use the “Support” link in the top right of every *Dimensions* page
2. Email support@dimensions.ai

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Brief Overview: Features of Dimensions

In This Section:

Summary of the solution

Dimensions allows users to explore the scientific research landscape by specific topics that can be defined by a search query or a category. Additionally, *Dimensions* supports finding experts and checking abstracts for scientific similarity against global data.

Quick guide to the data

Grants (awarded) and Publications are the two standard data sources. Subscriptions to Patents and Clinical Trials are available. Other data is also available with configurations and customizations. Most features can be used with each set of data. You can choose which data set is being used just below the search bar.

> **Note: Filters and results are on the documents (Grants, Publications, etc), which may contain more than one attribute, in the case of co-authors and the like. For example, when adding a filter of Country to publications, results will likely contain other countries in the case of co-authors from different countries.**

Dimensions integrates data from many sources, including openly-available databases together with direct contacts with publishers and funders. New sources are added on a regular basis, and date from existing sources are updated regularly.

We use the term “Grants” as a generic label for research funding from funders to provide a database of global funding.

- For more information about sources and enrichment see the chapter in this guide “About the Data”
- A Guide to the Dimensions Data Approach: https://figshare.com/articles/_/5783094

Your new proposals/applications can be added to your Workflow-Reviewer Identification section.

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Overview of each major section – Main view, Modules

The following are the major sections used to navigate *Dimensions*.

Main view

Search and filters

- Example ways to search:
  - Keyword – keywords with Boolean operators
  - Abstract – paste in an abstract or similar piece of text as the search criteria.
  - Filters – use filters to limit results to selected criteria.
- Document types - toggle between Grants (aka awards or projects) and Publications
- Searches can be saved as Favorites (available for all document types) or added to My Categories (if document type='Grants').
- Export - Search results can be exported as an .XLS file from the search results list. A limit is placed on the amount of records.

Analytical Views

Results tabs

Results can be viewed as a variety of entities, presented in different Results tabs:

- Research Categories: lists the topics of the grants or publications (where the document meets a minimum threshold of a category definition) using a growing number of pre-loaded classification schemes modeled by ÜberResearch, and user-created categories, or My Categories.
- Overview: visualizations (charts or tables) which show funding activity over time with line graphs or data tables for the entire search results set.
- Researchers: list of investigators, and co-investigators when available.
- Funders: list of the funders of the Grants.
- Organizations: list of the research organizations of the investigators from the Grants.
- Places: list of the countries, states and cities of the organizations of the Grants.
- Compare: option to compare the output of two research organizations by research categories

Note: some of these views will not be available or applicable for every data type.

Results views

For some of the above Results tabs, the user can toggle between document result lists and:

- Timeline: visualizations (charts or tables) which show funding activity over time with line graphs or data tables, pivoted by type (indicated in the results tab).
- Heat Map: funding amounts can be viewed as a color-coded matrix, with rows and columns that can be: funders, research organizations, researchers, or categories. Filters and a search query can be applied.
- Geo Map (in 'Grants'-'Places' only): allows exploring grants by selected geographies.

Note: some of these views will not be available or applicable for every data type or results tab.

Categories

Dimensions provides pre-loaded categories modeled by ÜberResearch, and tools to create My Categories, which can represent any topic. Classification schemes like RCDC, HRCS and FOR

Some items may not apply to HRA Reporter

NOTE: Some items in Dimension for Funders User Guide may not apply to HRA Reporter.

allow the user to pick relevant categories for a query. In addition, My Categories can be created and refined with the category creation tool.

Note: My Categories are only available for the Grants data type at this time.

Workflow module

Documents intended for peer review can be added manually by the user or via a bulk import by ÜberResearch. The user can identify relevant experts and check for similar grants and publications. Additional features are available to enhance features, settings, and/or integrate with grants management systems.

Coding Support module

Paste in any title and abstract and receive the Categories that this item would match to within the pre-loaded Classification schemes.

User Support

Support features include:

- FAQ Knowledgebase – search existing questions and answers.
- Support requests – send a support request to the ÜberResearch team.
- Training – contact your ÜberResearch representative or submit a request.

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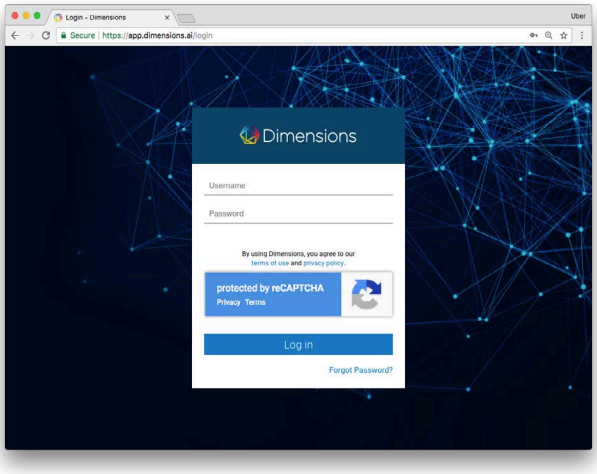
Getting Started

In this Section:

Logging In



Users are generally provided login credentials via Dimensions automated email, the username will be your email address. A link to the login page will be provided with the login credentials.

URL: https://app.dimensions.ai/login

Forgotten password / change password feature is provided from the login page.

Note: There is a public version of Dimensions, if you find that you see only publications and only a few filters, please select "Log in" in the upper right corner.

Training & Support

ÜberResearch provides all users with introductory training sessions, typically in groups via web conferencing. Follow-on group and individual trainings are provided as necessary, especially just prior to expected heavy usage; for example, just before a funding review cycle. Support is also available to users on an individual question basis.

To ask a question: Click "Support" in the upper right corner of *Dimensions*.

Quick Start to Exploring

Basic exploration with keywords is easy within the main view - the initial screen that appears after login. First, choose the data that you want to explore from the center of the screen; Grants or Publications are available.

You may enter a Boolean keyword search in the search bar and see the results list or further views in 'Analytical Views' where your results can also be listed by different groupings -- results by Funder, or results by Organization, etc. Each of the groupings can be viewed as a list, and each item within the list can be further explored, or added as a filter to see which records are resulting within that item. Each grouping may also be viewed graphically by clicking the 'Timeline' or 'Heatmap' within the grouping.

