

Technology to Uncover the Academic Story

A presentation of emerging technology for institutional analytics

Agenda

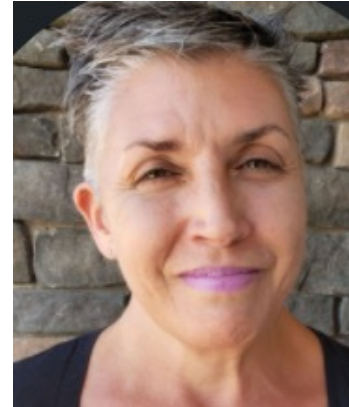
- Welcome and introductions
- Building a progressive data landscape at a Research Institution
- How Dimensions provides innovative options
The Data You Need, The Way You Want It
- Q&A



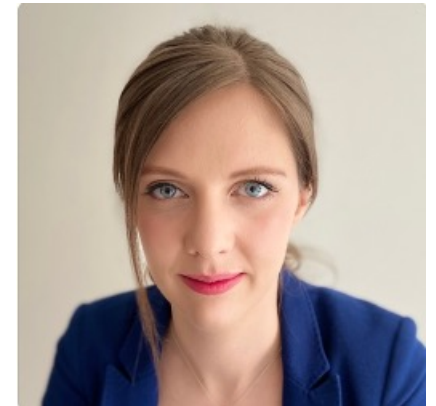
Colleagues Joining



Kelsey Rosell
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Sunset at the Pacific, San Diego, CA

Dimensions is part of Digital Science

Digital Science **invests, supports** and **nurtures** small innovative software companies.

Rooted in research, most founders have an academic research background and started a company around solving a self-encountered problem.

Since 2009, Digital Science has invested in and/or started numerous companies with nearly 300 colleagues to call on from across the Digital Science portfolio.

Making the research process more open,
efficient and effective...

 Dimensions



 Altmetric

 figshare

 readcube

 SYMPLECTIC

 seismic

Part of
DIGITAL
science

 Overleaf

 TETRASCIENCE

DIGITALscience
Consultancy

 ifi CLAIMS

 labguru

 transcriptic

CCTechnology 

 ripeta

 gigantum

GRID 

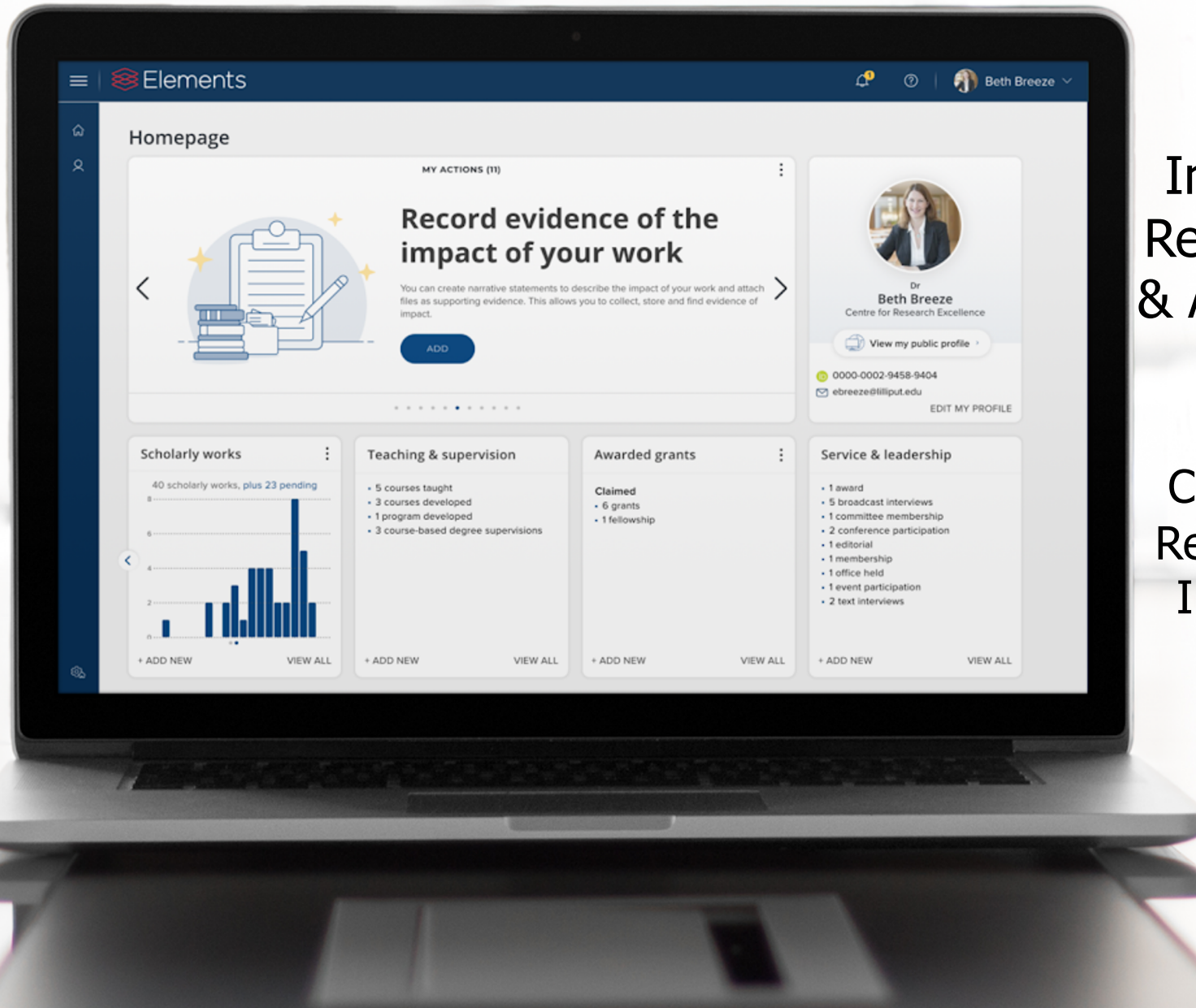
What is Dimensions?

A linked, categorized and disambiguated database of:

- Publications
- Awarded Grants
- Patents
- Clinical Trials
- Policy Documents
- Data sets

The screenshot shows the Dimensions database interface. At the top, there is a search bar with the query "e.g. plastic AND instrument" and a search icon. To the right of the search bar are links for "Save / Export", "Workflow", "Support", and a user profile for "Kelsey R.". Below the search bar, there are tabs for "PUBLICATIONS", "DATASETS", "GRANTS", "PATENTS", and "CLINICAL TRIALS". The "PUBLICATIONS" tab is active, showing a count of 108,279,670. Below the tabs, there are sections for "POLICY DOCUMENTS" (454,959) and "ANALYTICAL VIEWS". The "ANALYTICAL VIEWS" section includes a "RESEARCH CATEGORIES" dropdown menu with a list of categories and their citation counts: "11 Medical and Health Sciences" (28,215,173), "09 Engineering" (11,446,451), "1103 Clinical Sciences" (10,467,433), "06 Biological Sciences" (8,453,521), and "03 Chemical Sciences" (7,450,319). Below this is an "OVERVIEW" section with a line graph showing "Citations" (1.2 B) and "Citations (Mean)" (10.95). The main content area displays a search result for the article "Optimizing Test and Treat in Malawi: health care worker perspectives on barriers and facilitators to ART initiation among HIV-infected clients who feel healthy" by Kathryn Dovel, Khumbo Phiri, Misheck Mphande, Deborah Mindry, Esmart Sanudi, and Mcdaphto... (2020, Global Health Action - Article). The article has 2 citations and options to "View PDF" and "Add to Library".

Symplectic Elements



Internal Reporting & Analysis

Record Research Outputs

Populate Public Profiles



Capture Research Impact

Support Open Access

Annual Reviews & Assessment
(e.g. REF/Annual Faculty Review/PBRF/ERA)

figshare: store, share, discover research

Discover research from figshare

FEATURED CATEGORIES

- Agricultural and Veterinary Sciences
- Astronomy, Astrophysics, Space Science
- Biological Sciences
- Built Environment and Design
- Chemistry
- Commerce, Management, Tourism and Services
- Earth and Environmental Sciences
- Engineering
- Health Sciences
- Humanities
- Information And Computing Sciences
- Language, Communication and Culture
- Mathematics
- Meta Science
- Physics
- Psychology
- Social Science
- Studies in Creative Arts and Writing
- Studies in Human Society
- Technology
- Uncategorised

NEW POPULAR CATEGORIES SEARCH

CODE
sustainability-and-SVC-usage-...
Sarah Alhozaimy today

METADATA RECORD
Preconception care for women with type 1 or type 2 diabetes mellit...
Sarah Earle today

COLLECTION
Collection: Core-First Synthesis of Three-Armed Star-Shaped Pol...
Philipp Pahl today

COLLECTION
Core-First Synthesis of Three-Armed Star-Shaped Polymers by Rare...
Philipp Pahl today

DATASET
Core-First Synthesis of Three-Armed Star-Shaped Polymers by Rare...
Philipp Pahl today

DATASET
Core-First Synthesis of Three-Armed Star-Shaped Polymers by Rare...
Philipp Pahl today

COLLECTION
Collection: Emission Factors for Selected Semivolatile Organic ...
Xianyu Wang today

COLLECTION
Collection: Preparation of Colloidal Organosilica Spheres through ...
Casper van der Wel today

Who we are and what we do:

Figshare is an online digital repository where researchers can preserve and share their research outputs in any format, including (but not limited to) figures, tabular data, code, and preprints. Data can be published under licenses that promote reuse and remixing of published content, with every public item on the platform receiving a Digital Object Identifier (DOI) to aid in the discover citation of published content.

