What are those donuts? Intro to Altmetric

Sara Rouhi

Director of Business Development, North America (Washington DC – based)

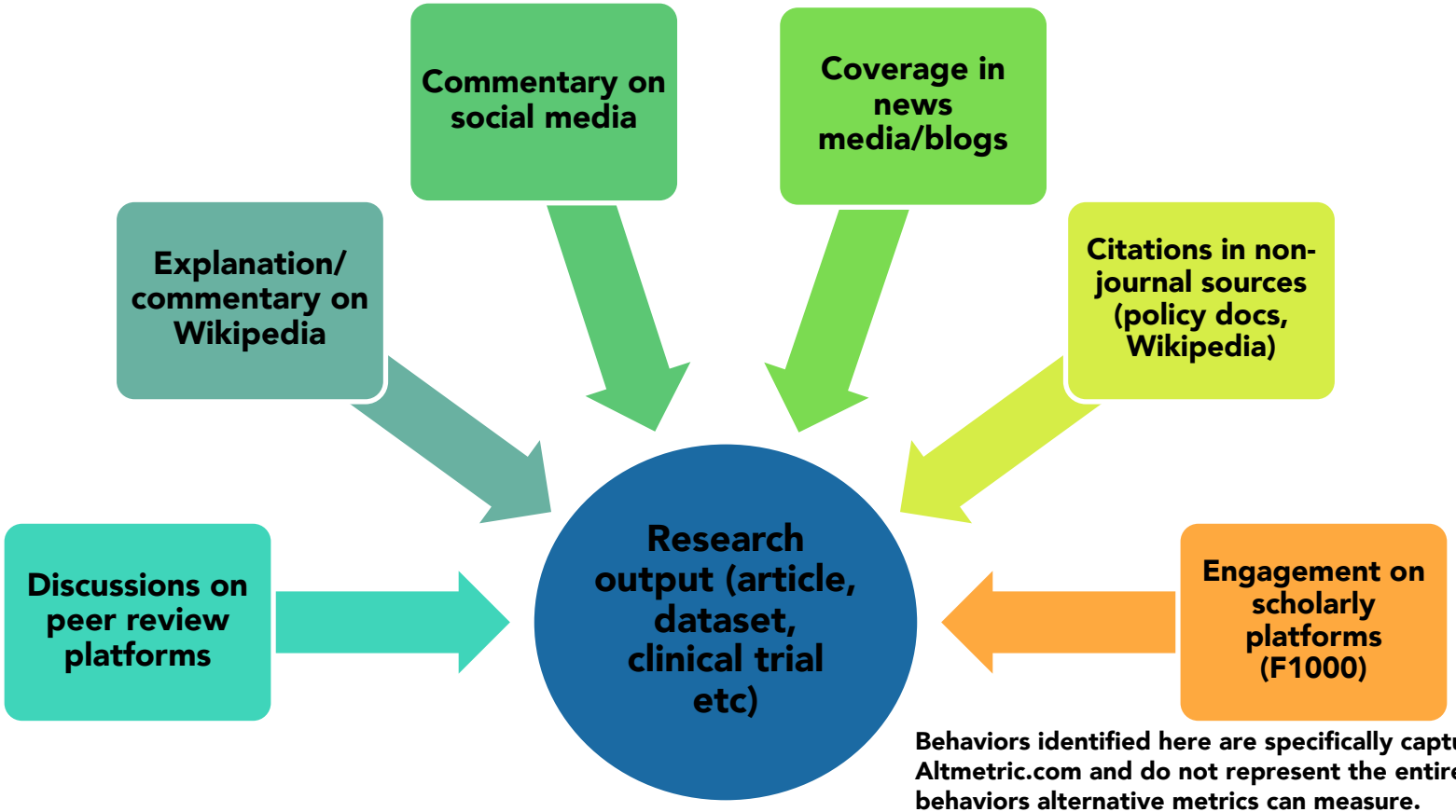
sara@altmetric.com ; 202 505 0814

Today…

- What are alternative metrics?
- Who are we at Altmetric.com?
- Understanding Altmetric data
- Altmetric in HRA reporter
- Funder use cases

What are alternative metrics versus Altmetric LLP?

Alternative metrics = ANY digital indicator of engagement



Behaviors identified here are specifically captured by Altmetric.com and do not represent the entirety of behaviors alternative metrics can measure.

Altmetric LLP is a UK-based data science company dedicated to tracking and analyzing the online activity around scholarly research outputs.

Global multi-industry customer base

RAND CORPORATION

JOHN TEMPLETON FOUNDATION

BILL & MELINDA GATES foundation

pcori

wellcome trust

ELSEVIER

Duke UNIVERSITY

OKLAHOMA STATE UNIVERSITY

Government of Canada / Gouvernement du Canada

Canadian Institutes of Health Research

Virginia Tech

USGS science for a changing world

Smithsonian

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty
IFPRI

MAX-PLANCK-GESELLSCHAFT

THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER

SPRINGER NATURE

THE WORLD BANK
IBRD • IDA

Pfizer

THE NATIONAL ACADEMIES PRESS

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

The COMMONWEALTH FUND

Differences between alt and traditional metrics – *complementary*

Traditional journal

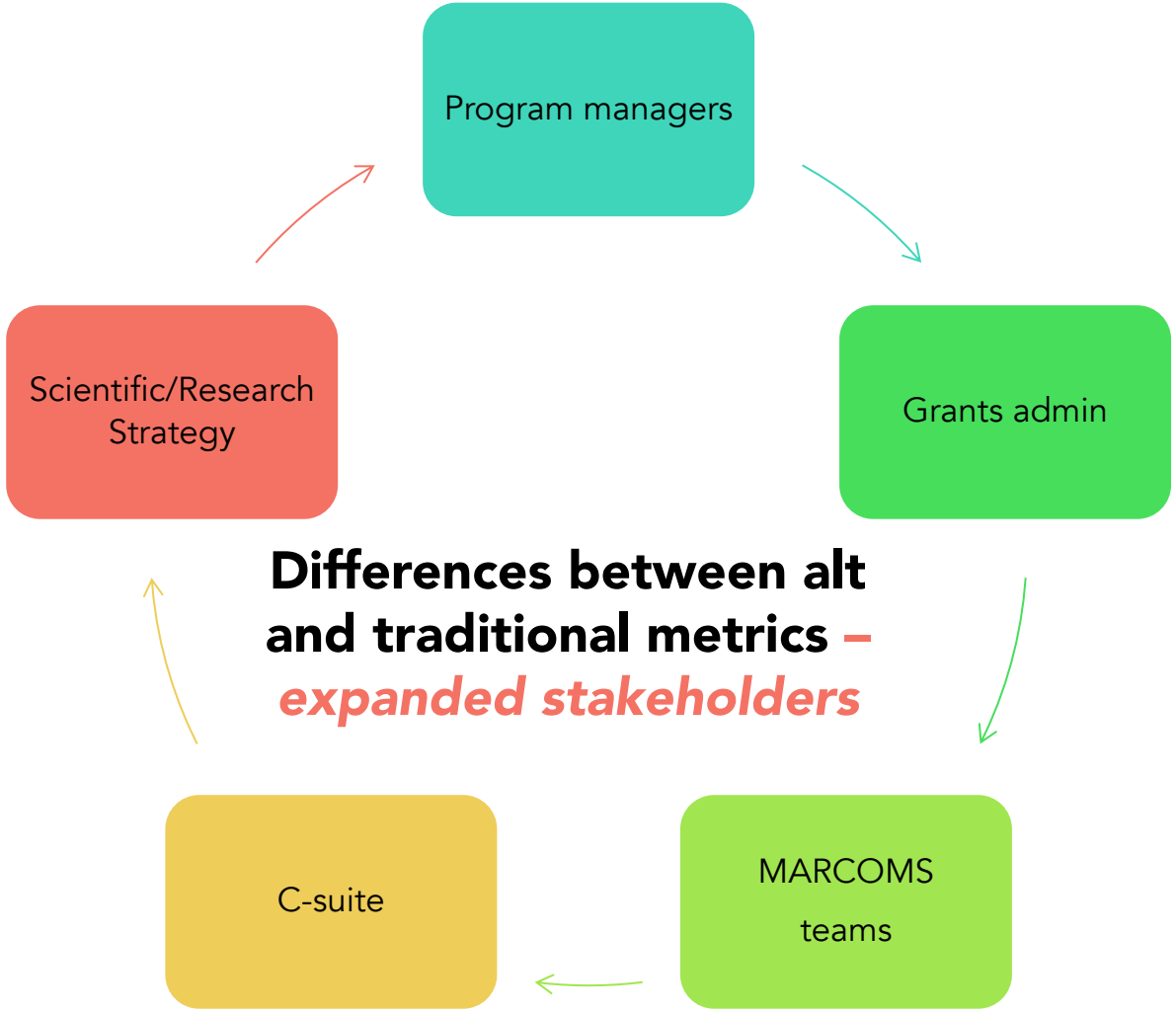
- Slow; take months/years
- Only for journal articles
- Reflect one stakeholder group: Other researchers who read/cite journals articles

