New systems for measuring research impact

Nader Ale Ebrahim
New systems for measuring research impact

Nader Ale Ebrahim, PhD
Visiting Research Fellow
Research Support Unit
Centre for Research Services
Research Management & Innovation Complex
University of Malaya, Kuala Lumpur, Malaysia

aleebrahim@um.edu.my
@aleebrahim
www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

11th May 2016
3rd SERIES OF INTRODUCTORY WORKSHOP ON:

**Strategies to Enhance Research Visibility, Impact & Citations**

Nader Ale Ebrahim, PhD

---------------------------------------------
Research Support Unit
Centre for Research Services
Research Management & Innovation Complex
University of Malaya, Kuala Lumpur, Malaysia
www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

All of my presentations are available online at:
https://figshare.com/authors/Nader_Ale_Ebrahim/100797
Link to this presentation: https://dx.doi.org/10.6084/m9.figshare.3364240.v1

Read more:
Abstract

**Abstract:** The reach of a publication can no longer be judged exclusively by the number of times it is cited. Because, we are now in the digital and sharing information age, academic conversations are as likely to be found on various academic social networks. So, we need new tools to measure the research impact. Altmetrics are new metrics proposed as alternatives to Impact Factor for journals and personal citation indexes like h-index. Altmetrics attempts to use the online activity to measure impact, buzz, word of mouth for scientific information and it includes new ways to measure usage at the citation level. In this workshop, I will explain about the application of "alternative metrics" tools such as: Altmetric.com, Impactstory.org, Plumanalytics.com, and PLoS metrics.

**Keywords:** Altmetric, H-index, Improve citations, Research tools, Bibliometrics, Research Visibility
Research Tools Mind Map

(1) Searching the literature
(2) Writing a paper
(3) Targeting suitable journals
(4) Enhancing visibility and impact

Virtual Teams will become as important as...
ON CAMPUS

Citations & Tweets: Tech-Savvy Research Impact Measurements

By Erica Bogese
October 30, 2015

It used to be that scholars shared their research primarily at academic conferences/symposiums or in academic journals/books. But now in the digital age, academic conversations are as likely to be found on Twitter or Facebook.
Informetrics, scientometrics, bibliometrics, webometrics, cybermetrics, and altmetrics

Bibliographies – largely references

Whole Internet, cyberspace

Bibliometrics

Cybermetrics

Altmetrics

Webometrics

Scientometrics

Science of Science

Web presence, visibility and impact – links, pages, documents

Alternative metrics – views, downloads, web citations, etc


©2016-2017 Nader Ale Ebrahim
What it’s like being a researcher

WILL IT HAVE ANY IMPACT?

Source: http://altmetrics.org/manifesto/
Problems with citation-based indicators

Problem 1: *Time*
Problem 2: *Journals*
Problem 3: *Impact*

Science IMPACT ON:

IMPACT ON:

Economy
Science
Environment
Education
Culture
Society

Altmetrics

Created by researchers

Created by the public

Altmetrics

Created by researchers

Indicating future scientific impact?

Indicating other types of impact, such as societal impact?

How is the Altmetric score calculated?

The score is a weighted count

The score is derived from an automated algorithm, and represents a weighted count of the amount of attention we've picked up for a research output. Why is it weighted? To reflect the relative reach of each type of source. It's easy to imagine that the average newspaper story is more likely to bring attention to the research output than the average tweet. This is reflected in the default weightings:

<table>
<thead>
<tr>
<th>Source</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>News</td>
<td>8</td>
</tr>
<tr>
<td>Blogs</td>
<td>5</td>
</tr>
<tr>
<td>Twitter</td>
<td>1</td>
</tr>
<tr>
<td>Facebook</td>
<td>0.25</td>
</tr>
<tr>
<td>Sina Weibo</td>
<td>1</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>3</td>
</tr>
<tr>
<td>Policy Documents (per source)</td>
<td>3</td>
</tr>
<tr>
<td>Q&amp;A</td>
<td>0.25</td>
</tr>
<tr>
<td>F1000/Publons/Pubpeer</td>
<td>1</td>
</tr>
<tr>
<td>YouTube</td>
<td>0.25</td>
</tr>
<tr>
<td>Reddit/Pinterest</td>
<td>0.25</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: https://help.altmetric.com/support/solutions/articles/6000060969-how-is-the-altmetric-score-calculated-
Altmetrics Tools

