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Changing Impact Metrics in Scholarly Communications

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CONCERT 2016 Conference, November 9-10
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The Focus of My Presentation

Impact metrics in scholarly communications are changing rapidly, and **librarians** are in a good position to influence, explain and promote new and alternative metrics within the institution.

Who Am I?

- David Nygren, VP, Research Insights at Wiley (15 years at Wiley)
- Live in New York City
- My department informs decision-making via analytics (sales, usage, bibliometrics, web analytics) and market research
- Spoke (and danced the macarena) at last year's CONCERT/Wiley Seminar "INTO the Metrics"
- I love numbers…but I love words more
- I love baseball ⚾ …but I'm better at playing basketball
- Contact: dnygren@wiley.com

You can use this presentation as a resource…there are numerous links to additional information.

What do I mean by "impact metrics"?

Any metric that attempts to **quantify the impact** of a researcher, article, research artifact (e.g. data), journal, book or institution **on the advancement of science or scholarship**.

Why are impact metrics important?

According to the Bernard Becker Medical Library, Washington University in St. Louis…

Measure Return on Funding and/or Faculty Investment
- Quantify and document research impact
- Justify future requests for funding
- Quantify return on research investment
- Discover how research findings are being used
- Demonstrate that research findings are resulting in meaningful health outcomes
- Discover community benefit as a result of research findings
- Progress reports

Find Other Relevant Research and Researchers
- Identify similar research projects
- Identify possible collaborators
- Determine if research findings are duplicated, confirmed, corrected, improved or repudiated
- Determine if research findings were extended (different human populations, different animal models/species, etc.)
- Confirm that research findings were properly attributed/credited

Tenure/Promotion Decisions
- Tenure evaluations
- Promotion dossiers

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Why do **I** think librarians have a strong role to play?

According to [a 2013 *Library Trends* survey](#) of **140 libraries** at institutions across the UK, Ireland, Australia and New Zealand, **79% of respondents indicated that they either offer or plan to offer "bibliometric training" services** to their constituents as part of their support for research.
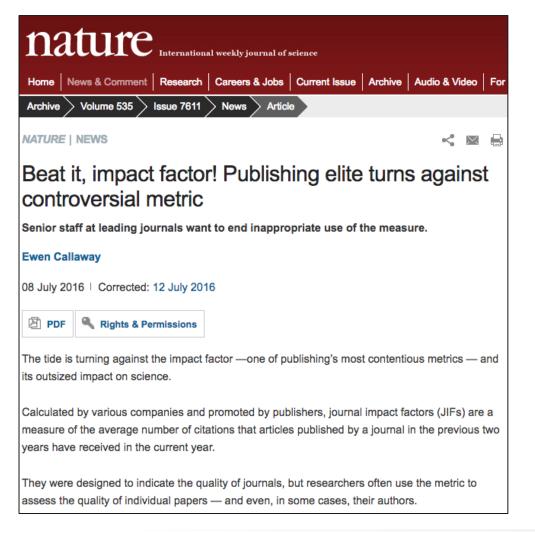
So many metrics!
(Fortunately I won't be covering all of them.)

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Is the Impact Factor dead?
Long Live the Impact Factor!

The journal-level metric is still relevant for the majority of authors and is still useful for collection development. Its dominance has been diminished, but newer metrics are mostly complementary. No metric is perfect!

For more info, click here to read the above *Nature* article.

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Facts: Research from Taiwan

- Taiwan spends 3.1% of its GDP on R&D (vs. 2.8% in U.S.A.)

