



Open Access MegaJournals Have They Changed Everything?

Pete Binfield
Co-Founder and Publisher
PeerJ

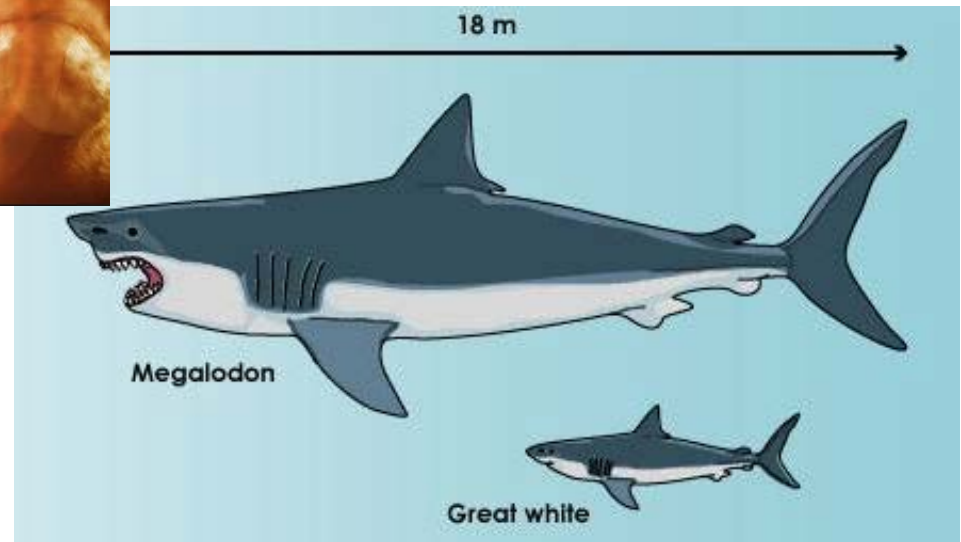
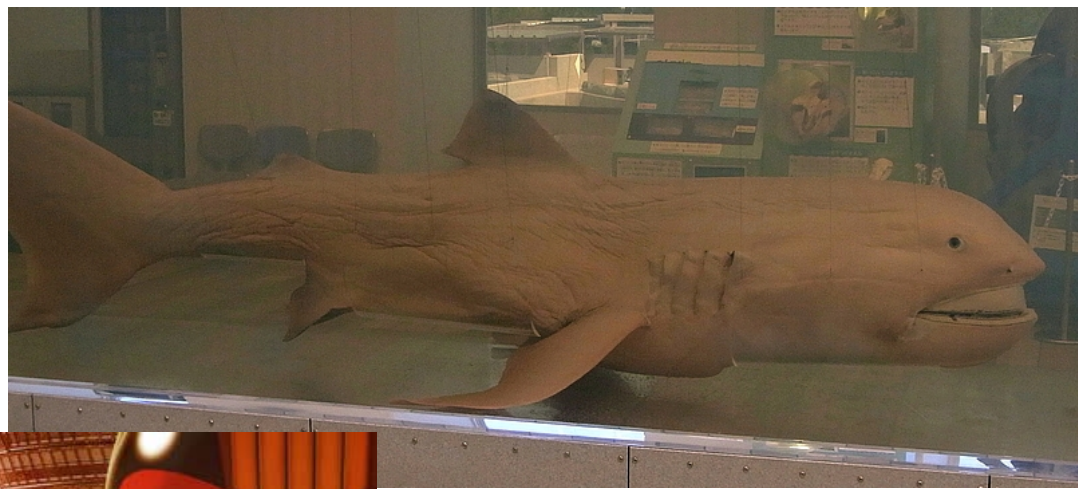
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@ThePeerJ
<https://peerj.com>

UBC Open - 10/22/2013

PeerJ

Academic Publishing is Evolving...



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<http://galearning.com/fun-analysis/megalodon-shark-analysis/>

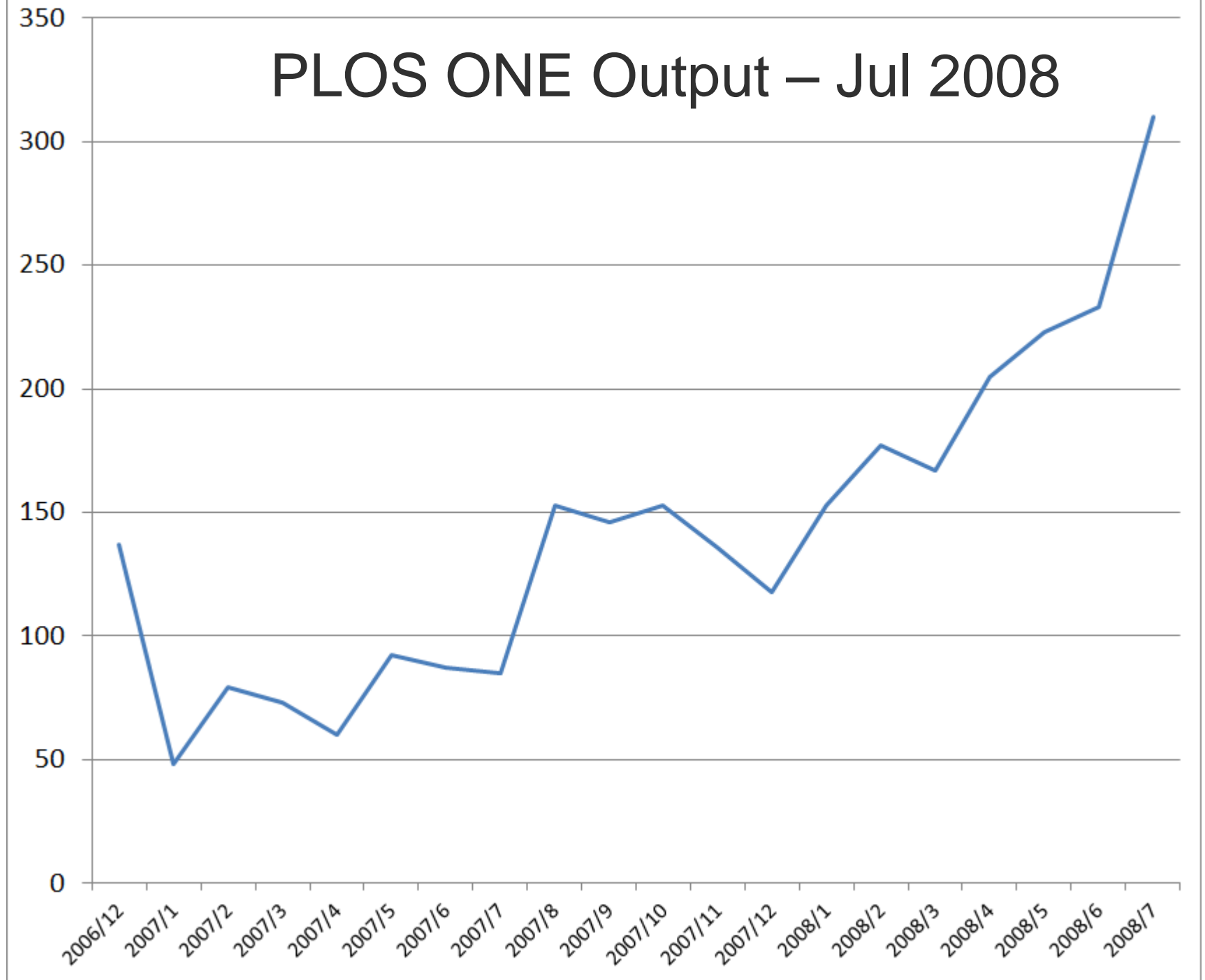
'MegaJournals'

- An online-only, peer-reviewed, open access journal
- covering a very broad subject area
- selecting content based only on 'technical soundness' (or similar)
- with a business model which allows each article to cover its own costs

The MegaJournal 'Editorial Model'

- Objective Editorial criteria
 - Scientifically rigorous ; Ethical ; Properly reported ; Conclusions supported by the data etc
 - Accept negative results, accept replication studies, accept protocols etc
- Editors and reviewers do **not** ask subjective questions such as:
 - How important is the work?
 - Which is the relevant audience?
- Everything that deserves to be published, will be published
 - Therefore the journal is not artificially limited in size
- Online tools are used to evaluate, sort & filter the content **after** publication, not before

PLOS ONE Output – Jul 2008



2 July 2008

[nature news home](#)[news archive](#)[specials](#)[opinion](#)[features](#)[news blog](#)[nature journal](#)[comments on this story](#)

Published online 2 July 2008 | Nature 454, 11 (2008) | doi:10.1038/454011a

News

PLOS stays afloat with bulk publishing

Science-publishing firm struggles to make ends meet with open-access model.

Declan Butler

Public Library of Science (PLOS), the poster child of the open-access publishing movement, is following an *haute couture* model of science publishing — relying on bulk, cheap publishing of lower quality papers to subsidize its handful of high-quality flagship journals.

Since its launch in 2002, PLOS has been kept afloat financially by some

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Launched in December 2002, with over 150 articles in the first issue, the new open access 2.0 online forum is attracting high-quality work from a variety of disciplines.