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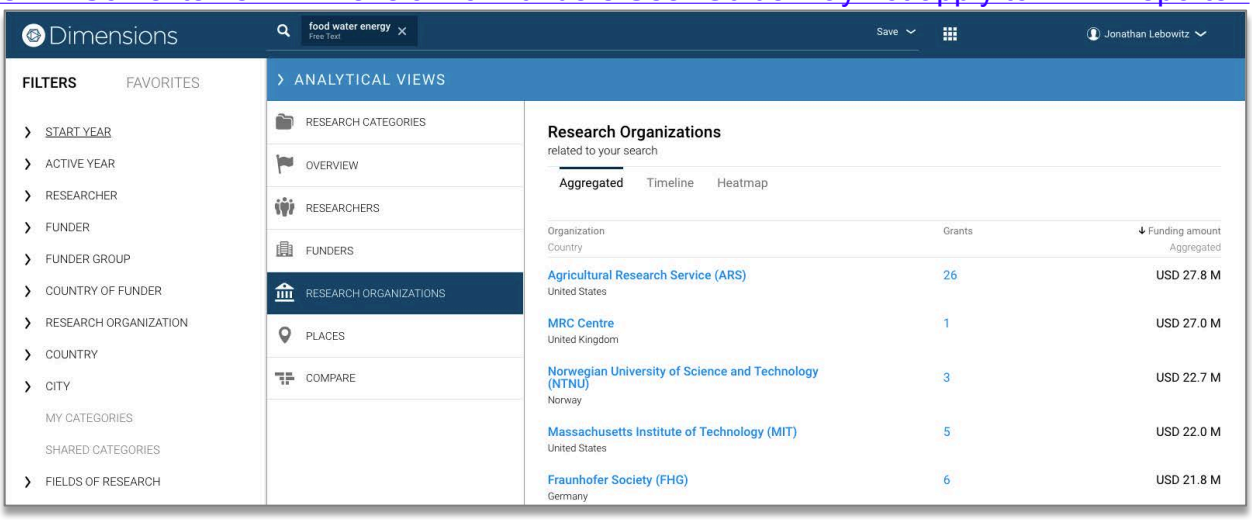

You can also layer on filters from the left menu to further limit the search parameters.

More detailed explorations and options are provided in the *Dimensions* User Manual, section "How *Dimensions* is Organized."

Quick Guide to the Data

Grants (awarded) and Publications are the two standard data sources. Subscriptions to Patents and Clinical Trials are available. Other data is also available with configurations and customizations. Most features can be used with each set of data. You can choose which data set is being used just below the search bar.

> **Note: Filters and results are on the documents (Grants, Publications, etc), which may contain more than one attribute, in the case of co-authors and the like. For example, when adding a filter of Country to publications, results will likely contain other countries in the case of co-authors from different countries.**

Dimensions integrates data from many sources, including openly-available databases together with direct contacts with publishers and funders. New sources are added on a regular basis, and date from existing sources are updated regularly.

We use the term "Grants" as a generic label for research funding from funders to provide a database of global funding.

- For more information about sources and enrichment see the chapter in this guide "About the Data"
- A Guide to the Dimensions Data Approach: https://figshare.com/articles/_/5783094

Your new proposals/applications can be added to your Workflow-Reviewer Identification section.

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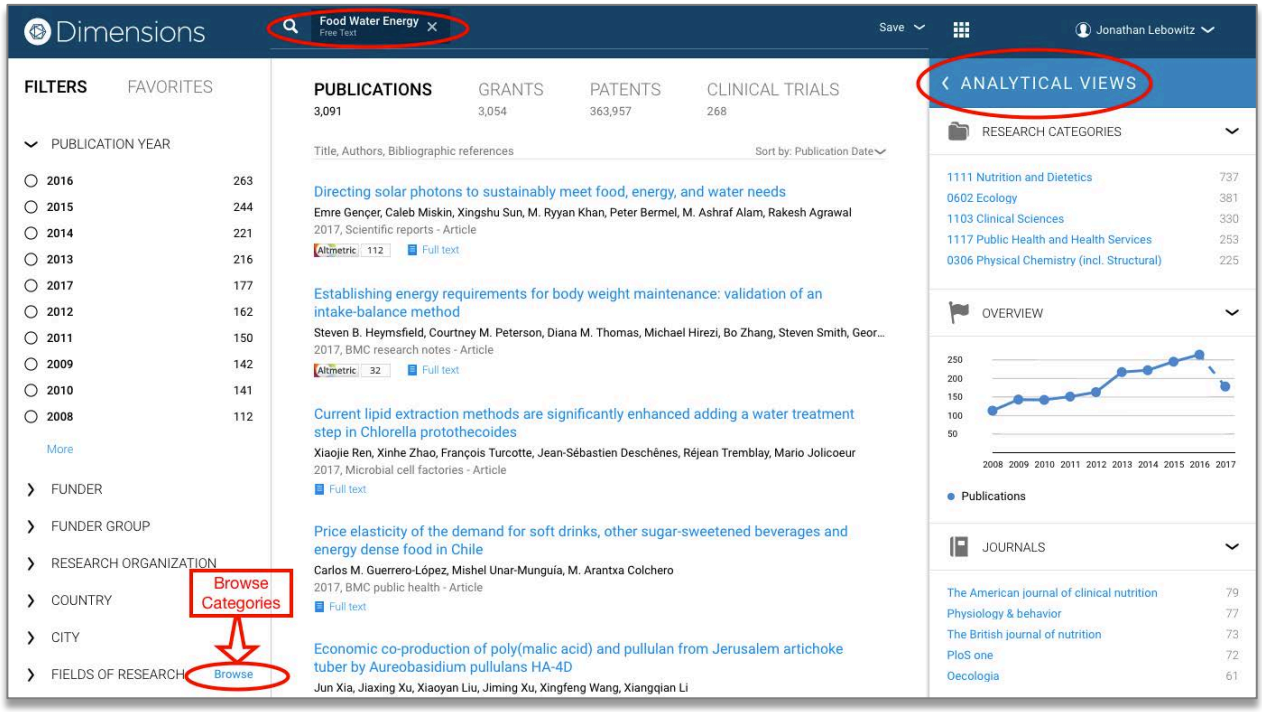
Basic Organization

In this section:

Main View

The main view of *Dimensions* provides different ways to view, sort, search, and browse the Grants & Publications.



Search and filter Grants or Publications using the search bar at the top and the filters in the left menu bar.

Analytical Views

Results can be viewed as a variety of entities, presented in different tabs. The user can toggle between document result lists and timeline visualizations (charts or tables) in each tab.

Unique visualizations are also provided with customizable settings where filters and search queries can be applied. Additional features are available for more complex visualizations or to provide direct outputs into other systems if this is desired.

Browse Categories

Add or learn about pre-loaded categories modeled by ÜberResearch, and tools to create and refine My Categories, which can represent any topic.

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Modules

Workflow

Documents intended for peer review can be added manually by the user or via a bulk import. The user can identify relevant experts and check for similar grants and publications. Additional features are available to enhance features, settings, and/or integrate with grants management systems.

Coding Support

Paste in any title and abstract and receive the Categories that this item would match to within the pre-loaded Classification schemes.

