

For the Public Good

Research Impact and the Promise of Open Access

Montasir Abbas, Associate Professor of Civil Engineering

Karen DePauw, Vice President and Dean for Graduate Education

Brian Hole, founder and CEO of Ubiquity Press

Peter Potter, Director, Publishing Strategy, University Libraries

Siddhartha Roy, Ph.D. candidate, Department of Civil & Environmental Engineering

Mohammed Seyam, Ph.D. candidate, Department of Computer Science

Scholarly Publishing: A Snapshot

A Global Business

STM* revenues: \$28 billion

- Journals = 40% (\$11b)
- Books = 16% (\$5b)
- Other (Tech info, databases, tools) = 44%

Market Share

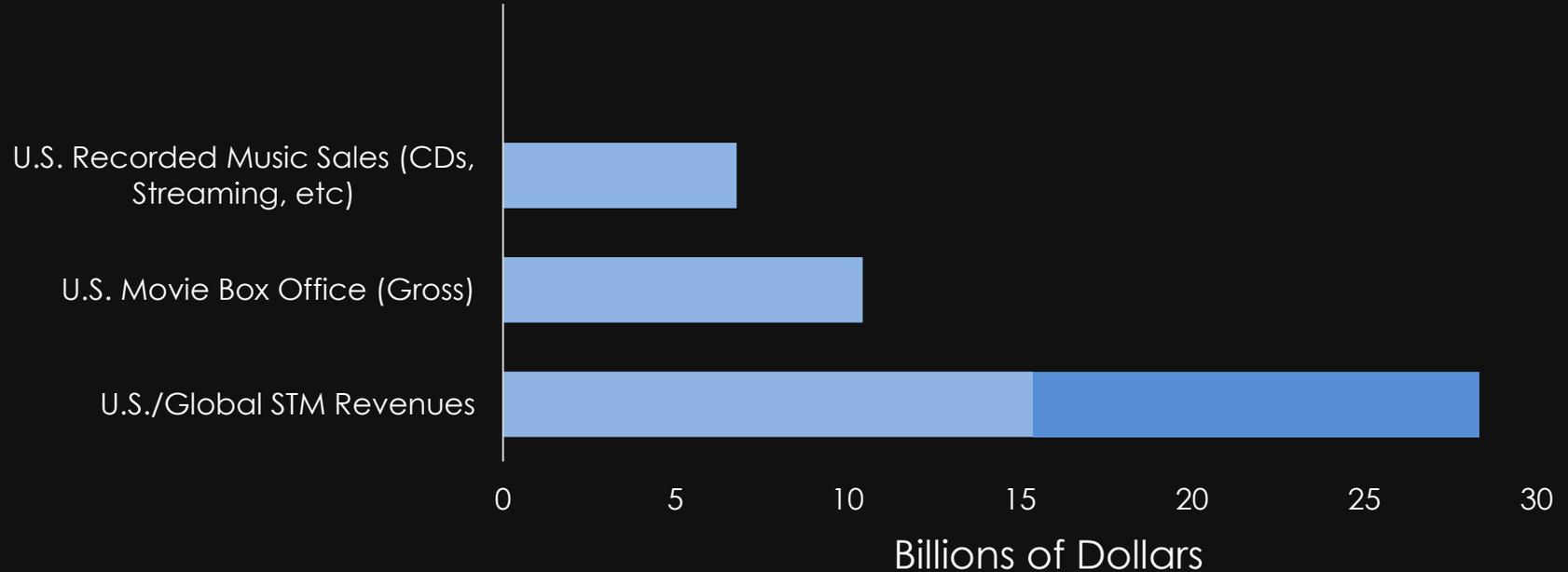
- United States - 55%
- Europe/Middle East - 28%
- Asia/Pacific - 14%
- Rest of world - 4%
- China
 - Second largest producer of research papers
 - Market share small but growing

* STM'' is an abbreviation for scientific, technical, and medical but it is also used to denote the sum total of scholarly publishing, including the social sciences, arts, and humanities. Source: Mabe & Ware, The STM Report (2015)



Scholarly Publishing: A Snapshot

A Global Business



Scholarly Publishing: A Snapshot

The Players

- Researchers
 - *As both authors and readers*
- Publishers
 - Scholarly societies
 - Academic/University presses
 - Commercial publishers
- Libraries
 - 68-75% of journal revenues from library subscriptions
- Research funders
 - NIH, NSF, HHMI, Research Councils UK, European Research Council