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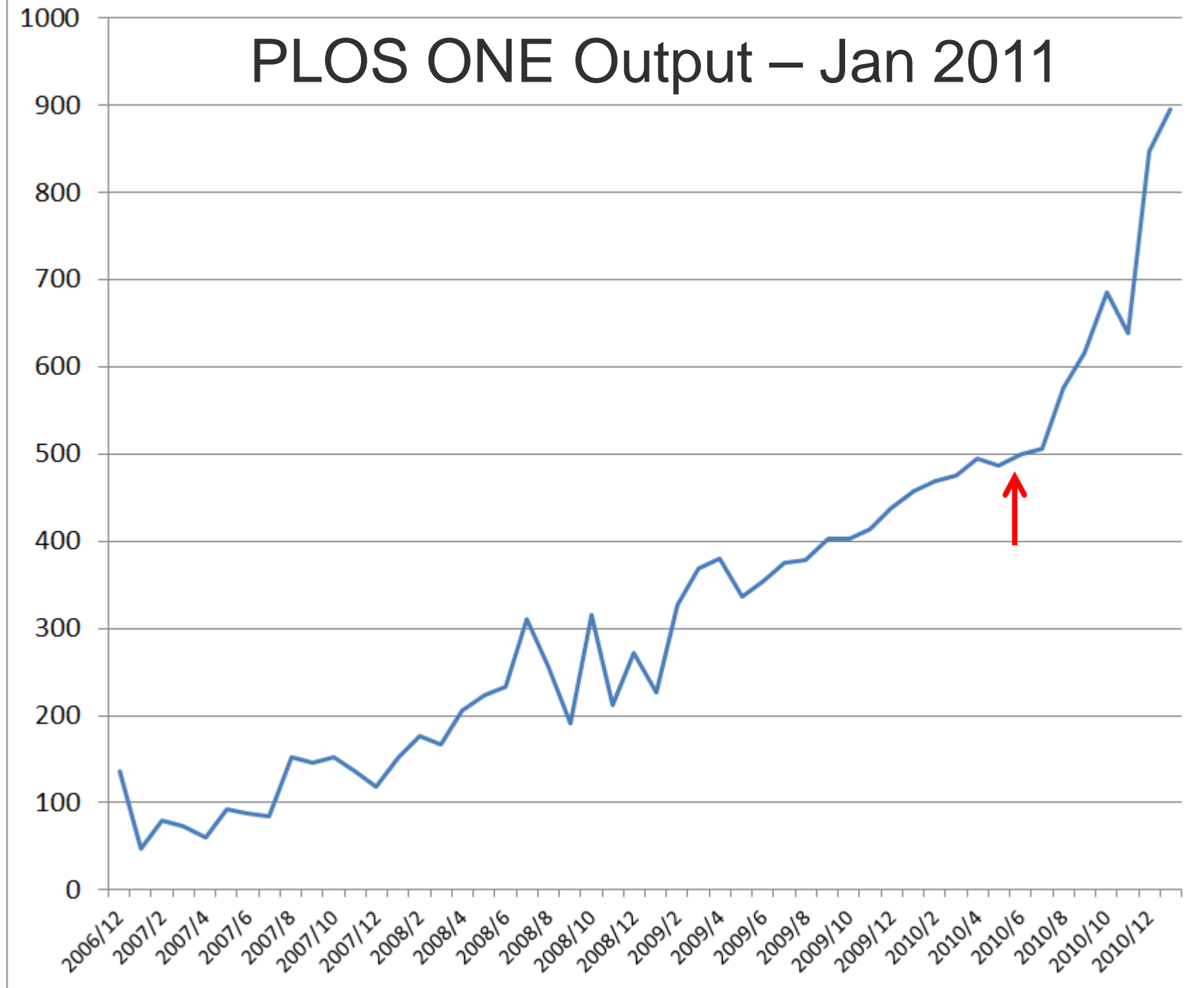
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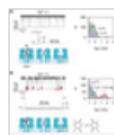
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PLOS ONE Output – Jan 2011



Online and open access, *Scientific Reports* is a primary research publication publishers of Nature, covering all areas of the natural sciences. [Read more](#)

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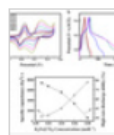


18 October 2013

Designing DNA interstrand lock for locus-specific methylation detection in a nanopore

Insoon Kang, Yong Wang, Corbin Reagan, Yumei Fu, Michael X. Wang + *et al.*

[DNA probes](#) [Single-molecule biophysics](#)
[Nanopores](#) [Biosensors](#)



18 October 2013

Ultrahigh capacitance from both Co and Ni electrodes

Cuimei Zhao, Wen Hengbin Zhang, X

[Electronic devices](#)
[Mechanical and devices](#)



18 October 2013

Type 2 Diabetes Mellitus and the Risk of Hepatitis C Virus Infection: A systematic review



18 October 2013

Plutonium release from the Fukushima Daiichi nuclear power plant

Welcome, Nature. Seriously.

Welcome to Open Access, the most exciting and important development in science communication since journals were invented.

And congratulations on your new journal *Scientific Reports*—an important step towards comprehensive Open Access to research. To realize the full power of Open Access, we urge you to permit your content to be re-used without restriction and to extend the Open Access model to all your journals.

Putting real knowledge into the hands of everyone will change the way people work, think, learn, and communicate. Openly sharing research encourages faster progress in solving some of the world's toughest problems—from protecting the biodiversity of our planet to finding more effective treatments for diseases such as AIDS and cancer.

As a result, Open Access is fast becoming the publishing model of choice for the scientific and medical community.

We're delighted that Nature and other publishers have recently announced journals modeled on *PLoS ONE*—a peer-reviewed journal that judges articles on scientific rigor rather than potential impact. Last year, *PLoS ONE* published 6,749 articles, making it the world's largest peer-reviewed journal.

We look forward to responsible partnerships in the massive effort to increase Open Access research throughout the world.

Because what we are doing is bringing about social change and accelerating progress.

Welcome to the challenge.



PLOS

Jan, 2011

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Committed to making the world's
scientific and medical literature
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of SCIENCE

PLOS ONE and the rise of the Open Access Mega Journal

www.plos.org

Peter Binfield, Publisher PLoS, pbinfield@plos.org



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27th 2012
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framework and the Ambra



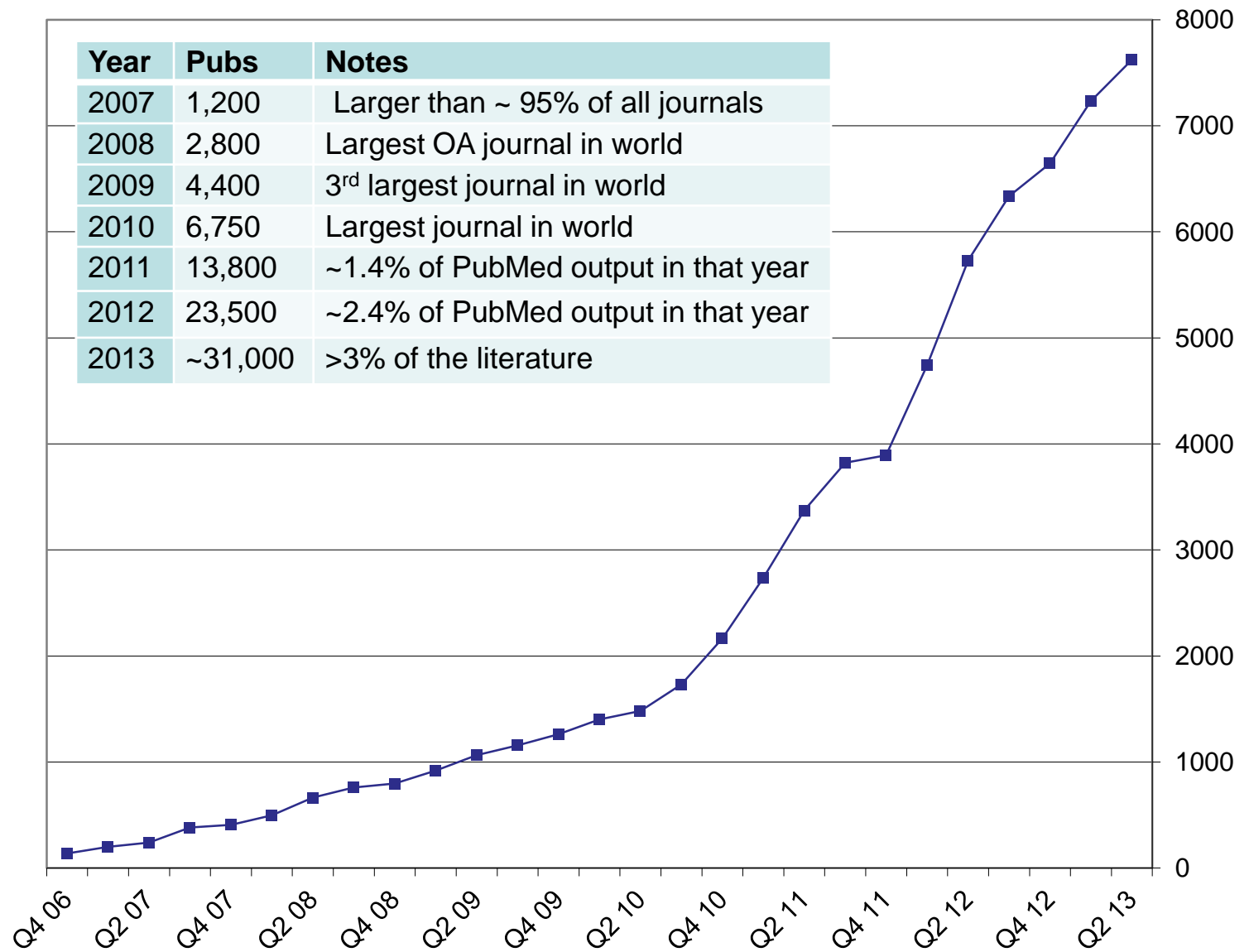
"PLOS ONE and the Rise of the Open Access Mega Journal" by Peter Binfield

by Peter Binfield on Jun 06, 2011 Edit

11,576
VIEWS

A presentation made by Peter Binfield, of Public Library of Science (PLOS), to the Society of Scholarly Publishing (SSP) meeting, June 1st 2011. Describing the model behind the journal PLoS ONE, some indications of the success of that model, and predicting the development of a new type of journal model