- Altmetric.com
- Impactstory.org
- Plumanalytics.com
- PLoS Article-Level Metrics
- Usage Count (webofknowledge.com)
- Bookmetrix (http://www.bookmetrix.com)
- Article Metrics in Scopus

©2016-2017 Nader Ale Ebrahim
Altmetrics are new metrics proposed as alternatives to Impact Factor for journals and personal citation indexes like h-index. The term "article level metrics" was first put forward in 2010, but altmetrics (derived from "alternative metrics") became prevalent as it better suggested a range of new metrics. Altmetrics can be applied not only to articles but also to people, journals, books, data sets, web pages, etc. Many aspects of the impact of a work (such as article views, downloads, mentions in social media and new services) can be measured, as well as traditional citation counts.

Source: [http://www.swansea.ac.uk/iss/researchsupport/metrics/altmetrics/](http://www.swansea.ac.uk/iss/researchsupport/metrics/altmetrics/)
On Friday, June 27, 2014 6:07 PM, The Impactstory team <team@impactstory.org> wrote:

Your new research impacts this week

Dr. Nader Ale Ebrahim impactstory.org/aleebrahim

1000+ SlideShare views
on Effective virtual teams
This slides attracted 73 new SlideShare views this week, bringing it up to 1003 total. It marks your 8th product to get this many views on SlideShare. Nice work!
Enhancing Research Visibility and Improving Citations: Publication Marketing Tools
Mpws publication marketing tools by nader ale ebrahim 2013


©2016-2017  Nader Ale Ebrahim

7000+ SlideShare views

on Enhancing Research Visibility and Improving Citations: Publication Marketing Tools
Mpws publication marketing tools by nader ale ebrahim 2013

This slides attracted 394 new SlideShare views this week, bringing it up to 7030 total.

It marks your 1st product to get this many views on SlideShare. Nice work!
Antony Williams
Connections in Chemistry

LinkedIn, ScientistDB, ChemConnector Blog, Twitter, about.me, Google Scholar, Microsoft Academic Search, Impact Story, Wikipedia, SlideShare, YouTube, Mendeley, Proskore, ResearchGate, Amazon.com, Vizify, visualize.me, Pinterest, ORCID, Vimeo

Researcher from:
Sample Profiles / Royal Society of Chemistry

My passion is connecting people to chemistry. Over the past decade I held many jobs and responsibilities including the direction of the development of scientific software applications for spectroscopy and general chemistry, directing marketing efforts, sales and business development collaborations for the company. I have almost... + More
PlumX Metrics

**Analyze**

You can aggregate metrics at any level to help you understand what is happening with your grant-funded research. For example, you can see output and metrics by:

- Researcher
- Grant
- Department
- Journal

**Metrics by publication year**

In this example, it is apparent that citations (red bars) are a lagging indicator; there are substantially fewer citations in the recent years, especially 2013 and 2014. The other categories of metrics help you see what has been going on recently.
At PLOS, we believe that research articles should primarily be judged on their individual merits, rather than on the basis of the journal in which they were published. In March 2009, we inaugurated a program to provide Article-Level Metrics (ALM) on every article across all journals. Article-Level Metrics (ALMs) capture the manifold ways in which research is disseminated and can help users determine the value of an article to them and to their scientific community. The regularly updated data include the following metrics:

**Viewed**
- PLOS Journals (HTML, PDF, XML)
- PubMed Central (HTML, PDF)
- Figshare (HTML, Downloads, Likes)

**Saved**
- Mendeley
- CiteULike

**Discussed**
- Twitter
- Facebook
- Reddit
- Wikipedia
- PLOS Comments
- ResearchBlogging
- ScienceSeeker
- Nature Blogs
- Wordpress.com

**Recommended**
- F1000Prime

**Cited**
- CrossRef
- Scopus
- Web of Science
- PubMed Central
- PMC Europe
- PMC Europe Database Links

Usage Count

Results: 711
(from Web of Science Core Collection)

You searched for: TITLE: (virtual teams) ...More

Create Alert

Refine Results

Search within results for...