Traditional comms

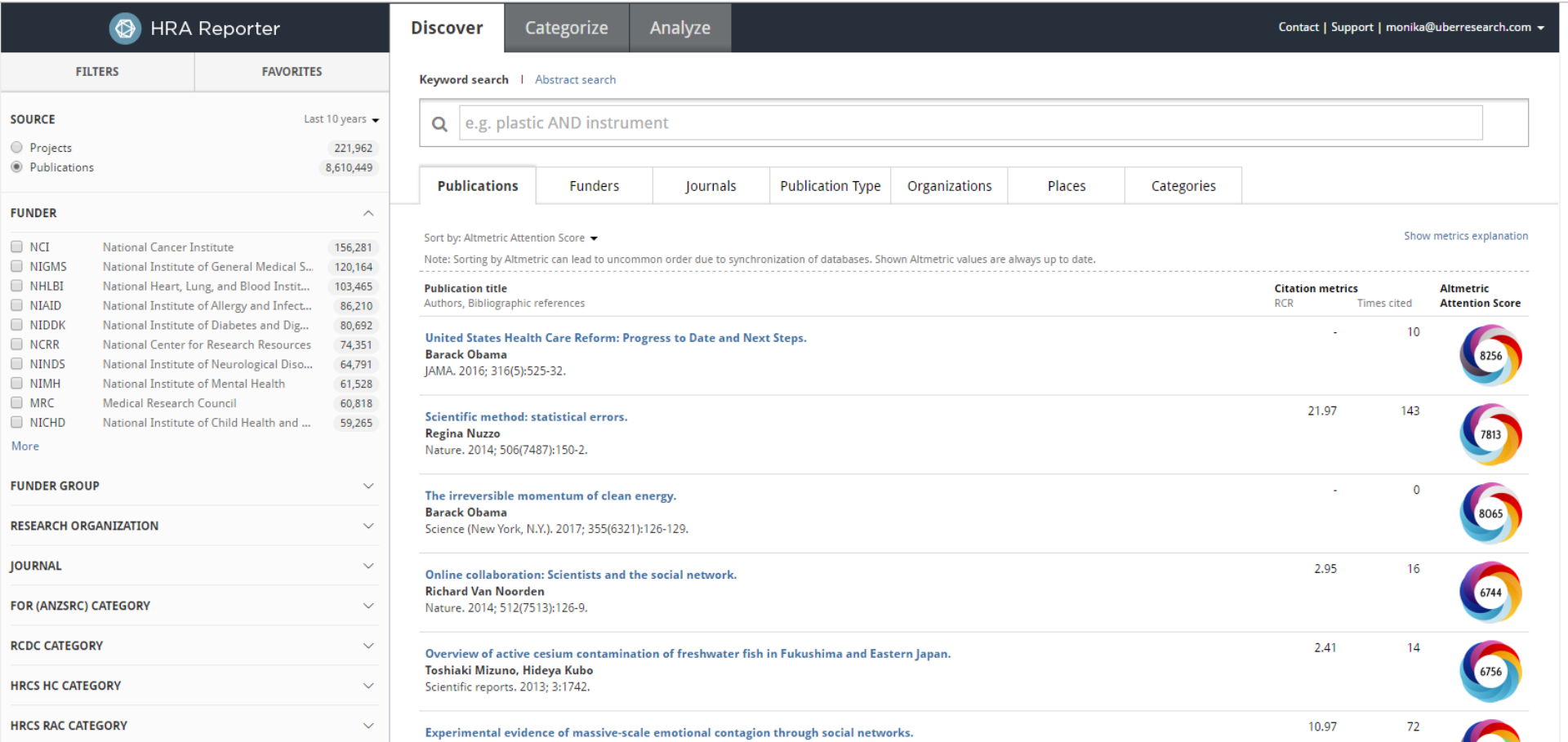
- Media monitoring
- Social media monitoring
- Clips services

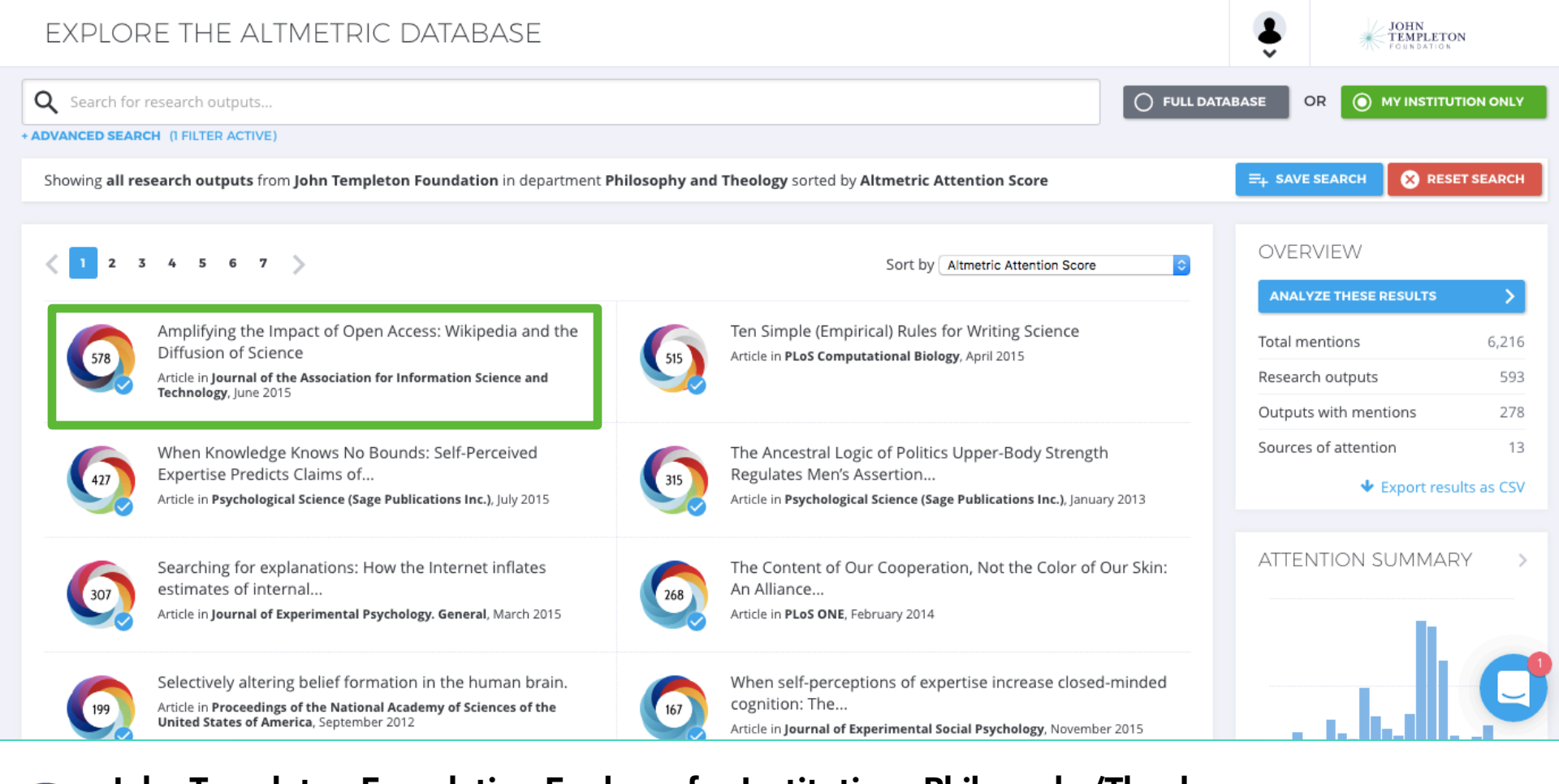
Alternative metrics

- Immediate; take hours/days/weeks
- Apply to scholarly outputs broadly (clinicaltrials.gov, articles, data set, books, websites)
- Reflect diverse stakeholder engagement from policy makers to educators to patients/practitioners


Program managers
Grants admin
MARCOMS teams
C-suite
Scientific/Research Strategy
Differences between alt and traditional metrics – expanded stakeholders

So what are these donuts in HRA Reporter?





John Templeton Foundation Explorer for Institutions Philosophy/Theology departmental view – using highest scoring article for demo

Data as of 2:30pm 12 March 2017

Known for our Altmetric Attention Score in thousands of academic journals, repositories, and websites

Data as of 2:30pm 12 March 2017

Wiley Online Library

? What is this page? | Embed badge | Share

Amplifying the Impact of Open Access: Wikipedia and the Diffusion of Science

Overview of attention for article published in arXiv, June 2015

SUMMARY | News | Blogs | Policy documents | Twitter | Weibo | Facebook | Wikipedia | Google+ | Reddit

Title	Amplifying the Impact of Open Access: Wikipedia and the Diffusion of Science
Published in	arXiv, June 2015
DOI	10.1002/asi.23687
Authors	Misha Teplitskiy, Grace Lu, Eamon Duede, Teplitskiy, Misha, Lu, Grace, Duede, Eamon

View on publisher site

Alert me about new mentions

About this Attention Score

In the top 5% of all research outputs scored by Altmetric

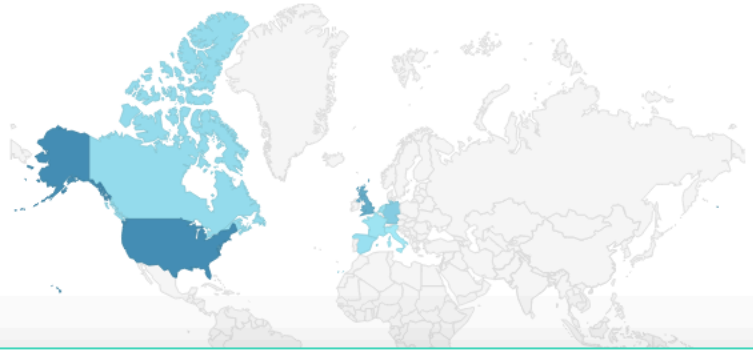
MORE...

Mentioned by

- **5** news outlets
- **12** blogs
- **1** policy source
- **579** tweeters
- **1** weibo user
- **14** Facebook pages
- **1** Wikipedia page
- **14** Google+ users
- **1** Redditor

TWITTER DEMOGRAPHICS | MENDELEY READERS | ATTENTION SCORE IN CONTEXT

The data shown below were collected from the profiles of **579** tweeters who shared this research output. Click here to find out more about how the information was compiled.



Thanks for visiting the details page for this item! Did you find it useful?

Yes

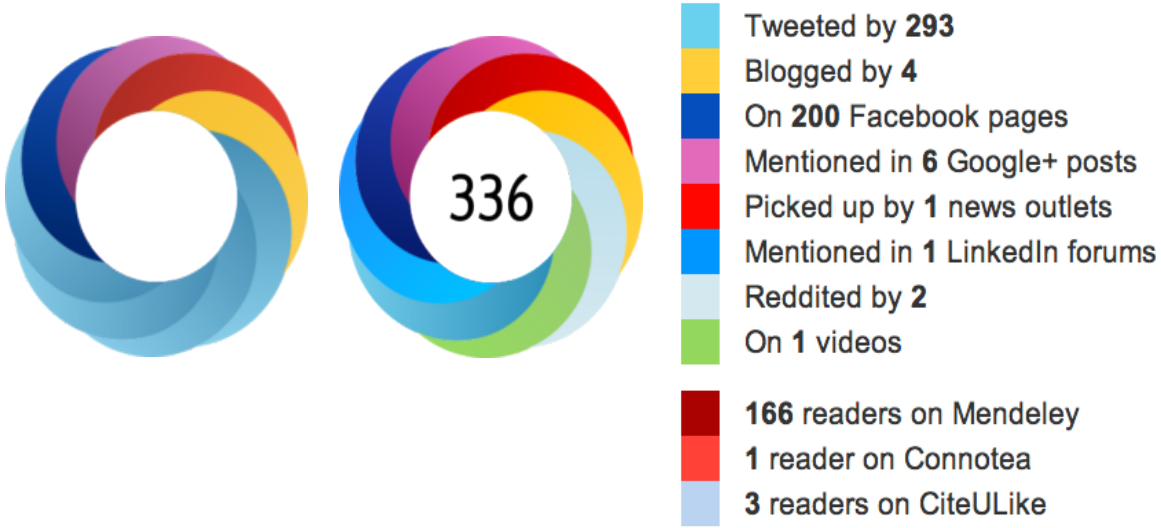
No

Powered by Survicate

Publishers make Altmetric data available as an author/reader benefit

Data as of 2:30pm 12 March 2017

What is the donut? What does it indicate?