- In 2015, Taiwan published 1.3% of global output

- Output growing at a rate of 1.5% per year since 2009

- 1.6% of world's citations and 1.5% of Wiley downloads in 2015

- 28% of output via international collaboration

- Engineering and Medicine dominate, followed by Computer Science, Physics and Materials Science

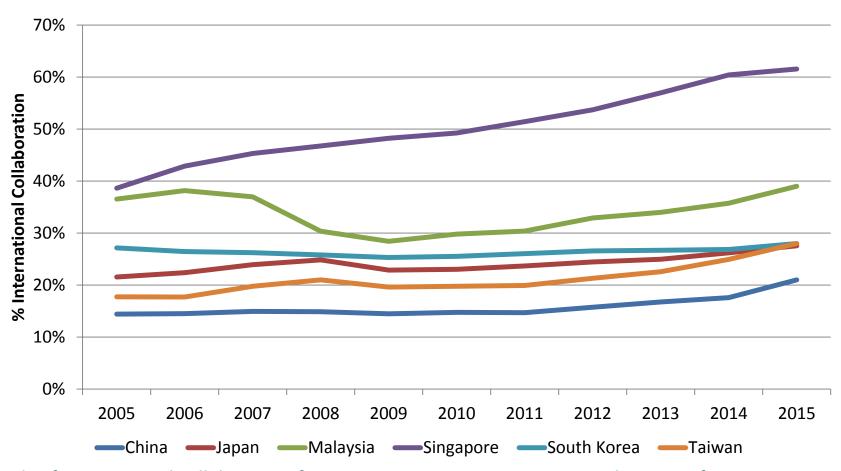- In 2015, over 17% of Taiwan's output was Open Access

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Estimated 2015 Papers Supported by Taiwanese Funders

Funder	2015 Papers
Ministry of Science and Technology, Taiwan	>7,000
National Science Council, Taiwan	>7,000
Ministry of Education, Taiwan	>1,000
National Taiwan University	>700
Academia Sinica	>700
China Medical University	>700
Taiwan Ministry of Health	>500

*Based on papers in Web of Science with a Taiwanese corresponding author. Data accessed 2nd August 2016.

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International Collaboration

Levels of international collaboration for Taiwan continue to increase, reaching 28% for 2015.

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ORCID provides a persistent digital identifier that uniquely distinguishes each researcher

AND

Through integration in key research workflows such as manuscript and grant submission, ORCID supports automated linkages between researchers, their professional activities and their institutions, ensuring that their work is appropriately attributed and discoverable

ORCID
Connecting Research and Researchers

With other identifiers, ORCID enables machine-readable connections with:

- works
- organizations
- person IDs

Repositories
DOI
URI
Thesis ID

Publishers
DOI
ISBN

Funders
FundRefID
GrantID

Higher Education and Employers
ISNI
Ringgold ID

Professional Associations
Member ID
Abstract ID

Other person identifiers
ISNI
Researcher ID
Scopus Author ID
Internal identifiers

iD
orcid.org

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Organizations

- ~520 members
- National Consortia: Australia, Taiwan, UK, Italy, Finland, Denmark, Germany, Holland
    - National Chengchi University
    - National Chiao Tung University
    - National Taiwan Normal University
    - National Taiwan University
    - National Yunlin University of Science and Technology
    - Tamkang University (independent)
    - National Cheng Kung University (independent)
- 270 live member integrations (70 more in progress)
    - Includes Search & Link for Crossref, DataCite, Europe PMC, MLA International Bibliography, Researcher ID, Scopus and more
    - Integrations in S1 & EM, ScienCV, Altmetric, Publons, and others

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Organizational responsibilities

- ***Publishers and Repositories:*** COLLECT iDs for authors, contributors, and reviewers; PUBLISH iD with work, POST paper, dataset, review IDs; RECEIVE updates

- ***Funders:*** COLLECT iDs at grant submission and review; PUBLISH with award; POST grant IDs researcher record; RECEIVE updates

- ***Universities:*** COLLECT iDs for new staff and students, at thesis submission, in faculty profile systems; POST affiliation IDs; RECEIVE updates

- ***Associations:*** COLLECT iDs for members, authors, and meeting participants; POST affiliation and presentation IDs; RECEIVE updates

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Key messages for researchers

- It's free!
- And quick/easy!
- Your 'forever' digital name
- Automated updates
- Enables recognition of your research outputs and includes many types of output
- Interoperable across multiple systems
- Increasingly being recommended/required

CRIS (Current Research Information Systems)
RIMS (Research Information Management Systems)

What do they do?

- Allow for a macro and micro view of current research capability and current research activity being undertaken by an institution.

