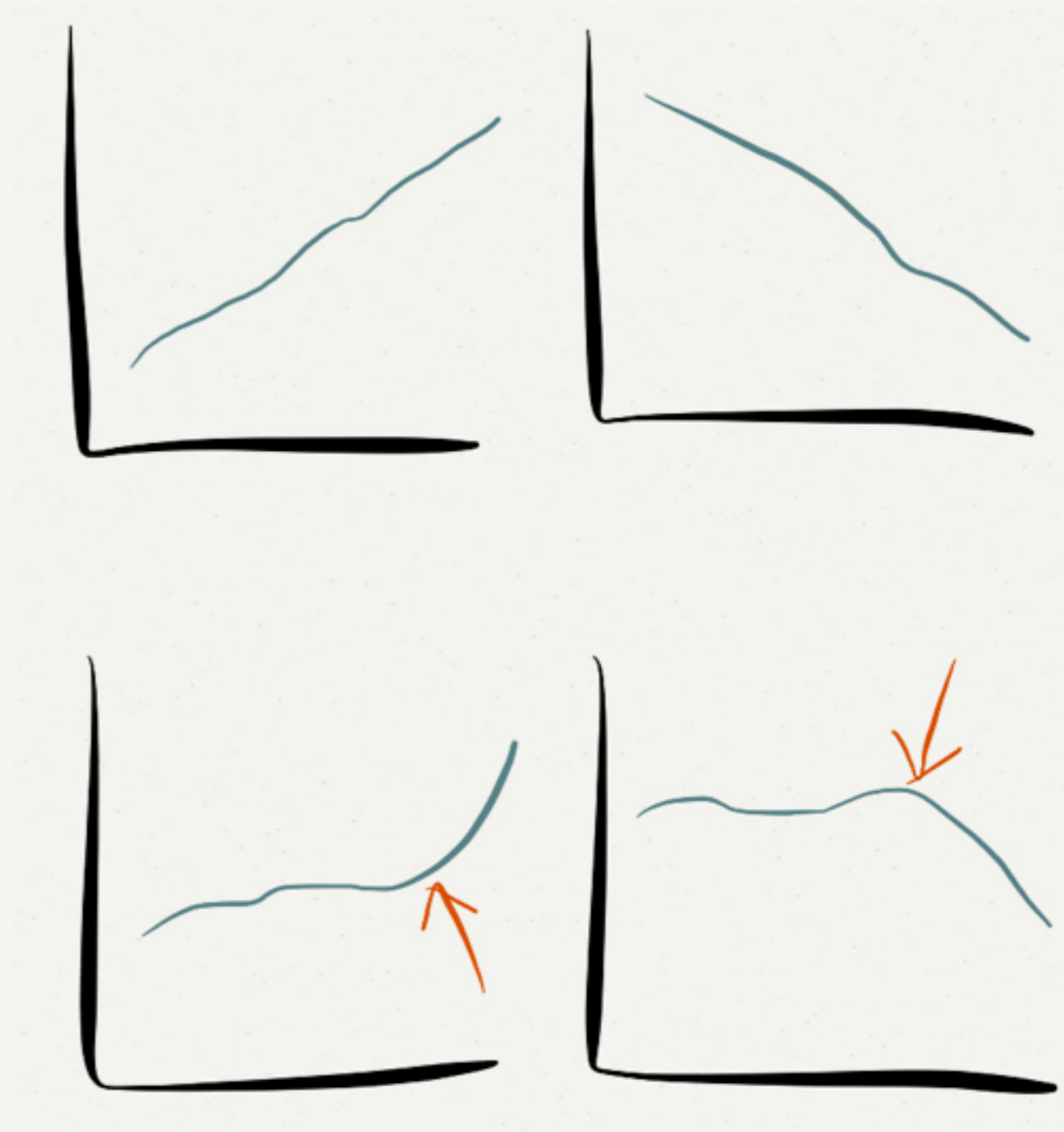


Article-Level Metrics

Martin Fenner



<http://www.flickr.com/photos/financialaidpodcast/7195300768/>

Article-Level Metrics (ALM) allow the comprehensive analysis of the post-publication activity around a paper, employing usage stats, citations and altmetrics.

<http://article-level-metrics.plos.org/alm-info/>

Article-level metrics add granularity and more dimensions

Usage	Citations	Altmetrics	Altmetrics
PLOS Journals (HTML, PDF, XML) PubMed Central (HTML, PDF)	CrossRef Scopus Web of Science PubMed Central	Facebook Twitter Wikipedia	PLOS Comments Mendeley CiteULike ResearchBlog. ScienceSeeker

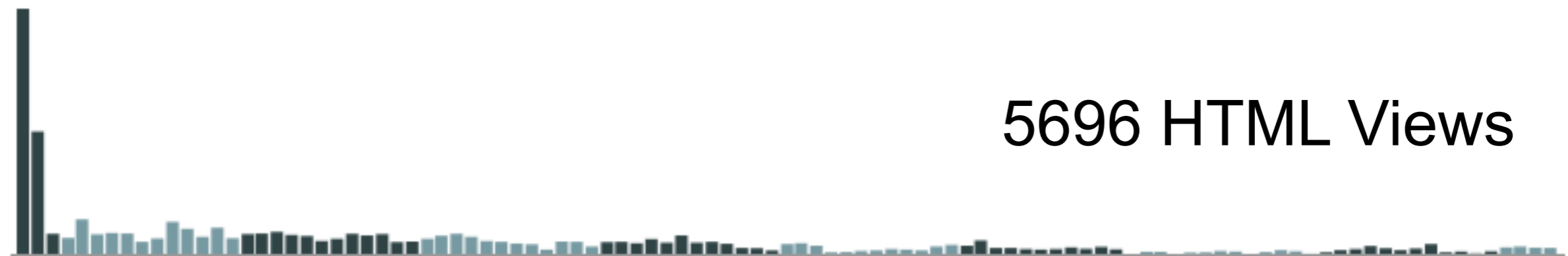
PLOS is collecting and displaying ALM since 2009

PLOS collects usage stats per article since 2003, and displays them publicly since 2009

Assessment of Volume Depletion in Children with Malaria

Published October 19, 2004

[10.1371/journal.pmed.0010018](https://doi.org/10.1371/journal.pmed.0010018)