Mention type	Points
News	8
Blogs	5
Twitter	1
Facebook	0.25
Sina Weibo	1
Wikipedia	3
Policy Documents (per source)	3
Q&A	0.25
F1000/Publons/Pubpeer	1
YouTube	0.25
Reddit/Pinterest	0.25
LinkedIn	0.5

More info at: www.altmetric.com - About altmetrics – The donut and score; Algorithm and score are publicly available.

The Altmetric Attention Score is generated by a weighted algorithm

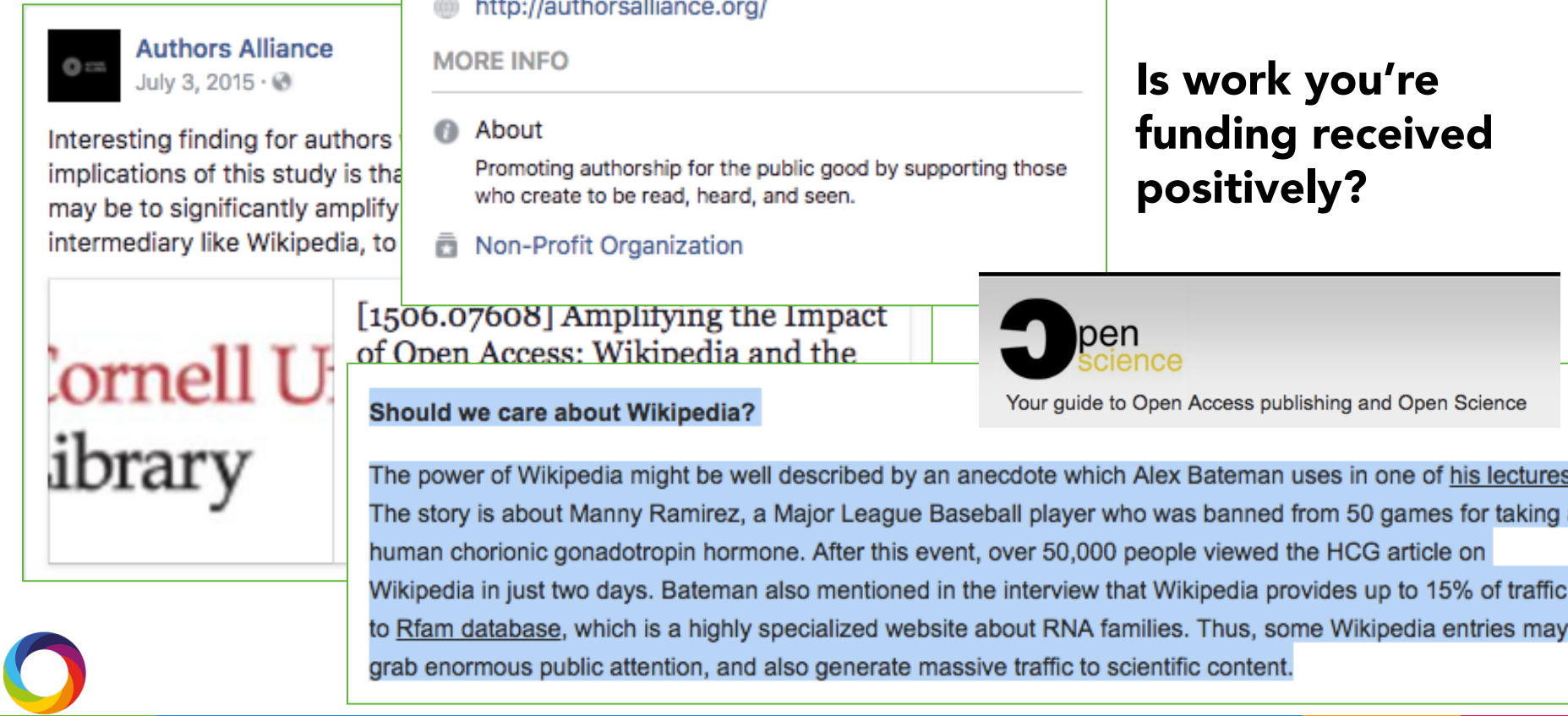
Volume	Sources	Authors
The score for an article rises as more people mention it.	Each source category contributes a different base amount to the final score.	Assess the author of each mention in terms of their reach, promiscuity and bias.

More info at: www.altmetric.com - About altmetrics – The donut and score; Algorithm and score are publicly available.

ATTENTION *not quality* indicator

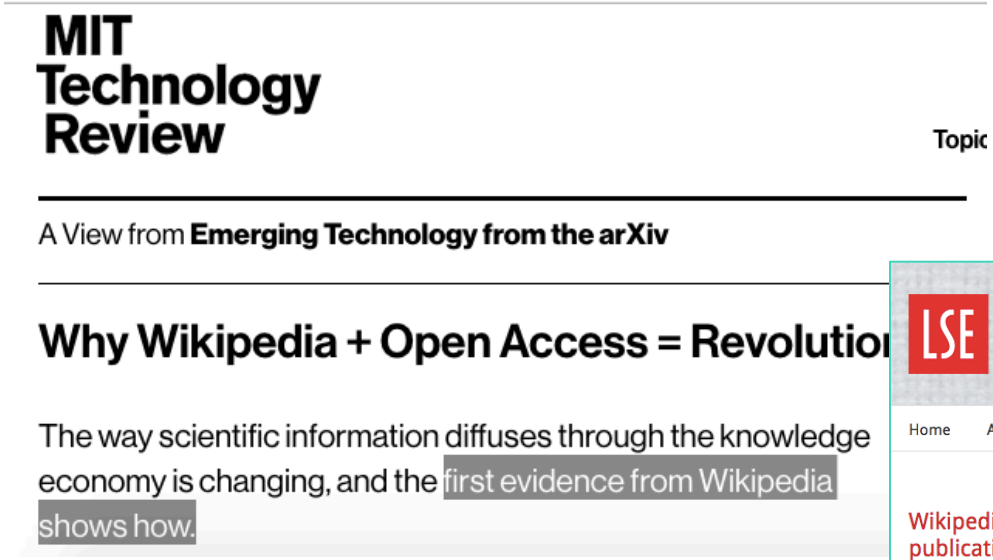
- Majority of articles receive *no attention*
- Some fields/subjects are *noisier* than others
- Most articles with attention score >15
- Attention can be negative (sentiment analysis)
  - Fraud, misconduct, unclear data, issues with methodology, etc

Context is king…*what is being said*



Is work you're funding received positively?

Context is king…*where is it said?*


MIT Technology Review

Topic

A View from **Emerging Technology from the arXiv**

Why Wikipedia + Open Access = Revolutio

The way scientific information diffuses through the knowledge economy is changing, and the first evidence from Wikipedia shows how.

Are you aware of the universe of places your funded work reaches?

What outlets matter to your organization? Are you even aware of all of them?

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

THE IMPACT BLOG

Home About Latest Our books Series Resources LSE Comment Popular

Wikipedia is significantly amplifying the impact of Open Access publications.

Email Address

Subscribe to the Impact Blog

When you edit Wikipedia to include a claim, yo substantiate that edit by referencing a reliable source. According to a recent study, the single biggest predictor of a journal's appearance in Wikipedia is its impact factor. One of the exciting findings, writes **Eamon Duede**, *is that it appears Wikipedia editors are putting a premium on open access content. When given a choice between journals of similar impact factors, editors are significantly more likely to select the "open access" option.*

REVOLUTIONS

Context is king…*by whom?*

Keet blog // research and teaching, with some relevance for society

On the arxiv paper's data and results

There are several limitations to the paper; some of them discussed by its authors, some are not. The arxiv paper does not distinguish between online freely available scientific literature where only the final typesetted version is behind a paywall and official 'open access'. This is problematic for processing the computer science entries in Wikipedia for trying to validate their hypothesis. In addition, they considered only journals with their open access policy and journal-level ana
factor, and only thos
4721 journals of whi
list was taken from b
between 'green' and
not bode well for ext
hence, the diffusion

About

I am a Senior Lecturer at the Department of Computer Science at the University of Cape Town, in Cape Town, South Africa. My research interests are in logic-based knowledge representation, ontology, and Ontology, of biological data and -knowledge; more information can be found on my homepage at http://www.meteck.org.