Filters

The filter bar appears throughout *Dimensions* on the left side of the screen - as a way to search and filter information. Users can filter by Funder, Research Organization, and Active Year to name a few. Filters can be selected individually as a way to search, or layered in combination to narrow the results.

For example, “Johns Hopkins University” from the Research Organization filter can be combined together with the “NCI” filter from the Funder section to give only those results which apply to both categories.

Categories are also provided in the filters bar. For more information, please see the *Dimensions* User Guide section “About Categories”

Note: Filters and results are on the documents (Grants, Publications), which may contain more than one attribute, in the case of co-authors and the like. For example, when adding a filter of Country to publications, results will likely contain other countries in the case of co-authors from different countries.

Adding filters to your search

There are two ways to add a filter:

Layer on a single filter with an AND relationship

For example, you may want to limit a Publications search to a single year. To do this, find the filter

you would like to add and select ‘Limit to’.

Add multiple filters with an OR relationship

For example, you might want to view your Publications search with those published in any of the last 3 years. To do this, select the checkbox next to each of the filters you wish to have an OR relationship. Then choose ‘Limit to’ at

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the bottom of the screen.

Common Uses

In this Section:

Common Starting Points

Common starting points for using *Dimensions* include:

- Keyword search
  - What have we and others funded in X?
- Abstract search
  - What funding and grants and people are similar to this abstract?
- Use existing Categories
- Summary views
- Trends over time
- Find a person meeting your criteria - reviewer / expert / collaborator

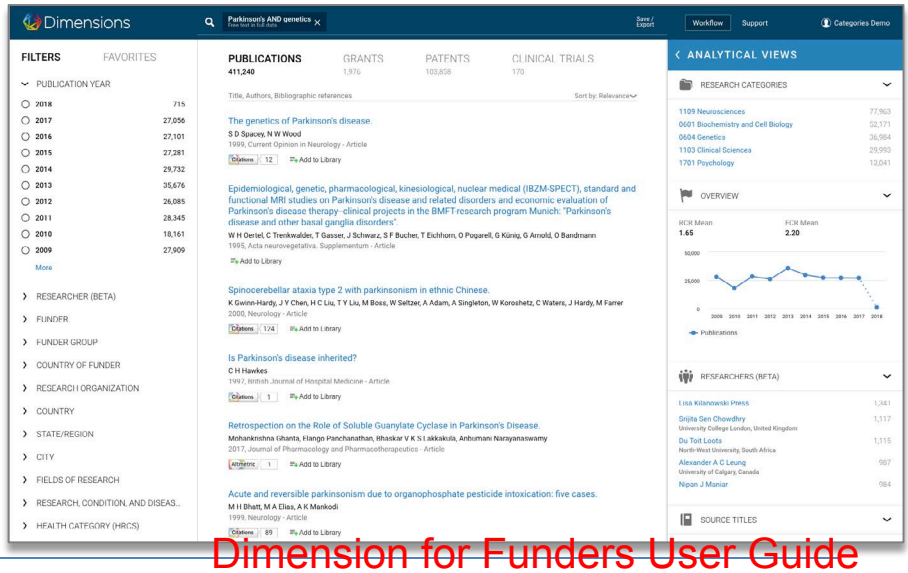
The following are descriptions of just a few ways in which you can use *Dimensions*. As well as being an instructive guide, they may also be useful with getting to know the software.

Explore funding on a specific topic

To explore funding for a specific research topic, first ensure that 'Grants' is selected as the document type, found in the top center of the screen.

In the search box in the main window, type the topic of interest and then press enter.

Boolean terms are usable in this search (see the 'Boolean Usage' section below). For example, if we were interested in the genetics of Parkinson's Disease, we would search for 'Parkinson's AND genetics'. The results list is then displayed below with other 'Analytical Views' available to the right.



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The results can then be exported for use outside of the software. To do this, click the link that says 'Save' and 'Export as Excel' in the top right corner, to download a file of the results.

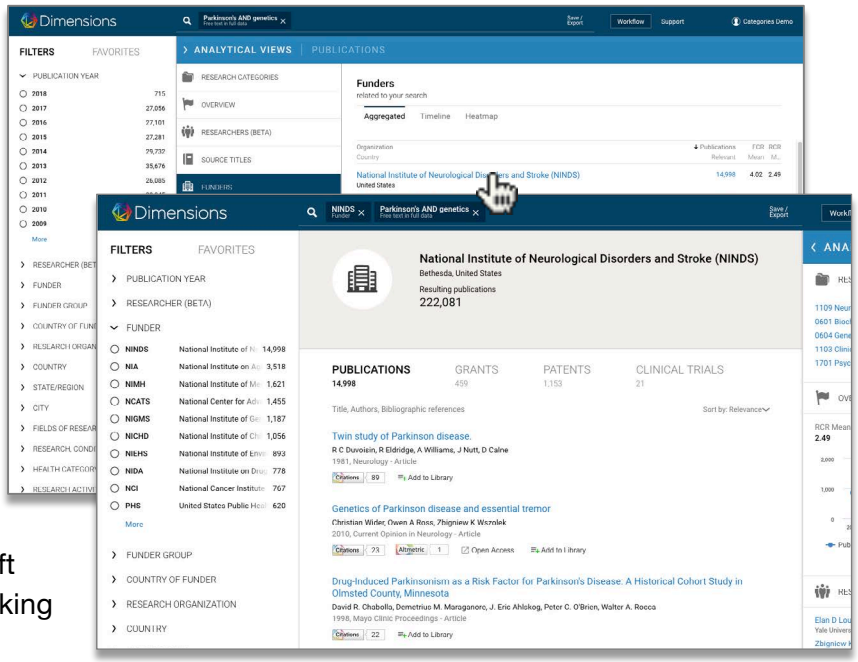
Depending upon the search terms, the number of Grants found could be very large, and from here it is useful to view the data in different ways.

Viewing the data in different ways

Viewing by Funder

Viewing results by funder is a good way to easily identify the main funders of a certain research topic.

With the initial list of results, select the 'Analytical Views' and then the 'Funders' Tab. This then displays the results grouped by the Institutions funding the grants, giving the number of grants and the total funding amount this represents on the right side.



Selecting the Funder name adds that Funder as another filter in the search. So, in the example of 'Parkinson's AND genetics' adding NINDS (National Institute of Neurological Disorders and Stroke) as a filter will return you to a list of results of only those grants which were both in the original 'Parkinson's AND genetics' search and that are funded by NINDS.

The same can be done by selecting NINDS from the 'Funder' option on the left side panel – it has the same effect as clicking the 'add as filter' button.

Viewing by Organization

The same principle can be applied to viewing the results of a search by Organization as with viewing by a Funder. Selecting the 'Research Organizations' Tab (within 'Analytical Views') organizes results by Organization, starting with those with the largest amount of aggregated funding (this is the default setting – to change to listing by the number of Grants, click the Grants header).