66,809,958 HTML pageviews

Article-Level Metrics
from November 8, 2012
for 48,439 PLOS ONE Papers

15,029,850 PDF downloads



379,155 Mendeley bookmarks



223,071 Facebook mentions

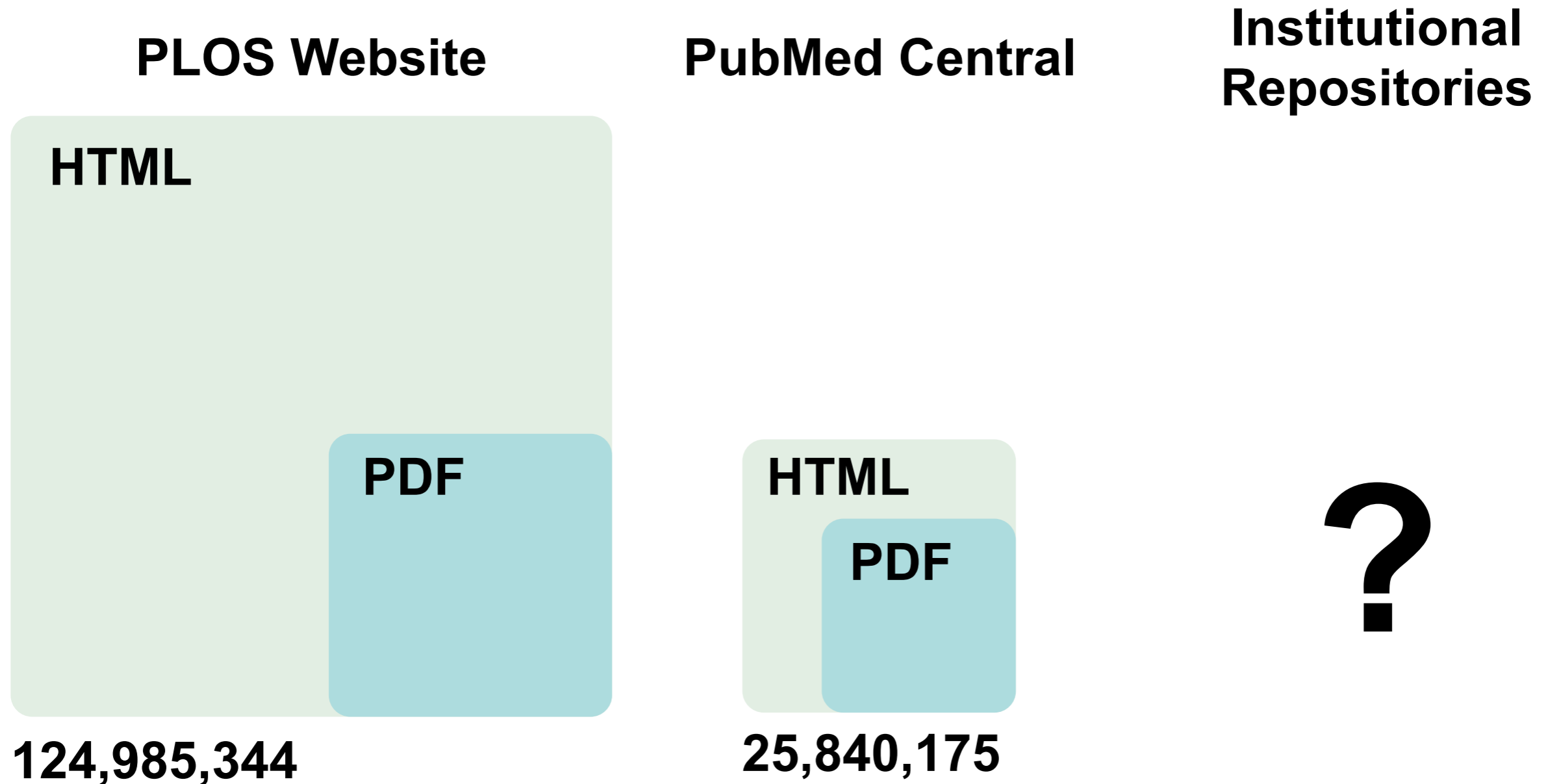


176,705 CrossRef citations



31,622 Wikipedia mentions

Most articles are accessed from the PLOS website

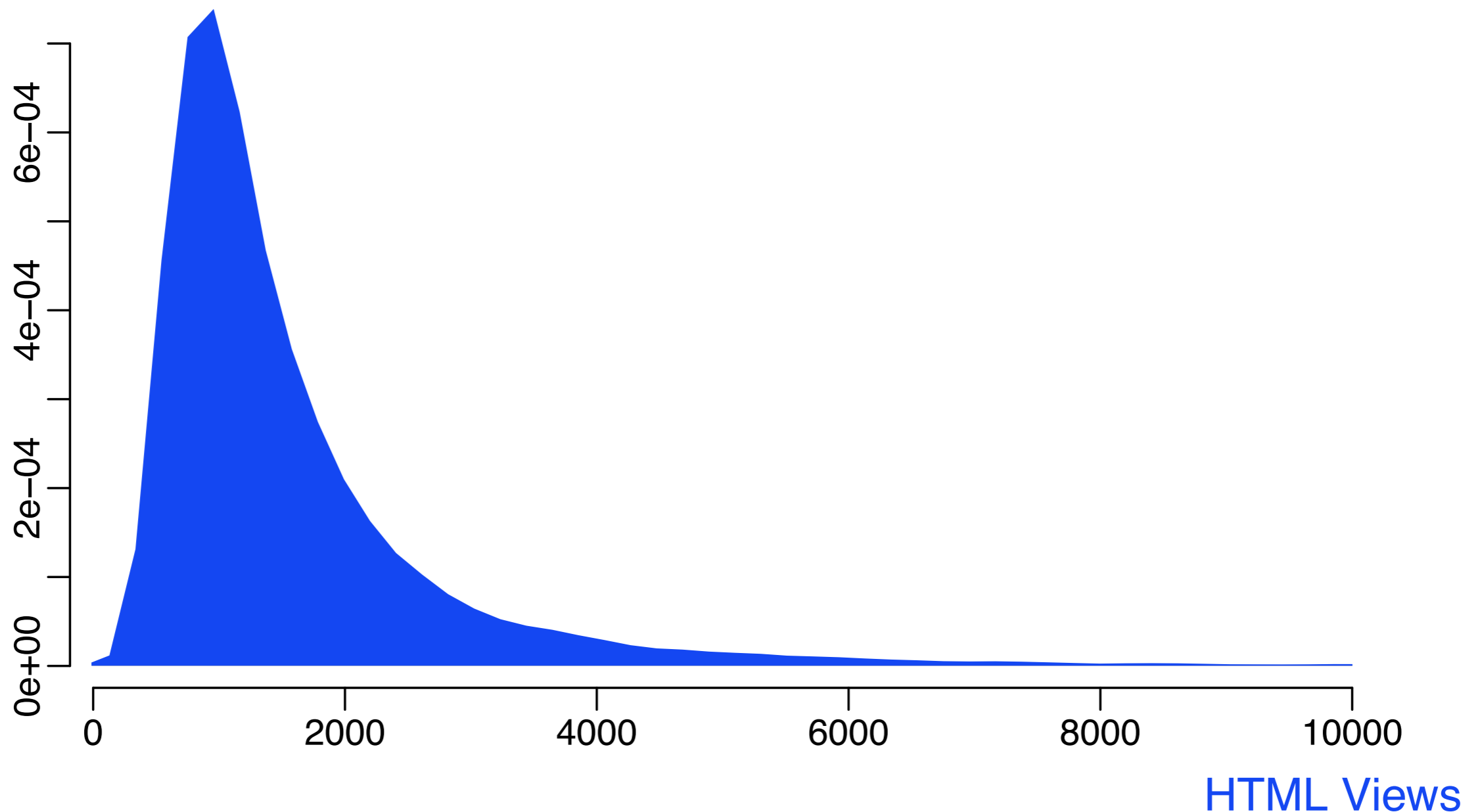


Metrics collected November 8, 2013

HTML Pageviews are not evenly distributed

Number of HTML views at the PLOS website for all 16,263 PLoS papers published in 2011.
Data collected April 11, 2013.

