"ALTERNATIVE IMPACT METRICS:

UK FACULTY EVALUATION

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CI SENIOR ASSOCIATE DEAN

OCTOBER 22, 2013
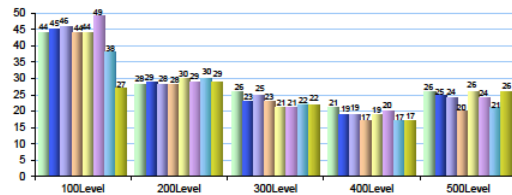
IMPACT?

EVIDENCE?

COLLEGE OF COMMUNICATIONS AND INFORMATION STUDIES SUMMARY

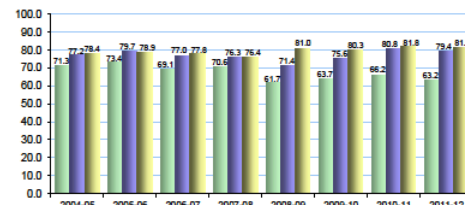| Fall Semester	MAJORS					ANNUAL DEGREES AWARDED					FACULTY			RATIOS
	B	M/S	D_Res	D_Prof	Total	B	M/S	D_Res	D_Prof	Total	Full Time Faculty	African American	Departed Faculty	FTE S:F
2011-12	979	252	41	0	1,272	Not Yet Available					62	3		16.8
2010-11	1,075	234	37	0	1,346	315	74	7	0	396	59	3		19.2
2009-10	1,086	232	34	0	1,352	340	94	11	0	445	49	3		23.2
2008-09	1,190	223	39	0	1,452	348	93	3	0	444	50	3	Not	23.9
2007-08	1,282	235	30	0	1,547	385	103	3	0	491	47	2	Yet	24.8
2006-07	1,390	257	41	0	1,688	371	110	9	0	490	42	2	Available	29.4
2005-06	1,404	266	39	0	1,709	382	118	8	0	508	42	3		30.8
2004-05	1,350	270	37	0	1,657	331	112	8	0	451	42	3		28.5
2003-04	1,319	261	55	0	1,635	335	102	7	0	444	40	2		27.8

Undergraduate Student Experience: Total College Average Class Size* by Level

*Total enrollment divided by number of sections.

Undergraduate 1st to 2nd Year Retention

Awards (in millions)

SPONSORED PROJECTS		
Academic Year	Proposals Submitted	Awards Total
2010-11	18	$0.53
2009-10	17	$0.46
2008-09	16	$1.39
2007-08	18	$1.13
2006-07	10	$0.85
2005-06	11	$0.64
2004-05	15	$0.95
2003-04	17	$2.67
2002-03	23	$4.61

GENERAL FUND BUDGET					PRIVATE GIVING	
Academic Year	Total Amount	% Increase	State / Tuition Base	% Increase	Number Donors	Annual Giving
2011-12	$8,473,082	9.2%	$8,050,482	6.3%		
2010-11	$7,761,082	16.7%	$7,572,982	17.3%	1,006	$440,245
2009-10	$6,648,461	1.3%	$6,455,861	1.3%	900	$334,915
2008-09	$6,560,895	5.2%	$6,373,395	5.1%	884	$416,649
2007-08	$6,236,300	14.3%	$6,062,829	14.7%	982	$463,948
2006-07	$5,455,400	7.0%	$5,284,327	5.5%	835	$326,370
2005-06	$5,099,000	5.3%	$5,007,867	4.9%	891	$333,118
2004-05	$4,844,000	1.7%	$4,774,224	1.1%		$237,825
2003-04	$4,762,800		$4,720,173			$171,972

STUDENTS
SERVED

FACULTY
CREDENTIALS

RANKINGS

BIG

ASSESS

DECISIONS

DATA

SCH
GENERATED

STUDENT
PLACEMENT

SALARIES

PATENTS

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The 3 Vs of Big Data

Volume
- Terabytes
- Records
- Transactions
- Tables, files

Velocity
- Batch
- Near-time
- Real-time
- Streams

Variety
- Structured
- Unstructured
- Semi-structured
- All the above

BIG DATA
IN A SINGLE DAY ONLINE
ENOUGH INFORMATION IS CONSUMED TO FILL
168 MILLION DVDS
294bn E-MAILS ARE SENT
MINUTES SPENT ON FACEBOOK **4.7M**
2 MILLION BLOG POSTS ARE WRITTEN
VIDEO UPLOADED TO YOUTUBE **864,000 HRS**
MORE IPHONES ARE SOLD **THAN BABIES BORN**