Web of Science Categories

| MANAGEMENT (241) |

Search

Sort by:

- Usage Count -- Since 2013
- Publication Date -- newest to oldest
- Publication Date -- oldest to newest
- Recently Added
- Times Cited -- highest to lowest
- Times Cited -- lowest to highest
- Usage Count -- Last 180 days

Full Text from Publisher
View Abstract

< | Page 1 | of 7 |

COMMUNICATION AND TRUST IN GLOBAL VIRTUAL TEAMS

By: Jarvenpaa, SL; Leidner, DE

MANAGEMENT LEARNING
Volume: 42 Issue: 4 Special Issue: SI Pages: 395-418 Published: SEP 2011

Times Cited: 233

©2016-2017 Nader Ale Ebrahim
Elsevier journals
Top downloaded OA articles

ELSEVIER

Open Access
Here you'll find the most-downloaded Open Access Articles for Elsevier's journals.

- Agriculture Sciences
  - Agriculture Science General
  - Forest Science
  - Plant Science
  - Soil Science
- Aquatic Sciences
  - Marine and Freshwater Biology
  - Oceanography
  - Water Resources
- Chemistry
  - Analytical Chemistry
  - Colloids
  - Electrochemistry
  - Inorganic Chemistry
  - Organic Chemistry
  - Physical and Theoretical Chemistry
  - Spectroscopy
- Computer Science
  - Artificial Intelligence
  - Computer Science for Engineering
  - Microelectronics and Hardware

©2016-2017 Nader Ale Ebrahim
A Risk Diagnosing Methodology Web-Based Platform for Micro, Small and Medium Businesses: Remarks and Enhancements

Authors: Luís Pereira, Alexandra Tenera, João Bispo, João Wemans
DOI: 10.1007/978-3-662-46549-3_22

This chapter has been downloaded a total of 54 times.
Article Metrics in Scopus

Scopus

<table>
<thead>
<tr>
<th>Search</th>
<th>Alerts</th>
<th>My list</th>
</tr>
</thead>
</table>

Metric details

Effective strategies for increasing citation frequency  
Ebrahim N.A., Salahi H., Embi M.A., Tanha F.H., Ordí A.  

<table>
<thead>
<tr>
<th>Overview</th>
<th>Citations</th>
<th>Scholarly Activity</th>
<th>Social Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overview

Citation Count 8
Cited by in Scopus

Field-Weighted Citation Impact 5.01

Citation Benchmarking 97th percentile
Compared to Social Sciences (all) articles of the same age and document type

Mendeley
74 Readers

Twitter
10 Tweets

Engagement highlights

Scholarly Activity - 74 readers from 1 source
Social Activity - 10 mentions from 1 source

©2016-2017 Nader Ale Ebrahim
Introduction to altmetrics and Altmetric

Nader Ale Ebrahim, PhD
Visiting Research Fellow
Research Support Unit
Centre for Research Services
Research Management & Innovation Complex
University of Malaya, Kuala Lumpur, Malaysia

aleebrahim@um.edu.my
@aleebrahim
altmetric.com
Our Ambassador of the Month for September is Nader Ale Ebrahim, a visiting research fellow at the University of Malaya. He has run over 100 workshops for researchers in Malaysia, and is considered an authority on research promotion practices and metrics tools. Learn more about what Nader has done so far as an Altmetric Ambassador on our blog.
In this session, we’ll cover...

1. Introduction to altmetrics
2. Altmetric tools
3. Altmetrics use cases
4. Examples of using altmetrics data
5. Questions?

©2016-2017 Nader Ale Ebrahim
Part 1: Introduction to Altmetrics
What are altmetrics?

- Attention to research outputs in non-traditional sources, e.g. policy documents, news, blogs and social media
- *Indicators* of research impact
- Help understand how research is being received and used
- Complementary to traditional citation-based analysis

**ACADEMIC ATTENTION**

- Journal Impact Factor
- Citation counts
- H-index
- Number of publications

**BROADER ATTENTION**

- Mentions in news reports
- References in policy
- Mentions in social media
- Wikipedia citations
- Reference manager readers… etc.

Alternative metrics “altmetrics”

Traditional bibliometrics

©2016-2017 Nader Ale Ebrahim
Why altmetrics?