To uncover key stakeholders engaging with their research

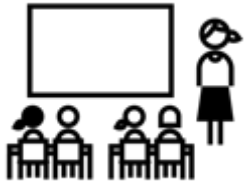
General Public

Government & Policy Makers

Investigators

Research communicators/watchdogs

Practitioners



Advocacy/ Non-profits

Tech Transfer

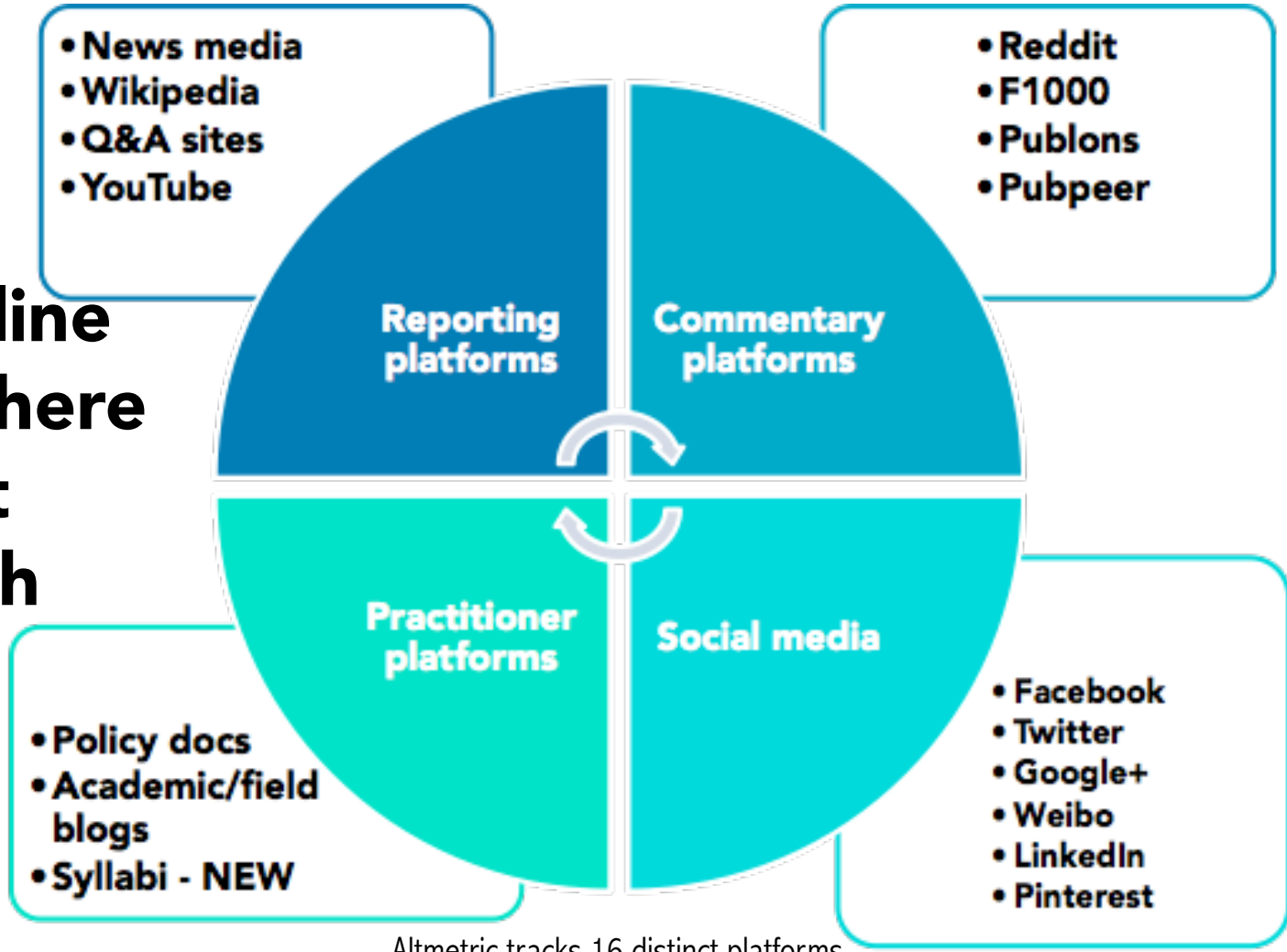
Interested parties

Altmetric can perform geographic or demographic analysis on request as custom work.

Defining our terms

Sources, mentions, and outputs

Sources: Online platforms where engagement with research occurs

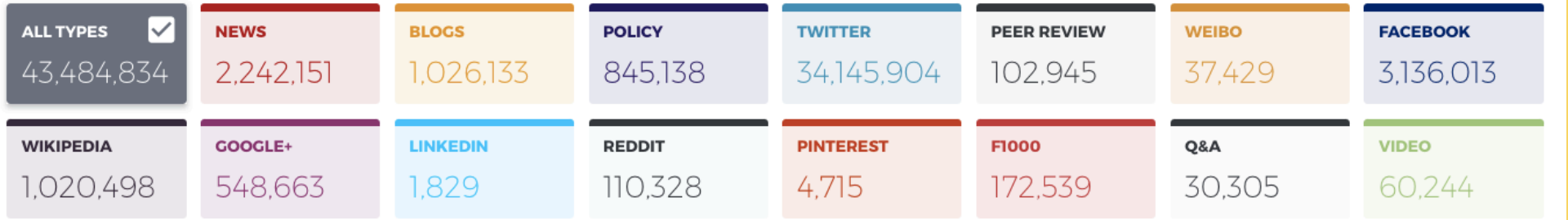


Altmetric tracks 16 distinct platforms

Sources: 16 platforms (each with its own donut color) represent thousands of website domains

Fo r a full overview of our sources visit: https://www.altmetric.com/about-our-data/our-sources/

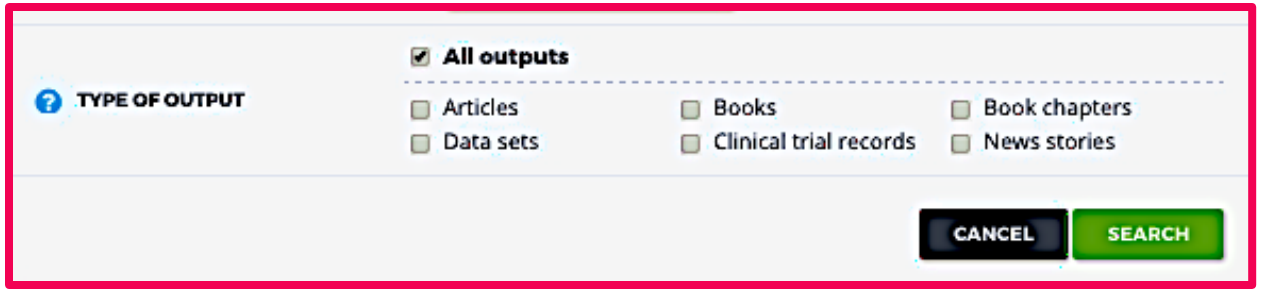
- Policy documents
- News
- Blogs
- Twitter
- Post-publication peer-reviews
- Facebook
- Sina Weibo
- Wikipedia
- Google+
- LinkedIn
- Reddit
- Faculty1000
- Q&A (stack overflow)
- Youtube
- Pinterest



Outputs: Any digital product of the research lifecycle

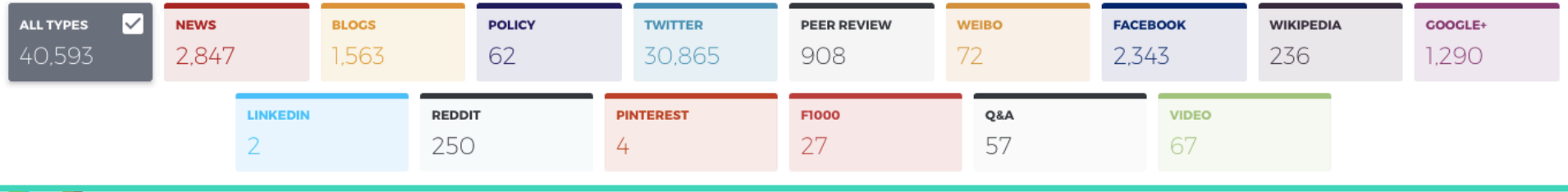
- **Require a persistent ID of some kind**
- **Outputs Altmetric currently tracks:**
  - Clinical trials records from clinicaltrials.gov
  - Articles
  - Books
  - Book Chapters
  - Data sets
  - Press releases
  - Websites

Advanced search filter in Altmetric platform allows you to sort by output type



Mentions:

- Any form of online engagement with a research output
  - Linking, recommending, bookmarking, citing, or otherwise engaging with online
- Below is the mention summary for everything JTF has funded
- Each engagement = 1 mention



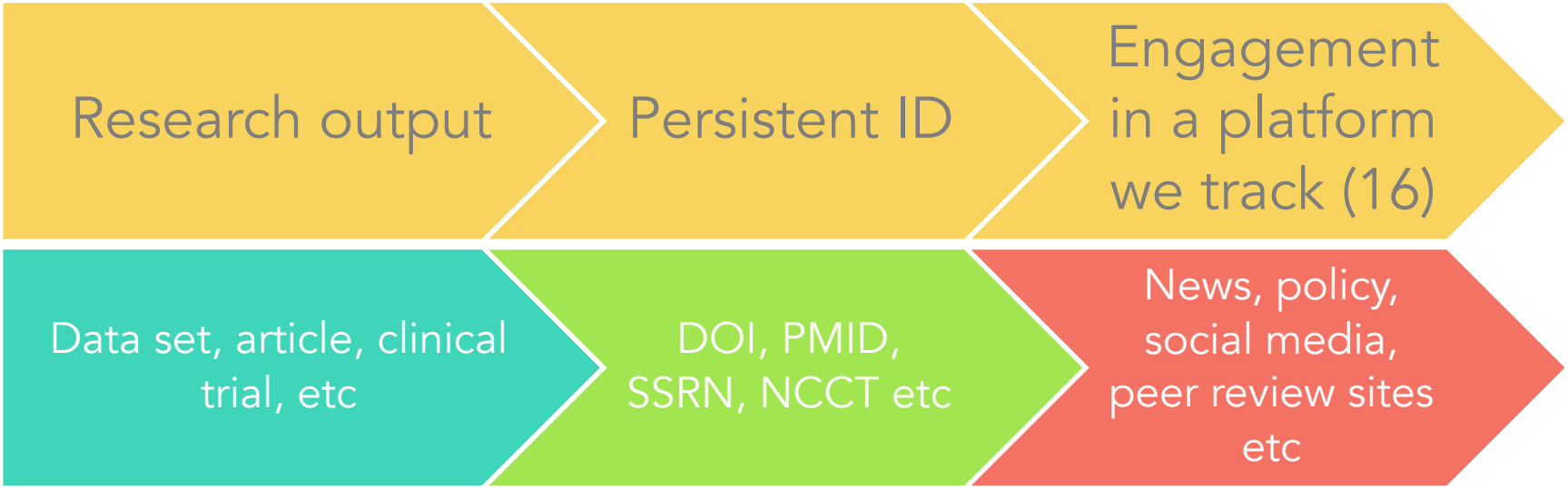
Mentions:

- **Altmetric tracks the following kinds of online engagement:**
  - Discussions on peer review platforms
  - Citations in Wikipedia
  - Commentary on Social Media
  - Coverage in news/blogs
  - Citations in non-journal sources (like policy documents and syllabi)
  - Recommendations in F1000