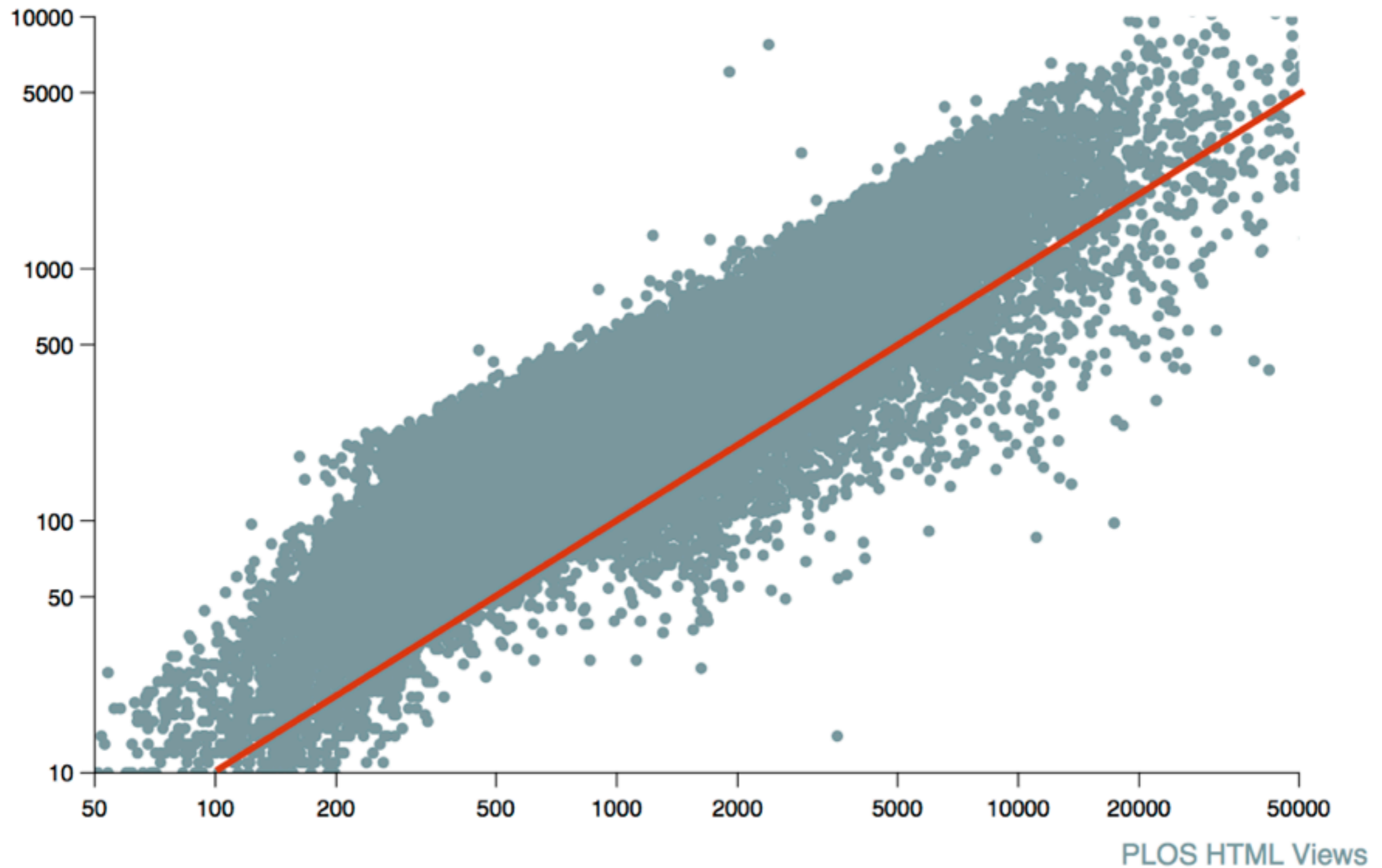
Probability



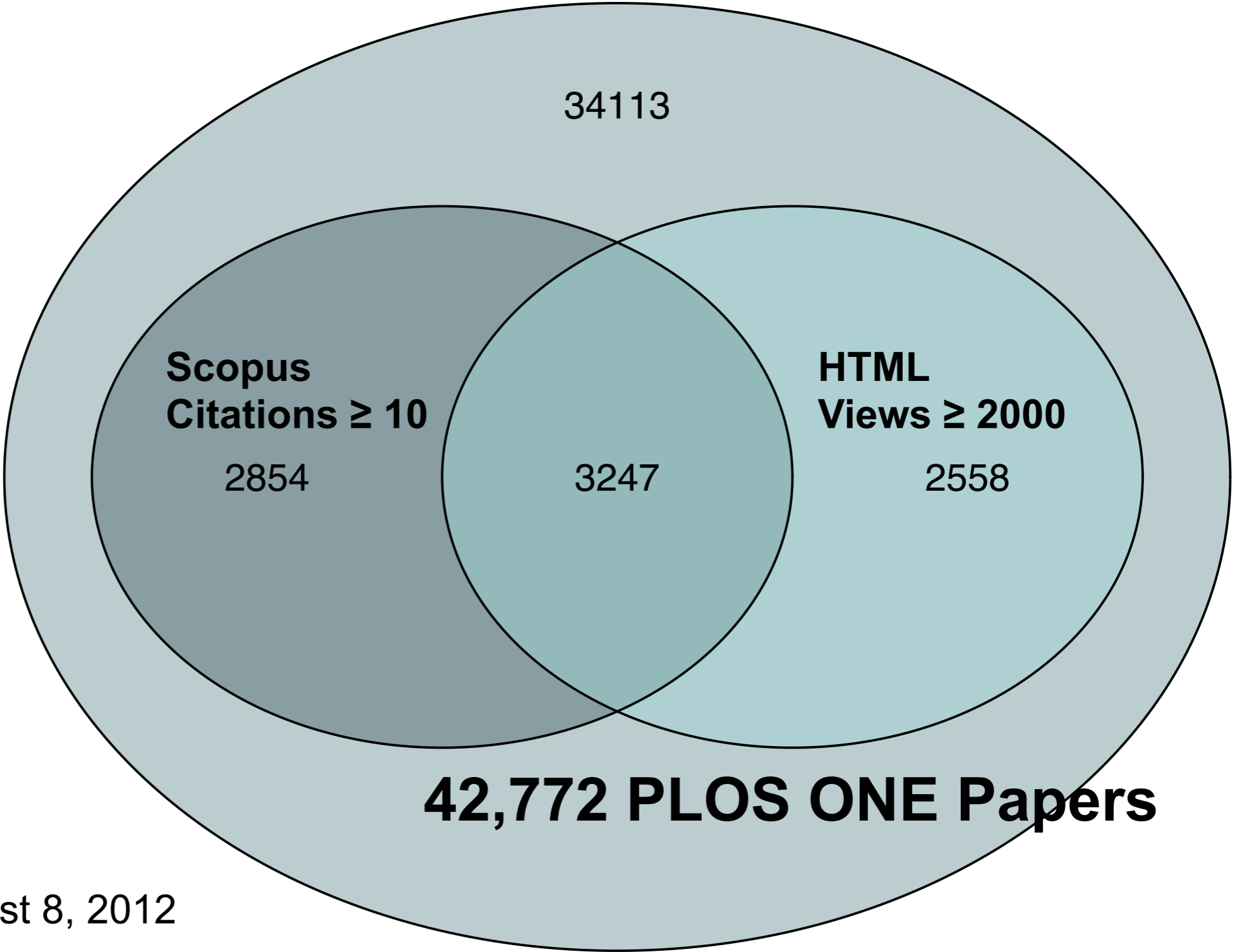
HTML pageviews correlate with PDF downloads

Usage data from the PLoS website for 56,208 PLoS articles. Data collected August 8, 2012. Log-log scale.

PLOS PDF Downloads



Different Metrics measure Different Things