PLOS ONE Quarterly Output



Known MegaJournals (Oct 2013)

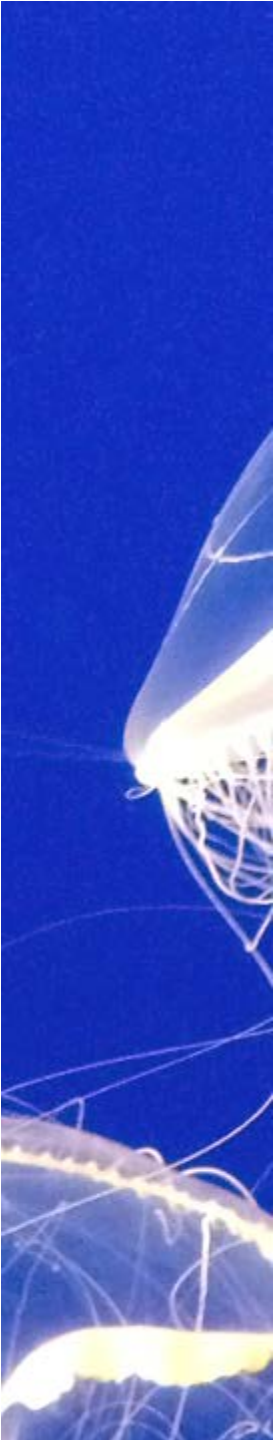
Name	1st Publications	Total Output
Optics Express (from the OSA)	1997	?
PLOS ONE	2006	75,382
Ecosphere (from the Ecological Society of America)	2010	399
mBio (from the American Society of Microbiology)	2010	601
FEBS Open Bio (Fed of European Biochemical Socs)	2011	129
AIP Advances	2011	973
BMJ Open	2011	1,540
SAGE Open	2011	371
QScience Connect	2011	53
G3 (the Genetics Society of America)	2011	383
Scientific Reports (Nature)	2011	2,731
EPJ-Plus (part of European Phys Journal) (not OA!)	2011	?
Springer Plus	2012	548
Cureus	2012	57
The Scientific World Journal (Hindawi)	2012	1,860
F1000 Research	2012	225
Biology Open (the Company of Biologists)	2012	252
PeerJ	2013	171
SAGE Open Medicine	2013	12
CMAJ Open (Canadian Medical Association)	2013	15

And Coming Soon...

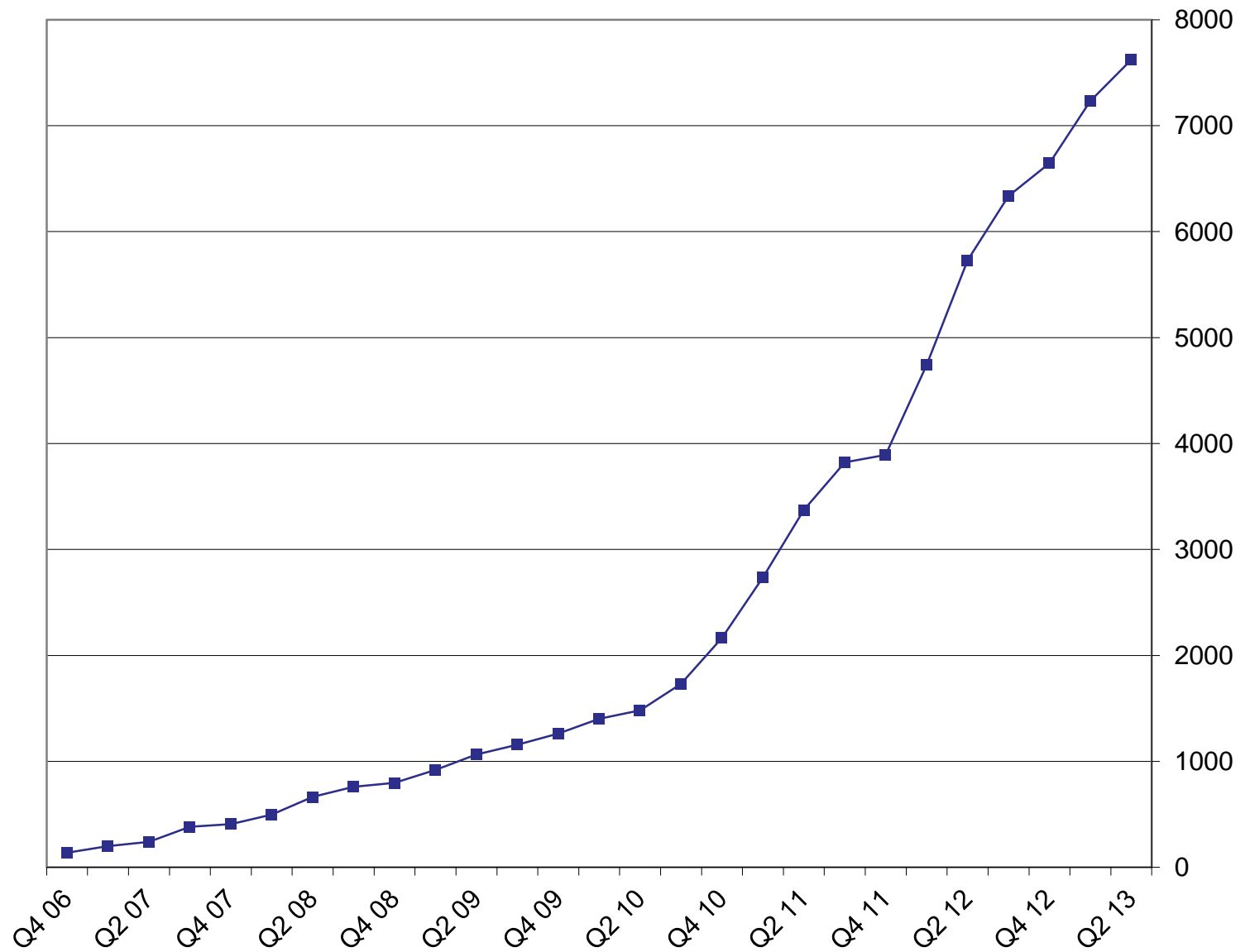
Name	Coming when?
BMJ Open Respiratory Research	in 2013
BMJ Open Diabetes Research & Care	in 2013
Open Heart (BMJ)	in 2013
Elementa (BioONE)	in 2013
IEEE Access	in 2013
OpenLibHums	coming in 2014
The Cogent Series (T&F)	in 2014
The Winnower	in 2014