TUNING INTO BIG DATA
AS THE BUZZ GETS **LOUDER**

The data on big data is...well... big. Here are some examples of the commotion you'd encounter while gathering data about big data.

Number of big data "V"s (and counting...) **16**

112,000,000 Blog posts discussing big data

1,350,000,000
Google results for "What is big data?" (Yes, that's billions)

120+ Twitter accounts for big data

50+ Infographics about big data

2 million PDFs to read from search results for "big data white paper"

70,000 Wikipedia "big data" hits a month

2010: 0
2012: 9,000 Job search results for data scientists

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http://www.ibm.com/analytics/us/en/what-is-smarter-analytics/big-data-analysis.html

ASSESSING

RESEARCH IMPACT (AND USAGE)

"PEER-REVIEWED JOURNAL ARTICLE PUBLICATION IS THE PRIMARY MODE OF COMMUNICATION AND RECORD OF SCIENTIFIC RESEARCH."

http://arxiv.org/ftp/cs/papers/0503/0503020.pdf

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ASSESSING RESEARCH IMPACT @UK

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OF EXPERT PEER-REVIEWED PUBLICATIONS
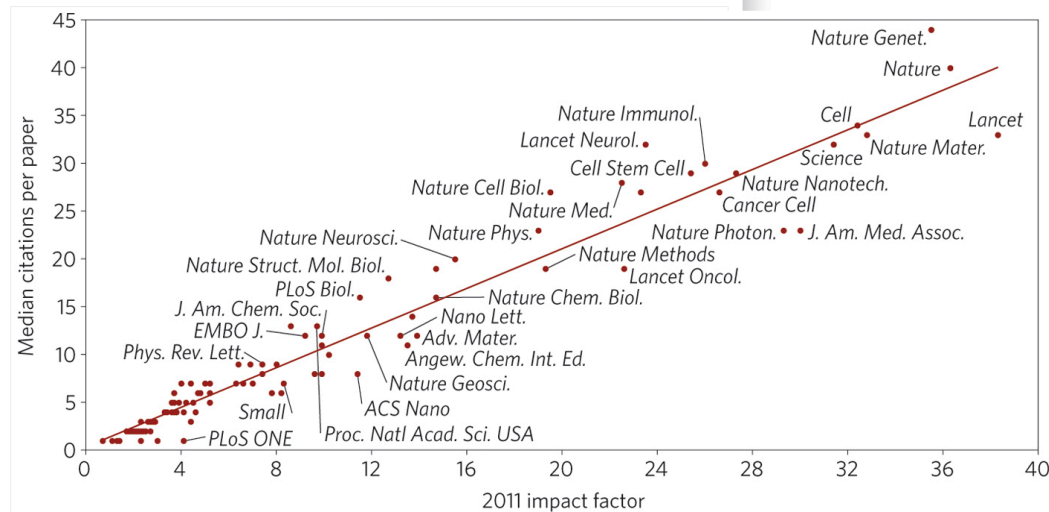
AUTHOR ORDER

JOURNAL QUALITY* (TIER, SCOPE)

IMPACT FACTOR*

OUTSIDE EXPERT LETTERS

*IMPACT FACTORS AS PREDICTORS

Figure 1: A journal's impact factor is a good predictor of its five-year median of citations to primary research articles.

From
Beware the impact factor
Nature Materials **12**, 89 (2013) | doi:10.1038/nmat3566

The data and linear fit ($r^2 = 0.94$) correspond to a sample of 100 journals launched before 2008. The five-year median values are of citations (as of 5 January 2013) to research papers (that is, excluding reviews, news, editorial material and other non-primary research articles) published in 2008–2012. The specific median values and slope of the linear fit (here 1.04) depend on the citation time window (here 1 January 2008 to 5 January 2013), impact-factor year and data source (here Thomson Reuters Web of Science). Journals included in the sample span the physical and chemical sciences, the biological and medical sciences, the earth and environmental sciences, and engineering.