Altmetric Attention Sources

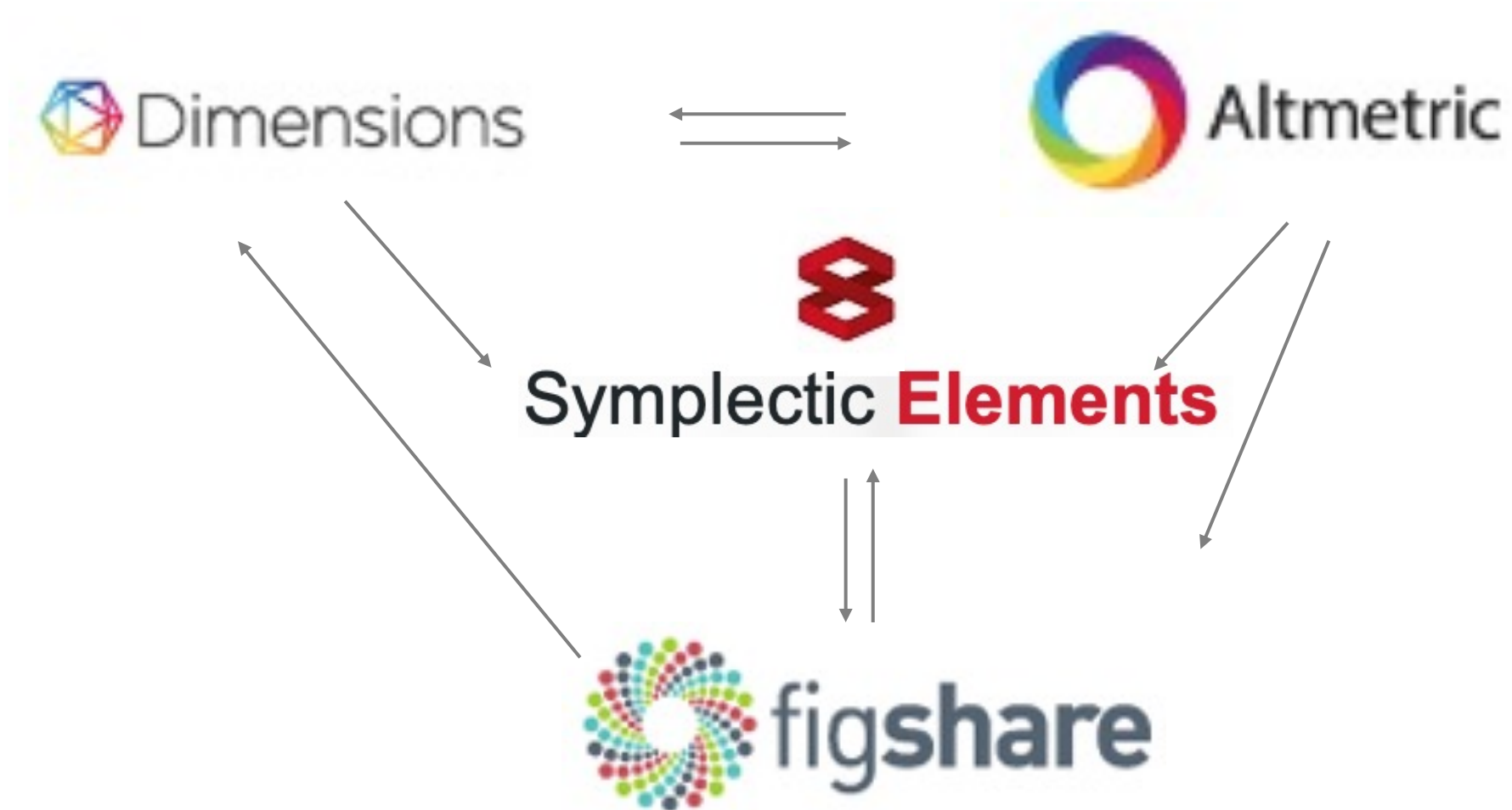
The Colors of the Donut

- Policy documents
- News
- Blogs
- Twitter
- Post-publication peer-reviews
- Facebook
- Sina Weibo
- Syllabi
- Wikipedia
- Google+
- LinkedIn
- Reddit
- Faculty1000
- Q&A (Stack Overflow)
- Youtube
- Pinterest
- Patents



17 categories representing thousands of websites

Even better together...



***Progressive Data Solutions
at CU Boulder***

**Liz Tomich, Sr Solutions Account Manager, Digital Science
Supporting Academia in the US and Canada**

About CU Boulder

 University of Colorado **Boulder**



Partners at CU Boulder



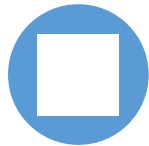
**Academic
Affairs**



**VC for
Research**



Libraries



**Institutional
Research**



**Strategic
Relations and
Communicators**



**Research
Institutes and
other early
adopters**



**Campus Power Users
(units, chairs, staff)**



**FIS Technical
Team**

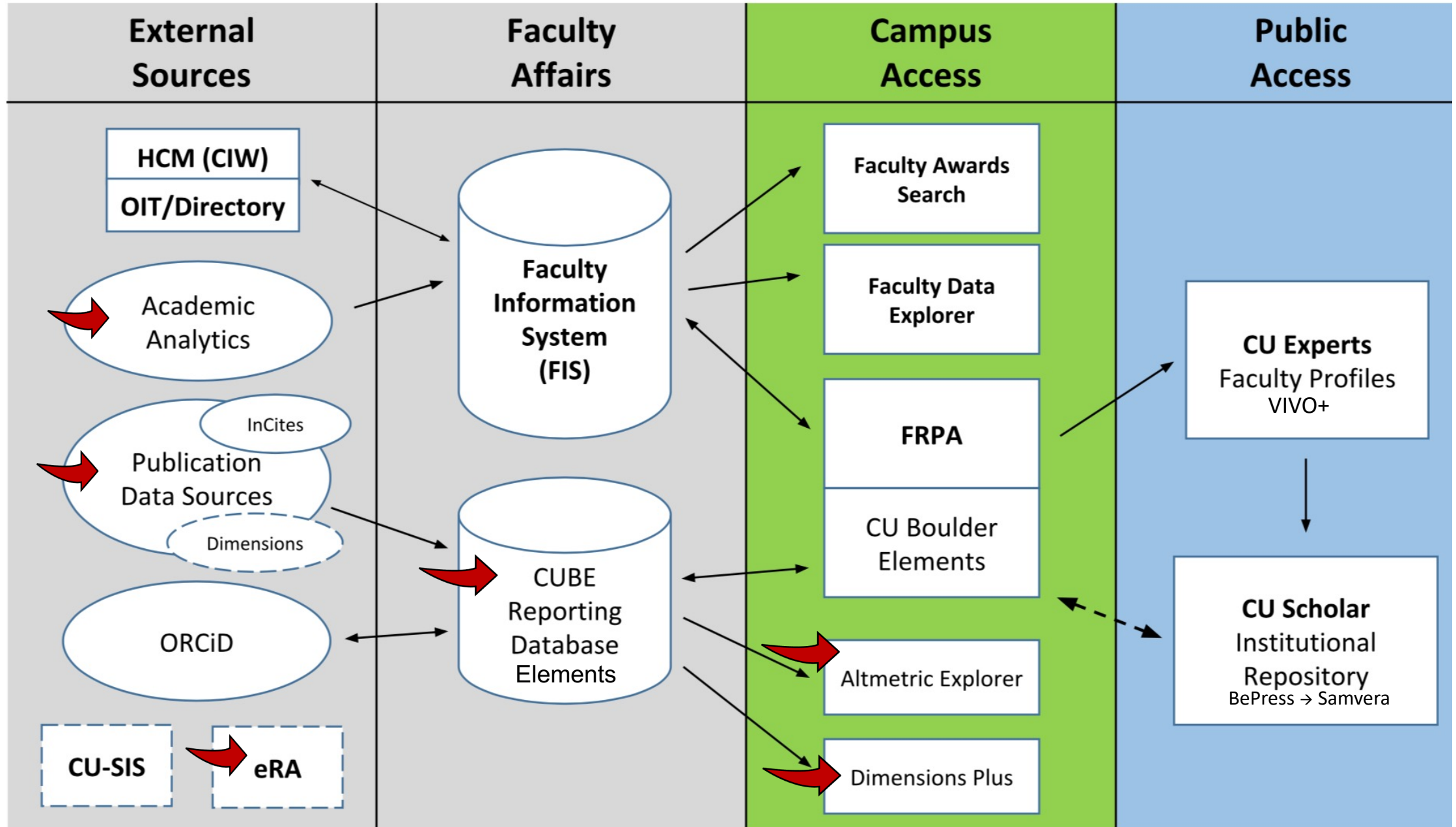
Campus Values - What drives decisions?

- 1. All faculty disciplines – Science and Creative Works
- 2. Diversity
- 3. Global connections – International partners and recruiting
- 4. Research compliance
- 5. Creative solutions for faculty – to save time
- 6. Faculty reputation and campus prestige

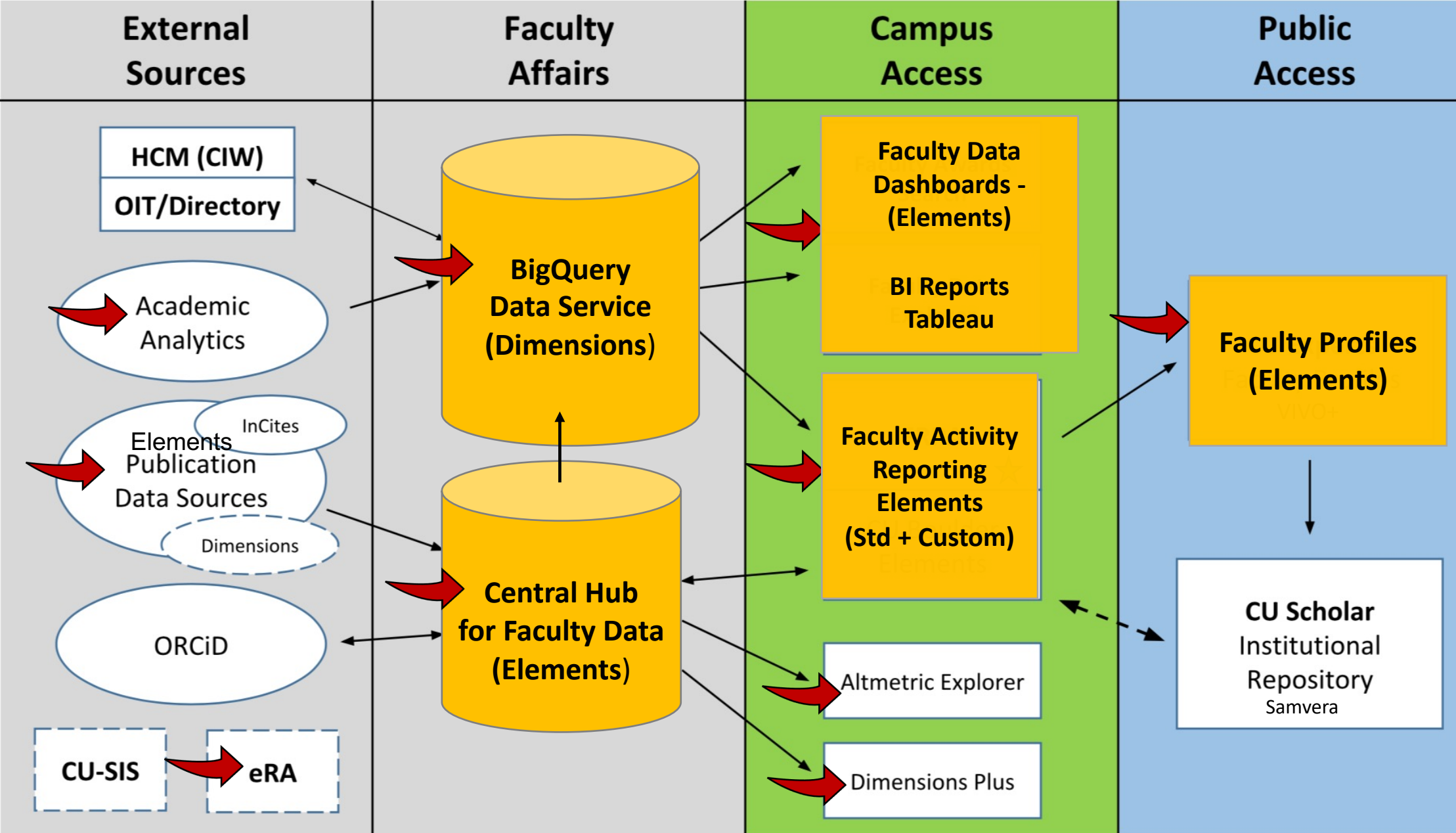
Campus Values - What drove decisions?