Altmetric data capture and transparency

Or: We've already got metrics for reseach you've funded; even if you don't know it

3 things required to capture attention

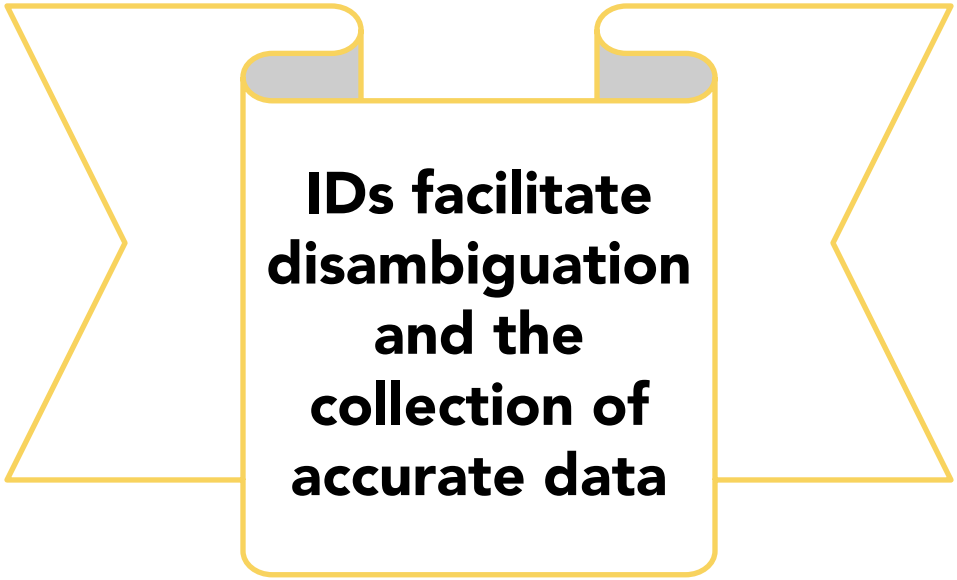


Research output - any part of the research lifecycle

- Data sets: figShare, Dryad, arXiv (anything with a DOI)
- Clinical trial records
- Peer reviewed journal articles
- Books
- Book chapters
- Policy documents, guidelines, white papers
- Presentations, blogs, anything web-native

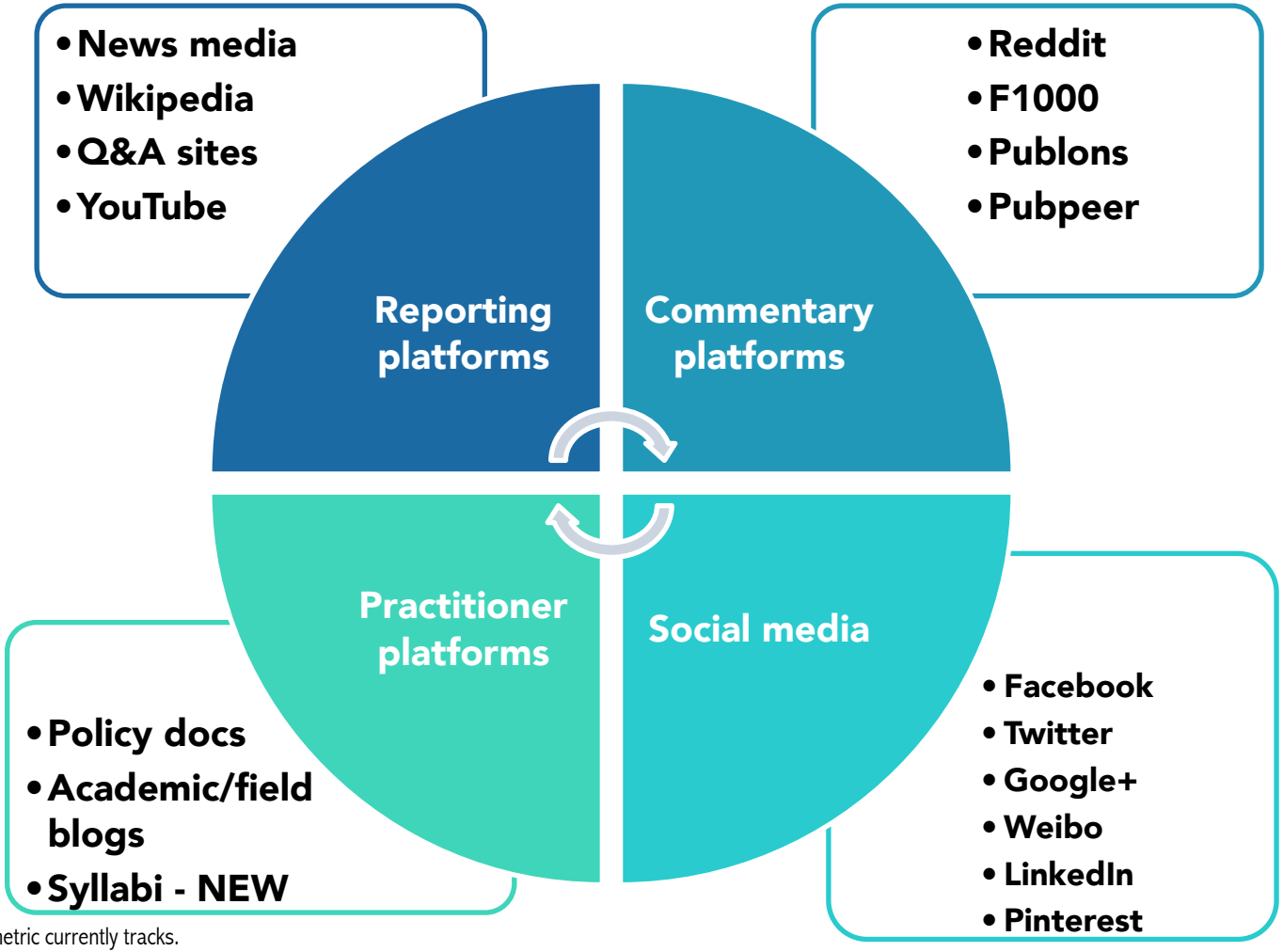
Persistent IDs

- DOIs
- PubMed IDs
- ISBNs
- Handles
- arXiv IDs
- ADS IDs
- SSRN IDs
- RePEC IDs
- ClinicalTrials.gov records
- URLs



Altmetric is fully integrated with ORCID but ORCIDs remain the one of the least accurate IDs as they require manual curation by their owners.

SOURCES



These are the 16 source types (channels) Altmetric currently tracks.

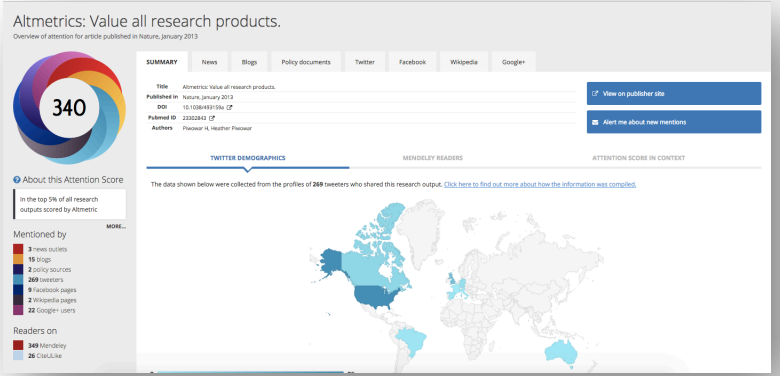
How data capture works

Across thousands of domains

Looking for links

Finding ID

Generating details pages

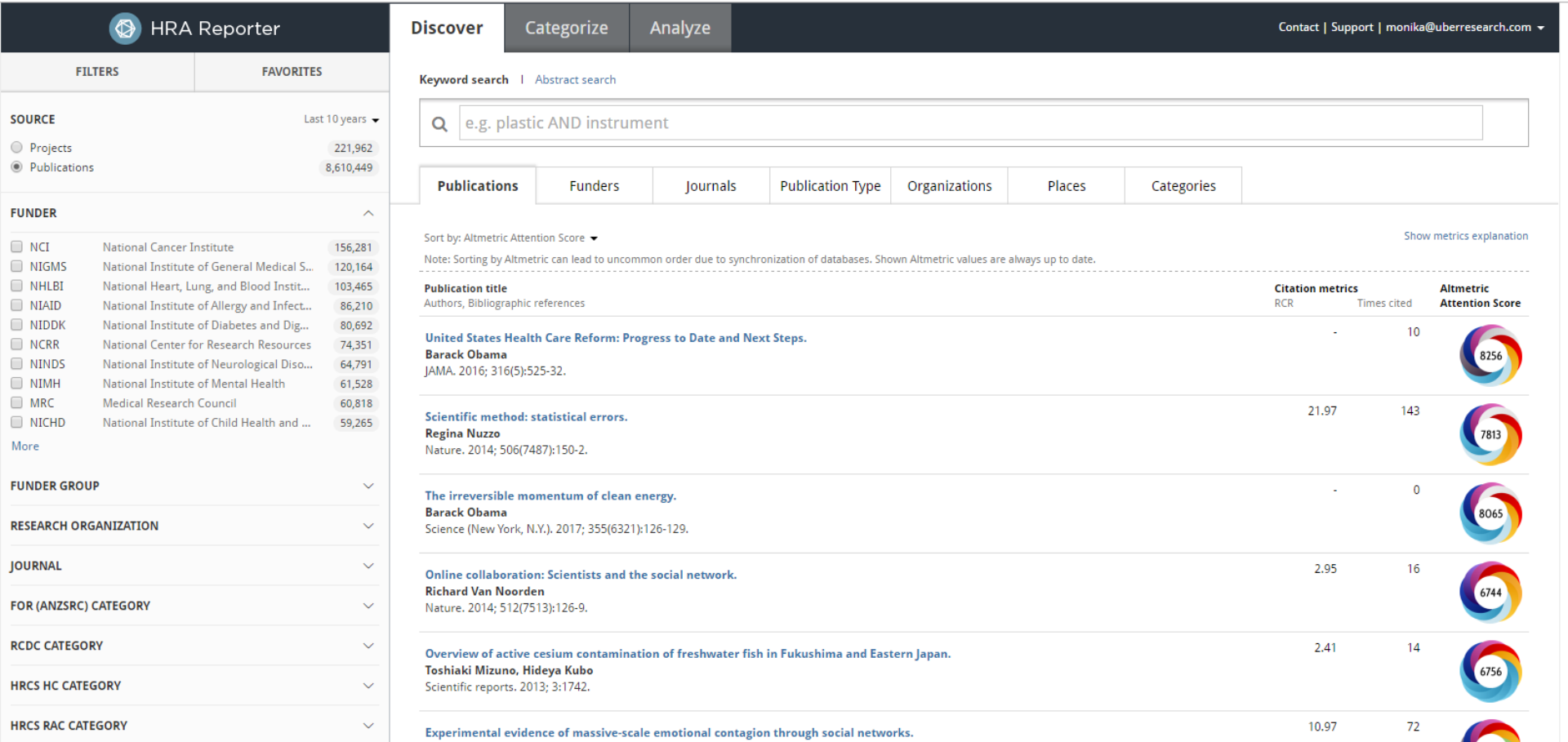


How data capture works: Exceptions

- News
  - Looking for keywords (journal and author name), cross referencing with PubMed or CrossRef
- Policy documents
  - Scraping bibliographies
- Syllabi
  - Feed from Harvard Open Syllabus Project