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ALTMETRICS

REPLACEMENT

OR

VALUE ADDED

ALTMETRICS

Impact

↑ **usage**
downloads
views

↑ **peer-review**
expert opinion

↑ **citations**

↑ **alt-metrics**
storage
links
bookmarks
conversations

http://altmetrics.org/manifesto/

MOVING BEYOND CITATION COUNTS

PLUMX

http://www.plumanalytics.com/index.html

Altmetric

http://www.altmetric.com/

ImpactStory.

http://impactstory.org/

MOVING BEYOND CITATION COUNTS

Mentioned by

344

- 188 tweeters
- 17 Facebook users
- 10 news outlets
- 2 video uploaders
- 13 science blogs
- 12 Google+ users
- 3 Redditors

949

Up to now this article has been mentioned 1209 times by 1050 sources.

Sources

- 8 Facebook users
- 22 science blogs
- 9 Google+ users
- 1 Q&A thread
- 2 Reddit threads
- 1007 tweeters

Saved to reference managers

- 17 CiteULike
- 36 Mendeley

Altmetric

http://www.altmetric.com/
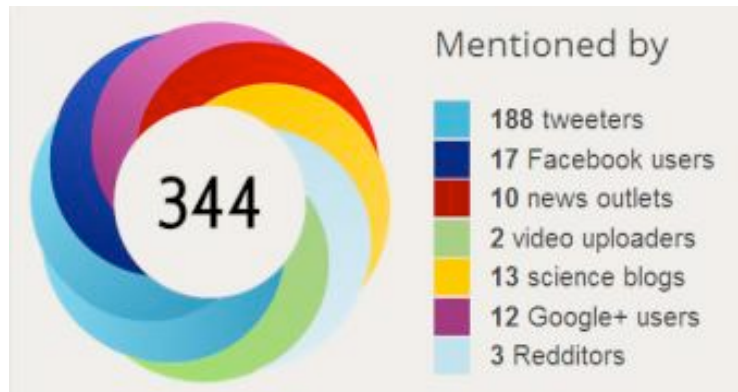
MOVING BEYOND CITATION COUNTS

- Meaningful Metrics

- Holistic View of Research Output

- 20 Different Types of Artifacts

http://www.plumanalytics.com/index.html

ALTMETRICS ARTIFACTS

Overview: Plum Metrics

Plum is building the next generation of research metrics for scholarly research.

Metrics are captured and correlated at the group / collection level (e.g., lab, department, museum, journal, etc.)

We categorize metrics into 5 separate types: Usage, Captures, Mentions, Social Media, and Citations. Examples of each type are:

- **Usage** - Downloads, views, book holdings, ILL, document delivery
- **Captures** - Favorites, bookmarks, saves, readers, groups, watchers
- **Mentions** - blog posts, news stories, Wikipedia articles, comments, reviews
- **Social media** - Tweets, +1's, likes, shares, ratings
- **Citations** - PubMed, Scopus, patents

We gather metrics around what we call artifacts. Artifacts are more than just the journal articles that a researcher authors. Artifacts are any research output that is available online. We gather metrics about:

- articles
- blog posts
- book chapters
- books
- cases
- clinical trials
- conference papers
- datasets
- figures
- grants
- interviews
- letters
- media
- patents
- posters
- presentations
- source code
- theses / dissertations
- videos
- web pages

We aggregate artifact and author level metrics into a researcher graph.

http://www.plumanalytics.com/metrics.html

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USAGE

Current List of Metrics

Below is a listing of the current type of metrics that Plum supports, and samples of providers where we harvest the data from. This list is growing fast / stay tuned.