- 7. Measuring impact of scholarly work for the public good
- 8. Attracting superstar faculty and keeping them
- 9. Being innovative
- 10. Compliance - funding laws and Regent policy
- 11. Creating new revenue streams
- 12. Donors and fundraising
- 13. Who does what research?
- 14. Strategic Imperatives

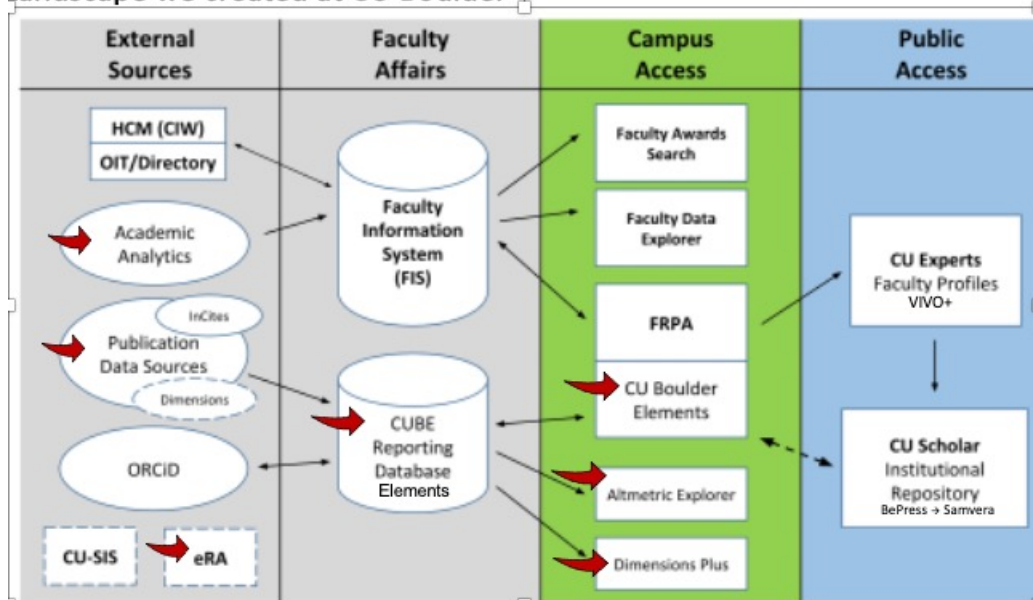
Landscape we created at CU Boulder



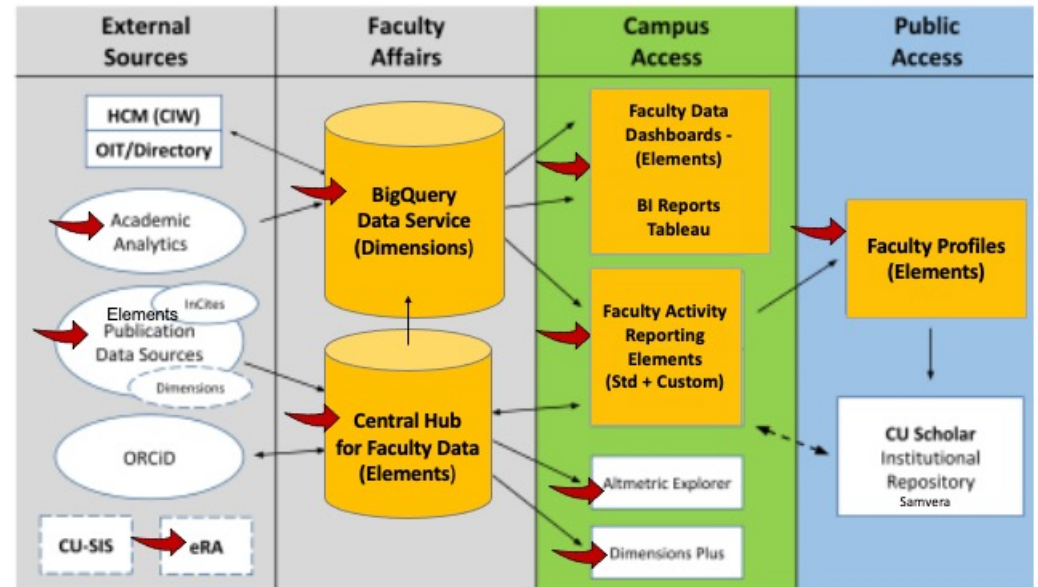
What if starting today? New Possibilities



Landscape we created at CU Boulder



What if starting today? New Possibilities



Dimensions meets needs for the entire campus

Chancellery, Deans & Planning	Research Office	Library	Faculty & Research	And Beyond
<p>Strategic planning & competitive intelligence</p> <ul style="list-style-type: none">• Peer group analysis & comparisons• Internal benchmarking• Cost-effectiveness of research• Horizon scanning <p>Advocacy</p> <ul style="list-style-type: none">• Impact, value of institutions & research <p>Talent planning & retention</p> <p>Networks & context</p> <ul style="list-style-type: none">• Industry collaboration & revenue generation	<p>Rankings & assessment</p> <ul style="list-style-type: none">• National assessment• International ranking• Custom benchmarking <p>Impact assessment and narrative</p> <p>Funding & grants</p> <ul style="list-style-type: none">• Strategy• Sources (incl. industry)• Trends• ROI assessment <p>Talent</p> <ul style="list-style-type: none">• Recruitment & capability building• Career tracking <p>Collaboration networks</p>	<p>Collection Development</p> <ul style="list-style-type: none">• Holdings & ROI assessment• Publisher negotiations & transformative agreements <p>Open access</p> <ul style="list-style-type: none">• Trends• Citation and impact analysis• Compliance tracking <p>Publication strategy</p> <ul style="list-style-type: none">• Support researchers on where to publish <p>Information hub</p> <ul style="list-style-type: none">• High value data asset for training	<p>Strategy</p> <ul style="list-style-type: none">• Funding trends & opportunities• Faculty output tracking• Find partners and recruit talent• Emerging research trends• Patent analysis <p>Bibliometrics</p> <ul style="list-style-type: none">• Co-citation analysis <p>Use for research</p> <ul style="list-style-type: none">• e.g. Computer Science, Business, Economics, Social Science• Dataset for analysis and visualisation	<p>Commercialization of research</p> <ul style="list-style-type: none">• Science-->Innovation• Tech transfer• Support university spinouts & deep tech• Patent analysis• Find Key Opinion Leaders• Industry partnerships <p>Marketing & Communications</p> <ul style="list-style-type: none">• Market segmentation & targeting• Monitor & grow wider impact & attention, publicity for research

Check these links out for more info...

[How to get started with Dimensions on Google BigQuery in 5 minutes](#)

[Upcoming webinar: May 18 Texas A&M discusses using Dimensions to track postgraduate success](#)

[Dimensions webinars on demand - various topics](#)

[CU Boulder's legacy of innovation - 2 minutes](#) Scroll down to trailer.





Dimensions

The data you need, delivered the way you want it

Presented to AAUDE Members

Kelsey Rosell, Sr. Vice President, Dimensions Commercial Director

Liz Tomich, Sr. Solutions Sales Manager, Digital Science

Isabel Thompson, Head of Data Platform

May 5, 2021

Part of **DIGITAL**science

Today's world

The research sector is more complex and sophisticated than ever before

- Impact agenda
- Rapid publishing
- Knowledge translation & tech transfer
- Global research challenges, SDGs
- Compliance

Priorities are:

- Context around research decisions
- Value of research

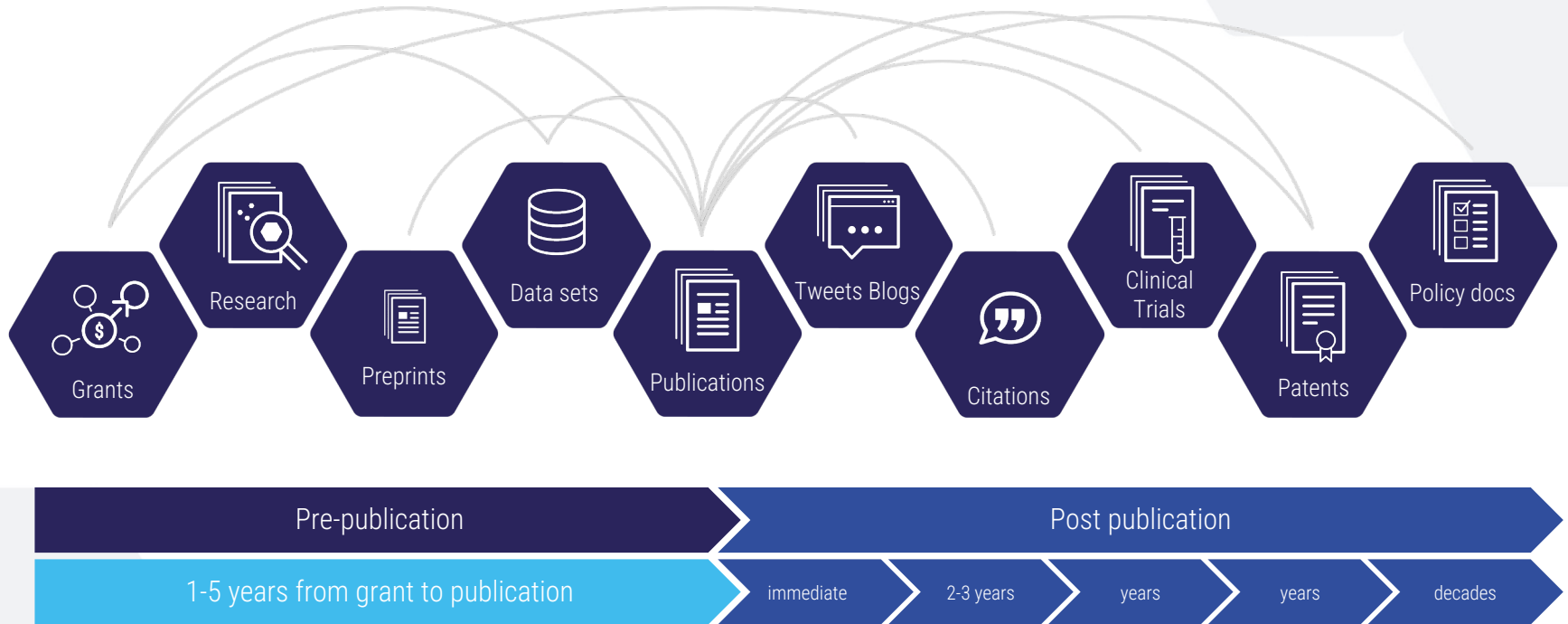


Today's agenda

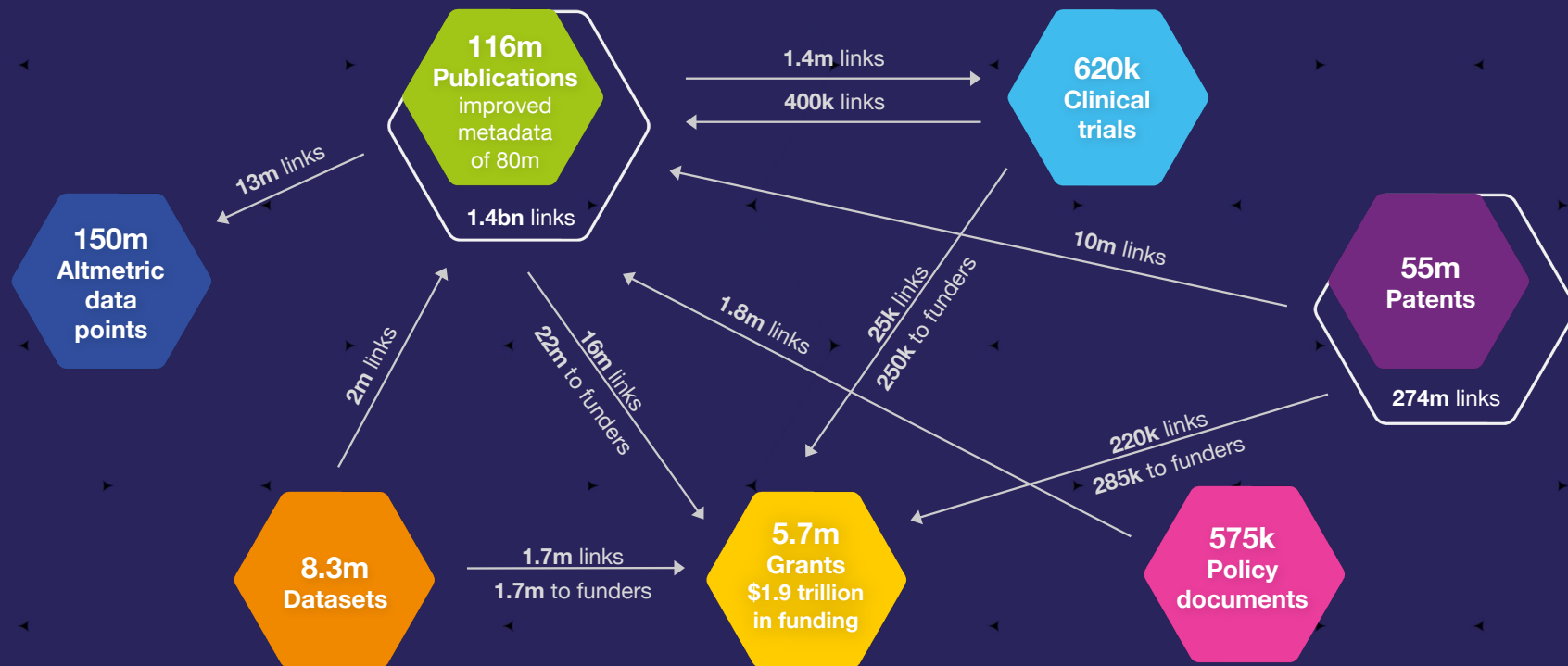
- Summary of Dimensions
- Data curation approach
- Navigating the new normal
- How you can engage with the data
- Discussion



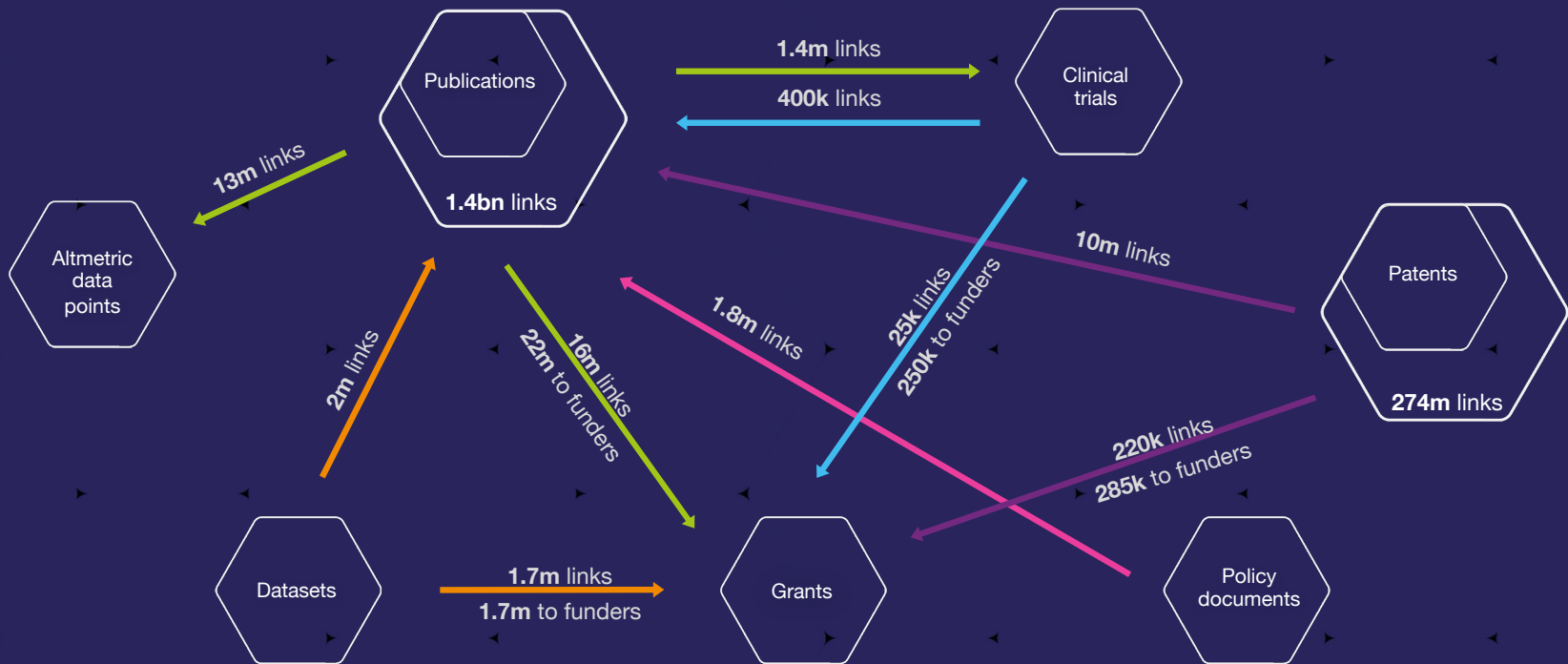
More context along the entire trajectory of research



Dimensions: A joined-up perspective on research



Links enable you to explore relationships



Practical, informative views - always adding more

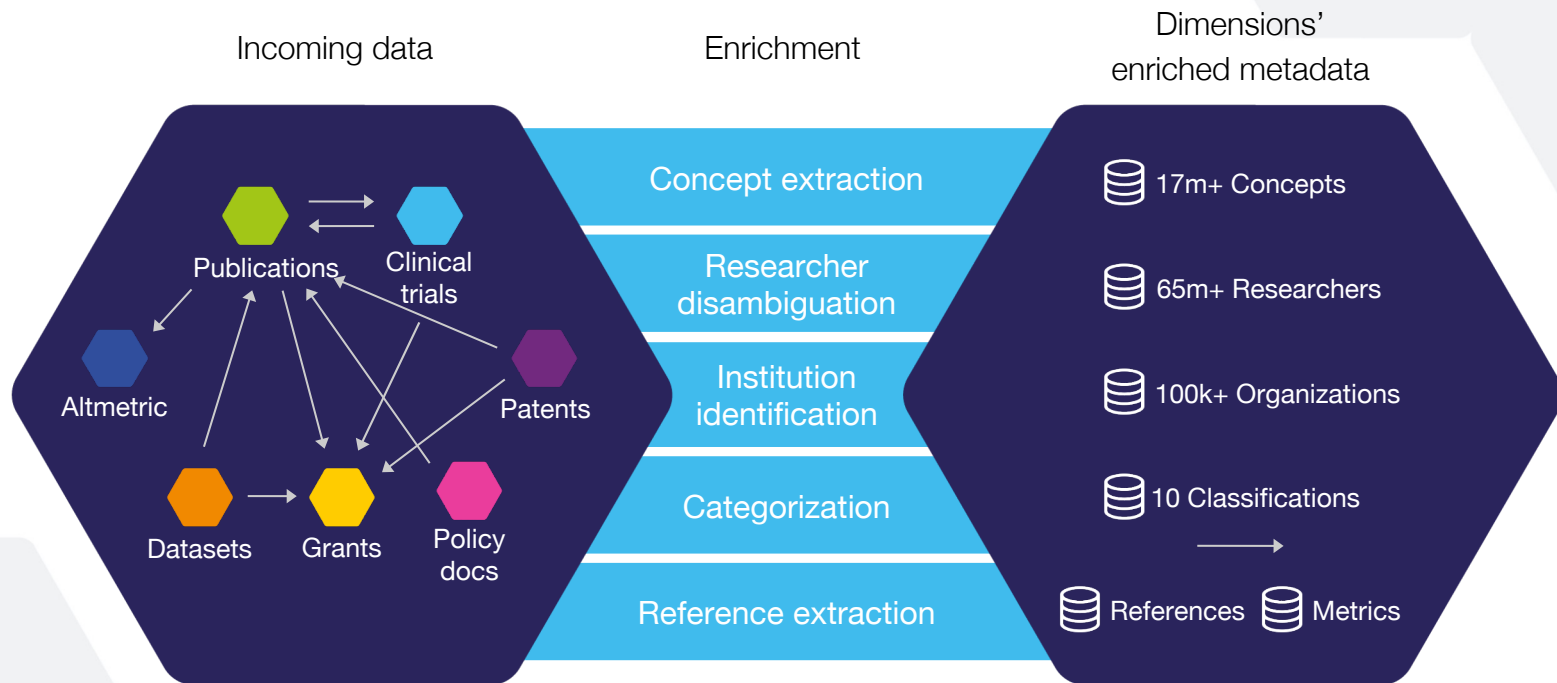
- Dashboard: Researcher profile
- Content Type views
- Classification Category: Sustainable Development Goals
- Advanced Search incl Concept Search
- Download limits to 50k
- Journal list
- Open Access
- Funders etc.