Altmetric in HRA reporter

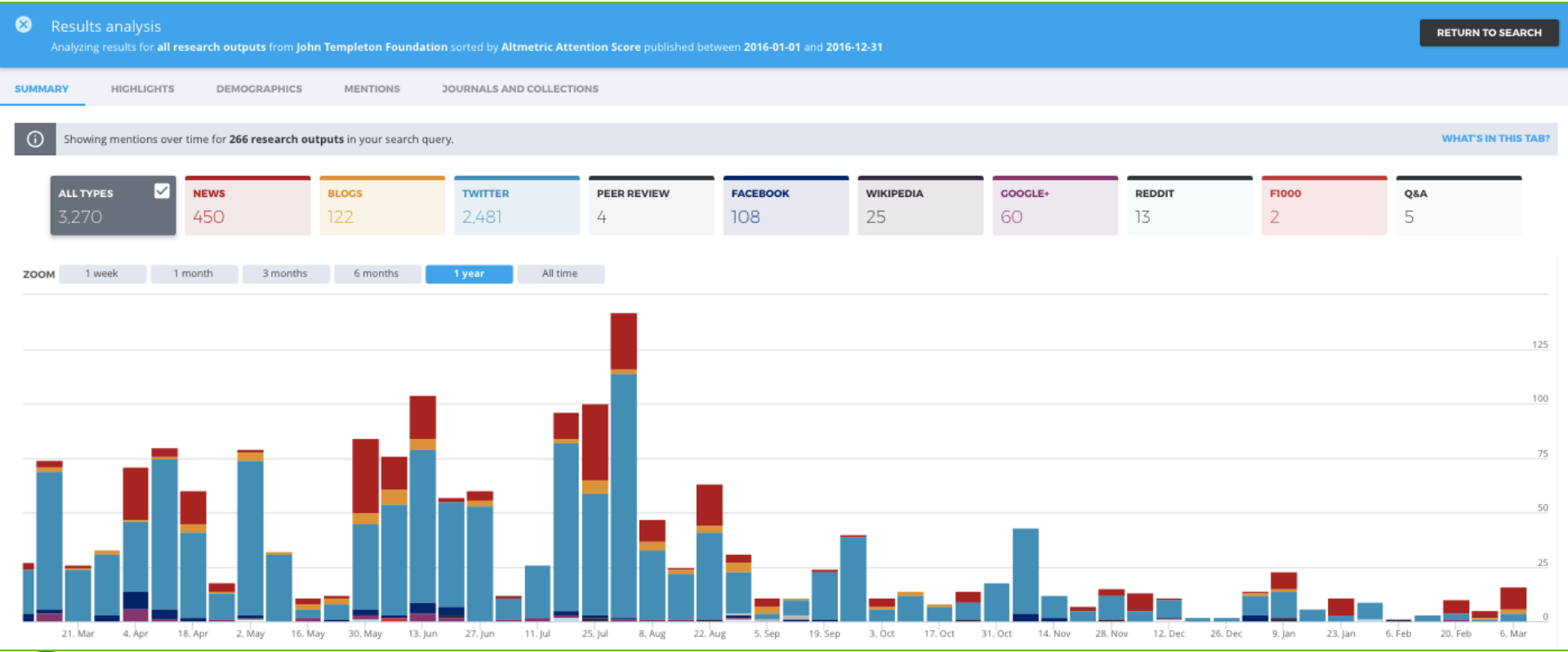
Donuts on the publications tab



In HRA reporter

- Donuts show Attention Score and breadth of reach at-a-glance
- Details pages are fully unlocked
- One article at a time
- Does not include “non-article” content
  - Project Vox, Discover the Genome, etc
  - Exception: 3 repositories we *do track*
    - figShare, Dryad, arXiv, bioarXiv,

Want to see data in aggregate like JTF?



Attention JTF-funded publications published in 2016 received across all the platforms we track

Analysis across articles by journal?

Results analysis

Analyzing results for **all research outputs** from **John Templeton Foundation** sorted by **Altmetric Attention Score** published between **2016-01-01** and **2016-12-31**

RETURN TO SEARCH

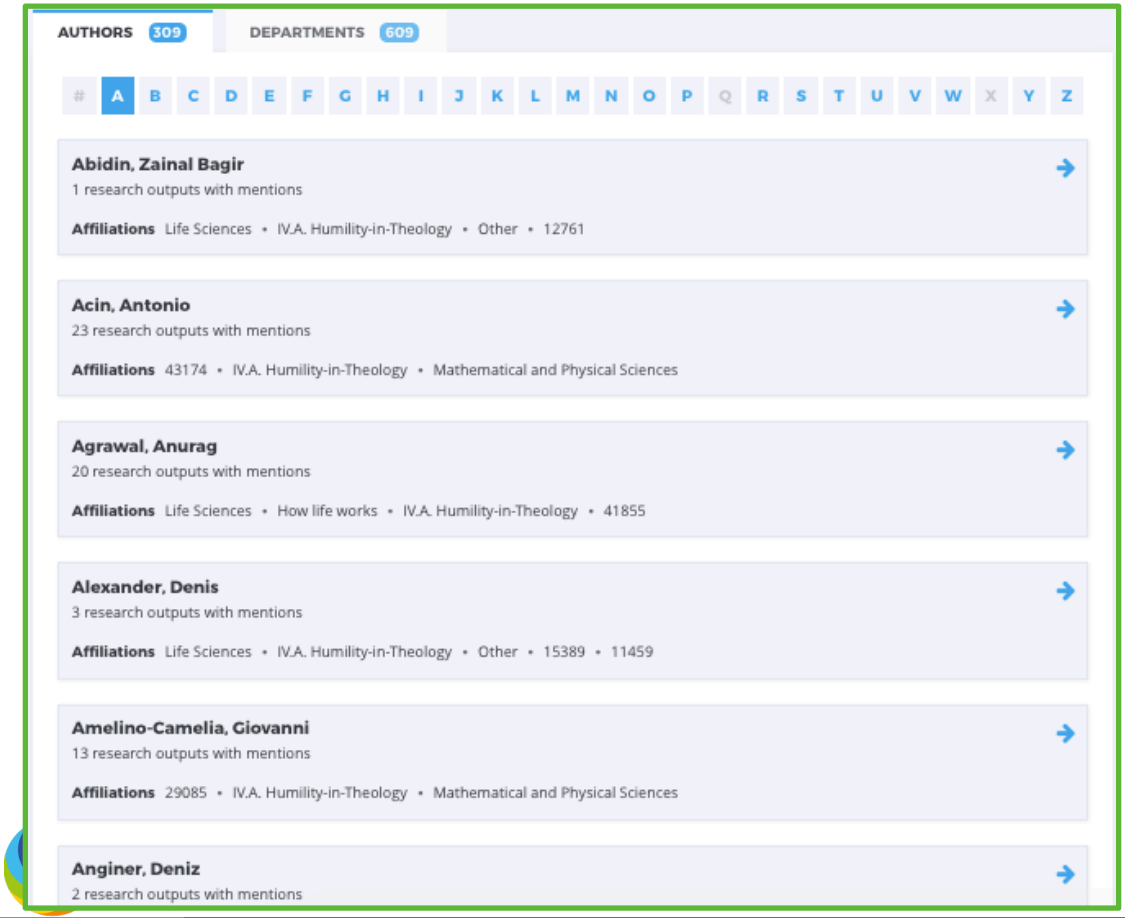
SUMMARY | HIGHLIGHTS | DEMOGRAPHICS | MENTIONS | JOURNALS AND COLLECTIONS

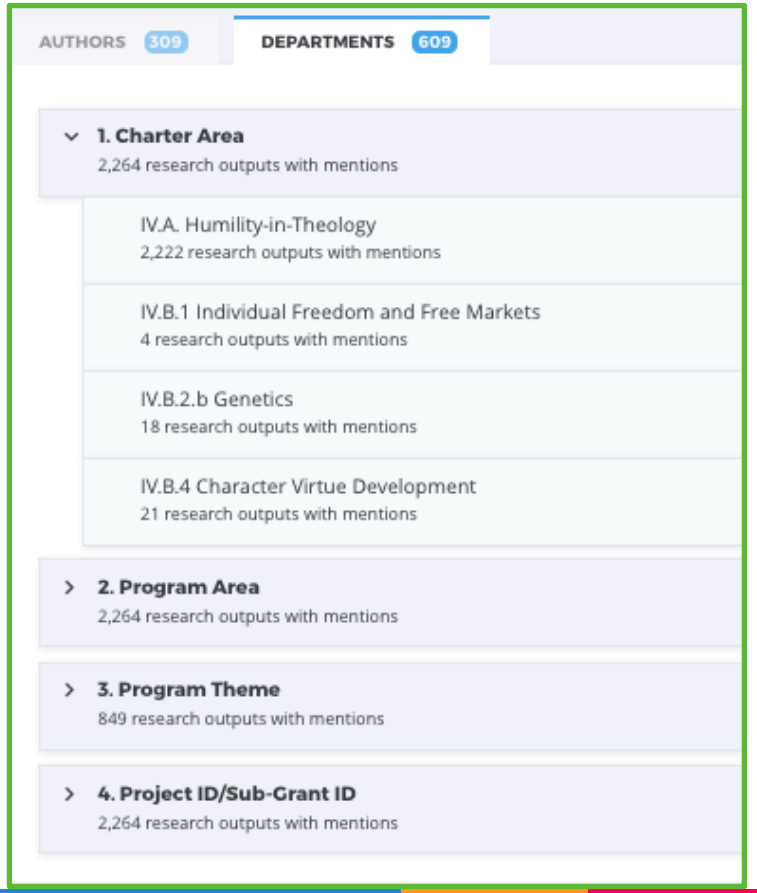
Found **82** journals and collections in your search results. Export journals/collections data as a CSV spreadsheet. WHAT'S IN THIS TAB?