- Brings together internal and external data.

- Used for reporting & evaluation, demonstrating expertise and assessments.

Examples: Pure, Converis, Symplectic Elements, PlumX

What is their scope?

- Pre-award (funding discovery, applications management)

- Post-award (funding awarded, projects, management process)

- People (Academic attributes, profiles, CV's, supervisions)

- Research outcomes (i.e. publications, press, patents, impact, research data)

- Professional activities and accolades (i.e. invited presentations, peer/editorial review, prizes or awards)

- Student (i.e. workflows for thesis deposit)

- Research assessment and compliance

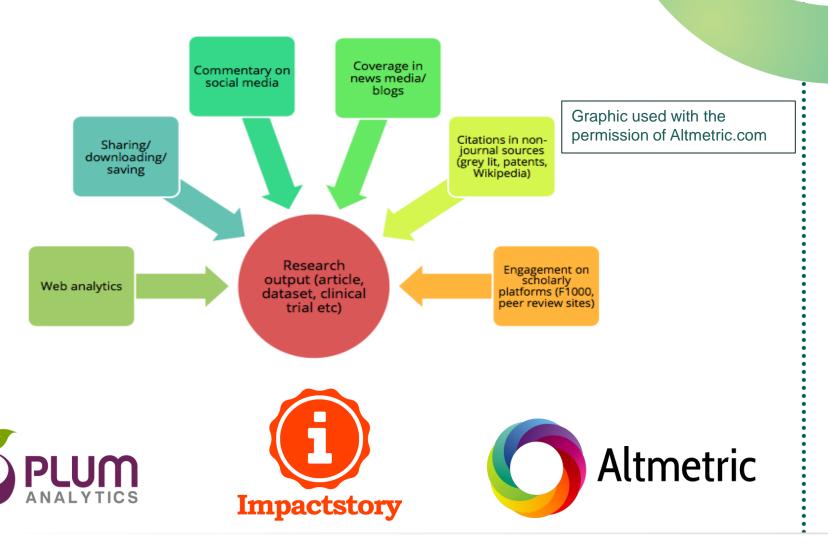- Management information (KPI, metrics, bibliometrics)

More Info: See the UKSG webinar by James Toon (Univ. of Edinburgh), from which the above material was adapted.

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Pure: A single source of truth for research data

- **Assure high quality, uniform research meta data** for reporting, evaluation and researcher profiles
- **Keep researchers' publication histories current** with automated scans of multiple online publication sources
- **Support administrative functions on campus** through advance analytics
- **Understand and Record Open Access within Pure** through the Sherpa RoMEO API
- **Showcase research strengths** to the world through the Pure Portal

Slide used with Elsevier's permission.

Altmetrics: Any indicator of online engagement with a research output

Graphic used with the permission of Altmetric.com

Altmetrics look across thousands of platforms

News outlets
- Over 1,300 sites and growing every day
- Manually curated list
- Text mining
- Global coverage

Academic blogs and social media
- Twitter, Facebook, Google+
- Public posts only
- Manually curated list
- Almost 10K academic/ field specific blogs

Post-publication peer review
- Publons
- PubPeer

Reference managers
- Mendeley, CiteULike
- Reader counts

Other sources
- Wikipedia
- YouTube
- Reddit
- F1000
- Pinterest
- Q&A
- Citations (coming in 2016)

Policy documents
- NICE Evidence
- Intergovernmental Panel on Climate Change
- Many more...

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What can librarians do with altmetrics?

1. Self-educate
   a) SPARC Article-Level Metrics Primer
   b) Indiana University's 17 Essential Altmetrics Resources (the Library Version)
   c) "Practical Guide to Altmetrics for Scholarly Communication Librarians" (from Altmetric.com)

1. Integrate altmetrics explanation and use cases into library outreach materials

2. Potentially integrate altmetrics into institutional repositories

What does Altmetric.com provide?