<https://app.dimensions.ai/details/entities/publication/author/ur.0703533536.40>

Data curation Approach

A modern approach to data curation



Our approach to classifications in Dimensions

- Dimensions uses a machine learning approach, which enables us to implement multiple classification systems efficiently.
- The classification is based on analysis of the content of the documents, not journal attributes, which we don't believe are precise enough.
- This enables:
 - Article level classification
 - Consistent application across all content types (grants, patents, clinical trials, datasets)

**Classifications in
Dimensions are driven
by the content of the
documents**



Navigating the New Normal

And why the approach matters

Part of **DIGITAL**science

What do we need to navigate The New Normal?

- Covid has changed the sector worldwide,
- Now more than ever, universities are looking to:
 - Find new revenue streams
 - Reduce costs
 - Better utilise existing resources
- More need for data-led approaches.
- Universities have access to lots of powerful and potentially informative data - but it's often siloed or difficult to work with.
- We need data that is ready-to-analyze and designed for answering questions.

The wait for a new normal life

The coronavirus has already led to significant shifts in people's behaviour. People are washing their hands or using sanitizer more often than before. Behavioural changes like these may be fear-driven to some extent. However, "fear-based" behaviour modification is not proven to be sustainable, writes **Rabul Alam Munna**

Like to the Covid-19 crisis, we cannot speak fluently, we cannot laugh loudly, we cannot meet and greet our families, friends and others, and we cannot travel frequently. We are in jail. We are craving for shiny days to fly around the globe. This pandemic keeps our kids at bay as we cannot accompany them in the idyllic green fields where they can run and breathe from nature.

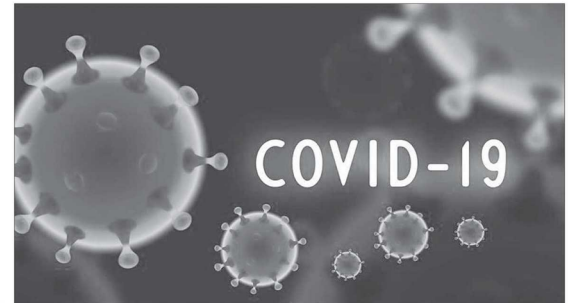
Covid-19 simultaneously affects human body and mind, society, world economy and even breaks the concept of global village. All the achievements of medical science are failing to stop the pandemic. Only in four months, it has outbreak the entire world economy has almost collapsed.

As public frustrations rise, economic woes multiply, and some signs emerge that the spread of Covid-19 is slowing and the desire for a return to pre-lockdown "normal life" grows stronger. Yet the changes wrought by the epidemic will likely not fade soon, if ever, forcing organisations and individuals across the spectrum-outgroups, foundations, citizens, governments, families to grapple with what "normal" means now and in the future.

Mostly this pandemic has ruined lives, it has come as a surprise to some of us and has changed the way we live and the things we did on a daily basis. The lockdown has made us realise the importance of actually appreciating the things and people that we take for granted, but what it has taught us is the spirit of unity and giving a helping hand to others and helping where one can.

It has come to show us that money and material things are not as important as human life and caring for each other in times of need, it has shown that much greatness can come from working together and what it can do for a nation and community just by extending a helping hand where it is needed and wanted.

For most of the people around the world today, the recent Covid-19 outbreak is a symbol of how fragile and unpredictable our lives can be in an unusual state of affairs. The deadly



virus which has changed the way in which most of us live, work or perform our basic day to day functions is continuing to increase its grasp at an alarming rate with the impact being felt at multiple levels resulting in economic slowdown, business disruption, trade hindrances, travel obstructions, public seclusion and so on.

With respect to the continuity of business, companies around the world have switched over to online/virtual modes of working while global mobility has come to a standstill, ensuring a healthy work-life balance by helping your teams find space both physical and mental to work from home and promote a healthy work-life balance which allows them to devote a significant amount of time to their work as well as to themselves and their family to avoid the risk of burnout.

Now we are fully technology-based, enabling proper access to technology by ensuring that each of our employees has the required tech equipment such as laptops, good internet connection, VPN connection, digital data-

base systems etc in place.

Using virtual platforms to have discussions, meetings and one-on-one talk is important. In order to maintain motivation and enhance productivity, it is critical to have regular team meetings/interactions with one's peers. Digital platforms such as Microsoft Teams, Zoom, etc are a big advantage in this case and can help people stay updated and feel connected even while working from home.

Struggling off their technophobia, middle-aged and senior executives of corporates and other offices now carry out the official activities online.

There is also a greater chance of people getting "psychologically sick", leading to decreased productivity. Hence, it is essential to share regular updates and tips and suggestions in which they can make the most of their time and increase productivity and collaboration.

Obviously, these are challenging times for all of us but the one thing we know is that our best response relies on global empathy, cooperation and community building that sits at the heart of our movement.

Health and economic prosperity are directly related, and so these should not be any "either-or" choice for a person or a nation.

I am certainly over-simplifying the massively complex situation we are in. We are all trying to make sense of where we stand today and where we will be tomorrow. We are all in it together. The elderly widow living on her meager social safety net payment from the government; the rickshaw-puller who doesn't have passengers any longer; the owner of a small ready-made garment factory who has seen most of his orders cancelled; our prime minister, who is constantly trying to balance between the medical and the socioeconomic considerations.

Social distancing has been universally accepted as the most effective solution to combating the Covid-19 pandemic.

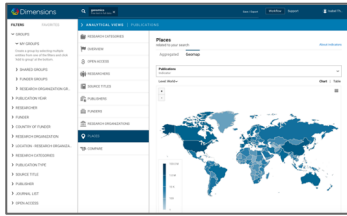
The pandemic has resulted in "work from home" experiment ever conducted in human history. We're seeing the effect on the internet, in terms of traffic patterns that are shifting. People are accessing more educational resources online for their kids, finding unconventional ways to connect with coworkers, friends, and family, and employees are being more flexible in how they respond to employee needs through more dynamic, cloud-based technology. I think we'll see these shifts last well beyond the immediate fallout of the Covid-19 outbreak.

The coronavirus has already created significant shifts in people's behaviour. People are washing their hands or using sanitizer more often than before. Behavioural changes like these may be fear-driven to some extent. However, "fear-based" behaviour modification is not proven to be sustainable. After the end of the initial coronavirus threat, it is predicted that new habits like hand washing, social distancing and hoarding will be less in vogue.

The contributor is a banking professional, rabul.alam.munna@gmail.com

One amazing database – multiple ways to access it

Web App



Search & discovery; top analytical use cases

Dedicated UI; inbuilt visualizations

In the browser, no specialized knowledge required

For everyone

API



Ad hoc analyses & topic modelling

Full-text search & special functions
e.g. affiliation extraction

Product integrations e.g. CRIS

**For API users
+ data & analytics teams**

Google BigQuery



Fast, large scale analyses; dynamic dashboards; automated reporting

Join private & public data, access previously unsurfaced links

Direct integration with BI tools e.g. Tableau, Qlik, PowerBI

**For data & analytics teams
+ dashboards for everyone**

Why does this matter so much?

- **Committed to DORA**

- Community classifications and metrics.
- Available, auditable data.
- Specific, contextualised assessment - appropriate to a particular institution, field, individual.
- Creation of new metrics.
- Real-time bibliometrics, reactive to changing environment.

- **Opportunity to expand horizons beyond narrow metrics**

- We all know that metrics impact behaviour.
- But “research excellence” is richer: a product of many threads coming together - people, funding, collaborations, culture.
- Understanding and fostering research excellence can only be done fairly with access to an analyzable global dataset.



What do we need to deliver on this?



We're being aspirational - there are many pieces

- Good understanding of sector, the data and the business questions.
- Flexible, direct access to underlying data.
- Strong community of practice.
- Reusable examples and code.
- **Ultimately, we're trying to support fast execution and short time to value.**

Putting it into practice

What direct access to the data means

 Dimensions +  Google Big Query

Direct access to all the underlying data

Ready to go

Google Cloud Platform ds-data-solutions-gbq Search products and resources

FEATURES & INFO SHORTCUT HIDE PREVIEW FEATURES

Explorer + ADD DATA *A COUNT... X COMPOSE NEW QUERY

Viewing pinned projects.

- ds-data-solutions-gbq
- accuweather-com
- bigquery-public-data
- covid-19-dimensions-ai
- dimensions-ai**
- dowjones-com
- ds-publisher-gbq
- fh-bigquery
- grid-ac
- patents-public-data
- test-bigquery-bob
- the-psf

```

1  --- Which publications, countries, organizations, and publishers is New Zealand citing? Which FoRs? How much of what NZ researchers are citing is Open Access?
2  WITH refids AS
3  (
4  (
5    --- select all of the publication IDs that are referenced in publications that contain a research org from New Zealand
6    SELECT DISTINCT ref
7    FROM
8    `dimensions-ai.data_analytics.publications` p, UNNEST(reference_ids) r
9    WHERE year >=2010 and type = "article" and "New Zealand" IN UNNEST(rese
10 )
11 )
12 refpubs AS
13 (
14 --- from the publications, find the publications from the above set of p
15 SELECT
16 p.id as reference_id,
17 publisher.name as publisher,
18 journal.title as journal,
19 year,
20 p.metrics.field_citation_ratio as fcr,
21 research_orgs as orgs,
22 ARRAY_LENGTH(research_orgs) as corg,
23 research_org_country_names as countries,
24 p.category_for.first_level.full as cat_for,
25 open_access_categories as oa
26 FROM `dimensions-ai.data_analytics.publications` p
27 | INNER JOIN refids r ON r.ref = p.id
28 )
29 /*
30 SELECT
31 *
32 FROM refpubs r
33 WHERE r.corg >= 1
34 ORDER BY r.corg desc
35 */
36 SELECT
37 * EXCEPT(cat_for),
38 CONCAT(cat_for.code, " ", cat_for.name) as cat_for
39 FROM refpubs r, UNNEST(cat_for) cat_for
40 WHERE r.corg >= 1

```

Run Save Schedule More This query will process 35.4 GiB when run.

dimensions-ai

data_analytics

- clinical_trials
- datasets
- grants
- grid
- patents
- publications
- researchers