Again, to add an Organization as a filter in the search and only return grants at that Organization, you can either select the Organization in the 'Research Organization' tab on the left, or click 'Add as filter' in the Organizations tab results list.

Viewing data over time

Viewing results from a search in relation to the time at which the funding was awarded is also possible in *Dimensions*. Within a particular results list from a search (like 'Research Organization' above), click the 'Timeline tab'.

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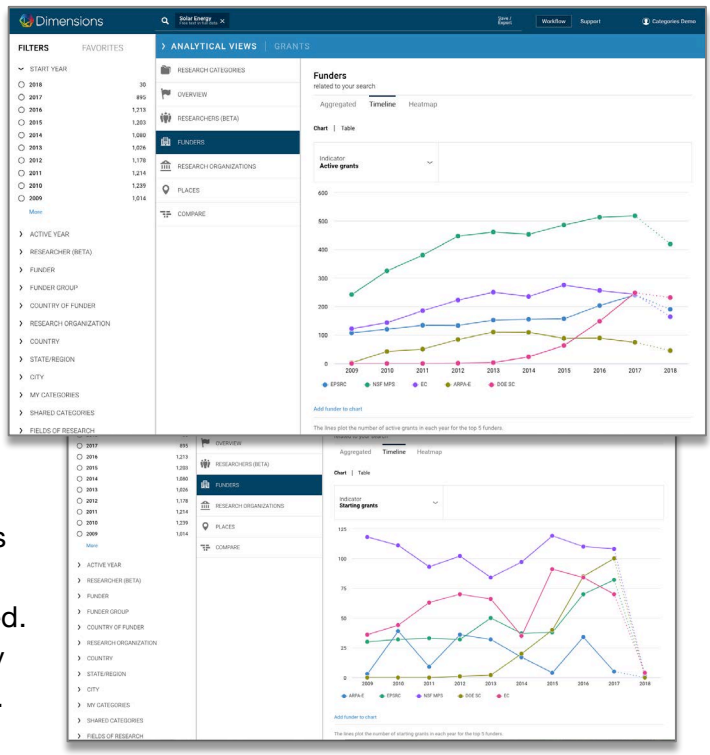
This displays a graph of both the number of active grants in any given year, and the number of grants starting in each year. For example, a grant that is listed as 2012-2015 will be present in active grants in 2012, 2013, 2014 and 2015, but will only be present in 2012 results for the starting grants.



This can be very useful when comparing other aspects such as funders or organizations. For example, to compare funded grants from several funders over time, in the 'Funders' tab click the 'Timeline' option. You will see the top Funders displayed on the graph by default. Next you can choose to remove or add Funders at the bottom of the chart.

It is important to note that this visualization does not affect the overall search, but only displays grants which are relevant to the Funders selected. The original search results can be returned to by clicking the 'Aggregated' link at the top left side.

Data can also be filtered by year. Again, this can be done either by start year or active year (see above). For example, to display only those grants active in 2015, go to the 'Active Year' section at the bottom of the left side menu bar. By clicking on this, the options are given for a year to select. If the year required is not displayed, click 'more' at the bottom.

The same process can be used for searching for only grants starting in a selected year by using the 'Start year' section.

Finding a person with expertise in a specific area

One of the advantages of *Dimensions* is that all of the different filters, such as Funder, Organization and year, can be used in combination to quickly and easily identify researchers who fit a certain set of criteria.

There are many ways in *Dimensions* to find experts, one example is below. For more information on this topic, please see the section "About Identifying & Matching Reviewers/Experts" in this guide.

For example, to identify an expert on the genetics of Parkinson's disease in the United Kingdom who has current funding in this area, first a search for 'Parkinson's AND genetics' will return a basic list, which can then have the filter 'United Kingdom' added in the 'Places' tab (in the same way as Funder or Organization was used above), and the year 2015 added as a filter in the 'Active Year' section.

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With these results, selecting the 'Researchers' Tab will then return a list of matching researchers in this field, only in the United Kingdom and with funding in 2015 on this topic, and these results can be sorted by funding amount or by number of grants, as before.

Clicking on one of these researchers then leads to a page displaying their overall number of grants in the database, the details of the grants which match the search, and research categories applying to the research carried out by this person.

Adding filters to your search

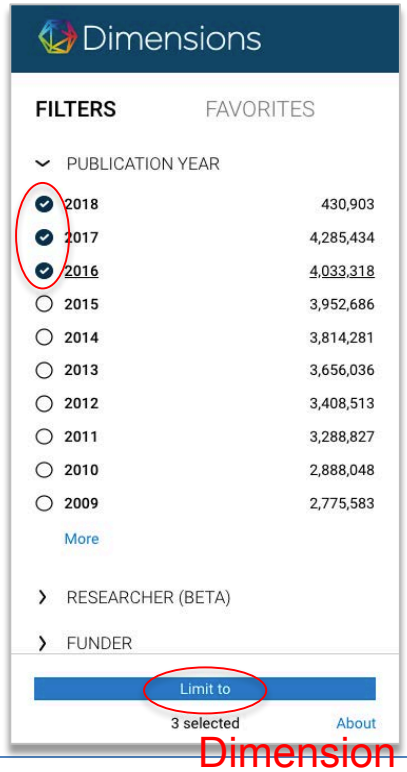
There are two ways to add a filter:

Layer on a single filter with an AND relationship

For example, you may want to limit a Publications search to a single year. To do this, find the filter you would like to add and select 'Limit to'.

Add multiple filters with an OR relationship

For example, you might want to view your Publications search with those published in any of the last 3 years. To do this, select the checkbox next to each of the filters you wish to have an OR relationship. Then choose 'Limit to' at the bottom of the screen.