- Provide a more coherent understanding of research attention
- Understand the broader reach and *early* impact of research
- Track attention to a broad range of research outputs, including articles, posters, data sets and working papers, etc.
- Help researchers get credit for impact activities
Advantages of metrics for single research outputs

1. Real-time, immediate feedback on attention to scholarly content
2. Useful for early career researchers whose work may not have accrued citations
3. Showcase attention to a research output beyond academia
4. Not biased by an over-arching metric
Altmetric in numbers: mentions and shares

Each day, we track ~44,000 new mentions of research across sources incl. social media, news, and policy docs. That's 1 mention every 2 seconds!

Each week, ~50k unique items are shared.

Mentions range in complexity, from quick shares to comprehensive reviews.

18m mentions of ~3.7m scholarly outputs

Altmetric data, March 2015
What sources does Altmetric track?

**News outlets**
- Over 1,300 sites
- Manually curated list
- Text mining
- Global coverage

**Social media and blogs**
- Twitter, Facebook, Google+, Sina Weibo
- Public posts only
- Manually curated list

**Post-publication peer review**
- Publons
- PubPeer

**Reference managers**
- Mendeley, CiteULike
- Reader counts
- *Don’t count towards the Altmetric score*

**Other sources**
- Wikipedia
- YouTube
- Reddit
- F1000
- Pinterest
- Q&A

**Policy documents**
- NICE Evidence
- Intergovernmental Panel on Climate Change
- Many more…
How does Altmetric collect online attention?

**Collecting attention data**

- Follow a list of sources.
- Search for links to papers.

**Reporting attention data**

- Collate attention.
- Display data in "Altmetric details pages".
- Disambiguation of mentioned items across different versions.

All research outputs with mentions have an Altmetric Details Page in our database.
Part 2: Altmetric Tools
The Altmetric Bookmarklet

The free Bookmarklet lets you instantly retrieve altmetrics data for any article.

To install, go to: http://altmetric.it
A Comprehensive Comparison of Educational Growth within Four Different Developing Countries between 1990 and 2012

Masoud Shakiba, Nader Ale Ebrahim, Mahmoud Danaee, Kaveh Bakhtiyari, Elankovan Sundararajan

Resumo
Deep impact: unintended consequences of journal rank

Björn Brembs¹, Katherine Button² and Marcus Munafò³

¹ Institute of Zoology–Neurogenetics, University of Regensburg, Regensburg, Germany
² School of Social and Community Medicine, University of Bristol, Bristol, UK
³ UK Centre for Tobacco Control Studies and School of Experimental Psychology, University of Bristol, Bristol, UK

Most researchers acknowledge an intrinsic hierarchy in the scholarly journals (“journal rank”) that they submit their work to, and adjust not only their submission but also their reading strategies accordingly. On the other hand, much has been written about the negative effects of institutionalizing journal rank as an impact measure. So far, contributions to the debate concerning the limitations of journal rank as a scientific impact assessment tool have either lacked data, or relied on only a few studies. In this review, we present the most recent and pertinent data on the consequences of our current scholarly communication system with
Major trends in knowledge management research: a bibliometric study

Peyman Akhavan, Nader Ale Ebrahim, Mehdieh A. Fetrai, Amir Pezeshkan

©2016-2017 Nader Ale Ebrahim
Altmetric Details Pages

1. See all the conversations and mentions.
2. Monitor mentions in the mainstream news.
3. Estimate attention with the “Altmetric score”.


Overview of attention for article published in The Lancet (British Edition), May 2014

So far, Altmetric has seen 108 news stories from 68 outlets.

1. This map shows you're more likely to find obese people in Pakistan or Afghanistan than India
   Scroll.in, 23 Apr 2015
   And yet, India is the third-most obese country on earth, the first two being US and China.

2. 'One-size-fits-all' on obesity opposed
   BBC News, 17 Apr 2015
   Doctors need to move beyond 'one-size-fits-all' approach to tackling obesity, say scientists in Sheffield.

3. An American Plate That Is Palatable for Human and Planetary Health
   Huffington Post, 26 Mar 2015
   What we eat determines our health. It also decides the health of our planet. In the newly proposed Dietary Guidelines, the US...