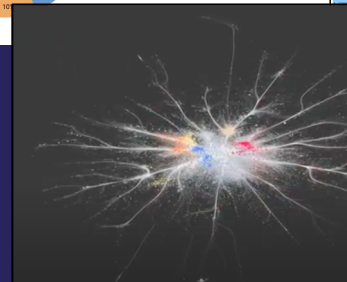
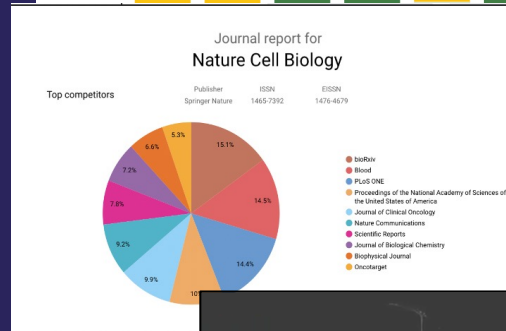
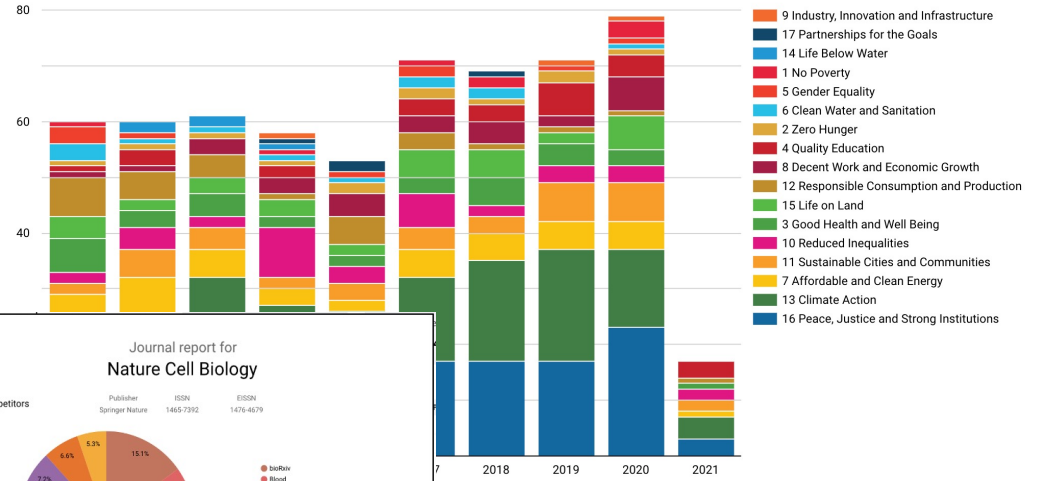
View and analyse Dimensions data however you want

- Slice, dice, ask whatever questions you want.
- Build custom dashboards that provide answers on a specific topic.

Publications with Sustainable Development Goals
633

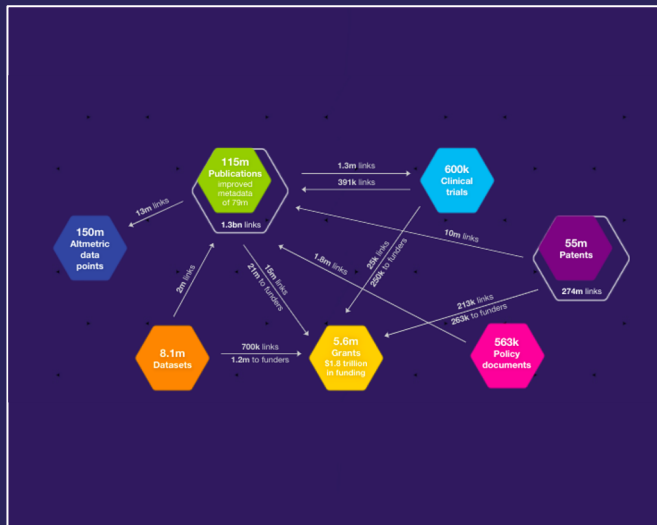


Number of publications per year and SDG



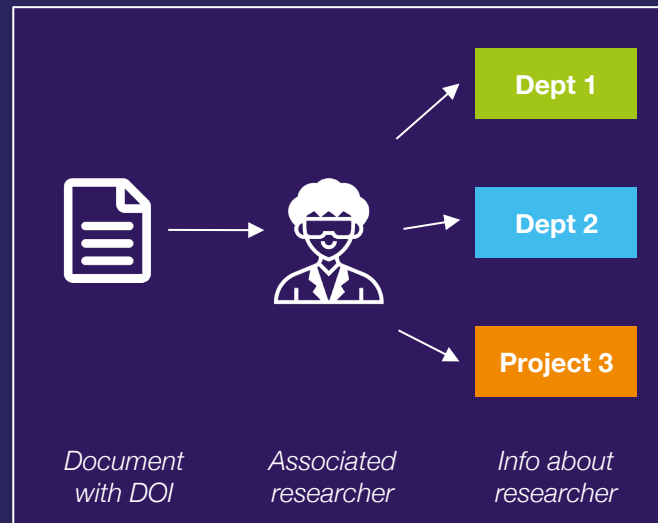
Break down barriers between your data and our data

Dimensions world on Google BigQuery



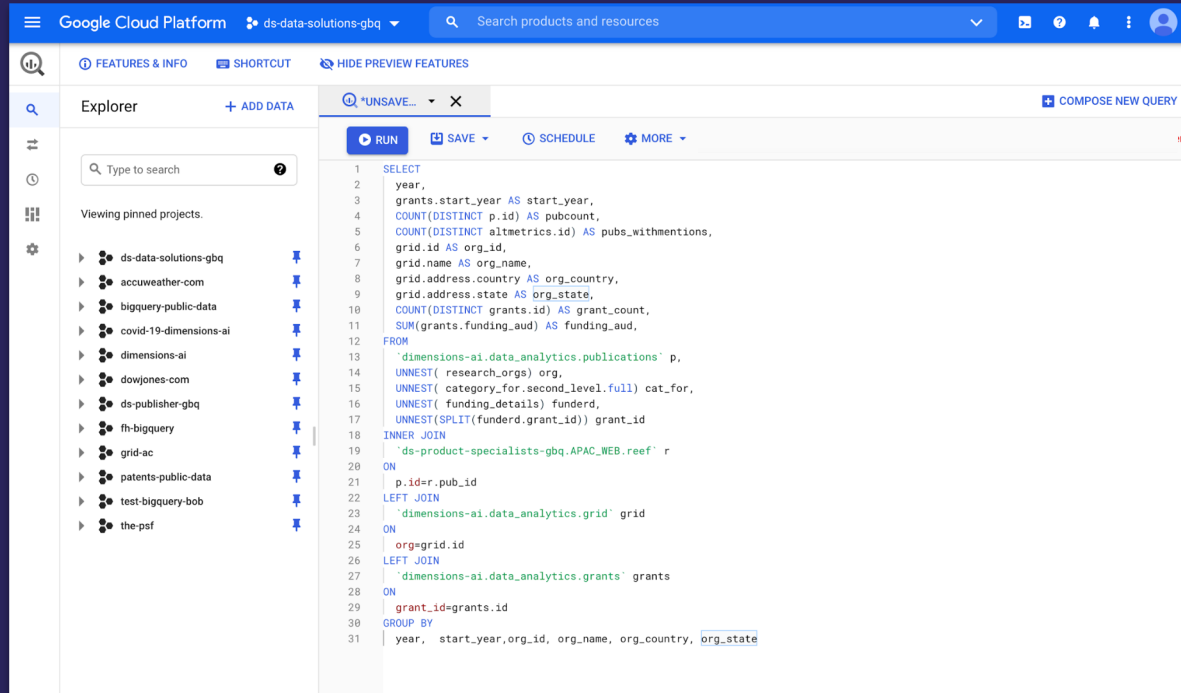
Representing the entire research landscape globally

Your world in your CRIS or internal systems



Carefully curated university-specific, private information

One query. 31 Lines of code



The screenshot displays the Google Cloud Platform BigQuery console interface. The top navigation bar shows the project name 'ds-data-solutions-gbq' and a search bar. The main area is divided into three sections: Explorer, Query Editor, and Query Results. The Explorer on the left lists various projects, including 'ds-data-solutions-gbq'. The Query Editor in the center contains a SQL query with 31 lines of code. The Query Results section on the right is currently empty.

```
1 SELECT
2   year,
3   grants.start_year AS start_year,
4   COUNT(DISTINCT p.id) AS pubcount,
5   COUNT(DISTINCT altmetrics.id) AS pubs_withmentions,
6   grid.id AS org_id,
7   grid.name AS org_name,
8   grid.address.country AS org_country,
9   grid.address.state AS org_state,
10  COUNT(DISTINCT grants.id) AS grant_count,
11  SUM(grants.funding_aud) AS funding_aud,
12 FROM
13   `dimensions-ai.data.analytics.publications` p,
14   UNNEST( research_orgs ) org,
15   UNNEST( category_for.second_level.full ) cat_for,
16   UNNEST( funding_details ) funderd,
17   UNNEST(SPLIT(funderd.grant_id)) grant_id
18 INNER JOIN
19   `ds-product-specialists-gbq.APAC_WEB.ref` r
20 ON
21   p.id=r.pub_id
22 LEFT JOIN
23   `dimensions-ai.data.analytics.grid` grid
24 ON
25   org=grid.id
26 LEFT JOIN
27   `dimensions-ai.data.analytics.grants` grants
28 ON
29   grant_id=grants.id
30 GROUP BY
31   year, start_year, org_id, org_name, org_country, org_state
```

Making it easy to work with the data

- **The BigQuery Lab**
 - Example queries and notebooks
- **Bi-weekly analytics training**
- **Interactive Covid-19 dashboard**
- **Walkthroughs & step-by-step guides**
 - How to connect to Tableau, PowerBI
 - Build your own Covid dashboard
 - Machine Learning topic modelling

The screenshot shows the Dimensions BigQuery Lab website. The header features the Dimensions logo and a Jupyter logo. A search bar is present. The main content area is divided into sections: 'GBQ COOKBOOKS' with a 'Getting Started' subsection listing 'Verifying your connection', 'Publication queries', and 'From the DSL API to Google BigQuery'. Below this is a 'Github Source' section with 'Star' and 'Fork' buttons. A 'Welcome to the Dimensions BigQuery Lab!' message follows, accompanied by a 'Note' and a 'Tip'. The 'BigQuery Cookbooks' section includes a 'Getting Started' subsection with three links: 'Verifying your connection', 'Publication queries', and 'From the DSL API to Google BigQuery'.