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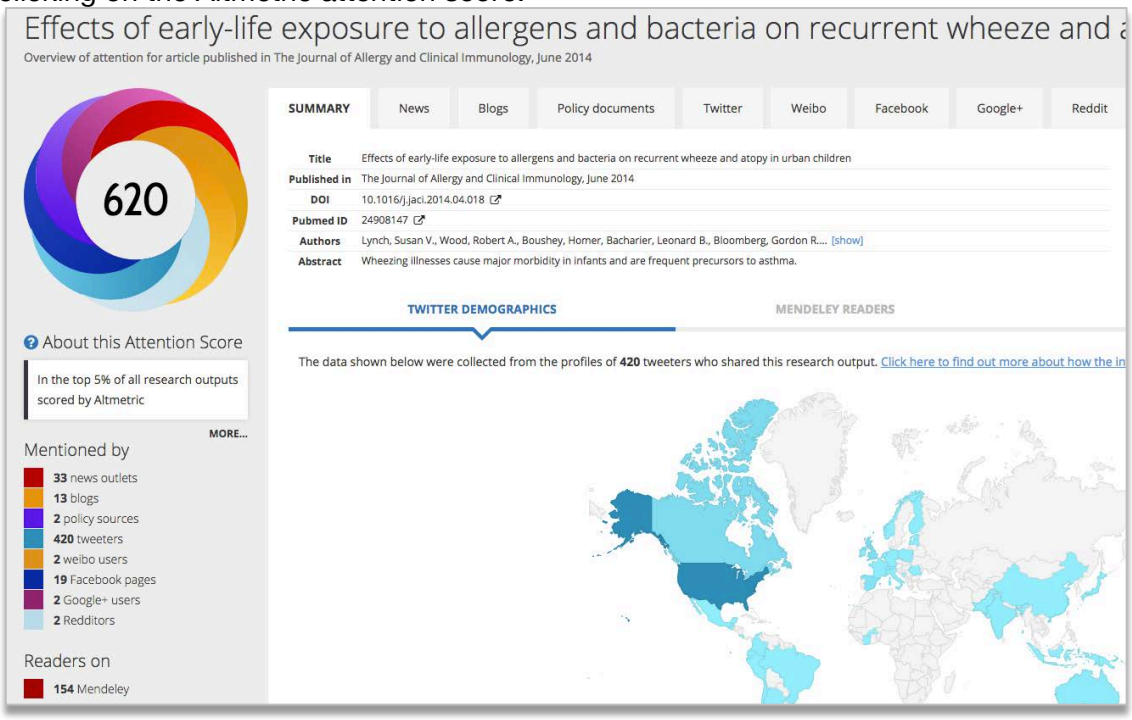
What Altmetric attention has this publication received?

The Altmetric visualization and score were developed to give a quick summary representing online attention that a publication has received. These scores can be found within the Publications tab after performing a search within Dimensions. Altmetric attention scores are a measure of impact that is independent of more traditional measures such as citation information. A higher score indicates a larger amount of attention and the different colors of the donut represent the variety of sources in which the article was mentioned.

Detailed information on which sources contributed to an Altmetric attention score can be found by clicking on the Altmetric attention score.



The Altmetric details page shows a demographic summary of Twitter mentions, Mendeley readers, and also view the details of received attention. Attention is displayed by source type, for example: News, Policy documents, Wikipedia, and many others, including social media platforms. For more information on how the score is calculated please visit www.altmetric.com.

What citations has this publication received?

Traditional publication citation counts are provided on the search results list and in the publication's details page. To see more details about the citations, click on the Dimensions citations badge.

The Dimensions citation details page displays citation metrics like total citations, recent citations. Relative Citation Ratio (RCR) and Field Citation Ratio (FCR) are normalized citation ratios that are included as well.

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Publication citations

Citation Count is the number of times that this paper has been cited by other published papers in the database.

Recent citations

The recent citations value is the number of citations that were received in the last two years. It is currently reset at the beginning of each calendar year.

Relative Citation Ratio (RCR)

The Relative Citation Ratio (RCR) indicates the relative citation performance of an article when comparing its citation rate to that of other articles in its area of research. A value of more than 1.0 shows a citation rate above average. The article's area of research is defined by the articles that have been cited alongside it. The RCR is normalized to 1.0 for all articles.

Field Citation Ratio (FCR)

The Field Citation Ratio (FCR) is an article-level metric that indicates the relative citation performance of an article, when compared to similarly-aged articles in its subject area. A value of more than 1.0 indicates higher than average citation, when defined by Fields of Research (FOR) Subject Code, publishing year and age. The FCR is calculated for articles published in 2000 and later.

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About the data

In this Section:

What data is included?

This section describes the data in standard *Dimensions*.

See also: *A Guide to the Dimensions Data Approach* at https://figshare.com/articles/_/5783094

The same major data sources are available throughout *Dimensions* – Grants (awarded) and Publications. Patents and Clinical Trials are available by subscription. Your new proposals/applications can be added to your Workflow-Reviewer Identification section.

- An up-to-date list of grants data sources is provided in *Dimensions* – click your username, then 'About the Data' in the resulting menu.
- To see a complete list of all Publications source titles covered in Dimensions, open "Analytical views" while searching the publications data source, and then go to the "Source titles" tab. This will then list all of the source titles of the results from your search.

Sources and Updates

An extensive metadata backbone was assembled and is continuously updated. This data spine integrates data from many sources, and are then used to link data in *Dimensions* where possible and applicable.

Publications

Dimensions uses a variety of sources including Crossref, Pubmed and direct contacts with publishers to create a baseline metadata model for publications data. Wherever possible we deep-index the full text of an article, allowing us to categorize the record, extract references, affiliations and funding sources etc. These are then used to link to other data sources in *Dimensions* where possible and applicable.

Grants

Grants Data is provided directly by the funder or from public sources. Funding data most often comes directly from funders, and often are connected to the systems as our funder partners. New grant data sources are added regularly.

We target at least five years of data for each funder - for some there is over 20 years of data. Monthly to quarterly updates are targeted, which is in line with the types of uses *Dimensions* serves. For some smaller funders, data is only added after award periods.

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Clinical Trials

Dimensions provides a single point of access to multiple clinical trial registries. As of January 2018 we have integrated eight registries, including those in ClinicalTrials.gov as well as others globally (including Europe, Asia, and Australia).

More will follow in the future. We integrate and map all relevant source data into Dimensions' coherent data model with filters, for e.g. research categories, research organizations or years, applicable across content types.

Patents

The patent data in *Dimensions* is provided by the Digital Science portfolio company IFI Claims. We started with an initial tranche of patent offices for the launch of Dimensions. We are now in the process of adding more, which will appear in *Dimensions*. The focus of the patent data in Dimensions is to provide a downstream view on how research funding is impacting and enabling the commercial protection and potential use of research results.

Enrichment

Summary of enrichment - cleansing, disambiguation, topics, more

Dimensions includes data from many sources which are converted to a common data model, cleaned, and then enriched so it is ready for use.

The enrichment steps include disambiguation of people ("Researchers") and Organizations, and categorizing the data into topics ("Categories").

Categories aka Topics

Existing categories - provided by ÜberResearch and your My Categories - are applied to the data and accessible as filters and search parameters.

For more, see the Categories section below.

Disambiguation - Researcher and Organization

Disambiguation of people and organization is a prerequisite to many questions. For example, it is necessary to identify reviewers (to generate expertise profiles for matching to proposals), to generate conflicts of interest (disambiguation is a prerequisite for co-author networks which lead to co-author conflicts), and to look at outputs by investigator.

Organization disambiguation is provided across all data sources using an Institutional Database of Canonical organization names, where new names are mapped manually into the system.