4. Cook Rice Differently To Reduce Its Calories
   Popular Science, 25 Mar 2015
   Rice, the base for cuisines all over the world, contains a lot of starch. That makes it delicious but also high in calories.

5. Could fining parents cut childhood obesity?
   BBC News, 13 Feb 2015
   Should parents of obese children be punished?

6. Unverändert hoher Handlungsbedarf
   Diabetes Online, 02 Feb 2015

©2016-2017 Nader Ale Ebrahim
What is the Altmetric donut?

The Altmetric donut visualizes which are sources discussing an item.

In the Altmetric Explorer, hover the cursor over the donut visualization to see the appropriate legend for an item.

Each source is colour coded:

The Colours of the Donut

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

©2016-2017 Nader Ale Ebrahim
What is the Altmetric score of attention?

The Altmetric score provides an indicator of the attention surrounding a research output.

It represents a weighted approximation of all the attention we’ve picked up for a research output and is calculated according to three facets:

<table>
<thead>
<tr>
<th>Volume</th>
<th>Sources</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>The score for an article rises as more people mention it.</td>
<td>Each source category contributes a different base amount to the final score.</td>
<td>How often the author of each mention talks about scholarly articles influences the contribution of the mention.</td>
</tr>
</tbody>
</table>

Read more about the score here: [altmetric.com/blog/scoreanddonut/](http://altmetric.com/blog/scoreanddonut/)
What can the data tell you?

- What type of attention is this research receiving?
- Where has this article received the most traction?
- Which countries are engaging most with the content?
- Has this article influenced policy, spurred new research, or engaged a new audience?
- Are reactions to this article positive or negative?
Remember that the numbers don’t tell you...

- Quality of the paper
- Quality of the researchers
- Whole story
Part 3:
Altmetrics Use Cases
Uncover conversations about your research

Set up email alerts for your output in the Summary tab.
Cochrane Library paper investigated use of probiotics to treat eczema: There is not enough evidence to recommend using probiotics for the treatment of eczema.

The paper has a relatively low score of attention but received mentions across policy documents and Wikipedia:

- Royal College of Paediatrics and Child Health - Allergy Care Pathways for Children: core competency for health professionals treating children with eczema.
The University of Pittsburgh has embedded PlumX widgets in their D-Scholarship institutional repository. You can see metrics across their institution at Plu.mX/Pitt. They have also built profiles for researchers across a variety of disciplines. Some sample profiles:

Peter Brusilovsky
Rebecca Crowley
Michael Pinsky
A Comparison between Two Main Academic Literature Collections: Web of Science and Scopus Databases

The Altmetric score is one measure of the quality and quantity of online attention that this article has received. You can read about how Altmetric scores are calculated here.

This article scored 3.75

The context below was calculated when this article was last mentioned on 13th May 2013

Compared to all articles in Asian Social Science

So far Altmetric has tracked 29 articles from this journal. They typically receive a little less attention than average, with a mean score of 1.0 vs the global average of 4.2. This article scored the same or higher as 28 of them. Its actually the highest scoring article in this journal that we've seen so far.

All articles of a similar age

Older articles will score higher simply because they've had more time to accumulate mentions. To account for age we can compare this score to the 73,149 tracked articles that were published within six weeks on either side of this one in any journal. This article has done well, scoring higher than 78% of its contemporaries.

All articles

More generally, Altmetric has tracked 1,645,693 articles across all journals so far. Compared to these this article has done well and is in the 79th percentile. It's in the top 25% of all articles ever tracked by Altmetric.
Genome Engineering of *Drosophila* with the CRISPR RNA-Guided Cas9 Nuclease

Scott J. Gratz*, Alexander M. Cummings†, Jennifer N. Nguyen*, Danielle C. Hammi*, Laura K. Donohue*, Melissa M. Harrison*,**,1, Jill Wildonger*, and Kate M. O’Connor-Giles*,***

**Author Affiliations**

*Corresponding authors: 5204B Biochemical Sciences Bldg., 440 Henry Mall, Madison WI 53706. E-mail: mharson@wisc.edu; 2204B Biochemical Sciences Bldg., 440 Henry Mall, Madison, WI 53706. E-mail: wildonger@wisc.edu; 227D Robert M. Bock Labs, 1825 Linden Dr., Madison, WI 53706. E-mail: oconnorgiles@wisc.edu

**Abstract**

We have adapted a bacterial CRISPR RNA/Cas9 system to precisely engineer the *Drosophila* genome and report that Cas9-mediated genomic modifications are efficiently transmitted through the germline. This RNA-guided Cas9 system can be rapidly programmed to generate targeted alleles for probing gene function in *Drosophila*.