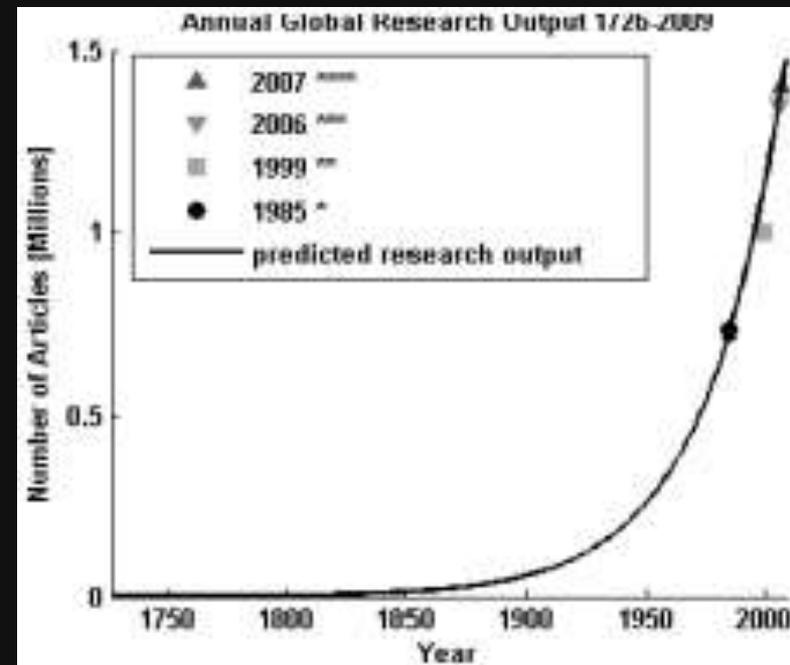


Scholarly Journals

It is estimated that the total number of journal titles worldwide now exceeds 30,000

“Facts” and figures:

- Global annual journal revenue: \$11 billion
- No. of articles published per year: 2.5 million
- No. of journal publishers: 5,000+
 - Of these, four account for 40% of market: Elsevier, Springer, Wiley, Taylor & Francis
- Number of active researchers in world today: 7 - 9 million
- Global spending on R&D more than doubled from 1996 to 2012 (NSF, 2012)



Estimated annual global research article output at 3% annual growth

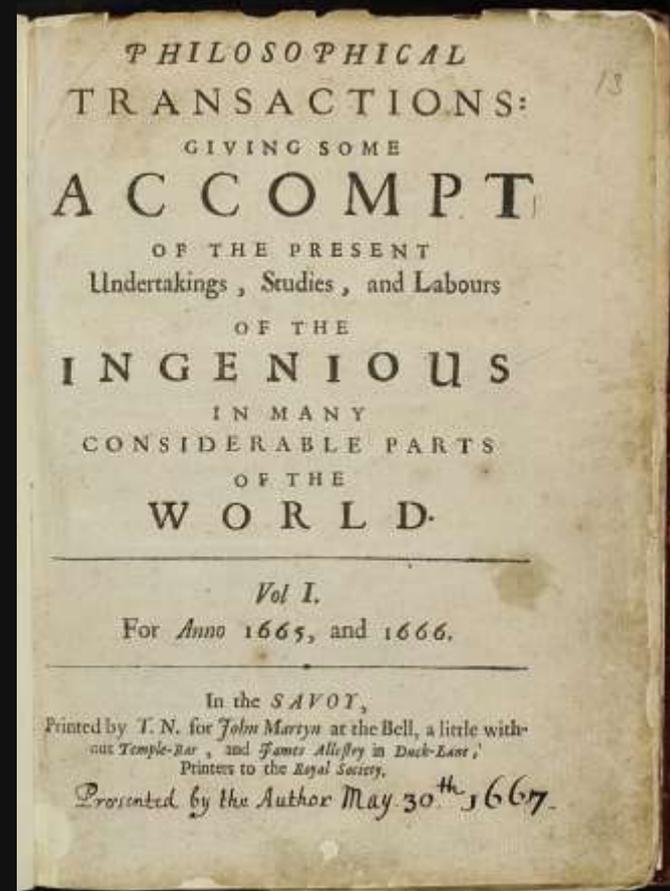
Scholarly Journals

Journals remains the primary vehicles for the formal communication of scientific research. Why is this so?

Consider the functions that journals perform in the scientific community:

- Dissemination
- Registration of discovery
- Quality control (peer review)
- Key indicator for career advancement

See Michael Clarke, "Why Hasn't Scientific Publishing Been Disrupted Already?" [Scholarly Kitchen](#), January 4, 2010



The Promise of Open Access

An Unprecedented Public Good?

“An old tradition and a new technology have converged to make possible an unprecedented **public good**. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The **public good** they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.”

The Budapest Open Access Initiative

February 14, 2002

Budapest, Hungary

<http://www.budapestopenaccessinitiative.org/read>



The Promise of Open Access

A Push from the Federal Government

In 2013 the White House Office of Science & Technology Policy directed federal agencies with more than \$100M in R&D expenditures to develop plans to make the published results of federally funded research freely available to the public within one year of publication.