JOURNAL/COLLECTION (e.g. Physics Letters, arXiv, figshare)	TOTAL MENTIONS	NEWS STORIES	BLOG POSTS	POLICY DOCUMENTS	TWEETS	PEER REVIEWS	WEIBO POSTS	FACEBOOK POSTS	WIKIPEDIA CITATIONS	GOOGLE+ POSTS	LINKEDIN POSTS
arXiv **36** mentioned research outputs in your search	**238**	11	12	0	211	0	0	3	0	1	0
Physical Review Letters **10** mentioned research outputs in your search	**289**	72	21	0	172	0	0	8	3	11	0
The Journal of Positive Psychology **6** mentioned research outputs in your search	**43**	4	0	0	37	0	0	2	0	0	0
The Astrophysical Journal Letters **3** mentioned research outputs in your search	**26**	0	2	0	22	0	0	1	0	0	0
PLoS ONE **3** mentioned research outputs in your search	**89**	15	3	0	64	0	0	6	0	0	0
Proceedings of the National Academy of Sciences of the United States of America **3** mentioned research outputs in your search	**230**	45	8	0	170	0	0	1	0	3	0

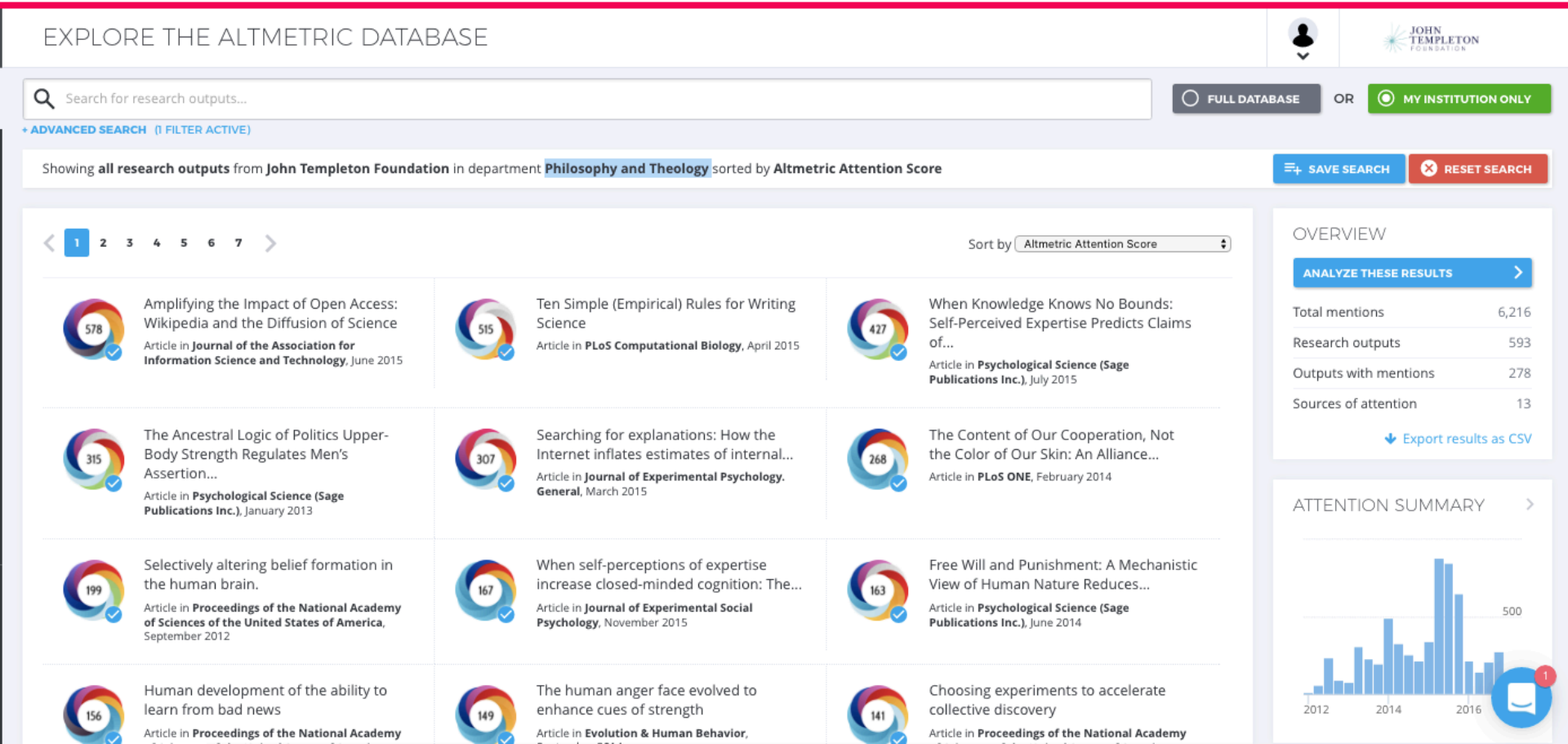
Attention JTF-funded publications published in 2016 received across all the platforms we track

Analysis by grant ID, grouping or grantee?





Introducing Explorer for Institutions



Use cases by sector

Altmetric solutions

The big question: What are you doing with our money?

The big challenge: Limited resources to answer the big question

Common drivers for new metrics

- Strict charter/mission
- Poor/incomplete grantee reporting
- Explosion of engagement platforms
- Limited FTE

Use cases: Communication/engagement

- Recognize researchers with good engagement track record
- Help grantees struggling with engagement
- Identify engagement campaign opportunities

Use cases:
Identify thought leaders/potential grantees/potential reviewers

- Ignore Facebook/Twitter at your own risk!
- Data reveals where leaders in the field engage and what they say
- Dissemination trails unearth unknown potential reviewers/grantees

Use cases: We didn't know what we didn't know

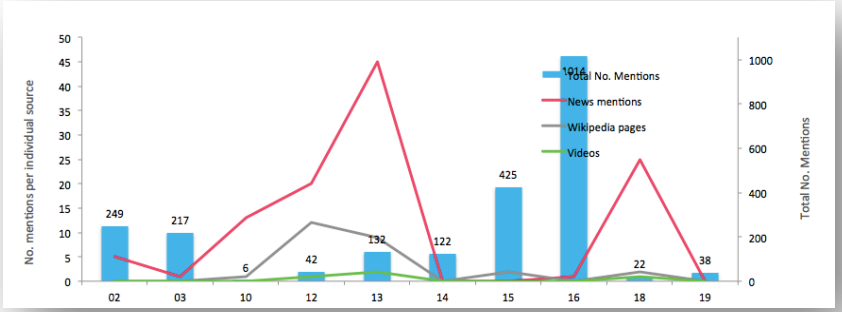
- Use comprehensive database to ID trends, missed opportunities
- Who are we NOT funding?
- What areas can we STOP funding?
- Just how wide and deep is the reaching of our funded research

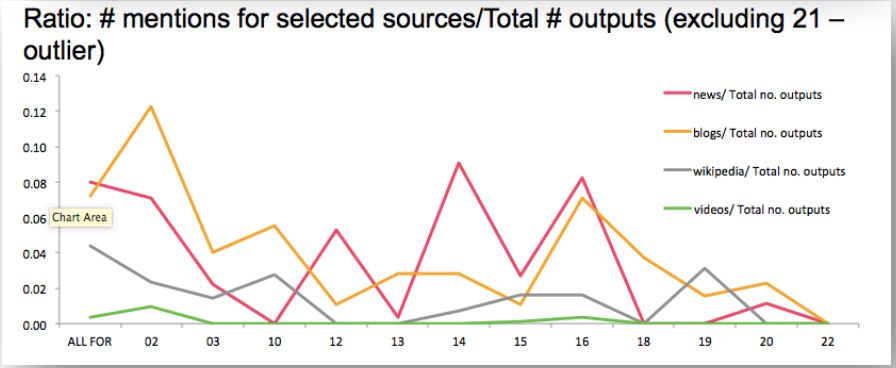
Use cases: Custom reporting

- Funders rely on custom reporting/analysis to provide a picture of reach
- Gates Foundation /Open Access mandate
- Custom visualizations/websites/infographics
- https://demos.altmetric.com/
- Publicly communicate the larger story around open access mandates, global reach, “successes”

Government agencies…

- Data Analysis
  - Audience segmentation
  - Networks
  - Policy organization linking
  - Non-article tracking
- Training
  - Defining impact
  - Integrating altmetrics in workflows
  - Identifying key stakeholders





#14

Assessing Industry-sponsored Medical Publications using Alternative Metrics

Catherine Skobe[a], LaVerne A. Mooney[a], Wendy Kopf[b], and Sara Rouhi[c]

[a]Pfizer, Inc, New York, NY [b]Adelphi Communications Inc, New York, NY [c]Altmetric LLP, London, UK

ABSTRACT

Objective

- The objective was to benchmark the evolution of medical publications metrics from journal citations to social media/digital channels through an evaluation of attention indicators, using the Explorer for Institutions platform from Altmetric.com (AT). An assessment of industry-sponsored published articles from one company was conducted

Research design and methods

- We examined 782 industry-sponsored manuscripts published between Jan 1, 2013 and Dec 31, 2014. DOIs and PMIDs were used to search in AT. Altmetric.com ranks level of attention by the volume of mentions, rather than the weighted Altmetric score, which is based on an algorithm. Articles that yielded any attention were included in the analysis (n=408). We assessed the publications to determine the top ten by level of attention, article type, therapeutic area, and product.