**Keywords**

CRI9PR RNA, Cas9, homologous recombination, genome engineering, Drosophila
"The Golden Age? What the 100 Most Cited Articles in Terrorism Studies Tell Us"
Teaching Elementary Students Who Speak Black English Vernacular to Write in Standard English: Effects of Dialect Transformation Practice

Abstract

Although nonstandard dialects of English are legitimate forms of spoken language used by many Americans, students in U.S. schools must acquire writing competence using Standard English (SE). Participants in this study were 3rd- and 4th-grade African-American students who exhibited Black English Vernacular (BEV) features in their written work. Six syntactic features differing in BEV and SE were targeted. Students received one of three treatments to increase their use of the SE features in their writing: (1) exposure to SE features in stories; (2) story exposure plus explanation of SE rules; and (3) story exposure, SE rule instruction, and guided practice transforming sentences from BEV to SE features. The third treatment proved most effective in enabling students to translate BEV sentences into SE forms and to employ the targeted SE features in their free writing. Results indicate that having students practice translation constant sentences that build their own writing and receiving corrective feedback are
Academic Search Engine Spam and Google Scholar’s Resilience Against it

Joeran Beel and Bela Gipp

Joeran Beel
Bela Gipp

Volume 13, Issue 3, December 2010

DOI: http://dx.doi.org/10.3998/3336451.0013.305

Permissions

This paper was refereed by the Journal of Electronic Publishing’s peer reviewers.
Neat study found via @altmetric on the use of personas in academic libraries. Go user research! crl.acrl.org/cgi/content/lo... #citylis
Use in grant applications and funder reporting

I save a tremendous amount of time for my lab.
Find potential collaborators

Victory for crowdsourced biomolecule design
Overview of attention for article published in Nature, January 2012

So far, Altmetric has seen 304 tweets from 293 users, with an upper bound of 1,977,580 followers.

Giovanna Guerrero
@GeFei

The internet provides a new universe of scied opps. Including crowdsourced discoveries such as http://t.co/K6BjxvYQ #sciamlesmng
05 Aug 2014

Gerald van Leeuwen
@dutchhigh360

Victory for crowdsourced biomolecule design http://t.co/jelvXo8f ping @DavidSingleton #crowdsourcing #science
17 Dec 2013

Christian Townsend
@C_Townsend

©2016-2017 Nader Ale Ebrahim
Embed badges on your website or CV

LSE Research Online is experimenting with all article level metrics as a way to measure the wider usage of their research. Badge type: Medium donut. Popover: Right. Details: None. The HTML to copy into your page for the above embed:

```html
<div data-badge-popover="right" data-badge-type="medium-donut" data-doi="10.1038/nature.2014.14583" data-hide-no-mentions="true" class="altmetric-embed"></div>
```
How are institutions using Altmetric?

- **Researchers**
  - Track attention to your research immediately
  - Uncover (unknown) conversations about your research
  - Use in grant applications & funder reporting

- **Librarians**
  - Support researchers in all of the above
  - Enhance department liaison activities
  - Encourage staff to deposit in your research information system

- **Research Administrators**
  - Integrate data into your existing performance reports
  - Identify key impacts across institution (i.e. policy docs)
  - Benchmarking (thoughtfully!)

- **Marketing Comms.**
  - Identify research to promote
  - Evaluate success of promotion activities
  - Identify key researchers

©2016-2017 Nader Ale Ebrahim
My recent publications
Questions?

E-mail: aleebrahim@um.edu.my
Twitter: @aleebrahim
www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

Nader Ale Ebrahim, PhD
Research Support Unit
Centre for Research Services
Research Management & Innovation Complex
University of Malaya, Kuala Lumpur, Malaysia
www.researcherid.com/rid/C-2414-2009
http://scholar.google.com/citations

©2016-2017  Nader Ale Ebrahim
References