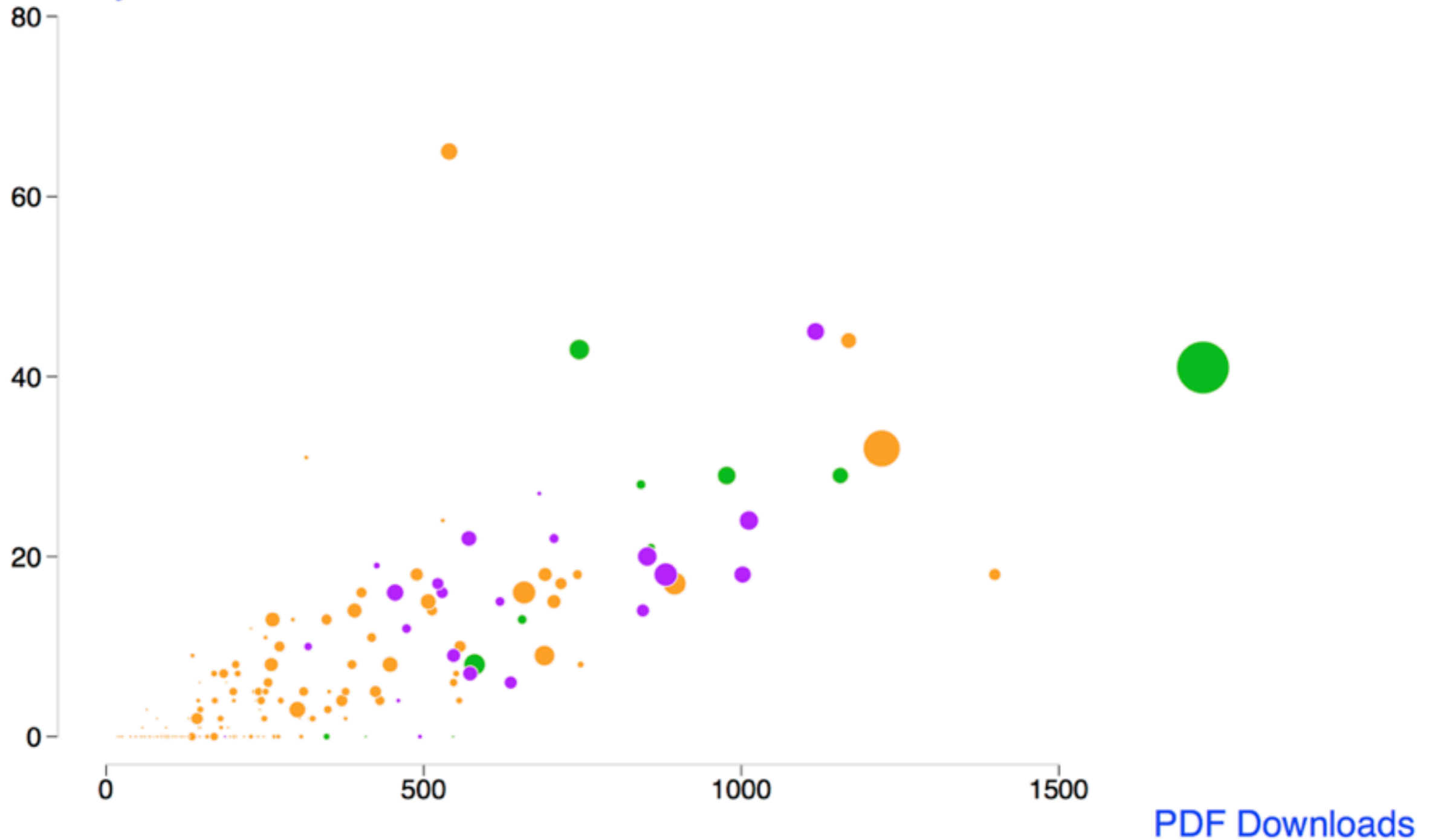


Metrics collected August 8, 2012

PDF downloads vs. Mendeley bookmarks

Data for PLOS website for 189 PLOS articles with authors affiliated with Hannover Medical School. Bubble size correlates with number of CrossRef citations, and color with PLOS journal. Data collected April 11, 2013.