Tweeted by **3838**
Blogged by **24**
On **895** Facebook pages
Mentioned in **54** Google+ posts
Picked up by **28** news outlets
Reddited by **15**

5 readers on Mendeley
0 readers on CiteULike

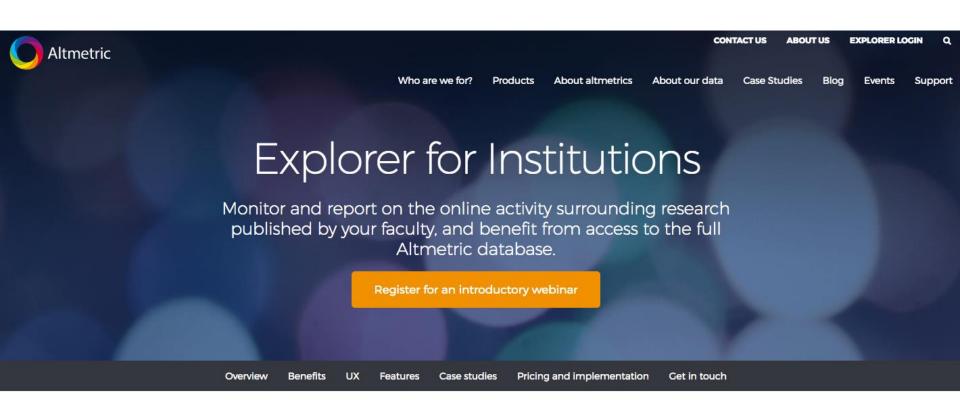See more details

Article or **output level engagement** metrics
- Altmetric badge or donut
- Free badges for academic IR's
- API for research

Aggregated metrics for outputs from a specific institution
- Explorer for Institutions
- Custom analytics, reporting, visualizations, and training

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Click image for more info

Altmetric Case Studies

Terrie Moffitt, PhD, Faculty at Duke and KCL

Nannerl O. Keohane University Professor, Duke University

Chair in Social Behaviour and Development, Kings College London

Terrie is best know for her pioneering research on the development of antisocial behavior and on gene-environment interactions in mental disorders.

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Altmetric Case Study #1

Monitor engagement around grant funded work via Duke's EFI license

Terrie's lab uses the institutional license to survey attention to specific papers

Use limited grant application space to report mention #s

NIH and Wellcome Trust program answers find data very interesting and welcome its inclusion

"The NIA program officer found this data really interesting and wanted to learn more. I shared the bookmarklet and explained what the data shows.

~Professor Moffitt

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Altmetric Case Study #2

Duke Dept of Psychology and Neuroscience evaluated every 10 years by external body

Reviewing everything from curricula to hiring practices to specialties of researchers to quality of campus facilities

Dept can respond to the evaluation with a self study

EFI aggregated mentions for all researchers and pubs across the dept for use in the response

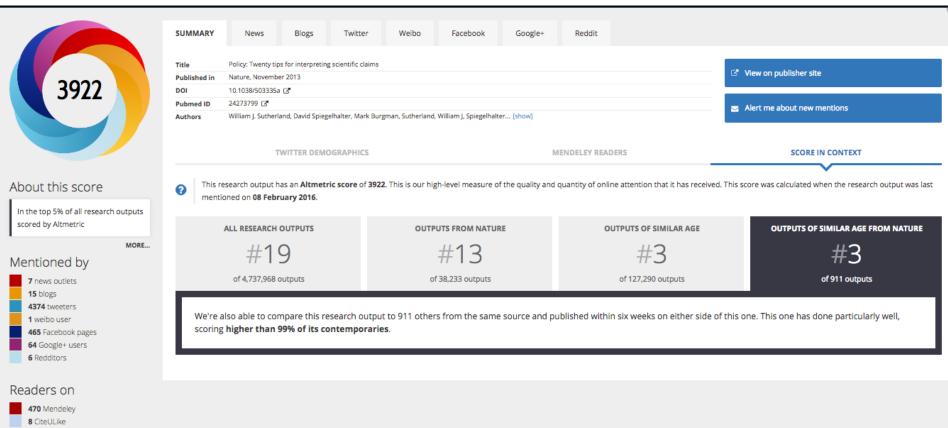> **"For young researchers, it's immediate feedback."**
> Otherwise they'd have to wait years for an H-index or citations.
>
> ~Professor Moffitt

