Public Access Overview/ Summary of Publishers' CHORUS Project

Tri-Institutional Collaboration Network Symposium on Public Access to Scholarly Research

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Executive Director and CEO
American Institute of Physics

Outline

- Evolution of the Scholarly Publishing Enterprise
- Context: Brief review of the chronology of public access policy in the US
- The White House Office of Science and Technology Policy (OSTP) Directive (February 22, 2013)
- The response to the Directive:
  - National Institutes of Health (NIH): PubMed Central
  - Universities: SHARE Project
  - Publishers: CHORUS Project
  - What happens next in the US?

The Scholarly Publishing Enterprise

The last 300+ years:

- Science as a profession
- The journal has endured as the primary communication for science.
- Exponential growth in research funding has driven parallel growth in journals.

The last 20 years:

- Internet technology has changed dissemination methods and enriched the complexity of content.
- The open culture has driven access models.
- Scientific journals were early adaptors of the web.

The Scientific Journal Endures

PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD

Vol I.
For Anno 1665, and 1666.

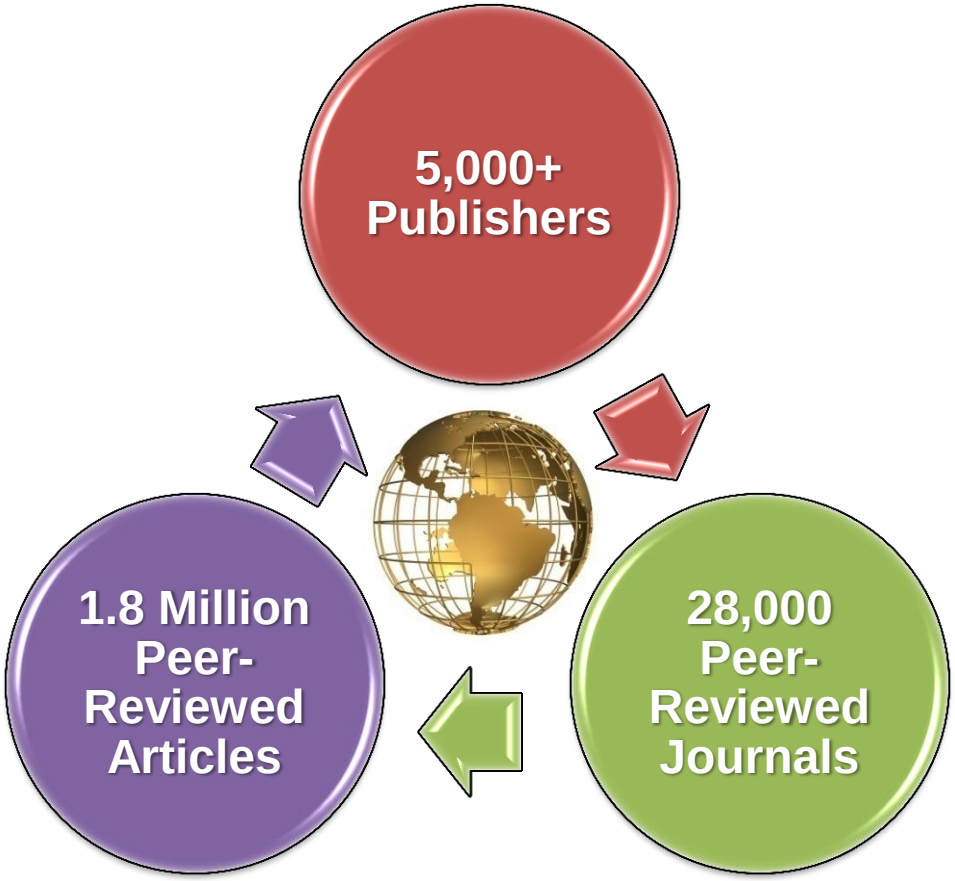
In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane,
Printers to the Royal Society.

What's Changed in the Journal Business?