Mendeley Bookmarks



What do usage stats measure?

Impact

Attention

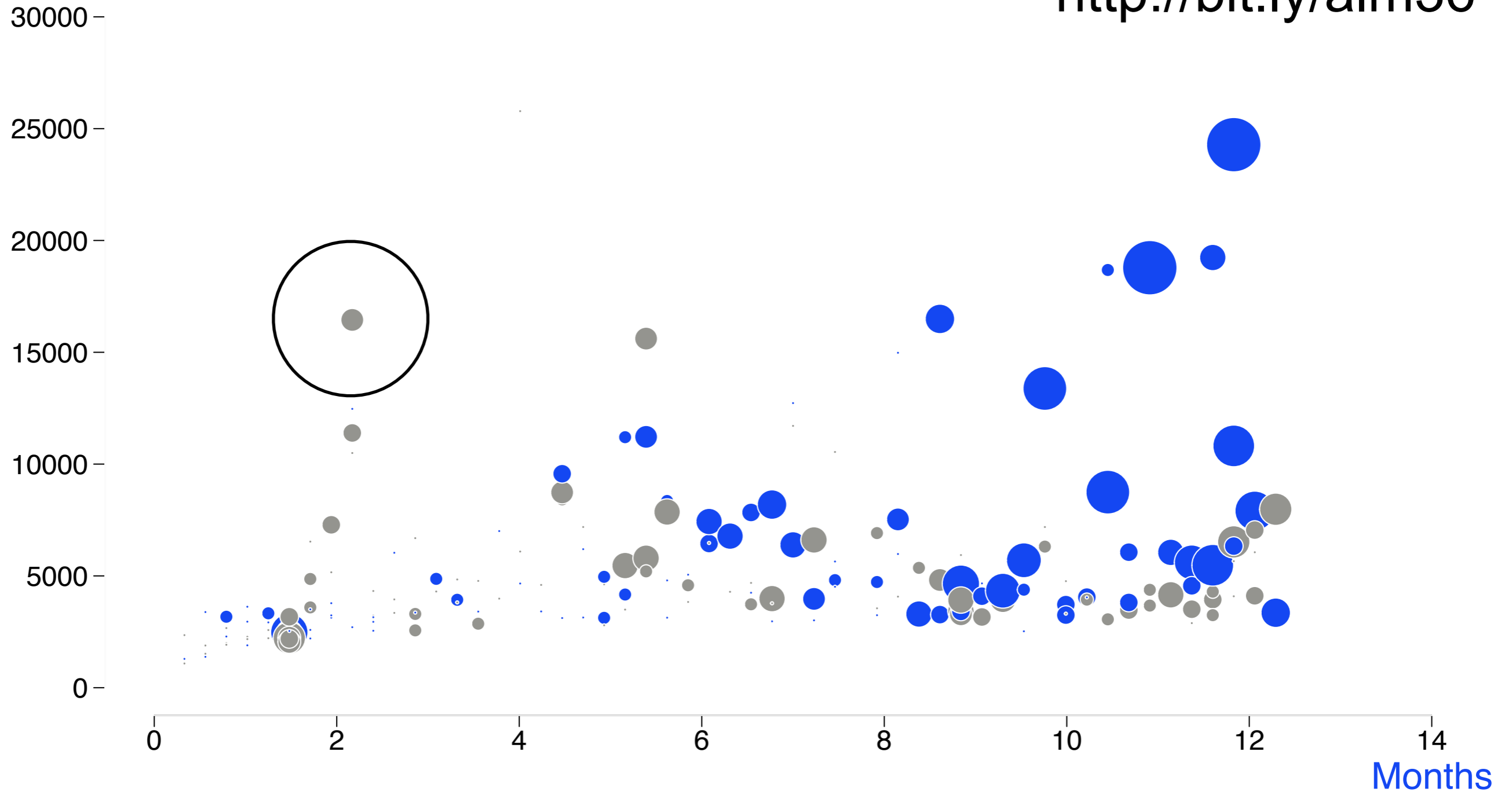
**Self-
Promotion**

PLOS Medicine Articles August 2011 to August 2012

Combined HTML views and PDF downloads (PLOS website) for articles published between 08/16/11 and 08/15/12. Bubble size correlates with Scopus citations, bubble color with article type. Data collected 08/24/12.