What data can and will be added

Internal data can be added, as an additional feature, privately available within *Dimensions*, and is both searchable and categorized. Your historical unfunded proposals can be added, as well as progress reports, and other data. *Dimensions* is a platform for all research inputs and outputs, from proposals to awards and reports, publications, patents and clinical trials.

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About Categories

In this Section

What are categories?

A Category in *Dimensions* represents a topic and is similar to a saved search. A Category can represent any topic, and be as broad as “cancer” or “engineering” or “basic research”, to populations (indigenous people, teens), to new yet-to-be defined topics like “implementation research”, and difficult to define topics (advanced manufacturing). Categories can represent existing programs, topics for annual reporting, ideas for new programs, areas of new investment, and more. For example: What did we fund in X? Who is researching X today?

Categorization, classification, topic modeling, clustering, ontologies, thesauri, coding - all are about looking at the data by topic to support almost all uses. The system provides for all approaches throughout the tool because data by topic applies to most uses. The ability to search, filter, group/cluster by topic is pervasive throughout the Dimensions. Categories are available with both pre-loaded categorization systems (e.g. ANZSRC FOR, HRCS, RCDC), and user-created categories with the category building tool.

Groups of previously defined and commonly used categories make up classification systems such as FOR or RCDC or HRCS classifications (see below).

Where do Categories come from?

Categories are pre-loaded in *Dimensions*, we are always adding new ones, and you can create your own (and we will help you create them).

Many of the classification systems (sets of categories) are internationally recognized systems which we have integrated into *Dimensions*. These include the FOR, RCDC and HRCS classifications (see below), and more are being added constantly.

We provide all methods to create categories. Ranging from keyword-based semantic approaches to machine learning and more. We often hear categories, coding, classification, ontologies, thesaurus/thesauri used interchangeably.

Behind a category is some definition which can be very complex, or very simple. The ÜberResearch team has over 10 years of experience in modeling classification systems for the largest funders and uses all methods to create categories; machine learning, topic modeling, clustering, and semantic to name a few.

Using Categories

Categories appear throughout *Dimensions* - as ways to search and filter information.

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All data records in *Dimensions* are labeled with all classification systems simultaneously, and this means that different categories can be selected at the same time in order to give combined filters on information. For example, the "Economics" category from the FOR classification system can be combined together with the "Mental Health" category from the RCDC system to give only those results which apply to both categories.

As Filters

In many views within the *Dimensions* system, there is a filter section on the left hand side of the page. Categories are one of the many filters that the user can apply to the listed data search results. For example, you can see all Grants that fall into the RCDC definition of cardiovascular research by simply clicking the "Cardiovascular" filter within the RCDC category menu.

Additionally, the filters can be applied together in order to provide a more detailed view of the Grants or Publications. Using the cardiovascular filter above, we can add a funder, "CIHR," and an institution, "University of Toronto." This will allow us to see all cardiovascular grants being funded by CIHR at The University of Toronto.

As Classification

A user may also view a categorized summary of the current search results. For example, we can see a summary view of grants by RCDC Category funded by NSERC – click the "NSERC" filter on the left filter bar and then click the "Categories" tab within the search results, then specify RCDC. The resulting view will be NSERC funded grants summarized by RCDC Category.

Things to keep in mind

In many cases there is not one right answer for whether a certain title and abstract should belong or not belong to a certain category. The ÜberResearch modeled categories are a good match to the sample set provided but may not be exactly matched to another organization's coding.

Data without abstracts will not work as well; particularly where a machine learning approach was used.

Provided Categories

In some cases categories are created with keyword searches. In other cases, such as widely used classification systems, ÜberResearch uses a machine learning approach to derive categories from a large pre-coded data set. In these cases, ÜberResearch is provided large sets of titles and abstracts that are coded to the classification system to be modeled. Definitions are then created and tested against the sample set.

In addition to the stock definitions below, ÜberResearch provides additional services to create categories to model classification systems. Categories can be generated from any approach – ÜberResearch supports all methods, both within *Dimensions* and as a separate service. Some examples within *Dimensions* -- machine learning, thesaurus/taxonomy, manually created, keyword driven, and build your own categories.

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ÜberResearch provides some stock categories within *Dimensions* that are derived from different classification systems within certain scientific communities; we continuously add categorization systems available to all subscribers at no extra cost. Presently, these stock categories are -

FOR - The Fields of Research (FOR) classification is a component of the Australian and New Zealand Standard Research Classification (ANZSRC) system and it allows all R&D activity to be categorized using a single system. The system is hierarchical, with major fields subdivided into minor fields. We have emulated the second level of the system only. The Fields of Research cover all areas of academic research at a high level, so it works well for non-granular investigations into funding by broad subject areas.

RCDC - The Research, Condition, and Disease Categorization System is a classification scheme used by the US National Institutes of Health (NIH) for the public reporting required by the US Congress. A RCDC Category can be a research area such as neuroscience, a disease such as diabetes, or a condition such as chronic pain. Despite being a purely biomedical system, not all areas of biomedicine are covered, and some medical grants may not fall into any of the RCDC categories.

HRCS - The Health Research Classification System is a classification system used by nearly all UK biomedical funders to classify their portfolio of health and biomedical grants. In addition to widespread use in the UK, HRCS is being considered for adoption in other European countries. As a high level system it provides a useful overview of major health topics, but is clearly not appropriate as an overall research classification.

BRA - Broad Research Areas category. We have implemented the Broad Research Areas developed by the Australian Bureau of Statistics (ABS) and published as part of the Australian and New Zealand Standard Research Classification (ANZSRC) 2008 edition.

HRA - Health Research Areas category. We often get requests to help distinguish between research on the basic to applied spectrum, and research that is about translating discoveries into patient care. And of increasing interest is to identify research that is of public and global health concern. Using machine learning of public data in combination with our experience building and modeling many categorization systems, we have modeled four categories related to biomedical and health research: "Health Research Areas". The four categories are a beginning - please make suggestions as we refine and expand.

Create your “My Category”, re-use for consistent definitions, share with others

The “My Categories” allow users to create their own categories, using *Dimensions*’ category creation tool. My Category definitions are created by users with simple or advanced keyword searches using Boolean operators, boosted terms and minimum thresholds. ÜberResearch can help users create draft My Categories or work with users to help with learned best practices as required.

Note: My Categories are only available for the Grants data type at this time.

Sharing level:

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- **Private** *(default)* - My Categories are only seen within the login they were created unless the user selects a different sharing level for that category.
- **Organization** - everyone in your organization with a login will be able to see and apply the category.
- **Public** – all users of *Dimensions* world wide will be able to see and apply the category.

Categories that have been shared to you will appear in "Shared Categories". This can be particularly useful for users who want their colleagues to be able to use exactly the same definitions in reports or searches.