Who is it for

Part of **DIGITAL**science

Now you can create dashboards, reports and custom analyses for:

Chancellery, Deans & Planning	Research Office	Library	Faculty & Research	And Beyond
<p>Strategic planning & competitive intelligence</p> <ul style="list-style-type: none">• Peer group analysis & comparisons• Internal benchmarking• Cost-effectiveness of research• Horizon scanning <p>Advocacy</p> <ul style="list-style-type: none">• Impact, value of institutions & research <p>Talent planning & retention</p> <p>Networks & context</p> <ul style="list-style-type: none">• Industry collaboration & revenue generation	<p>Rankings & assessment</p> <ul style="list-style-type: none">• National assessment• International ranking• Custom benchmarking <p>Impact assessment and narrative</p> <p>Funding & grants</p> <ul style="list-style-type: none">• Strategy• Sources (incl. industry)• Trends• ROI assessment <p>Talent</p> <ul style="list-style-type: none">• Recruitment & capability building• Career tracking <p>Collaboration networks</p>	<p>Collection Development</p> <ul style="list-style-type: none">• Holdings & ROI assessment• Publisher negotiations & transformative agreements <p>Open access</p> <ul style="list-style-type: none">• Trends• Citation and impact analysis• Compliance tracking <p>Publication strategy</p> <ul style="list-style-type: none">• Support researchers on where to publish <p>Information hub</p> <ul style="list-style-type: none">• High value data asset for training	<p>Strategy</p> <ul style="list-style-type: none">• Funding trends & opportunities• Faculty output tracking• Find partners and recruit talent• Emerging research trends• Patent analysis <p>Bibliometrics</p> <ul style="list-style-type: none">• Co-citation analysis <p>Use for research</p> <ul style="list-style-type: none">• e.g. Computer Science, Business, Economics, Social Science• Dataset for analysis and visualisation	<p>Commercialization of research</p> <ul style="list-style-type: none">• Science-->Innovation• Tech transfer• Support university spinouts & deep tech• Patent analysis• Find Key Opinion Leaders• Industry partnerships <p>Marketing & Communications</p> <ul style="list-style-type: none">• Market segmentation & targeting• Monitor & grow wider impact & attention, publicity for research

Competitive intelligence

Flexible benchmarking

Research culture and environment

Compliance & foreign influence monitoring

Academic <-> Industry partnerships and collaboration, Technology foresight

Emerging research trends & horizon scanning

Impact analysis

Organization, topic, or journal overview

Creation of new metrics & indicators with transparency

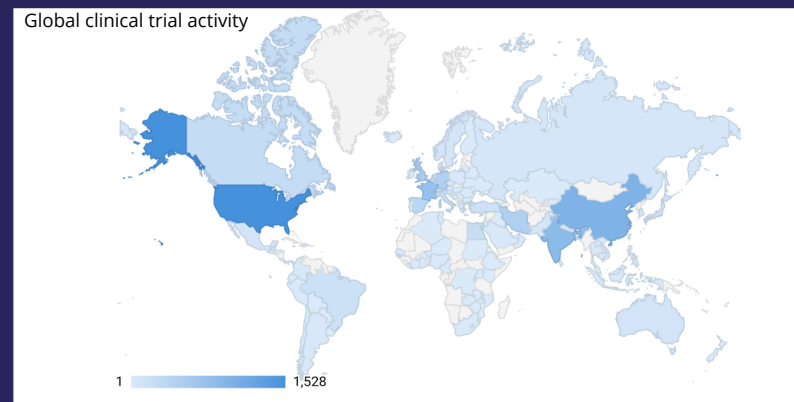
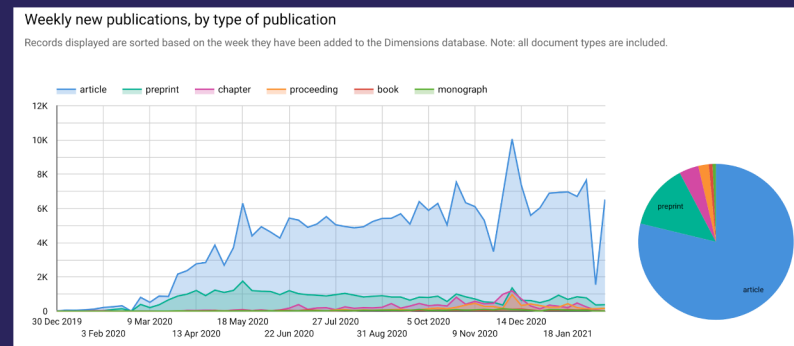
Rising stars, KOLs, recruitment and capability building

Open access behaviour shifts

Example of Dimensions Data on Google Big Query

Try it out! Our Covid-19 dataset is openly available on BigQuery

- Click here to get started:
<https://docs.dimensions.ai/bigquery/sandbox.html>
- Explore our **interactive dashboard** using the Google BigQuery + Data Studio technology stack:
<https://reports.dimensions.ai/covid-19/>
- More inspiration & code for analyses here:
<https://bigquery-lab.dimensions.ai/>



Discussion

Ways you can work with us

- **Across your organization:** Organizational subscription for the analytical Web Application
- **Direct data access** for your analytics team
- **Project licences**
- **Discuss with our consultancy team:** They can work with you on custom projects or on formulating these types of questions



Kelsey Rosell

k.rosell@digital-science.com



Liz Tomich

l.tomich@digital-science.com

Part of **DIGITAL** SCIENCE

Thank you! Questions?

Get in touch
info@dimensions.ai

or via

dimensions.ai/bigquery



Limited only
by your
imagination

(not our technology)

Appendix Slides

Publications (1/2) - Publication metadata backbone



PUBLICATIONS

- Journal articles, pre-prints and books/book chapters
- 100M + records based on metadata
- Metadata and citations derived from multiple available databases
- OA tagging
- Rule-based document type identification

JOURNALS / BOOKS



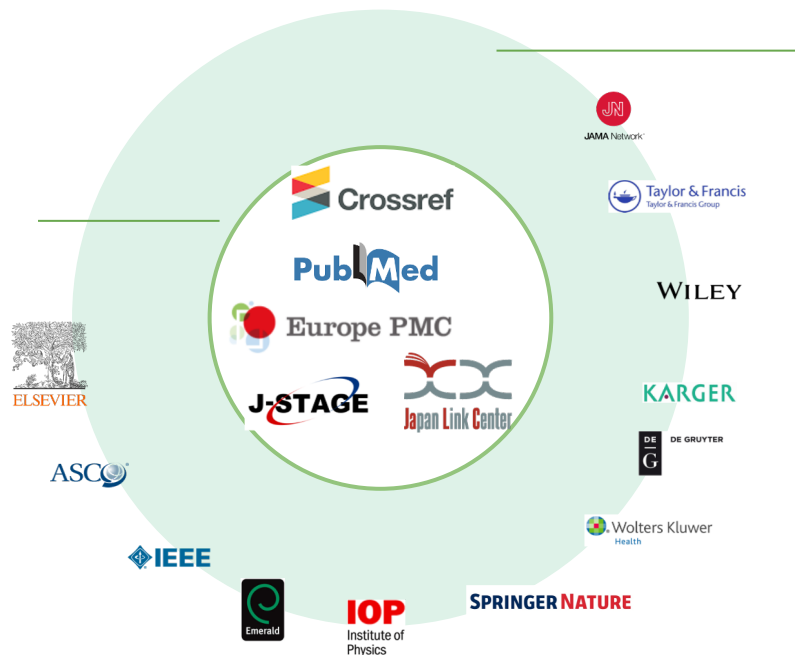
PRE-PRINT / OA



...and more!

Publication metadata is enriched based on indexed full text data from publishers

- 112M records based on metadata
- 'Backbone' for Dimensions
- OA tagging
- Rule-based document type identification



- Full text for 78,620,438 publications (direct relationships with >130 publishers)
- Improved representation compared to the 'backbone' record
 - Additional metadata
 - Fill gaps
 - Deep indexing

Open access data

- More than 32M open access publications
- Based on Unpaywall data integration and additional improvements by Dimensions
- All publications categorized as
 - Closed
 - Gold (Pure gold, Hybrid, Bronze)
 - Green (published, accepted, submitted)



Grants data



GRANTS

- Project funding
- Over 5M grants from 600+ funders globally
- \$1.8 trillion of funding
- Sourcing
 - Direct relationships with funders
 - Data available via APIs
 - Data available via websites which we crawl

app.dimensions.ai

Dimensions

Workflow Support

Close X

MY ACCOUNT

- General settings
- Set currency
- ORCID information
- Set export format
- Export center

ABOUT DIMENSIONS

- Dimensions
- About the grants data**
- Acknowledgements
- Privacy Policy
- Legal Terms

About the grants data

Dimensions checks all sources of grant data for new data each month. The latest data update was in May 2019. Individual funders may have individual update dates over the year. The grant data contained in the current release is detailed below.

Funder	GRID ID	Country	Grants	Available Years	Show details
Japan Society for the Promotion of Science (JSPS)	grid.54432.34	Japan	907,621	1964 - 2019	Show details
National Natural Science Foundation of China (NSFC)	grid.419696.5	China	466,422	1977 - 2018	Show details
Natural Sciences and Engineering Research Council (NSERC)	grid.452912.9	Canada	279,872	1991 - 2017	Show details
National Research Foundation (NRF)	grid.425534.1	South Africa	177,294	1950 - 2018	Show details
Russian Foundation for Basic Research (RFBR)	grid.452899.b	Russia	174,670	1993 - 2019	Show details
Federal Ministry of Education and Research (BMBWF)	grid.5586.e	Germany	140,275	1968 - 2020	Show details
German Research Foundation (DFG)	grid.424150.6	Germany	118,000	1964 - 2019	Show details
European Commission (EC)	grid.270680.b	Belgium	113,578	1981 - 2020	Show details
Directorate for Mathematical & Physical Sciences (NSF MPSS)	grid.457875.c	United States	92,443	1963 - 2020	Show details
Social Sciences and Humanities Research Council (SSHRC)	grid.183804.6	Canada	76,282	1998 - 2017	Show details
Directorate for Engineering (NSF ENG)	grid.457810.f	United States	73,467	1958 - 2019	Show details
Swiss National Science Foundation (SNF)	grid.425888.b	Switzerland	71,179	1975 - 2019	Show details
National Endowment for the Humanities (NEH)	grid.422239.c	United States	65,078	1953 - 2020	Show details
National Science Foundation (NSF)	grid.431093.c	United States	64,853	1952 - 2018	Show details

Technical reports data



TECHNICAL REPORTS

More than 1 million technical reports - including but not limited to:

- Office of Scientific and Technical Information (OSTI)
- Defense Technical Information Center (DTIC)
- Natural Resources Canada (NRCAN)
- United States Geological Survey (USGS)
- National Bureau of Economic Research (NBER)

The screenshot shows the Dimensions AI search interface. The search query is "e.g. plastic AND instrument". The interface displays a list of search results under the "REPORTS" category, which has a count of 1,060,276. The results include:

- Closed-circuit-television electron-beam-weld tracking system** by C Nelson, 1978, Office of Scientific and Technical Information. The abstract discusses the development, operation, and performance of an all-electronic spot/beam-tracking device for monitoring the performance of electron beam welders.
- An atlas of gas chromatograms of oils using dual flame-ionization and nitrogen phosphorus detectors. Final report** by G Frame, D Carmody, G Flanigan, 1978, Office of Scientific and Technical Information. The report details experiment techniques for using a thermionic nitrogen phosphorus detector (NPD) for gas chromatographic (GC) fingerprinting of petroleum and synthetic oils.
- Numerical analysis of hydraulically-driven fractures** by R Nilson, 1982, Office of Scientific and Technical Information. A general method-of-lines numerical approach for modeling hydraulically driven fractures is developed and tested. The methodology employs several novel features: a straining coordinate system that...
- The Department of Defense statement on the defense energy technology program by Ruth M. Davis Deputy Under Secretary of Defense for research and advanced technology before the Research and Development Subcommittee of the Committee on Armed Services of the United States House of Representatives 96th Congress, First Session** by R Davis, 1979, Office of Scientific and Technical Information. The seemingly inevitable disruption of energy sources not under U.S. control, and the budgetary impact of increasing energy costs, poses a serious threat to our ability to maintain the operational rea...