Total Views

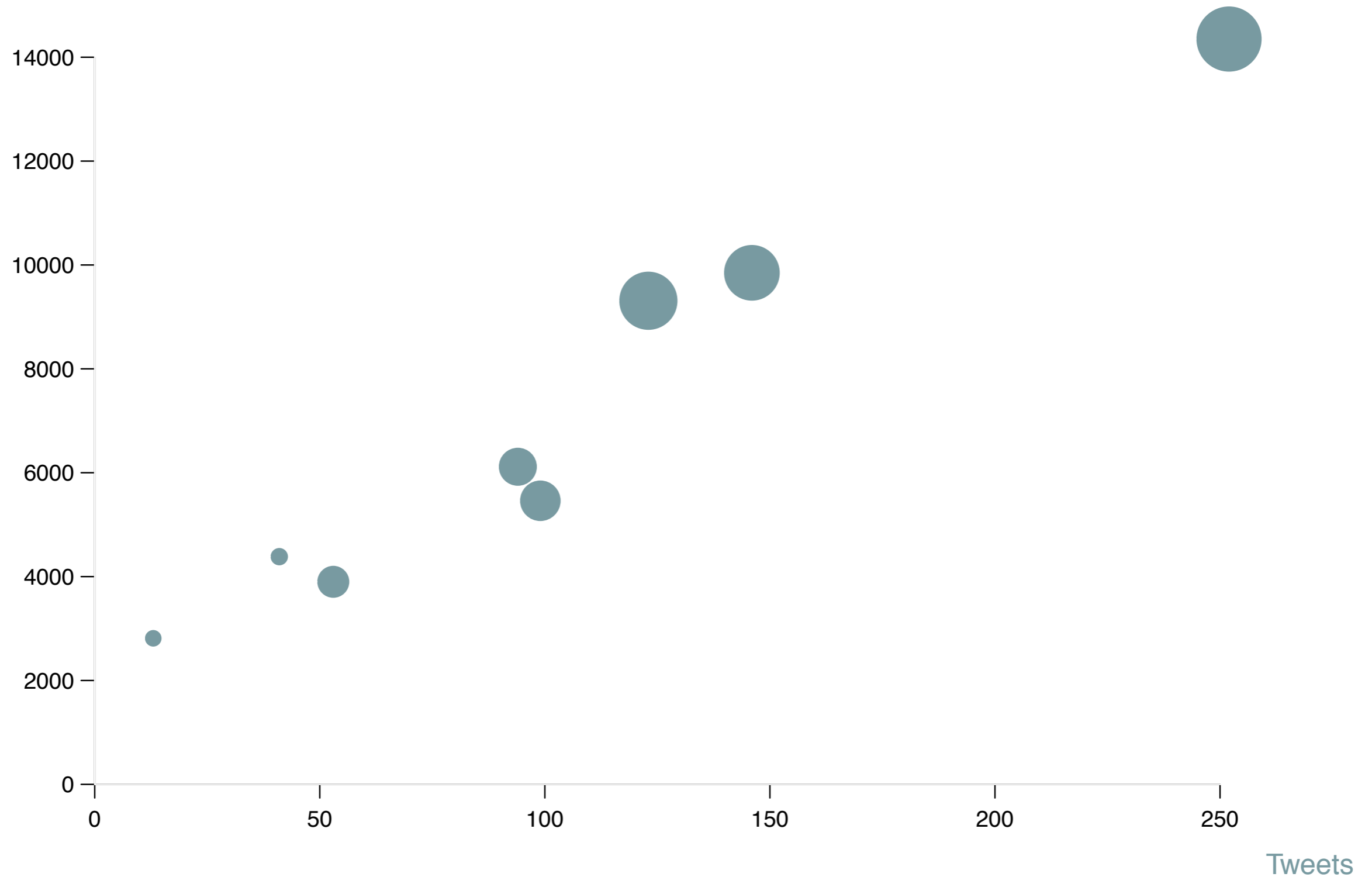
<http://bit.ly/alm36>



PLOS Articles from the Big Food collection

Tweets vs. HTML views at PLOS for articles in the Big Food collection. Circle size correlates with Facebook activity. Data collected August 19, 2012.

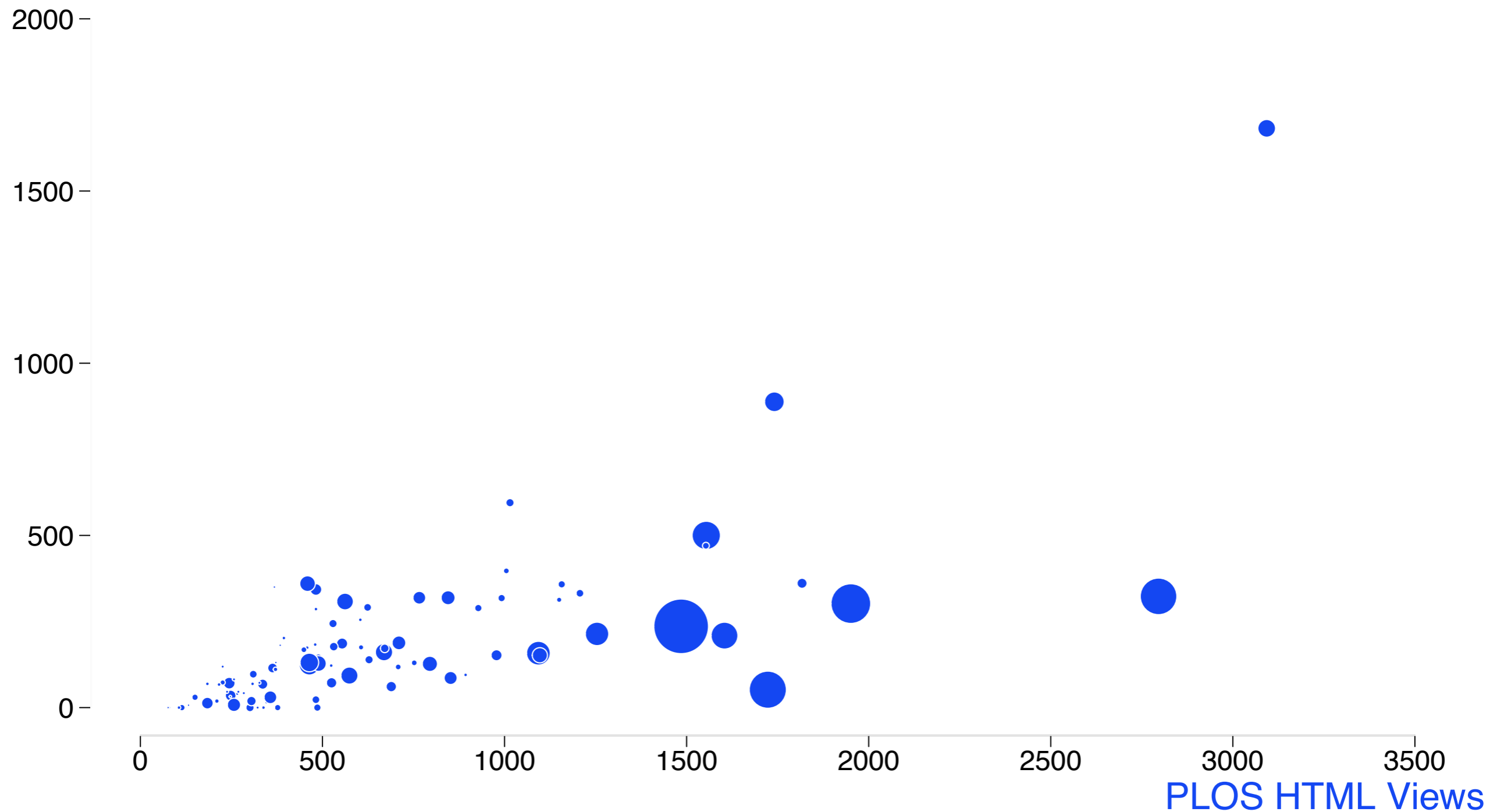
HTML Views



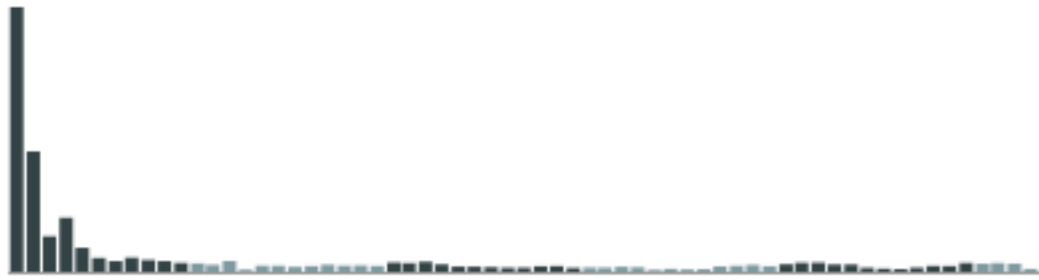
PLOS Medicine Research Articles Aug 2011 to Aug 2012

HTML views PLOS website vs. PubMed Central for research articles published between 08/16/11 and 08/15/12. Bubble size correlates with Facebook Likes/Shares/Comments. Data collected 08/24/12.