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Altmetric Case Study #3

University of Melbourne author's paper published in *Nature* as a non-peer reviewed article…
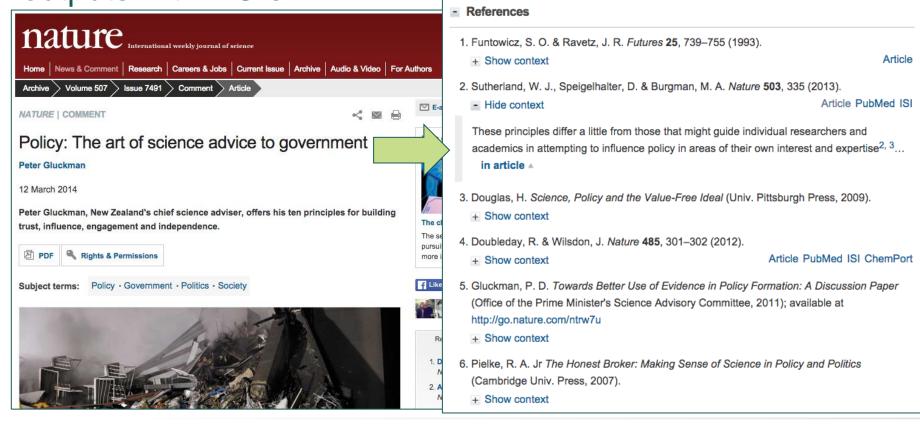
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Altmetric Case Study #3

But they found out about it a year too late since their tracking mechanisms were focused exclusively on peer reviewed outputs with DOIs.
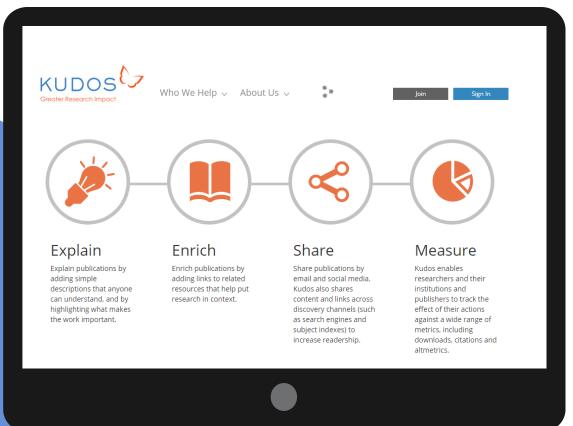
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Kudos

Helping authors explain, enrich, and share their articles for greater research impact

80%

of authors say that Kudos helped them achieve their goals of getting read, shared, and cited.

2015 Kudos survey

KUDOS
Greater Research Impact

Who We Help ⌄   About Us ⌄   Join   Sign In

Explain

Explain publications by adding simple descriptions that anyone can understand, and by highlighting what makes the work important.

Enrich

Enrich publications by adding links to related resources that help put research in context.

Share

Share publications by email and social media. Kudos also shares content and links across discovery channels (such as search engines and subject indexes) to increase readership.

Measure

Kudos enables researchers and their institutions and publishers to track the effect of their actions against a wide range of metrics, including downloads, citations and altmetrics.

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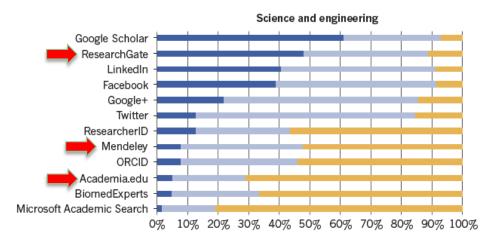# Impact metrics for research data?

- Over 2.5 million research outputs deposited on Figshare will now display Altmetric Badges.