Policy documents data



POLICY DOCUMENTS

Over 500,000 policy document records, linked to publications

Including but not limited to:

- World Health Organization
- World Bank
- Centers for Disease Control & Prevention
- Government of the United Kingdom
- National Bureau of Economic Research

The screenshot shows the Dimensions database interface. The search query is "e.g. plastic AND instrument". The results are filtered by "POLICY DOCUMENTS" with a count of 568,871. The search results list several documents related to climate change and COVID-19 risk assessment, published by the Food and Agriculture Organization of the United Nations. The interface includes filters for PUBLICATIONS (115,796,687), DATASETS (8,225,401), GRANTS (5,713,768), PATENTS (54,961,345), CLINICAL TRIALS (616,067), and POLICY DOCUMENTS (568,871). The search results are sorted by "Publication Date".

Filters	Count
PUBLICATIONS	115,796,687
DATASETS	8,225,401
GRANTS	5,713,768
PATENTS	54,961,345
CLINICAL TRIALS	616,067
POLICY DOCUMENTS	568,871

Search results for "plastic AND instrument":

- Assessing risk in times of climate change and COVID-19
2021, Food and Agriculture Organization of the United Nations
- Assessing risk in times of climate change and COVID-19
2021, Food and Agriculture Organization of the United Nations
- Assessing risk in times of climate change and COVID-19
2021, Food and Agriculture Organization of the United Nations
- Call for resource mobilization for the COAG Sub-Committee on Livestock
2021, Food and Agriculture Organization of the United Nations
- AGROVOC
2021, Food and Agriculture Organization of the United Nations
- SponGES Policy Brief - Deep-sea sponges: Biotechnology and the blue economy
2021, Food and Agriculture Organization of the United Nations
- SponGES Policy Brief - Threats and impacts on sponge grounds
2021, Food and Agriculture Organization of the United Nations
- SponGES policy brief: the social and cultural value of deep-sea sponges
2021, Food and Agriculture Organization of the United Nations
- Asia and the Pacific Regional Overview of Food Security and Nutrition 2020

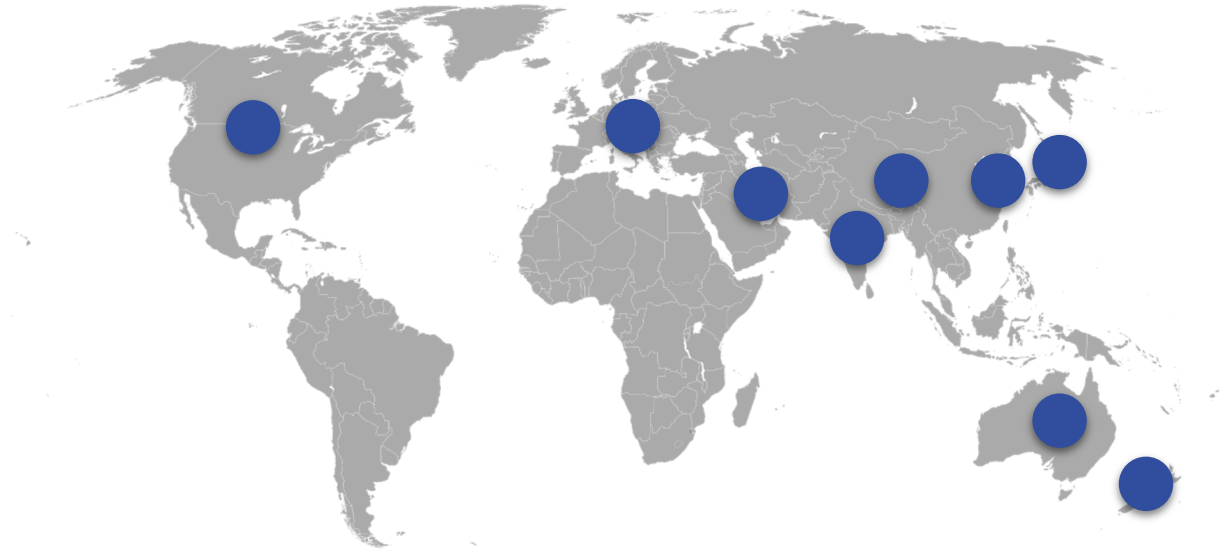
Clinical trials data



CLINICAL TRIALS

- ClinicalTrials.gov
- EU-CTR
- UMIN-CTR
- ISRCTN
- ANZCTR
- CHICTR
- ENCePP
- NTR
- GCTR
- CTRI
- CRIS
- IRCT

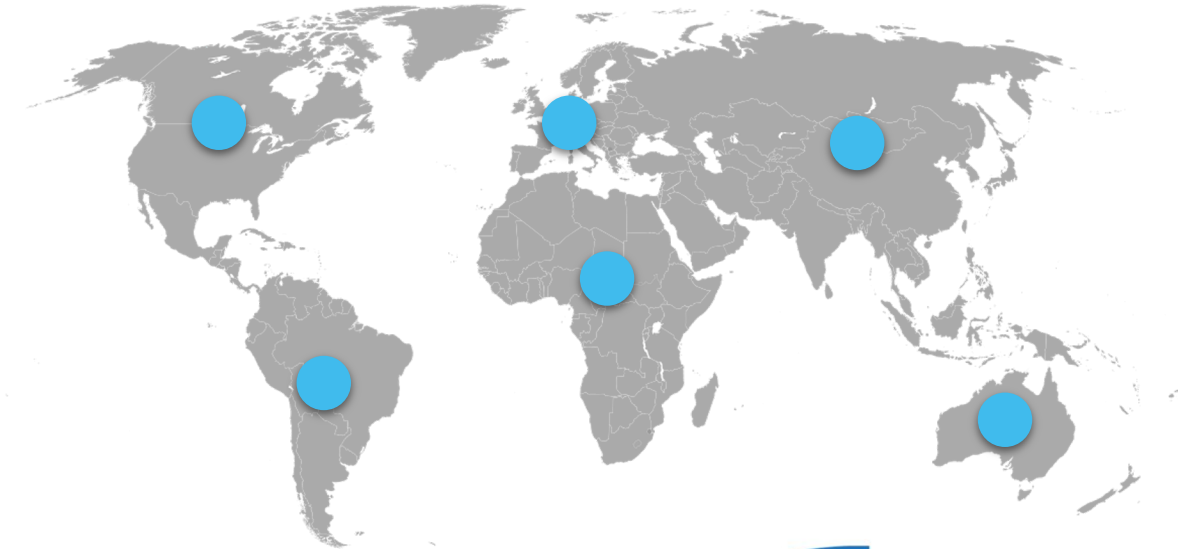
... and more are coming



Patents data

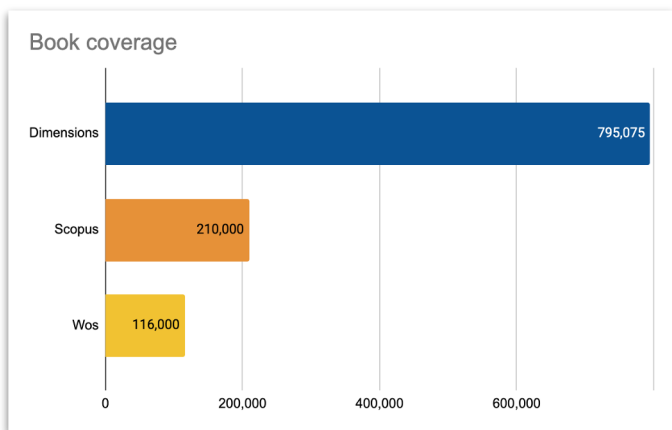


- 134 million+ patent documents
- Global coverage
- 100+ jurisdictions, including but not limited to:
 - China
 - Japan
 - United States
 - Germany
 - European Union
 - South Korea



Books in Dimensions

- ~800,000 monographs, 296,891 edited books (10m chapters)
- Relevant research outputs to represent disciplines in a fair way
- From the 795k monographs, 242k are Open Access



Dimensions e.g. plastic AND instrument

FILTERS FAVORITES

GROUPS

PUBLICATION YEAR

RESEARCHER

FUNDER

COUNTRY OF FUNDER

RESEARCH ORGANIZATION

LOCATION - RESEARCH ORGANIZATION

RESEARCH CATEGORIES

PUBLICATION TYPE

- Article 92,840,209
- Chapter 9,786,664
- Proceeding 6,224,527
- Preprint 2,450,781
- Monograph 795,464
- Edited Book 296,891

SOURCE TITLE

PUBLISHER

JOURNAL LIST

OPEN ACCESS

PUBLICATIONS 112,394,564

DATASETS 1,566,004

GRANTS 5,588,930

PATENTS 40,559,786

CLINICAL TRIALS 583,310

Title, Author(s), Bibliographic reference - [About the metrics](#)

[Protein measurement with the Folin phenol reagent.](#)

O H LOWRY, N J ROSEBROUGH, A L FARR, R J RANDALL

1951, Journal of Biological Chemistry - Article

Citations 232k Altmetric 155 Add to Library Add to ORCID

[Cleavage of Structural Proteins during the Assembly of the Head of Bacteriophage T4.](#)

U. K. LAEMMLI

1970, Nature - Article

Using an improved method of gel electrophoresis, many hitherto unknown proteins have been identified with these have been identified with specific gene products. Four major components...

Citations 198k Altmetric 82 Add to Library Add to ORCID

[A rapid and sensitive method for the quantitation of microgram quantities of protein-dye binding](#)

Marion M. Bradford

1976, Analytical Biochemistry - Article

A protein determination method which involves the binding of Coomassie Brilliant Blue G250 to protein causes a shift in the absorption maximum of the dye... [more](#)

Citations 181k Altmetric 56 Add to Library Add to ORCID

[Analysis of Relative Gene Expression Data Using Real-Time Quantitative PCR](#)

Kenneth J. Livak, Thomas D. Schmittgen

2001, Methods - Article

The two most commonly used methods to analyze data from real-time, quantitative PCR assays are the relative expression method and absolute quantification. Absolute quantification determines the input copy number of a gene or sequence...