PubMed Central HTML Views

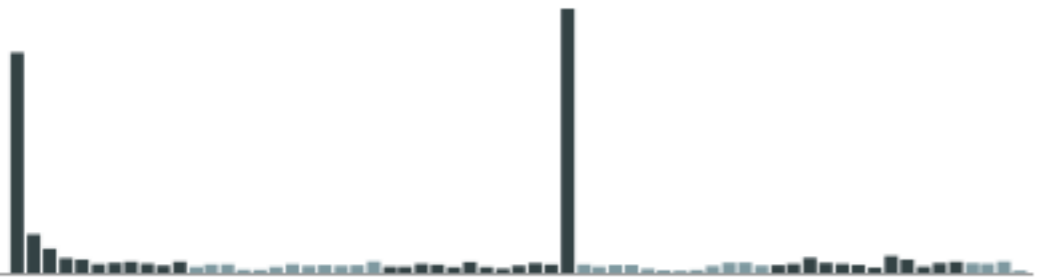


Articles differ in usage over time



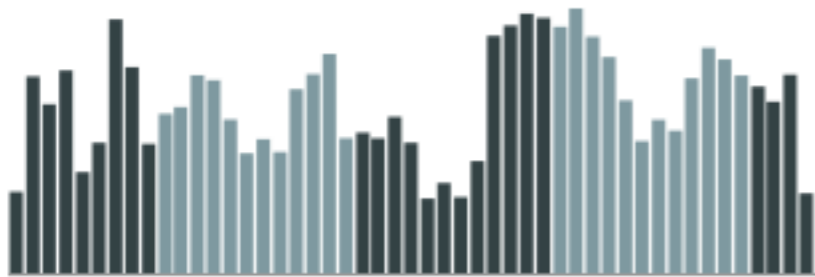
Initial Severity and Antidepressant Benefits: A Meta-Analysis of Data Submitted to the Food and Drug Administration

[10.1371/journal.pmed.0050045](https://doi.org/10.1371/journal.pmed.0050045)



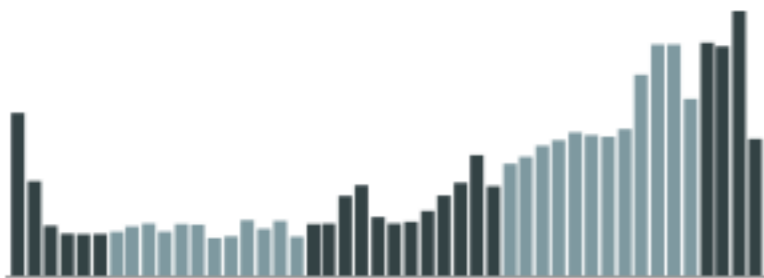
Lifetime Medical Costs of Obesity: Prevention No Cure for Increasing Health Expenditure

[10.1371/journal.pmed.0050029](https://doi.org/10.1371/journal.pmed.0050029)



The Preventable Causes of Death in the United States: Comparative Risk Assessment of Dietary, Lifestyle, and Metabolic Risk Factors

[10.1371/journal.pmed.1000058](https://doi.org/10.1371/journal.pmed.1000058)



Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement

[10.1371/journal.pmed.1000097](https://doi.org/10.1371/journal.pmed.1000097)

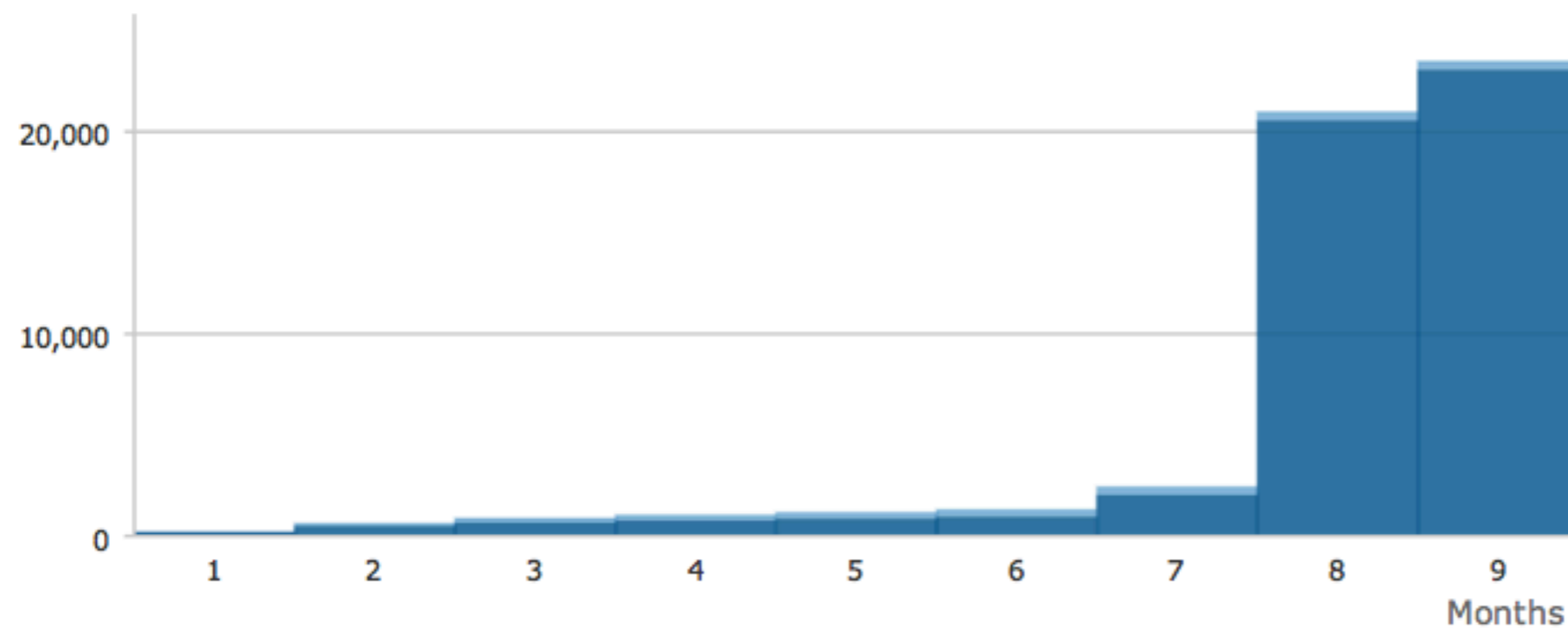
HTML views per month from PLOS website, data collected April 18, 2013

Gaming and Spam

Article Usage ⓘ

Total Article Views		HTML Page Views	PDF Downloads	XML Downloads	Totals
23,475 Jan 26, 2012 (publication date) through undefined NaN, NaN*	PLoS	22,683	283	60	23,026
	PMC	276	173	n.a.	449
	Totals	22,959	456	60	23,475

Cumulative Views



*Although we update our data on a daily basis, there may be a 48-hour delay before the most recent numbers are available. PMC data is posted on a monthly basis and will be made available once received.

