Supplementing traditional ways of measuring scholarly impact: The altmetrics way

Rajiv Nariani, Science Librarian
York University

ACRL 2017
yFile: YU’s Research highlights

Lassonde researcher is improving the precision of GPS data

Using software developed at Lassonde, York PhD student John Aggrey achieved a 22 per cent improvement in the positional accuracy of Global Navigation Satellite System (GNSS) receivers, a network that includes the GPS (United States).

Research led by York improves access to mental health care for immigrants

A team led by York University researcher Professor Farah Ahmad has developed a new interactive eHealth tool to facilitate the pre-consult assessment of mental health disorders for immigrants and refugees.

Collaborative research adds to greater understanding of amnesia
Safe exercise guidelines for Type 1 Diabetes developed by international team led by York U researcher

January 24, 2017

An international team of researchers and clinicians led by York University Professor Michael Riddell has published a set of guidelines to help people with type 1 diabetes exercise safely to avoid fluctuations in blood sugar.

"Regular exercise can help individuals with diabetes to achieve their blood lipid, body composition, fitness and blood sugar goals, but for people living with type 1 diabetes, the fear of hypoglycemia, loss of glycemic control and inadequate knowledge around exercise management are major barriers," said Riddell, in the Faculty of Health. "This is a big struggle for both type 1 diabetes patients and their healthcare providers. This first ever set of consensus guidelines from leading experts will help them."

Patients with type 1 diabetes have to monitor their blood glucose levels before, during and after exercise, said Riddell, who led the team of 21 international experts. For two years, they reviewed observational studies and clinical trials on exercise management for people with type 1 diabetes who exercise regularly, to reach a consensus.

The guidelines on glucose targets for safe and effective exercising as well as nutritional and insulin dose adjustments to prevent exercise-related fluctuations in blood sugar, appear in the report, "Exercise management in type 1 diabetes: a consensus statement," published in The Lancet Diabetes & Endocrinology. This work was funded by the JDRF, a leading global organization funding type 1 diabetes research.

The authors note that a majority of people with type 1 diabetes are now overweight or obese and tend to be at least as inactive as the rest of the population. A large percentage of patients do not maintain a healthy body weight nor do they achieve the minimum required moderate-to-vigorous aerobic activity (150 minutes per week). This is in contrast to a few decades ago when most patients with the disease were relatively slim and active.

"Regular exercise helps patients achieve a number of goals. In pediatric patients, in particular, it reduces the cardiovascular..."
When you can be all over the globe!!

Altmetric Attention Score (AAS): 592
Google Scholar Citations (it will increase!): 3
Exercise management in type 1 diabetes: a consensus statement

Overview of attention for article published in The Lancet Diabetes & Endocrinology, January 2017

This research output has an Altmetric Attention Score of 592. This is our high-level measure of the quality and quantity of online attention that it has received. This Attention Score, as well as the ranking and number of research outputs shown below, was calculated when the research output was last mentioned on 15 March 2017.

Altmetric has tracked 7,402,082 research outputs across all sources so far. Compared to these this one has done particularly well and is in the top 5% of all research outputs ever tracked by Altmetric.
Thank you both! Without such great work to promote, we couldn't have garnered great results :) Have the good work coming!

Regards

Sent from my iPhone. I apologize for any TiPOS

On Jan 25, 2017, at 2:16 PM, wrote:

Awesome news!!! Great work, team!

From:
Sent: Wednesday, January 25, 2017 1:31 PM
To: 
Subject: lots of hits

According to our amazing science librarian Rajiv, we are among the top 5% of all research outputs scored by Altmetric (43 news outlets, 94 tweeters)

This score is already similar to the ADA diabetes exercise guidelines published last year.
Great work

--

Professor and Graduate Program Director
School of Kinesiology and Health Science
Muscle Health Research Centre
York University
Toronto, On
Canada M3J 1P3
Senior Scientist
LMC Diabetes & Manna Research

Getting Pumped- An Insulin Pump Guide for Active Individuals with Type 1 Diabetes
available at:
www.medtronicdiabetes.ca/gettingpumped
### Altmetric Explorer: Basic Version

#### Articles mentioned at least once in the past 3m

<table>
<thead>
<tr>
<th>Pick new articles:</th>
<th>Articles</th>
<th>Activity</th>
<th>Journals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mentioned in the past</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1 day</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 3 days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1 week</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1 month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 3 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 6 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1 year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Any time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>With keyword</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>In these journals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>With identifiers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>With ORCID</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>From publisher</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>With Medline subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>With subjects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Matching PubMed query</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No PubMed query run yet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetch PubMed results</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Altmetric score of 2813**