Results

- Eight of ten articles with the highest number of mentions were published in the New England Journal of Medicine. The highest level of attention peaked between 1 to 2 months of publication. Of the 6 article types, primary and secondary manuscripts were most prevalent and demonstrated attention levels of 71.2% and 52.6%, respectively, based on a percentage (mentions/ total number of pubs by article type). Similarly, review articles demonstrated a 51.4% level of attention. The products with the highest percentage of manuscripts with mentions were CVD (81.8%), CVZ (80.0 %), and Blom9e11 (77.3 %). A qualitative assessment of mentions is ongoing.

Conclusions

- Journals that promote via social media published the most highly mentioned manuscripts. The ratio of mentions to number of articles was approximately 50 % by article type or by product. While the number of mentions is of interest, we expect the qualitative evaluation to provide greater insight.

OBJECTIVES

To benchmark the evolution of medical publications metrics from journal citations to social media/digital channels by:

- Examining article level attention by product, therapy area, and publication type
- Identifying journals with high levels of attention
- Assessing if volume of publication influences total attention
- Assessing peak periods of attention for publications
- Exploring audience segmentation across products, therapy areas, and publication types
- Assessing the qualitative feedback at the article level

Glossary

- **Alternative metrics**: Dynamic attention indicators that accrue around digital-native research objects (not limited to social media)
- **Attention**: Research output on a digital platform that draws public engagement (not limited to social media)
- **Mention**: Term used when research output gets attention. Within the Altmetric Explorer platform, each instance of attention = 1 mention
- **Pubmed**: Post-publication peer review site where research is made openly available and other researchers can anonymously or publicly comment
- **Source**: Digital platform where a research output might be mentioned. For Altmetric these range from global news media, to policy documents, to social media
- **Weibo**: Chinese microblog similar to Twitter

Altmetric Score Method

Mention type	Points
News	8
Blogs	5
Twitter	1
Facebook	0.25
Sina Weibo	1
Wikipedia	3
Policy Documents (per source)	3
Q&A	0.25
F1000/Publons/Pubpeer	1
YouTube	0.25
Reddit/Pinterest	0.25
LinkedIn	0.5

- The Altmetric score of attention is the number centered in the colored donut.
- The score is derived from an automated algorithm, and represents a weighted count of the amount of attention for a research output.
- The default weighting reflects the idea that **'not all mentions are created equal'**

CAUTION!

The Altmetric score cannot determine the quality of the article as attention may be positive or negative and can only be discerned from a qualitative review

Altmetric Donut

RESEARCH DESIGN AND METHODS

Via Dataviion, generated list of Industry-sponsored manuscripts published between January 1, 2013 and December 31, 2014 **[n=782]**

Manuscript details including DOI were imported into Excel spreadsheet. Sorted by article type, therapy area, product, and launch stage **[n=767]**

Populated DOIs in Altmetric into "Custom Groups." 408 manuscripts received attention **[n=408]**

Analyzed by article type, therapy area, product, and Top 10. A qualitative assessment was conducted on a select sample

RESULTS

- 408 of 782 published articles that yielded any attention were included in the analysis
- All manuscripts in the top 10 list were in therapy areas with the highest volume of publications
- All manuscripts in the top 10 list were published in established journals with a formidable online presence
- By article type, the percentage of articles with mentions:volume of manuscripts ranged from 46.6% to 52.6 % with the exception of the Meta-Analysis which was 70.6 %

Top Ten Articles by Altmetric Score

Top Ten Articles by Total Number of Mentions

Percent of Manuscripts Mentioned

Percentage of Manuscripts by Article Type

- Primary and secondary articles show highest levels of attention
- Percent of total publications and percent of total mentions are similar across article type categories

*Based on 782 total publications from Dataviion output.
†Total number of mentions is dynamic due to real time online activity.

Percentage of Manuscripts by Therapy Area

- Percent of total publications and percent of total mentions are similar across all therapy areas

Primary Manuscripts

Secondary Manuscripts

Meta-Analysis

Oral Apixaban for the Treatment of Acute Venous Thromboembolism [NEJM]

- Activity highest around time of publication

Initiation of Warfarin in Patients with Atrial Fibrillation: Early Effects on Ischaemic Strokes [Euro Heart J]

- Activity highest around time of publication

Two Phase 3 Trials of Bapineuzumab in Mild-to-Moderate Alzheimer's Disease [NEJM]

- Activity/spread around time of publication

Crizotinib in ROS1 – Rearranged Non-Small-Cell Lung Cancer [NEJM]

Crizotinib versus Chemotherapy in Advanced ALK-positive Lung Cancer [NEJM]

Demographic Analysis for Attention to "Crizotinib in ROS1-Rearranged Non–Small-Cell Lung Cancer"

CONCLUSIONS

General observations:

- Volume of publications does not equate to volume of mentions (attention)
  - Potentially driven by size of therapeutic area, popularity of field
- Journals that promote via social media published the most highly mentioned manuscripts
- Higher scores were seen with publications from high impact factor journals

Pilot sample:

- Of the 782 Pfizer articles in the pilot, 408 had attention representing a 52 % "hit rate" – or, 52% of the sampled articles had attention. This is well above the 20–30 % hit rate typical found in random samplings of articles
- The ratio of mentions to number of articles was approximately 50 % by article type or by product
- Activity was greatest within first 2–3 weeks of publication and then decreases dramatically
- E-publications initiate and appear to draw more attention than print publications
- Twitter/Facebook/Google+ mentions were predominantly "re-posts" or "shares" with little or no additional qualitative commentary

Qualitative Analysis:

- While the number of mentions is of interest and the qualitative evaluation provides greater insight, the analysis can be labor intensive
- Qualitative analysis provides the ability to identify specific commentators and their reach
- Results and outcomes from a qualitative analysis must be vetted before distribution to ensure medical integrity is maintained

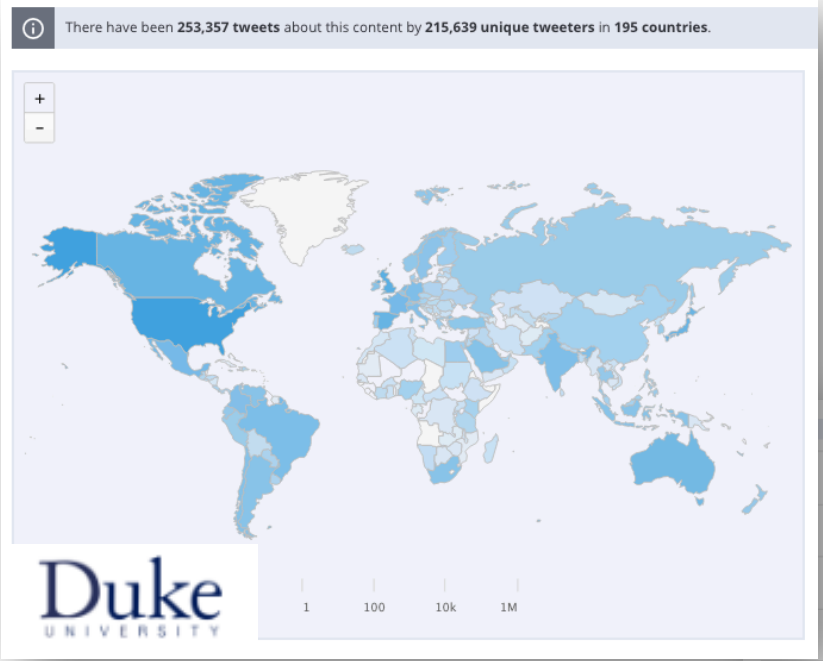
12th Annual Meeting of ISMPP

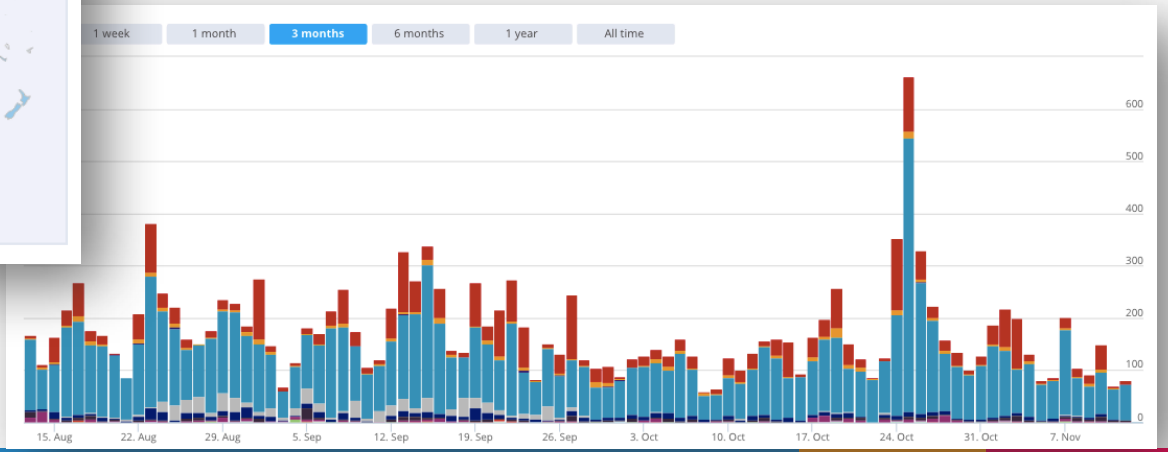
Pharma/corporates…

- Data analysis
  - Competitor drugs
  - Therapeutic areas
  - Tech transfer opps
  - New clinical trial communities
  - Sentiment/context analysis
- Journal analysis

Academics…

- **Institutional platform**
  - **Benchmark against peers**
  - **Evaluate grant success**
  - **Tenure/Promo**
  - **Support story telling**
    - **Communications and fundraising**





Non-profits/museums/research institutes want to…

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

sustainable solutions for ending hunger and poverty

IFPRI

Smithsonian

RAND CORPORATION

NATURAL HISTORY MUSEUM LOS ANGELES COUNTY

THE WORLD BANK IBRD • IDA

W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

ROYAL ONTARIO MUSEUM

- **Commercial API integration**
  - **Integration into online publishing platforms**
  - **Institutional repositories**
- **Non-article tracking**
  - **Websites**
  - **Standards**
  - **Reports**
  - **Policy recommendations**

Services and Data in summary

- Explorer for Institutions Platform
- Commercial API
- Custom reporting/analysis
- URL (non-article) tracking
- Custom visualizations
- Impact trainings

How can we help?

Sara Rouhi, Director of Business Development

sara@altmetric.com

202 505 0814

@RouhiRoo