Why use Article-Level Metrics?

Metrics as a discovery tool

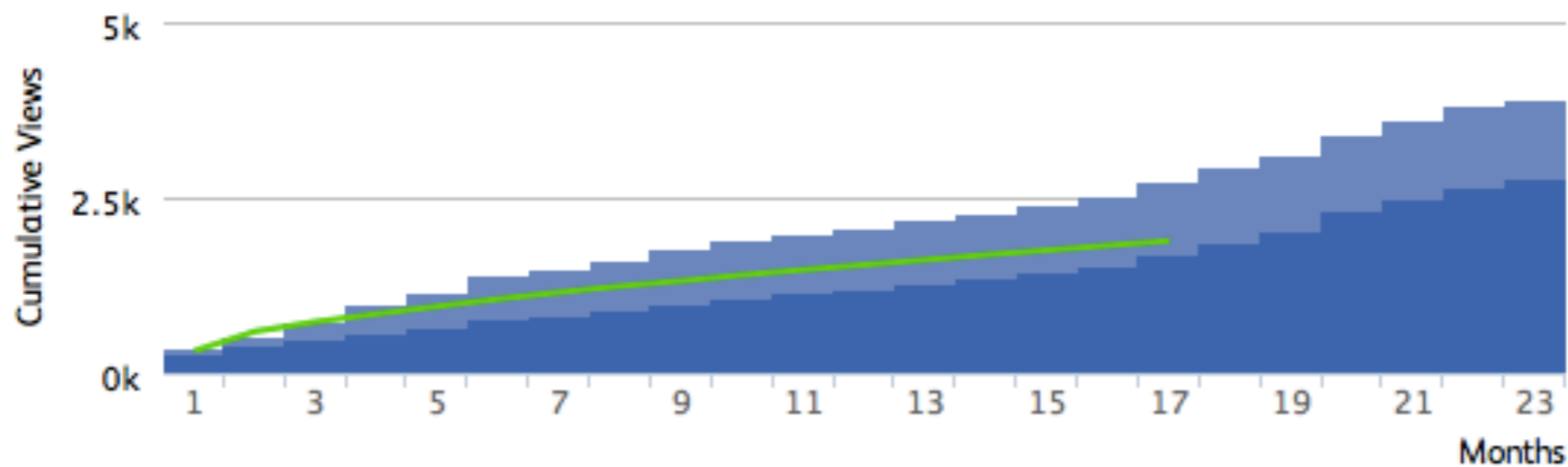
Data-driven stories about the post-publication reception of a paper

Business intelligence for a journal, university or funder

Evaluation of the impact of research and researchers

Relative metrics are needed to better understand the context of a number

Total Article Views	HTML Page Views	PDF Downloads	XML Downloads	Totals
3,912				
Jun 3, 2011 (publication date) through Apr 18, 2013*				
PLOS	2,185	574	22	2,781
PMC	716	415	n.a.	1,131
Totals	2,901	989	22	3,912
34.09% of article views led to PDF downloads				



BETA

■ Compare average usage for articles published in **2011** in the subject area: ?

| [Show reference set](#)

*Although we update our data on a daily basis, there may be a 48-hour delay before the most recent numbers are available. PMC data is posted on a monthly basis and will be made available once received.

10.1371/journal.pone.0020425



diabetes



advanced

filter by +

Clear all filters

Most views, all time

11,486 results for **diabetes**

View as: **Figures** | **List**

SEARCH ALERT



The Diploid Genome Sequence of an Individual Human

Samuel Levy, Granger Sutton, Pauline C Ng, Lars Feuk, Aaron L Halpern, Brian P Walenz, Nelson Axelrod, Jiaqi Huang, Ewen F Kirkness, Gennady Denisov, Yuan Lin, Jeffrey R MacDonald, Andy Wing Chun Pang, Mary Shago, Timothy B Stockwell, Alexia Tsiamouri, Vineet Bafna, Vikas Bansal, Saul A Kravitz, Dana A Busam, Karen Y Beeson, Tina C McIntosh, Karin A Remington, Josep F Abril, John Gill, Jon Borman, Yu-Hui Rogers, Marvin E Frazier, Stephen W Scherer, Robert L Strausberg, J. Craig Venter

Research Article | published 04 Sep 2007 | PLOS Biology
10.1371/journal.pbio.0050254

Views: 143,228 • Citations: 381 • Bookmarks: 83

Lifetime Medical Costs of Obesity: Prevention No Cure for Increasing Health Expenditure

Pieter H. M van Baal, Johan J Polder, G. Ardine de Wit, Rudolf T Hoogenveen, Talitha L Feenstra, Hendriek C Boshuizen, Peter M Engelfriet, Werner B. F Brouwer

Research Article | published 05 Feb 2008 | PLOS Medicine
10.1371/journal.pmed.0050029

Views: 135,994 • Citations: 82 • Bookmarks: 47

Hunter-Gatherer Energetics and Human Obesity

Herman Pontzer, David A. Raichlen, Brian M. Wood, Audax Z. P. Mabulla, Susan B. Racette, Frank W. Marlowe

Research Article | published 25 Jul 2012 | PLOS ONE

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<http://alm.plos.org/sources/counter>

rplos, v0.0.7

rplos is an R wrapper to the search and altmetrics APIs for PLoS Journals. Let us know of any issue [on our issues page](#).

Fork 5

Star 21

Download from GitHub

- › About
- › Installation
- › Search and get altmetrics data
- › Visualize PLoS altmetrics
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- › Search titles only
- › Plot terms through time
- › Search on words
- › Support and Bugs
- › License

Function index

About the package

rplos is an R wrapper to the Public Library of Science search and ALM APIs.

You do not need any API keys :)

Installing rplos

A stable version is now available on [CRAN](#).

```
# Stable version from CRAN
install.packages('rplos')
library(rplos)
```

```
# or install the development version from our GitHub repo.
install.packages('devtools')
library(devtools)
```

Next Steps for Article-Level Metrics

Coordination, aggregation, standardization

Data validation and anti-gaming

New services

More research