Known MegaJournals Today

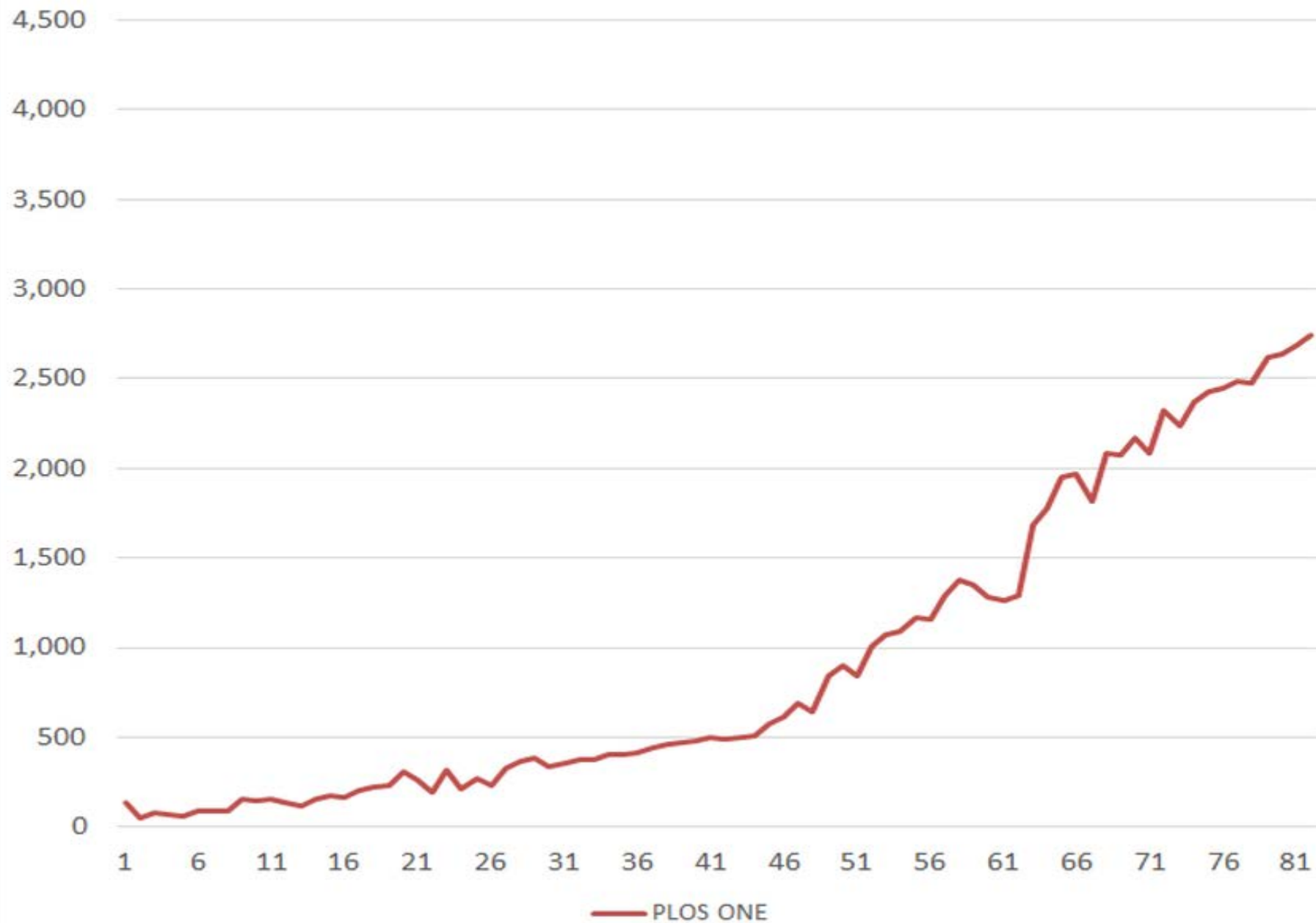
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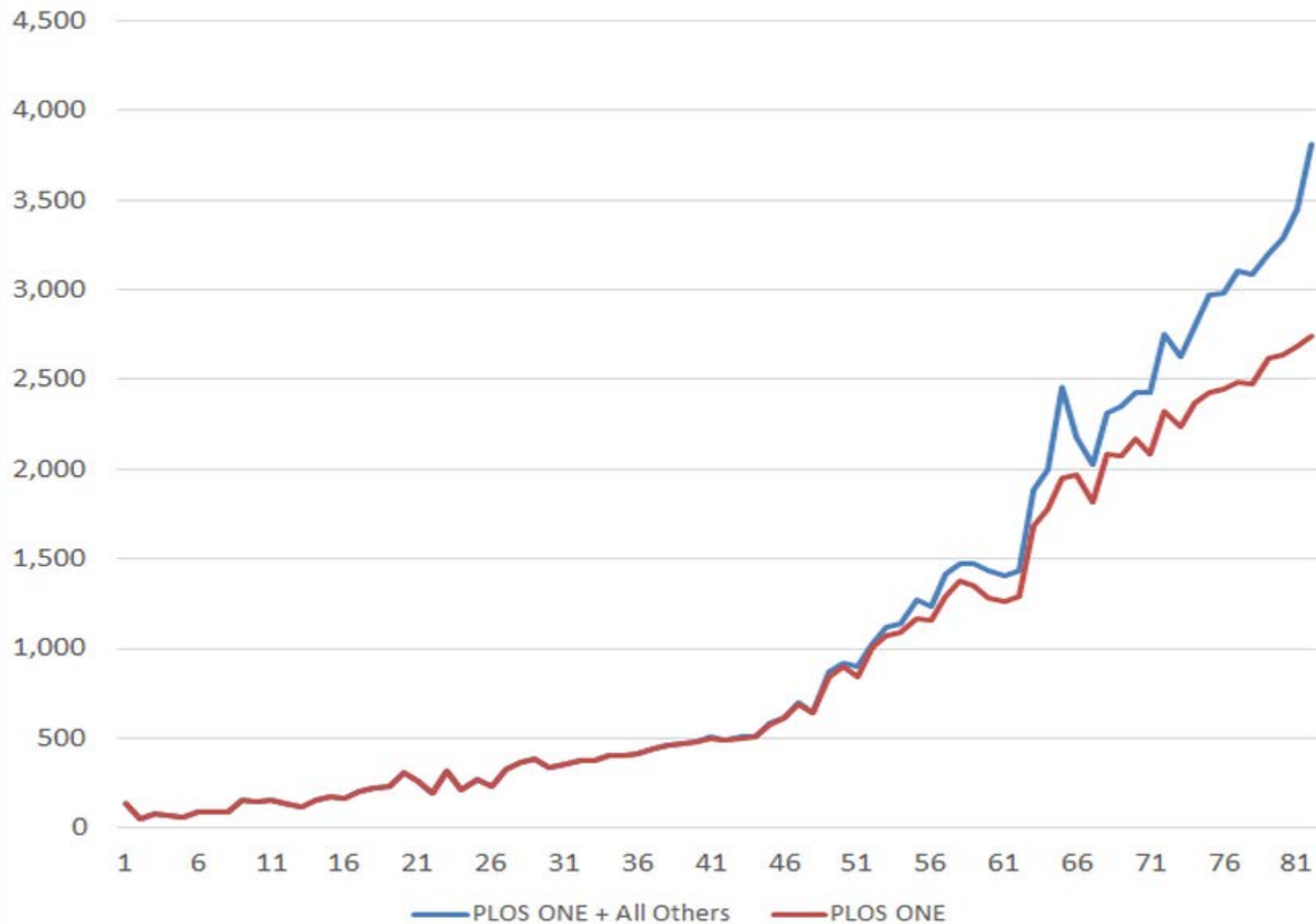
PLOS ONE Quarterly Output



PLOS ONE Output (monthly)



All MegaJournal Output (monthly)



Mega?

Mega = 10^6 (one million)

Kilo = 10^3 (one thousand)

But 'MegaJournal' = ?





It's About the Editorial Criteria

- “Reviewing only for scientific and methodological soundness” (PLOS ONE)
- “rigorous but inclusive review” (BioONE)
- “impact neutral” (Hindawi)
- “publishing all sound science - separating the question of level of interest from the decision about publishability” (BMC)
- “technically sound” (Scientific Reports)
- “properly conducted medical research” (BMJ Open)
- “objective determination of scientific and methodological soundness, not subjective determinations of 'impact,' 'novelty' or 'interest'” (PeerJ).

The MegaJournal Editorial Model

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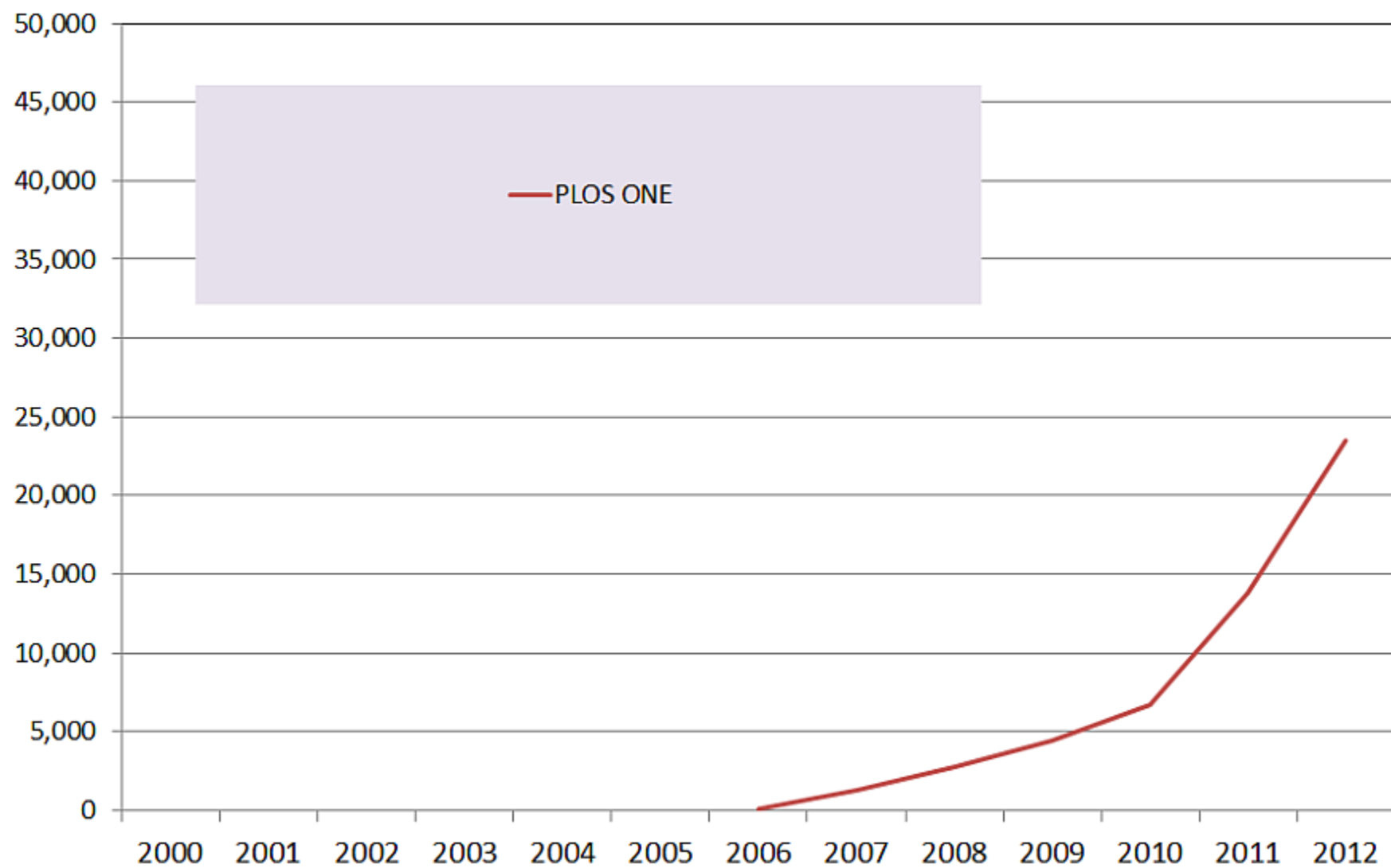
If we define using the same Editorial Criteria but allow for ‘niche’ journals...