The Promise of Open Access

A Growing Infrastructure

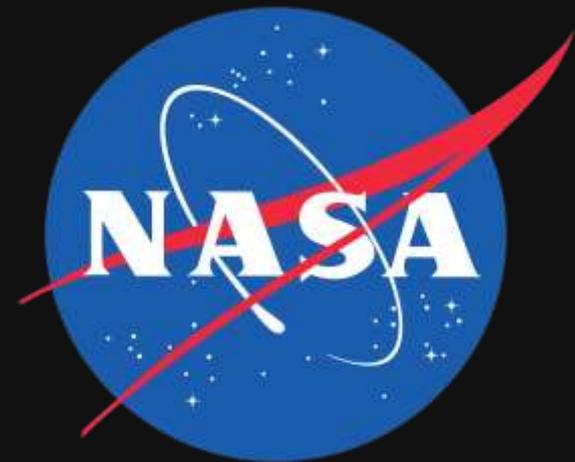


PubMed Central is a free full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM)

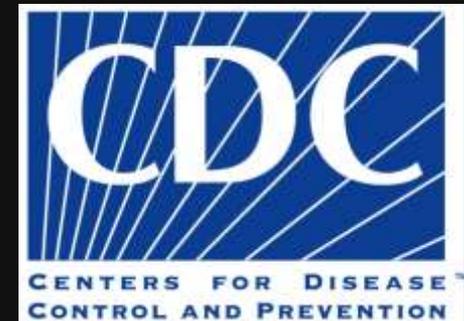
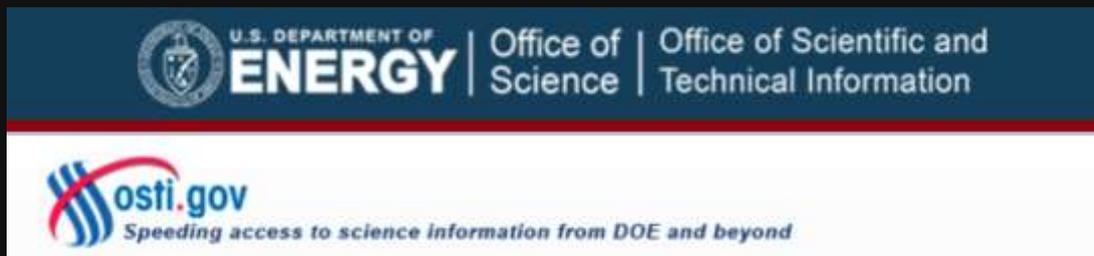
- 4 million articles archived in PMC
- 1,939 full participation journals

The Promise of Open Access

A Growing Infrastructure



BILL & MELINDA
GATES *foundation*

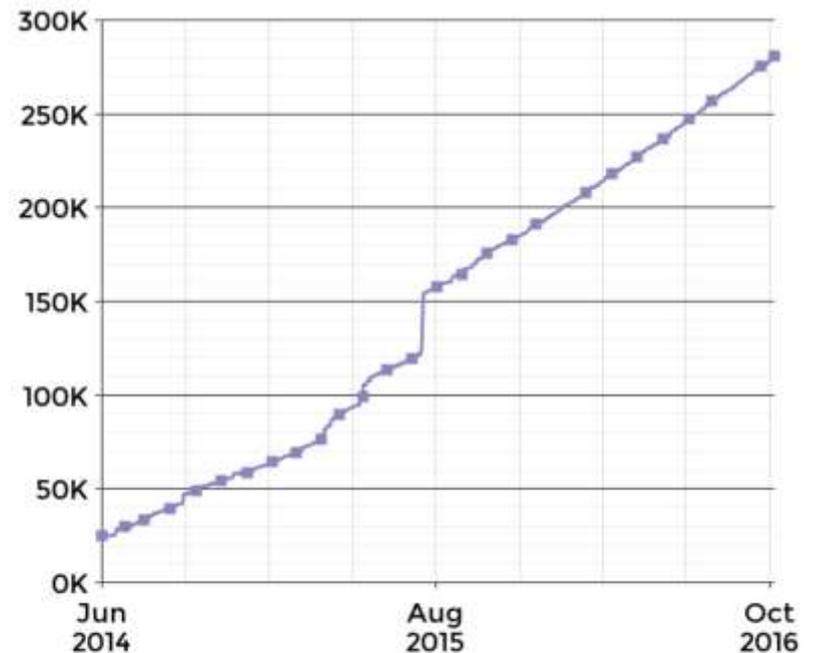


The Promise of Open Access

A Growing Infrastructure

The logo for CHORUS, featuring the word "CHORUS" in a bold, sans-serif font. The letter "O" is stylized with a blue arrow pointing upwards and to the right, integrated into its circular shape.