- Picked up by 287 news outlet(s)
- Blogged by 15
- Tweeted by 747
- On 17 Facebook page(s)
- Mentioned in 1 Google+ post(s)
- Redited by 1
- On 3 video(s)
- 96 readers on Mendeley
- 0 readers on Connotea
- 0 readers on CiteULike

Click for more details

- The irreversible momentum of clean energy
  *Science*
- When Facts Backfire
  *Scientific American*
- Repealing the ACA without a Replacement — The Risks to American Health Care
  *New England Journal of Medicine*
- How Diversity Works
  *Scientific American*
- Gender stereotypes about intellectual ability emerge early and influence children's interests
  *Science*
- Comparison of Hospital Mortality and Readmission Rates for Medicare Patients Treated by Male vs Female Physicians
  *JAMA Internal Medicine*
- Three minutes with Hans Rosling will change your mind about the world
  *Nature*
- Evidence for early life in Earth's oldest hydrothermal vent systems
  *Nature*
- Efficacy and effectiveness of an rVSV-vectored vaccine in preventing Ebola virus disease: final results from the Guinea ring vaccination, open-label, cluster-randomised trial (Ebola Ça Suffit!)
- Future life expectancy in 35 industrialised countries: projections with a Bayesian model ensemble
  *The Lancet*
- Seven temperate terrestrial planets around the nearby ultracool dwarf star TRAPPIST-1
  *Nature*
- Living near major roads and the incidence of dementia, Parkinson's disease, and
  *Nature*
High AAS from YU: Score in Colourful Doughnut
(Google Scholar Citations in Red)
Data needs to be seen in a different way...
2016-15: Google Scholar/AAS/News Outlets

BAR COLOURS
- Red: Subscription journal/Not OA
- Green: Open Access
- Blue: Open PMC
- Light Green: Open (YorkSpace)
- Purple: Open (Research Gate)
Tableau: For Visualizing the results

Individual articles/Scores (2014-13)
Red: Subscription journal/Not OA; Green: Open Access; Blue: Open PMC
Light Green: Open (YorkSpace); Purple: Open (Research Gate)
<table>
<thead>
<tr>
<th>Year</th>
<th>Select Hot Topics (based on AAS)</th>
<th>Select Top Journals (how many times published in that Journal – in brackets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-2013</td>
<td>Vision Research; Jellification of Lakes; Forest- Fish Growth; Bilingualism; Autism; Honeybees; Concussions, Text Messaging &amp; Vodka; Brain-Personality Behaviour; Cardiac Rehab; Antihydrogen, Exercise-Health</td>
<td>Plos One (7), PNAS, BMJ, Biol Letters, Nature Communications, Cerebral Cortex, Personality &amp; Pschol. Bulletin</td>
</tr>
<tr>
<td>2012-2011</td>
<td>Pain management; Boredom Unengaged mind; Charles Darwin; Narcissism-Self Esteem-Facebook; Food Addiction-Obesity; Bilingualism and Brain</td>
<td>Cognitive Science, Appetite, Notes of the Royal Soc., Cyber Psychol. Behaviour &amp; Social Networking</td>
</tr>
</tbody>
</table>
2016-15: Hot Topics

- Climate change: 2,800
- Health policy: 371
- Autism: 270
- Birds: 478
- Honey bees: 1,173
- ADHD: 317
- Athletics-sports: 115
- Attention: 67
- Concussion: 37
- Media coverage: 7

Topics:
- ADHD
- Ageing
- Antihydrogen
- Athletes-sports
- Attention
- Autism
- Birds
- Butterfly/pesticides
- Cancer
- Cardiac rehab
- Climate change
- Concussion
- Diabetes-obesity
- Fish physiol
- Health policy
- Honey bees
- Media coverage
- Motor-vehicle collisions
- Neuroscience
- Pain management
- Planets
- Sound physiol.
- Vaccination
- Zika virus
Dear Faculty Members,

Traditional impact indicators, known as bibliometrics, are commonly based on the number of publications, citation counts and peer reviews of a researcher or journal or institution. Altmetrics is the creation and study of new metrics based on social web activity for analyzing and informing scholarship. Altmetrics is an innovative way to measure impact and engagement with research output and metrics that are alternative to the established citation counts and usage stats—and/or metrics about research outputs.

Data that contributes to Altmetrics Attention Score (the colourful donut) is tracked by the company AAltmetric and includes traditional media (New York Times, The Globe and Mail among others), science specific (New Scientist, Scientific American and likewise), Mendeley saves, Wikipedia references, F1000, Blog mentions and Twitter links and posts among others. I have included the Altmetric Attention Score (AAS) for your article in the e-mail.

I am exploring the societal impacts of York University’s published research. I am particularly interested in the coverage of YU Research in News media, Policy documents, and as Wikipedia references. All these mentions contribute to the Altmetric Attention Score in a weighted manner.