Then we should include:

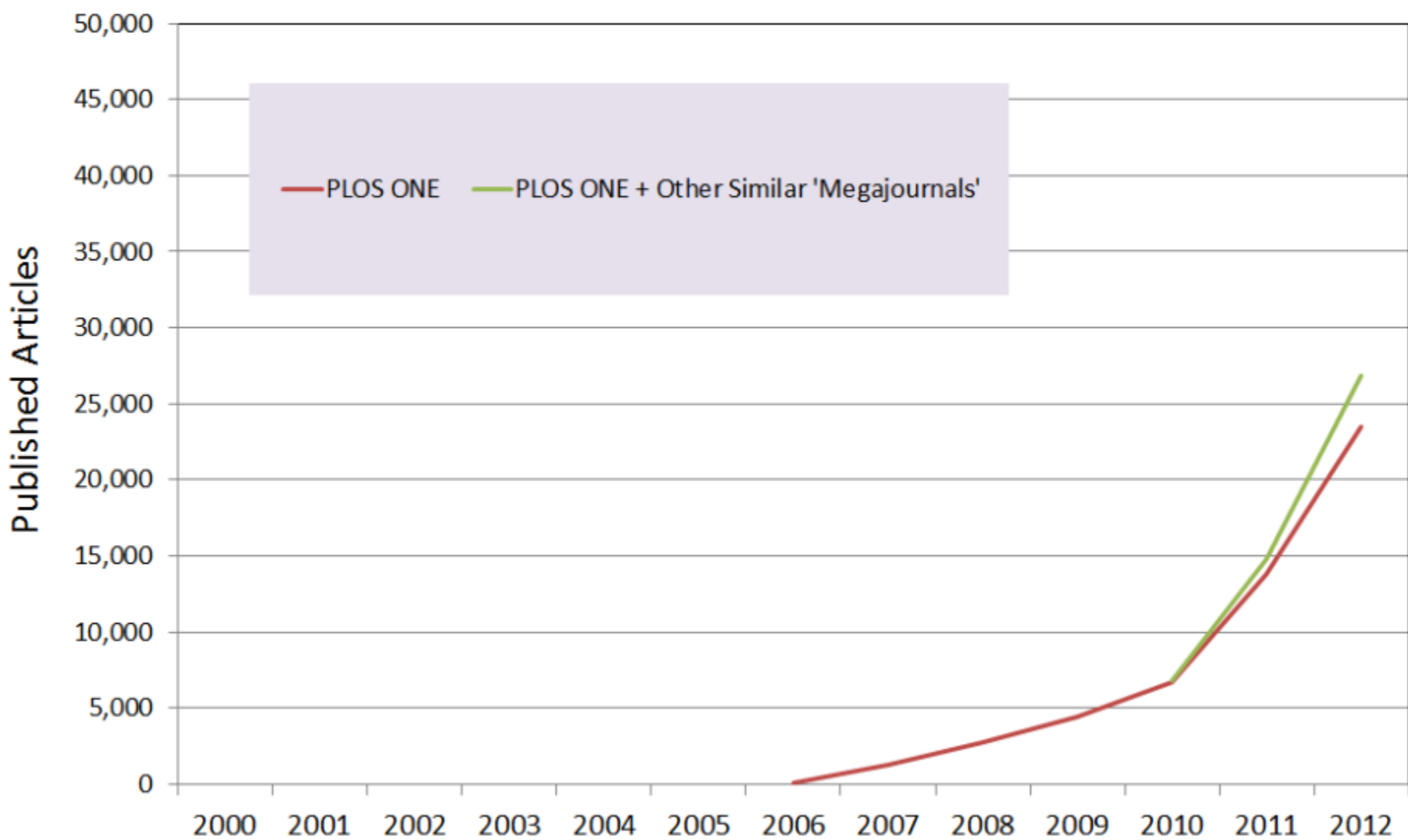
- All of the “Frontiers in...” Series (part of Nature)
- All of the “BMC Series” (~ half of BMC)
- ~ 1/3 of Hindawi’s current output

And if we do that....

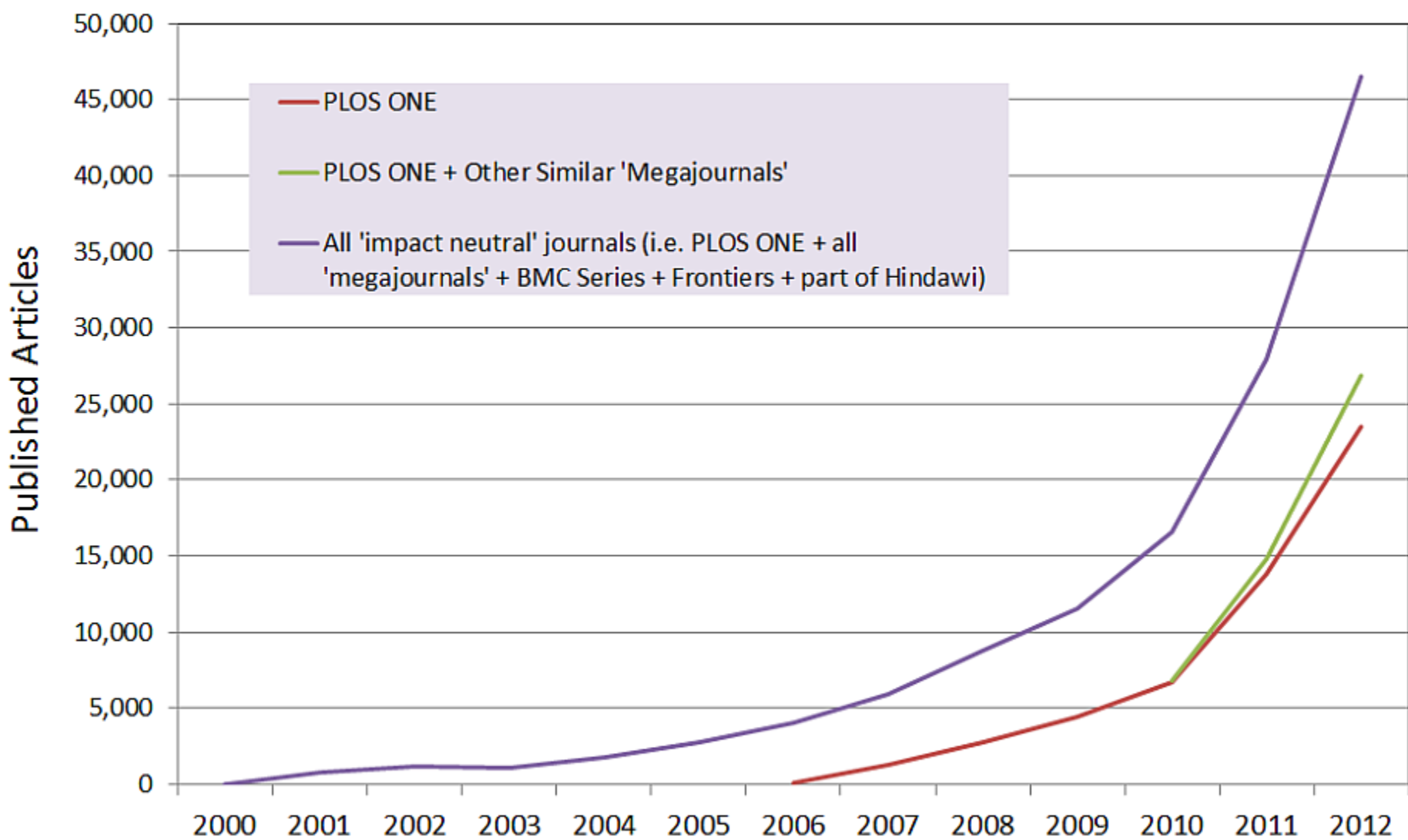
Annual Article Output of all 'impact neutral' Journals



Annual Article Output of all 'impact neutral' Journals




Annual Article Output of all 'impact neutral' Journals




Why is it better to operate the 'full' MegaJournal model?

- Improves the author experience – single review and decision
- Improves the 'global reviewer' experience – only review any given paper once
- 'subjective filtering' pre-publication is an outdated approach to determining quality
- In an Author Pays OA model, there is no economic reason for artificially limiting the size of a journal
- The journal only needs to be indexed once (e.g. MedLine, WoS)
- A large journal attracts high usage / high visibility
- Many aspects of the journal can be 'consolidated' (e.g. one blog, one twitter stream, one marketing plan)
- Economies of scale naturally develop, making the journal more efficient
- The journal has the opportunity to set consistent standards which may become de facto standards in it's field



Regardless of Name, Have They 'Changed Everything'?