How to create a Category: Using the Dimensions Category building tool

Factors:

- No one right method to creating categories, no one definition for anything.
  - What is X? What is the definition of cancer? Well, it depends. What is the use? Who is the audience? What is the data? How much time do you have? Etc.
  - Depends on your organization, situation, and perspective.
- The Category building feature in *Dimensions* is only one way, and is intended for creating categories of any precision - ad hoc to very refined. Other methods for Category creation are available as an additional service from ÜberResearch.
- The guide below is specifically for using the *Dimensions* category building tool.

General approach:

- Bubbling up most relevant with lots of relevant "OR" keywords.
- Think about it – Where do you draw the lines of "in" or "out;" what perspective are you looking for?
- Is there opportunity for creating more than one category, or re-using another that exists?
  - Example: if the goal is 'Community resiliency and health in rural populations' - use RCDC Rural Health, and then only one new category - community resiliency.

ÜberResearch will provide guidance for creating more precise, robust categories – a web meeting with one of our categorization specialists is usually available to all clients and it is highly recommended.

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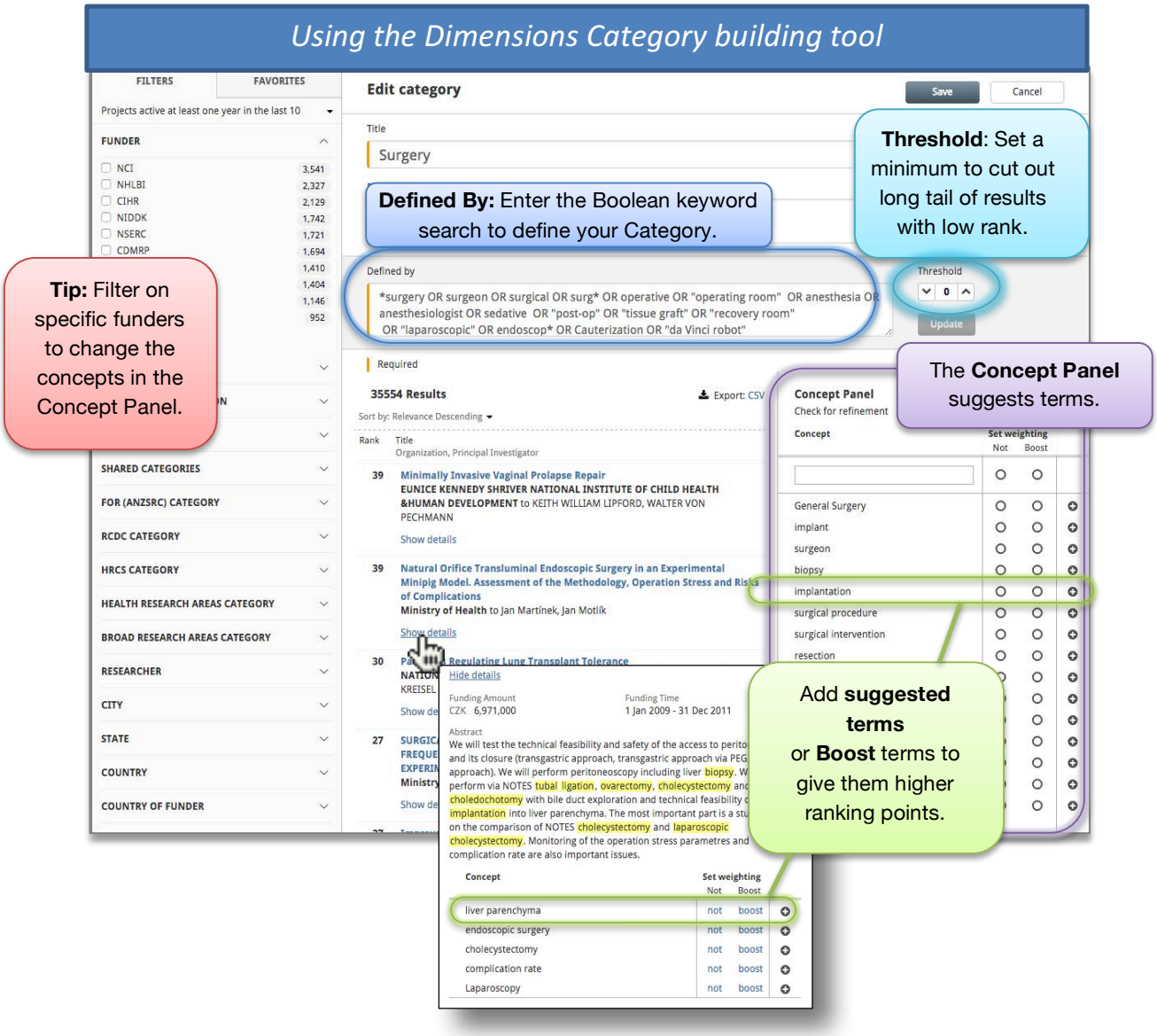
Quick ad hoc category from scratch, the mechanics:

- Start with one or more definite keywords.
- Use sources where someone has already thought of related concepts (Wikipedia).
- Use suggestions within similar grants and on the Concept Panel (to the right).
- Iterate.
- Set threshold.

Note: When saving a My Category, the system will need to finish processing (a few minutes) prior to being able to use the category.

ÜberResearch will provide guidance for creating more precise, robust categories or web meeting with one of our categorization specialists is usually available to all clients and it is highly recommended.

First, choose the Grants data source, then in the left menu bar, pass the mouse over 'My Categories' and select 'browse'. This will take you to a list of your 'My Categories' where you can edit each:



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FAQs - Categories

1. Can I share categories?
    a. Yes. Categories can be created for private use and shared with colleagues. It is possible to share categories across organizations as well.
2. Can previously coded data be used to create a new Category?
    a. Yes. This is how the Fields of Research (FOR) Categories were implemented, using a machine learning approach with training sets.
3. Do you provide adaptive learning approach?
    a. Yes. Please contact us for more information if needed regarding the aspect that you have in mind.
4. Why are grants without abstracts not being coded by some classification systems?
    a. The coding approach for FOR, RCDC, BRA, and others use machine learning. The approach requires abstracts as input to compute codes.

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About Identifying & Matching Reviewers/Experts

In this Section:

Within Dimensions there are specialized features for finding experts. The main finding and matching reviewer features are in the Workflow section; but researchers can be searched for throughout Dimensions.

Workflow Module

'Workflow' is found in the 'Modules' menu at the top of the main view.

Each row is a Grant Application/Proposal, which can be added manually by the user with the "Add Grant Application" button on the top right of the main Workflow page. ÜberResearch may be able to add Grant Applications/Proposals for you - please contact us.