- Jisc and figshare have been working to allow UK institutions using figshare as an institutional data repository to access accurate COUNTER-compliant download metrics

- Usage stats for research data (and other supplementary materials) being considered for COUNTER5 (2018 release)

- Making Data Count (MDC): project funded by the U.S. National Science Foundation (NSF) to design and develop metrics that track and measure data use – data-level metrics (DLM).
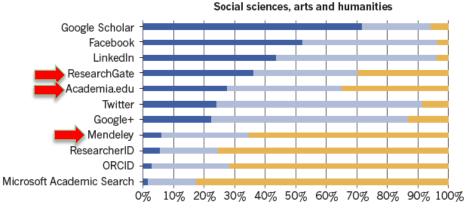
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Scholarly Collaboration Networks (especially ResearchGate)

REMARKABLE REACH

More than 3,000 scientists and engineers told Nature about their awareness of various giant social networks and research-profiling sites. Just under half said that they visit ResearchGate regularly. Another 480 respondents in the humanities, arts and social sciences were less keen on ResearchGate.

- I am aware of this site and visit regularly
- I am aware of this site but do not visit regularly
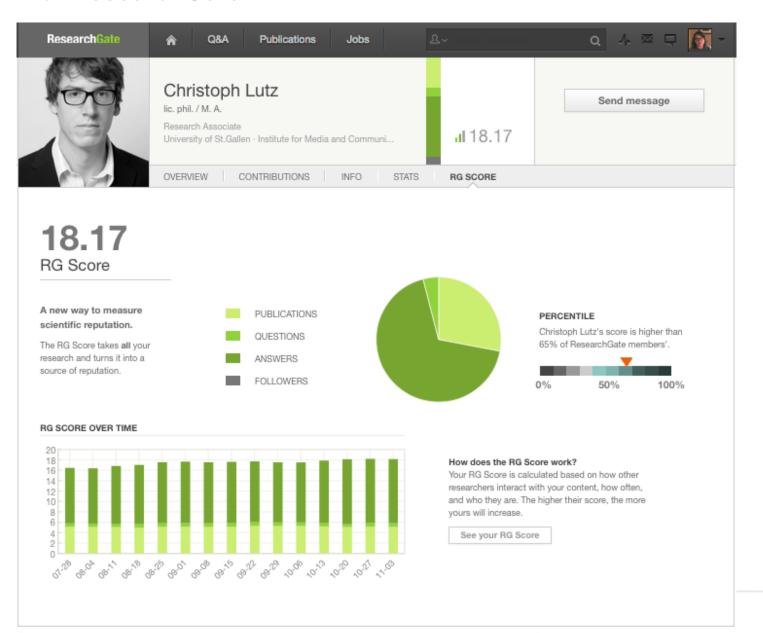- I am not aware of this site

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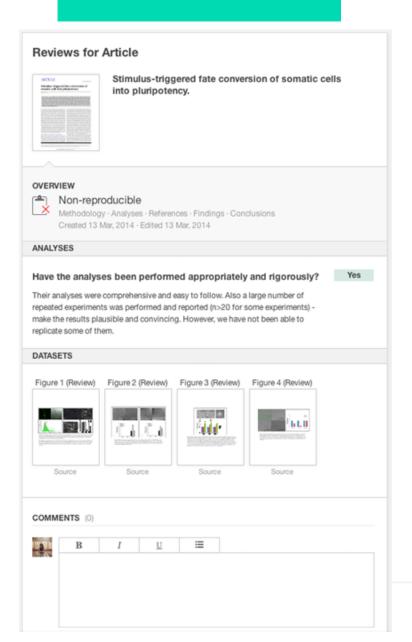# "RG Score": Meaningful, or just a clever way to drive usage of ResearchGate?

ResearchGate "Open Review"

"Open Review" encourages researchers to focus on one key question: Is this research reproducible? No metrics around "reproducibility" yet…

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Recommendations if you want to
learn more and do more:

1. Follow the links in my slides for more info
2. Promote ORCID adoption at your institution!
3. Pick a few key metrics/tools and start working with them
4. Keep a lookout for relevant conferences and events…most materials end up online
5. Create an impact metric guide for use by your institution's researchers
6. Revisit your library's scholarly impact metrics strategy…if you don't already, should you take a leadership role within your institution?
7. Take advantage of the power of CONCERT…not every institution needs to do it alone!