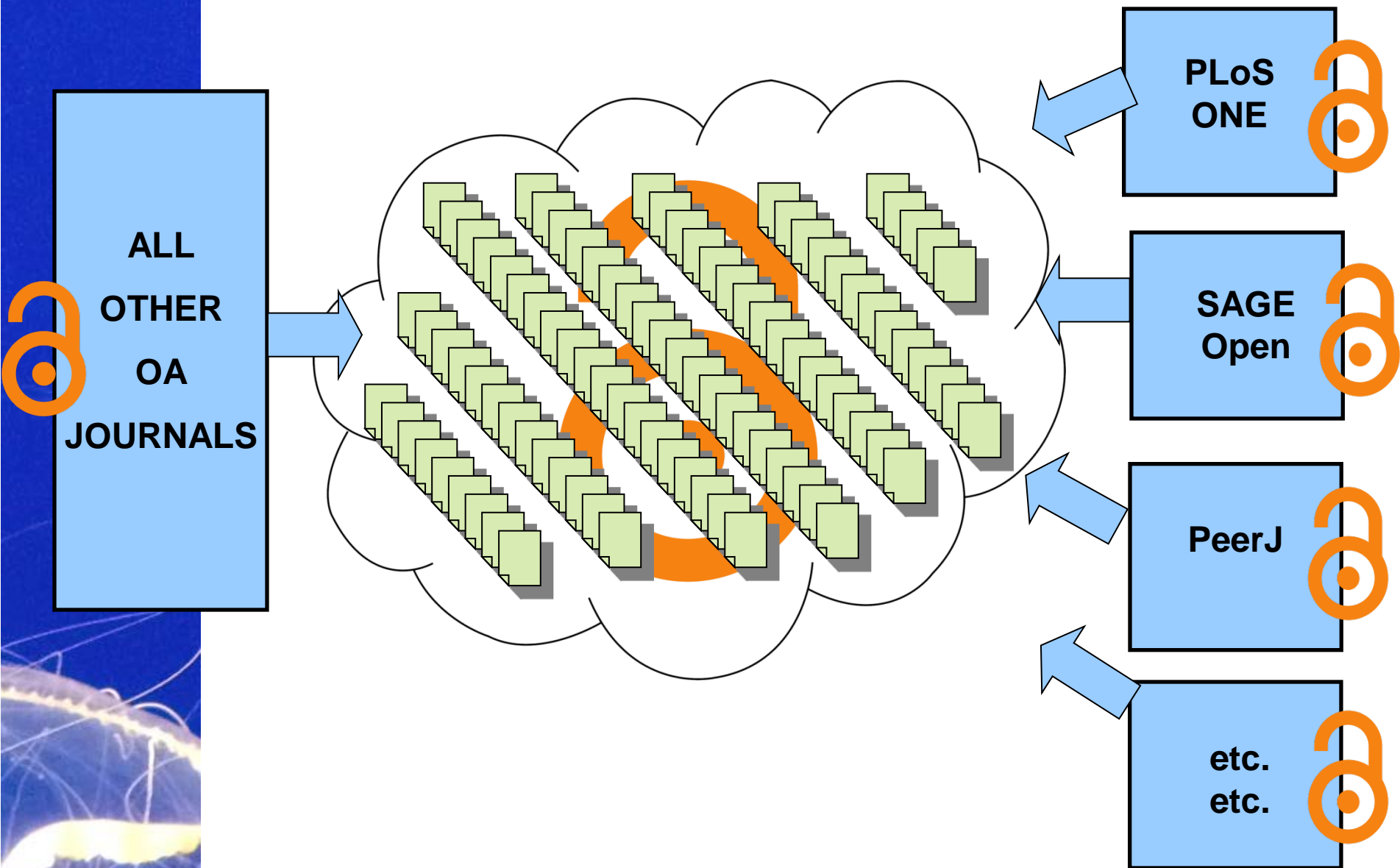
- Rapidly Approaching ~10% of all published content, spurring new developments
- Require (and have stimulated) Article-Level Metrics
- Publish Negative Results, Replication Studies, Incremental Articles
- Dramatic Improvement to the Speed of the Ecosystem
- Dramatic Improvement to the Efficiency of the Ecosystem



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An OA future containing MegaJournals



New Innovations



2006

PeerJ

Early 2013

ImpactStory.

2012



Altmetric

2012

PeerJ PrePrints

2013

F1000Research

2012

aIOS
REVIEW

2013



figshare

2011

PLOS CURRENTS

2009

bioRxiv

THE PREPRINT SERVER FOR BIOLOGY

2013



Rubriq
independent peer review


2013

BMJ
open

2011

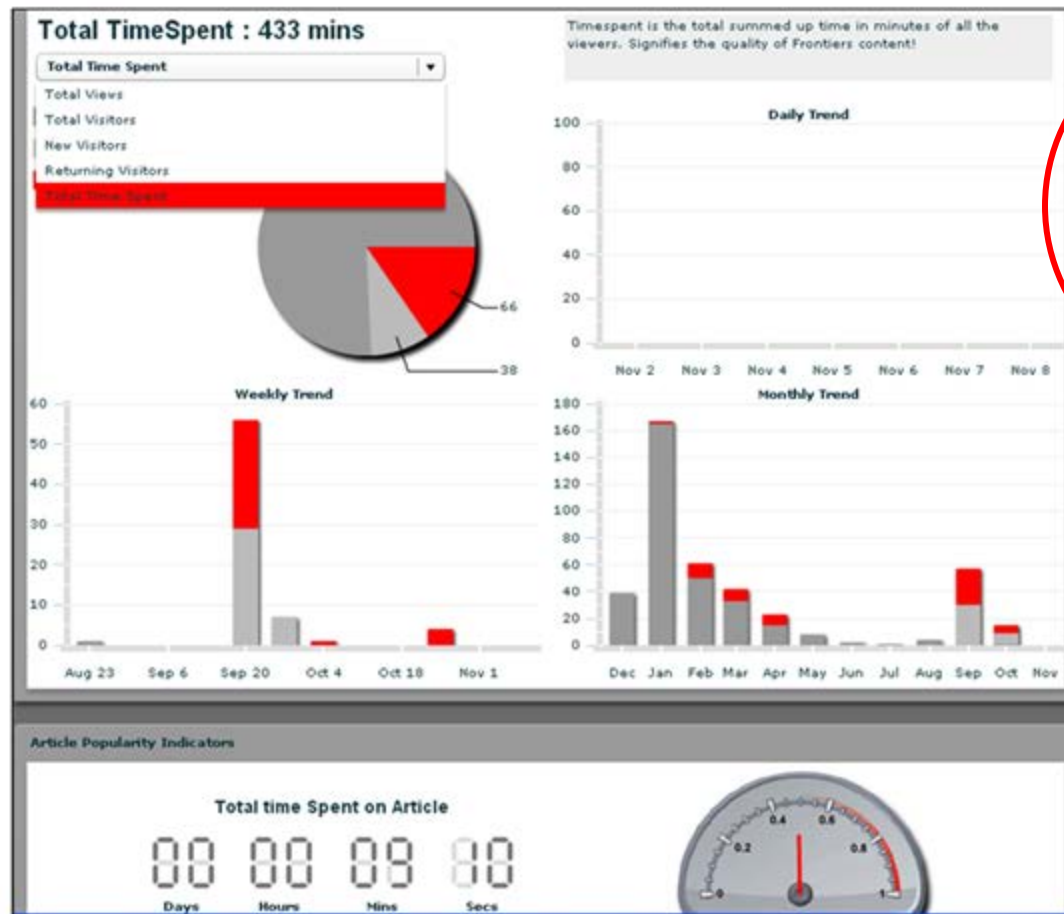
International Scholarly Research Network

2010



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Screenshot from ~ Nov 2009 but Way Back Machine has examples from April 2008

PLOS ALMs

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Ionizing Radiation Changes the Electronic Properties of Melanin and Enhances the Growth of Melanized Fungi

Ekaterina Dadachova , Ruth A. Bryan, Xianchun Huang, Tiffany Moadel, Andrew D. Schweitzer, Philip Aisen, Joshua D. Nosanchuk, Arturo Casadevall

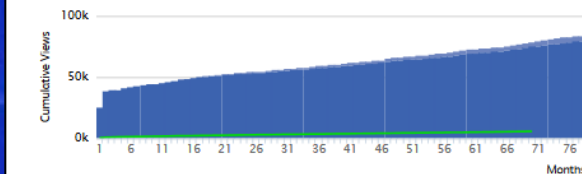
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Viewed ?

Total Article Views	HTML Page Views	PDF Downloads	XML Downloads	Totals
83,732	PLOS 73,986	5,094	241	79,321
May 23, 2007 (publication date) through Oct 9, 2019*	PMC 3,777	634	n.a.	4,411
	Totals 77,763	5,728	241	83,732

7.37% of article views led to PDF downloads

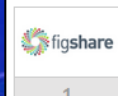


BETA

Compare average usage for articles published in 2007 in the subject area:

Microbiology  | [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. PIVC data is posted on a monthly basis and will be made available once received.



Cited ?

57	39	21	56	Search

Saved ?

5	97

Discussed ?

26	16	107	3	2

Search

Recommended ?

7

Information on PLOS Article-Level Metrics
Questions or concerns about usage data? Please let us know.



Comments

Fantastic study
Posted by jeta11on

Blog comment link
Posted by pedrobeltrao

Many?
Posted by Veristimulus




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Unreliable research

Trouble at the lab

Scientists like to think of

Oct 19th 2013 | From the print

nature

International weekly journal of science

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NATURE | COMMENT

Drug development preclinical cancer

C. Glenn Begley & Lee M. Ellis



Science
EXCHANGE

Blog

Reproducibility Initiative receives \$1.3M grant to validate 50 landmark cancer studies

October 16, 2013 | Posted by Elizabeth in [Science Exchange News](#) | [View comments](#)