Reviewer Identification

Reviewer Identification automatically extracts concepts from the text and suggests researchers based on the context of the Title and Abstract. Experts are identified based on their Publications (default) or Projects (grants/awards) – you can toggle between them in the upper left corner. You may restrict search results by location and how recent the Publication or Grant. Filters are available on the left to change the requirements of the search further.

The results panel shows useful additional information on which to make decisions, such as the publications/grants that were found to be related, as well as conflicts of interests based on co-publication (co-author conflicts) and working at the same institutions (organizational conflicts).

Overlap Check

Overlap check uses the abstract to search for related Grants and Publications. You can use these results to find researchers, determine if the research may be duplicative, and identify co-funding opportunities.

Main view

One of the advantages of Dimensions is that all of the different filters, such as Funder, Organization and Year, can be used in combination to quickly and easily identify researchers who fit a certain set of criteria.

For example, to identify an expert on the genetics of Parkinson's disease in the United Kingdom who has current funding in this area, first a search for 'Parkinson's AND genetics' will return a basic list, which can then have the filter 'United Kingdom' added in the 'Places' tab, and the year 2015 added as a filter in the 'Active Year' section.

With these results, selecting the 'Researchers' Tab will then return a list of matching researchers in this field, only in the United Kingdom and with funding in 2015 on this topic, and these results can be sorted by funding amount or by number of grants.

Clicking on one of these researchers then leads to a page displaying information about the researcher's activities.

Suggestions for search approaches

There are many different ways to identify reviewers and experts. Below are some ideas.

Typical Methods:

A typical starting point is to use the default results in Workflow using the actual title and abstract of the application/proposal. Each row in workflow represents an application/proposal. Click on "Reviewer Identification" and see the experts that are being matched based on the concepts extracted in the concept panel. Then edit to your requirements by adjusting parameters in the Filters and Concept Panel.

Alternative Methods:

- Start broad.
  - Workflow: Use a single concept by creating a new (fake) Grant Application/Proposal with the Title and Abstract as keyword/statements.
  - Discover: Explore a single concept by searching with a Category or keywords.
- Follow threads
  - Workflow: Use Reviewer Identification to find co-authors of returned reviewers.
  - Workflow: Use Overlap Check by starting with a known Grant and view similar Grants.
  - Discover: Start with a known Publication, Person, Category/topic - and view Similar Grants or Publications.
- If starting before receiving LOIs or applications/proposals
  - Use LOIs ahead of applications/proposals.
  - Use previous LOIs/applications/proposals, or any publication or grants that are representative of expected LOIs/applications/proposals.

Preparing for a review cycle

Contact us in advance of your review cycle so that we can help with preparations. We recommend scheduling a refresher training session specific to finding reviewers.

We can also help determine the best way to add your Grant Applications/Proposals, as several options exist:

- Added manually by user ("Add Grant Application" button).
- Send to ÜberResearch and have them added for you (contact us to discuss options).
- Dimensions is integrated with your system and automatically appear (optional feature).

If you need help during the review, please feel free to contact us and we can help.

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FAQs – Finding Experts

1. How can I find people with specific roles, like methodologists or statisticians?
    a. User a combination of Concepts and Filters.
    b. Example: statistician who knows clinical trials. Add in “clinical trial” as a Concept, and filter on a big leading journal about statistics + biomedical, like “Statistics in Medicine”. Or use concepts like “clinical trial” + “biostatistics” without a journal filter (as this may be too limiting to the results).
2. How can I cluster proposals based on the topics?
    a. Contact us early as possible to increase lead time. We may be able to help.
3. How can I increase the chance of acceptance by the reviewer?
    a. Our customers have found that they increase the average range of acceptance, and in shorter time, because of the better matches of reviewers to applications/proposals.
    b. Some funders will reference a reviewer’s publications and grants in the request citing evidence as to why it is a good fit.
    c. Identify reviewers currently interested in the topic. The use of Data Source = Grants in Workflow will find reviewers who are actively researching the topic, and controlling for Published since X helps identify those reviewers who have published more recently.

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Boolean Usage

Boolean operators - OR, AND, NOT

OR
'green OR blue' will return any grant with either 'green' or 'blue'.

AND
'green AND blue' will only return grants where both terms are found within a single grant.

NOT
'green NOT blue' means all grants with 'green' in them will be returned unless they also have 'blue' as well.

Term modifiers - (), “, *

Parentheses
'green AND (blue OR purple)' will return any grant that has both 'green' and 'blue' or 'green' and 'purple'.

Double Quotes
"green blue" will return an exact match only. An Asterisk (below) within Double Quotes will be ignored.

Asterisk
'green*' returns everything starting with 'green'. like 'greenery', 'greener', 'Greensmith' etc. An Asterisk within Double Quotes (see above) will be ignored.

Spelling

Both American and English spelling exist. If you are looking for 'ageing' remember to search for 'ageing OR aging'. Boolean operators need to be capitalized, for the rest capitals make no difference.

Threshold

The minimum threshold allows users to cut out the least relevant results of the Boolean search on a sliding scale.

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FAQs

FAQs are also available in the Support section, accessed from the upper right of every *Dimensions* page.

1. Can we include our internal data, like unfunded, historical proposals?
   a. Yes, this is available as an additional feature. Contact us for more details.
2. How do I get to the My Category editor?
   a. First, choose the Grants data source, then in the left menu bar, pass the mouse over ‘My Categories’ and select ‘browse’. This will take you to a list of your ‘My Categories’ where you can edit each.
3. How can I see the updated list of Classification systems that are modeled?
   a. In the left menu bar, pass the mouse over any of the classification names and select ‘browse’. This will take you to a panel which describes each of the classifications and the Categories that have been modeled.
4. How do I get to Workflow to add or view my proposals/applications?
   a. Select the ‘Workflow’ menu at the top of the main view and select ‘Reviewer identification’.

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Beyond standard Dimensions: What else is available from ÜberResearch

ÜberResearch provides data, data services (e.g. enrichment), tools (*Dimensions*), and services.

Dimensions represents the combination of many of our capabilities at entry level from portfolio analysis to visualizations to reviewer finding - these capabilities are available also as components, stand-alone, with more advanced and customized features.

ÜberResearch is able to provide tailor-made solutions to problems according to your requests. Many of these may be related to Dimensions itself.

Examples of *Dimensions* configurations and customizations:

- Locally hosted, country-specific hosting, and more.
- Adding your internal data, e.g. historical unfunded applications/proposals.
- Adding more data, e.g. more publications, patents, or clinical trials.
- More references/linkages.
- More categorizations/classifications.
- Customizing and enhancing reviewer identification tools.
- Integrating Workflow with GMS.

Outside of Dimensions we are also able to help with problems such as data disambiguation and management, as well as developing new tools for specific needs such as public facing searchable databases for your data or modeling new classification systems. If you have a problem that you think we would be able to help with then please get in touch.

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