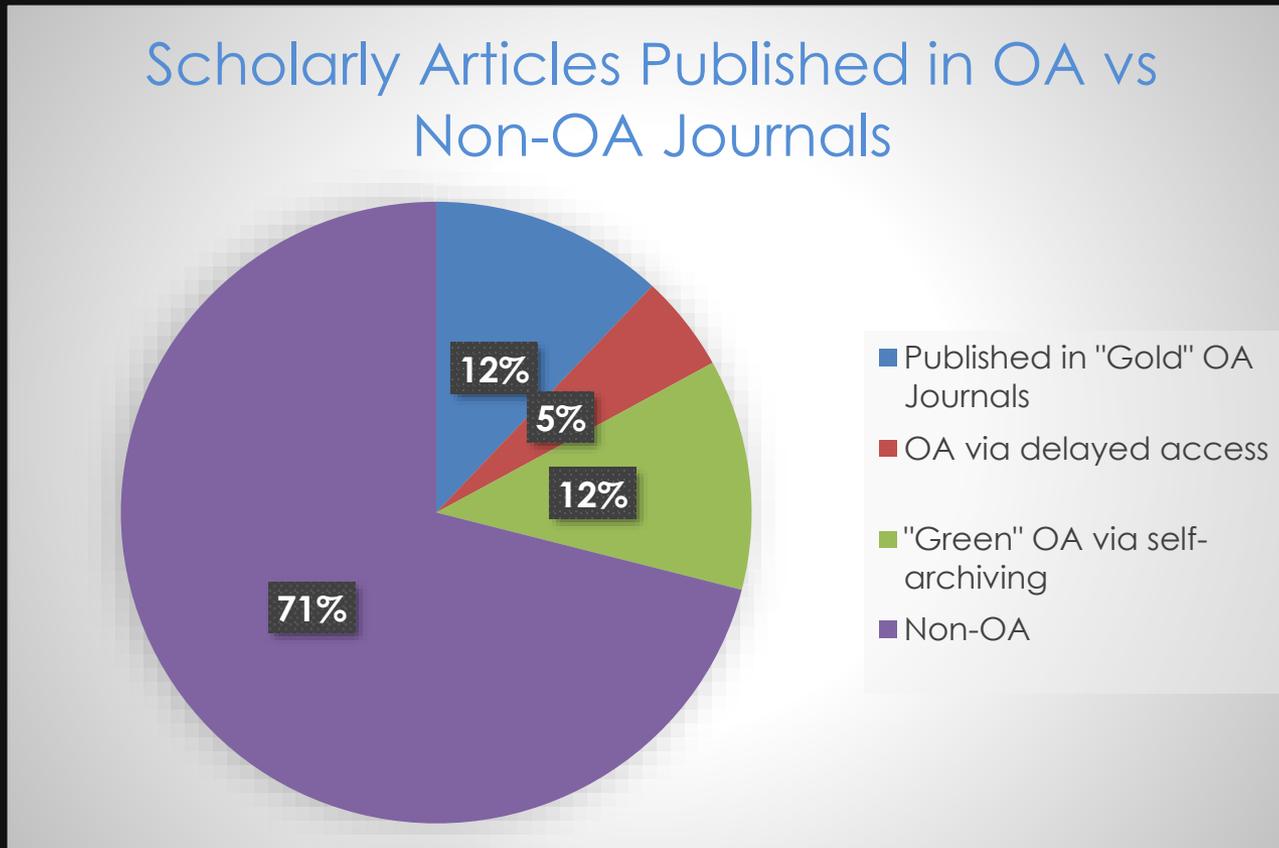
CHORUS provides a sustainable solution for agencies and publishers to deliver public access to published articles reporting on funded research in the U.S.



The chart represents the growth in the number of Publisher Member articles identified as reporting on funded research that have been monitored by CHORUS since June 2014.

The Promise of Open Access

Still a Long Way to Go



Source: Mabe & Ware, The STM Report (2015)

The Case for Open Access

Some Rationales for OA

- Cost—savings on printing, paper, postage, subscriptions, warehousing, etc.
- Control —“take back” scholarship from commercial publishers
- Expanding the pool of beneficiaries—more people with more opportunities to solve more problems
- Sharing—more collaboration, interdisciplinarity, interoperability, searchability, etc.
- Transparency/reproducibility
- Accelerated research —faster publication and sharing means research can advance more quickly

Some Barriers to OA

- Cost— OA costs as much or more than traditional publishing, not to mention the significant cost of flipping from toll-access to OA
- Reward/incentive structure of academia —“take back” scholarship from commercial publishers