REPRODUCIBILITY
INITIATIVE




Rewarding Reproducible Research... submit your publication to opt in



<http://www.nature.com/nature/journal/v483/n7391/full/483531a.html>

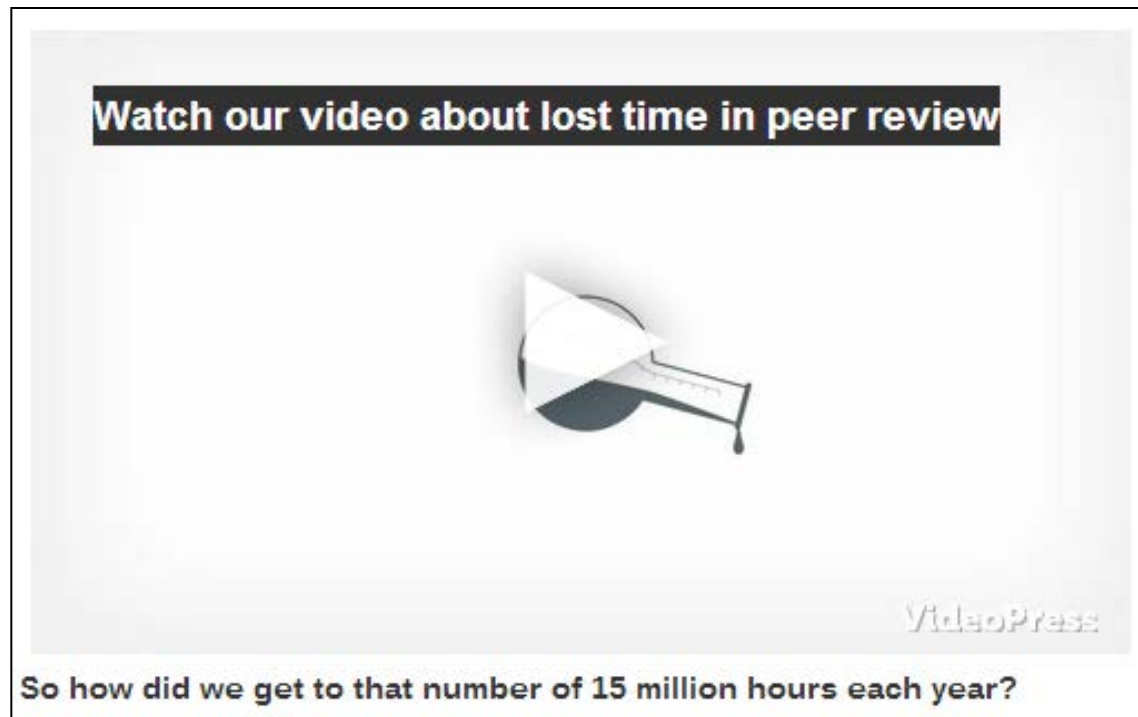
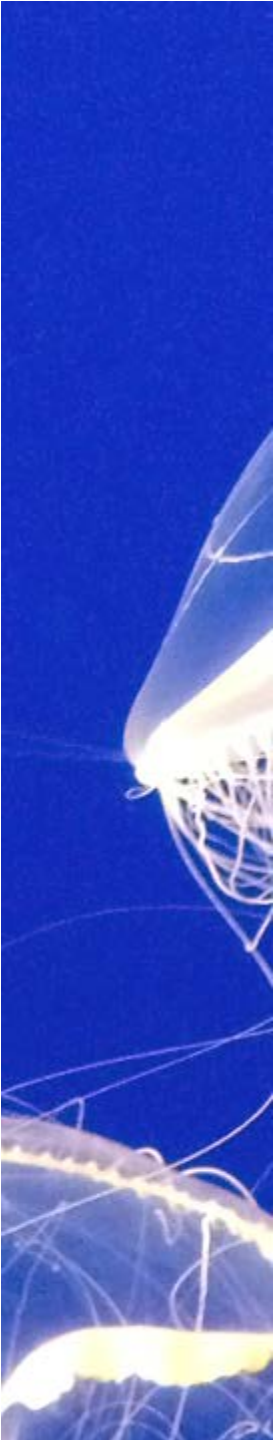
<http://www.economist.com/news/briefing/21588057-scientists-think-science-self-correcting-alarming-degree-it-not-trouble>

<http://blog.scienceexchange.com/2013/10/reproducibility-initiative-receives-1-3m-grant-to-validate-50-landmark-cancer-studies/>



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<http://blog.rubriq.com/2013/06/03/how-we-found-15-million-hours-of-lost-time/>

“...in a recent report Kassab and his colleagues estimated that Elsevier currently rejects 700,000 out of 1 million articles each year.”

<http://poynder.blogspot.co.uk/2013/10/media-research-analyst-at-exane-bnp.html>

PeerJ

Academic Publishing is Evolving...

Nucleic Acids Research

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An analysis of the feasibility of short read sequencing



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[OPEN ACCESS](#)

**Nava Whiteford, Niall Haslam, Gerald Weber, Adam Prügel-Bennett¹,
Jonathan W. Essex, Peter L. Roach, Mark Bradley² and Cameron Neylon***

[+ Author Affiliations](#)

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This Article

33 (19): e171.
doi: 10.1093/nar/gni170

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Abstract

Several methods for ultra high-throughput DNA sequencing are currently under investigation. Many of these methods yield very short blocks of sequence information (reads). Here we report on an analysis showing the level of genome sequencing possible as a function of read length. It is

“rejected from at least six journals (including Nature, Nature Genetics, Nature Methods, Science) and took a year to publish before going on to be my most cited research paper (150 last time I looked)” – Cameron Neylon



➤ Lab Members

Nobody likes to receive a letter from the editor of your favorite journal letting you know that your paper was rejected. Some journals have begun including

Posted On	Title	Rejected By	Ultimately Published In
14 Sep 2012	Cryoelectron tomography reveals doublet-specific structures and unique interactions in the I1 dynein	J. Cell Biol.	2012, PNAS 109:E2067-76
31 Aug 2012	Movies of ice-embedded particles enhance resolution in electron cryo-microscopy	PNAS, Nature Methods	2012, Structure
2 Mar 2012	Nucleotide excision repair (NER) machinery recruitment by the transcription-repair coupling factor involves unmasking of a conserved intramolecular interface	NSMB, Mol. Cell	2012, PNAS 109:3353-3358
14 Dec 2010	Atomic model of an infectious rotavirus particle	Science	2011, EMBO J. 30:408-416
29 Jul 2010	A β (1-40) Fibril Polymorphism Implies Diverse Interaction Patterns in Amyloid Fibrils	EMBO J, PLoS, JBC, JACS	2009, J. Mol. Biol. 386:512-522
28 Jul 2010	Molecular interactions in rotavirus assembly and uncoating seen by high-resolution cryo-EM		
28 Jul 2010	Paired β -sheet structure of an A β (1-40) fibril by electron microscopy		
28 Jul 2010	The structure of the A β (1-40) fibril by electron microscopy		
28 Jul 2010	It's a long way from the K... to the PLoS One		
28 Jul 2010	The structure of the A β (1-40) fibril by electron microscopy		
28 Jul 2010	Ele... Nature		2004, Neuron 41:513-519




ShirasuLab ShirasuLab@RIKEN
in PLoS One

ShirasuLab Shirasu Lab@RIKEN
Our first paper in **PLoS One** accepted! Previously rejected by P
Methods just because we use non-popular plant. Congrats, Julianne!
35 minutes ago

Nature	2004, Neuron 41:513–519
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<http://grigoriolab.jp/eli>

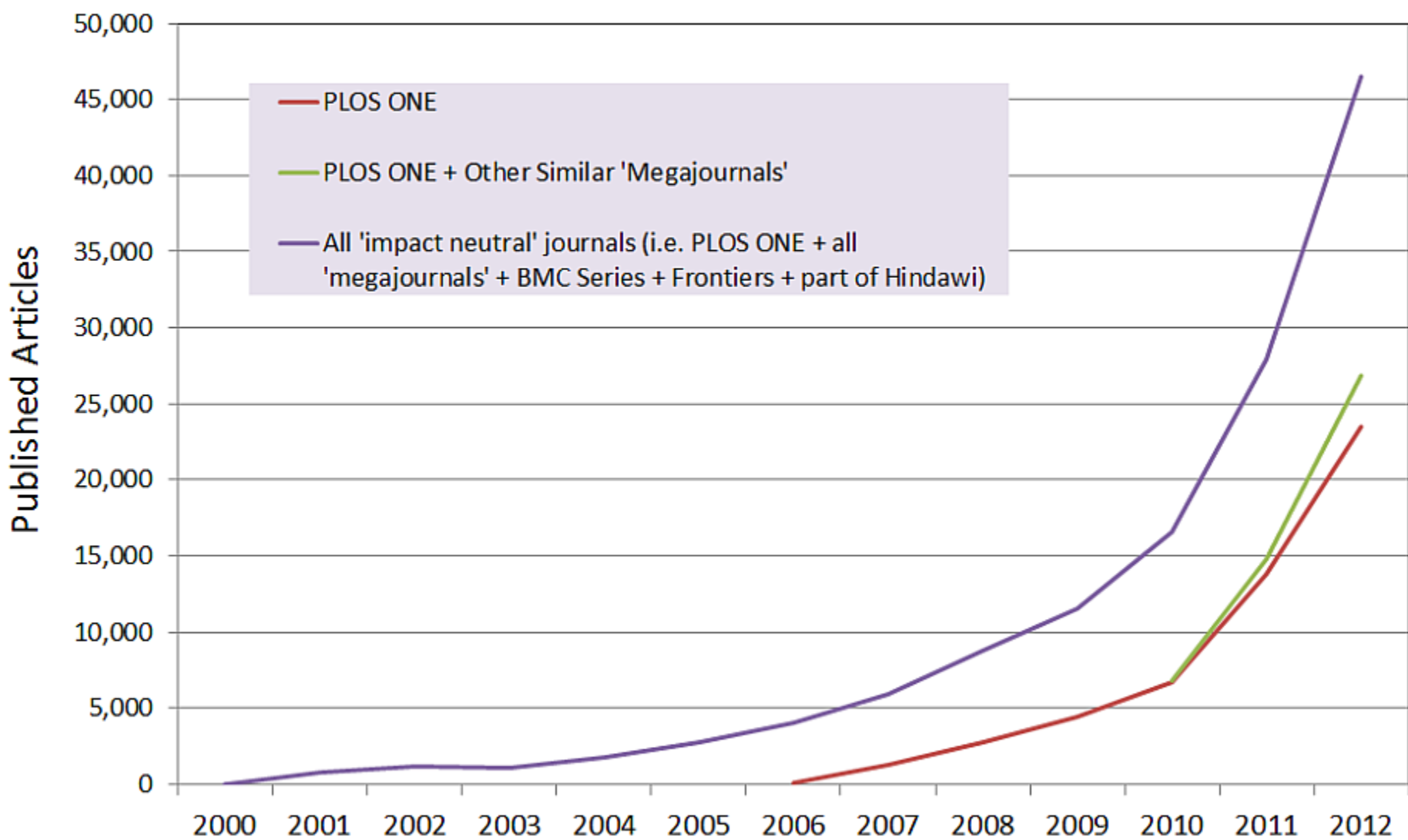
<http://grigoriefflab.janelia.org/rejections>