Metrics as of July 28, 2013

Type	Metric	Example Source(s)	Description
Usage	Abstract Views	dSpace, ePrints, PLoS	The number of times the abstract of an article has been viewed
Usage	Clicks	bit.ly, Facebook	The number of clicks of a URL
Usage	Collaborators	GitHub	The number of collaborators of an artifact
Usage	Downloads	Dryad, Figshare, Slideshare, Github	The number of times an artifact has been downloaded
Usage	Figure Views	figshare, PLoS	The number of times the figure of an article has been viewed
Usage	Full Text Views	PLoS	The number of times the full text of an article has been viewed
Usage	Holdings	WorldCat	The number of libraries that hold the book artifact
Usage	HTML Views	PLoS	The number of times the html of an article has been viewed
Usage	PDF Views	dSpace, ePrints, PLoS	The number of times the PDF of an article has been viewed
Usage	Views	Dryad	The number of times the dataset has been viewed.
Usage	Supporting Data Views	PLoS	The number of times the supporting data of an article has been viewed

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CAPTURES

Captures	Bookmarks	CiteULike, Delicious	Number of times an artifact has been bookmarked
Captures	Favorites	Slideshare, YouTube	The number of times the artifact has been marked as a favorite
Captures	Followers	GitHub	The number of times a person or artifact has been followed
Captures	Forks	Github	The number of times a repository has been forked
Captures	Groups	CiteULike, Mendeley	Number of times an artifact has been placed in a group's library
Captures	Readers	Mendeley	The number of people who have added the artifact to their library
Captures	Subscribers	Vimeo, YouTube	The number of people who have subscribed for an update
Captures	Watcher	Github	The number of people watching the artifact for updates

http://www.plumanalytics.com/metrics.html

MENTIONS

Mentions	Comment count	Facebook, Reddit, Slideshare, Vimeo, YouTube	The number of comments made about an artifact
Mentions	Forum Topic Count	Vimeo	The number of topics in a forum discussing the artifact
Mentions	Gist count	GitHub	The number of gists in the source code repository
Mentions	Links	Wikipedia	The number of links to the artifact
Mentions	Review count	SourceForge	The number of user reviews of the artifact
Mentions	Blog count	Research Blogging, Science Seeker	The number of blog posts written about the artifact

http://www.plumanalytics.com/metrics.html

SOCIAL MEDIA

Social Media	Likes	Facebook, Vimeo, YouTube	The number of times an artifact has been liked
Social Media	+1	Google	The number of times an artifact has gotten a +1
Social Media	Ratings	SourceForge	The average user rating of the artifact.
Social Media	Recommendations	Figshare, SourceForge	The number of recommendations an artifact has received
Social Media	Score	Reddit	The number of upvotes minus downvotes on Reddit
Social Media	Shares	Facebook	The number of times a link was shared on Facebook
Social Media	Tweets	Topsy	The number of tweets that mention the artifact

CITATIONS

Citations	Cited by	CrossRef	The number of articles that cite the artifact according to CrossRef
Citations	Cited by	Microsoft Academic Search	The number of articles that cite the artifact according to Microsoft Academic Search
Citations	Cited by	PubMed	The number of PubMed Central articles that cite the artifact
Citations	Scopus Cited-by Count	Scopus	The number of articles that cite the artifact according to Scopus
Citations	Cited by	USPTO	The number of patents that reference the artifact according to the USPTO

POTENTIAL ADVANTAGES: "MORE"

- **MORE "Nuanced Understanding"**

  ♣(read, discussed, saved, recommended, AND cited)

- **MORE "Timely Data"**

  ♣(evidence of impact in days instead of years)

- **MORE "Artifacts"**

  ♣(datasets, software, blog posts, videos, slide decks, etc.)

- **MORE "IMPACTS"**

  ♣(diverse audiences, practitioners, clinicians, educators, general public)

MORE MORE MORE

http://asis.org/Bulletin/Apr-13/AprMay13_Piwowar.pdf

THE 3 A'S OF ALTMETRICS

Question 1 (Acceptance):

Will faculty, administrators, and professional colleagues accept altmetrics to assess research impact as it relates to tenure, promotion, and merit?

Question 2 (Artifacts):

Which specific artifacts should be used to assess research impact?

Question 3 (Adoption):

When, if at all, should the "adoption" occur?

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