Your article has a very high Altmetric Attention Score, and I thought I’d let you know about the same. I would also like your input about research metrics through this short online survey.

5. I actively promote my research through

[ ] Twitter
[ ] Facebook
[ ] Mendeley
[ ] My Google Scholar profile
[ ] University web page/website
[ ] I do not use any social media tools
[ ] Other (please specify)

6. Were you aware of the Altmetrics Attention Score for your article(s) (prior to the Librarian’s e-mail)

[ ] Yes
[ ] No
[ ] Comments (please specify)

7. Is your article(s) [with high Altmetric Attention Score(s)] Open Access?

[ ] Yes
[ ] No
[ ] I don’t know
[ ] Other (please specify)

8. I would be interested in knowing more about these research impact metrics

- Citation Count (# of citations accrued since publication)
- Journal Impact Factor (citations in a year to documents published in previous 2 years/no. of citable items in previous 2 years)
- H-Index (# of articles in the collection (h) that have received at least (h) citations over the period)
- Social Activity Online (# of mentions on micro-blogging sites)
- News media mentions (# of mentions in mass or popular media)
- Altmetrics & Altmetric Attention Score
- Others (please specify)

9. How important are the following statistics for your article(s)

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Very Important</th>
<th>Important</th>
<th>Not Important</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Citation count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentions in News Media</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook posts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twitter mentions and posts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mendeley readers &amp; downloads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downloads by readers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentions in Policy documents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentions in Wikipedia references</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mentions in F1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How important do you think are Altmetrics/alternative metrics for career advancement

<table>
<thead>
<tr>
<th>Metric</th>
<th>Very Important</th>
<th>Important</th>
<th>Not Important</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure &amp; Promotion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant Applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Faculty Responses: General Awareness of Metrics

- Impact Factor of the journal (journal level metrics): 33
- H-index (author level metrics): 28
- Citations to article (article level metrics): 31
- Papers: 29
- Alternative metrics (Altmetrics): 29
- Google Scholar (H-index, GS citations): 19
- Scimago Journal & Country Rank: 29
- Scopus: 1
- Web of Science: 1
- None of the above: 1
- Other (please specify): 1
I promote my research through……

- Twitter: 13
- Facebook: 3
- Mendeley: 0
- My Google Scholar profile: 14
- University web page/website: 16
- I do not use any social media tools: 8
- Other (please specify): 10

ResearchGate
Were you aware: You are famous!!

Were you aware of the Altmetrics Attention Score for your article(s) (prior to the Librarian's e-mail)

Yes: 11
No: 24
After knowing about AAS: \textbf{Importance of statistics}
I would be interested in knowing more about these research impact metrics.
Altmetrics and Career Advancement

How important do you think are Altmetrics/alternative metrics for career advancement (One skipped)

- **Grant Applications**
  - Not Important: 13
  - Important: 11
  - Very Important: 8
  - N/A: 2

- **Tenure & Promotion**
  - Not Important: 13
  - Important: 10
  - Very Important: 7
  - N/A: 4

*York University*
I learned a lot - good luck with this research :)!
3/7/2017 11:50 AM    View respondent's answers    Categorize as... ▼

I am gratified that efforts are being made to develop this tool to quantify the impact of research. The h-index can be very misleading.
1/23/2017 6:05 PM    View respondent's answers    Categorize as... ▼

Interesting, important and contentious topic to explore...the landscape is changing quickly too which makes it hard for academics
1/10/2017 4:01 PM    View respondent's answers    Categorize as... ▼

I appreciate that the librarians teach us how us faculty can determine the impact of our work in these traditional and non-traditional ways

I like the idea, but it should be used carefully. Tweets and FB posts can be done by the general public without a scientific background and it can be amplified as a hype ("get viral") without real scientific relevance.
3/7/2017 1:00 PM    View respondent's answers    Categorize as... ▼

I am thinking of writing a book for a popular audience about my research and when approaching agents I have been asked about my social media following - not surprisingly as an academic I do not have a social media following - don't have the time or interest to develop such a following. I understand though why an agent / publisher would ask about such a thing.
I wonder if something like altmetrics could serve as an alternative indicator of the interest and reach of my work to help sell a book proposal? Do you have any ideas about the kind of alternative metrics that could be assembled to help me in this regard. For example can altmetrics generate a score for a researcher not just an individual paper?

As you can see I don't really pay any attention to it. Sorry, I'm probably just too old!
12/27/2016 1:34 PM    View respondent's answers    Categorize as... ▼
• Capturing impact besides citations
• Junior and tenured faculty want to know about AAS and news media mentions
• Use in our teaching and learning
Thank you to all of You for attending!!

&

Thank you to York University for providing monetary assistance for part of the travel – SSHRC Conference Opportunity Grant