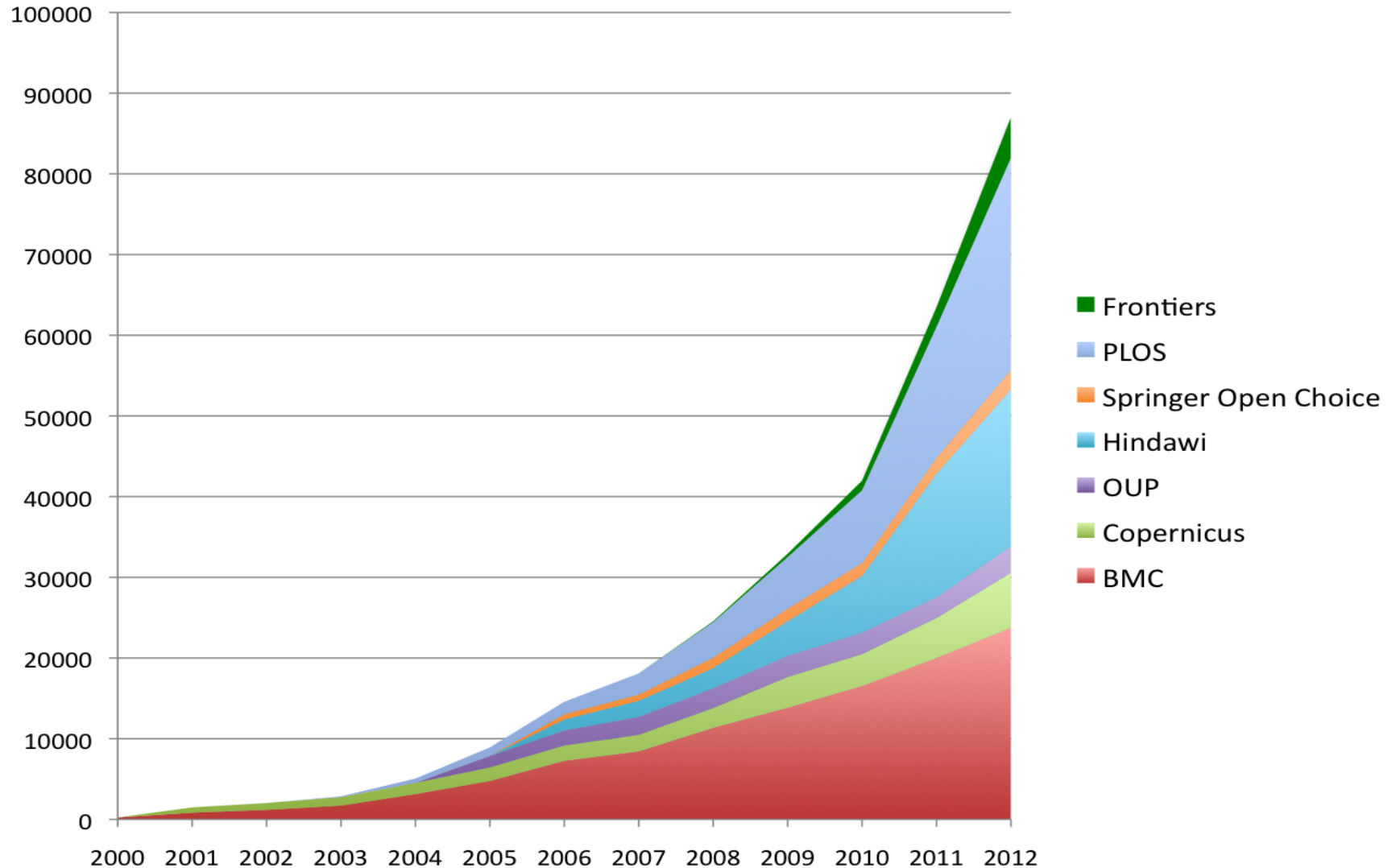
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Annual Article Output of all 'impact neutral' Journals



Stacked area graph of the contribution of major 'APC' OA publishers (articles per year)

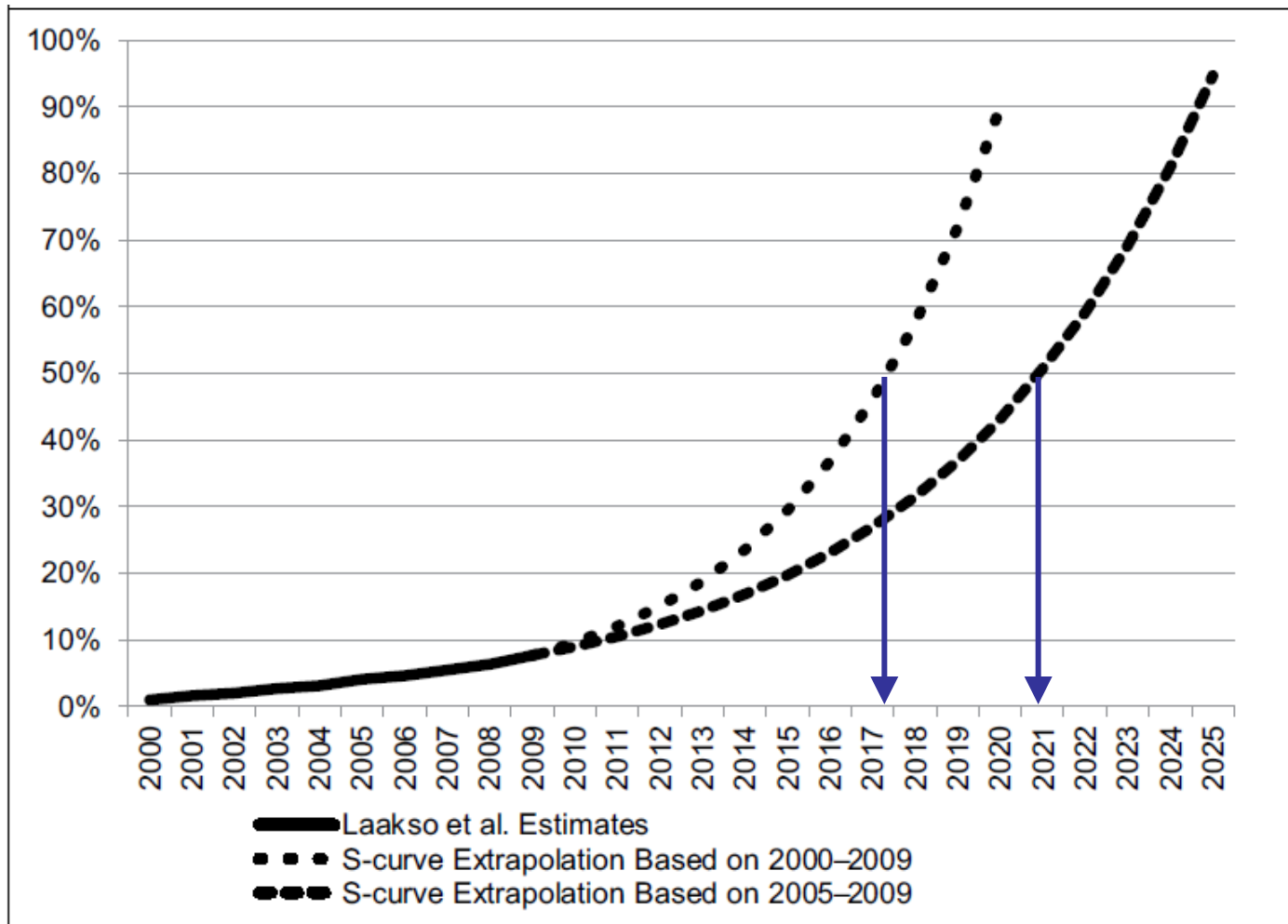


Predicted 'Disruption Timeframe' of OA vs Subscription model

TABLE 1

Pace of Substitution of Direct Gold OA for Subscription Journals

	Laakso et al. Estimate	Extrapolation Based of 2000–2009	Extrapolation Based of 2005–2009
2000	1.0%		
2001	1.7%		
2002	2.0%		
2003	2.7%		
2004	3.1%		
2005	4.1%		
2006	4.7%		
2007	5.5%		
2008	6.4%		
2009	7.7%		
2010		9.6%	9.0%
2011		12.1%	10.5%
2012		15.1%	12.3%
2013		18.8%	14.4%
2014		23.6%	16.9%
2015		29.4%	19.7%
2016		36.8%	23.1%
2017		46.0%	27.0%
2018		57.5%	31.6%
2019		72.0%	36.9%
2020		89.9%	43.2%
2021			50.7%
2022			59.2%
2023			69.2%



Source: "The Inevitability of Open Access", David Lewis

<http://crl.acrl.org/content/73/5/493.full.pdf+html> (College and Research Libraries, Sep 2012)

The Net Result

- New business models, new innovations and new thinking can flourish in a new ecosystem
- 'Mistakes' or 'non-results' are actually reported – future researchers save time, energy, resources
- Previously 'uninteresting' results are actually reported – the potential to incrementally build on these 'micro findings' is enabled
- Reporting standards are raised and standardized
- The process of publication is made more transparent and 'fair' for the author
- Less time is wasted by multiple reviewers on the same content
- Better methods of filtering, evaluating and sorting publications will evolve
- Science is published more rapidly, saving author time and improving the overall speed of discovery

Thank You

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