Past (1665)	Present (2014)
Peer review	Peer review
Print format	Online format
Distribution	Discovery
Volumes / issues / articles	Volumes / issues / articles
Linear text	Linear text plus
References	Reference links (DOI)
Archive (library)	Archive (shared)
Business model (entrepreneur)	Business models (many)

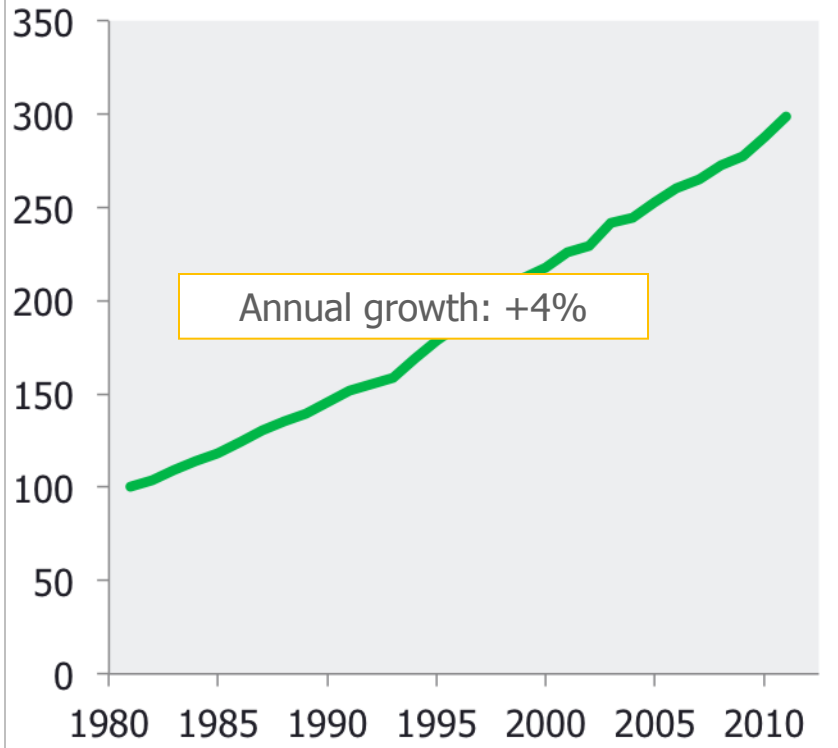
Scholarly Publishing Today

Scientific, Technical and Medical communities around the world are united through publishing

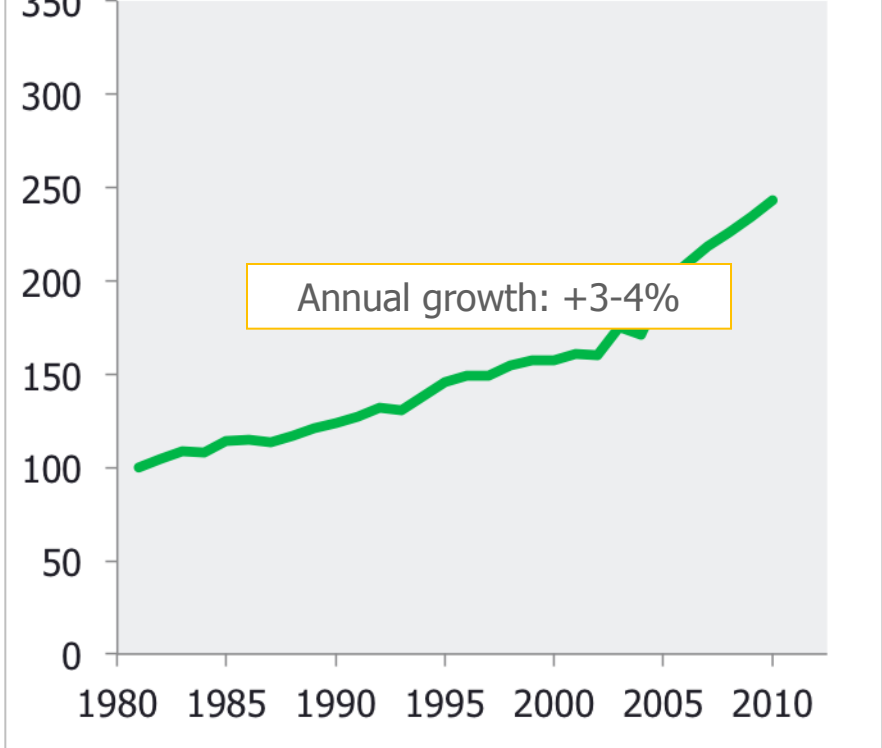


STM Report, 2012

Growth in R&D Spending Drives Number of Researchers and Research Activity



Global number of researchers:
7 million in 2010

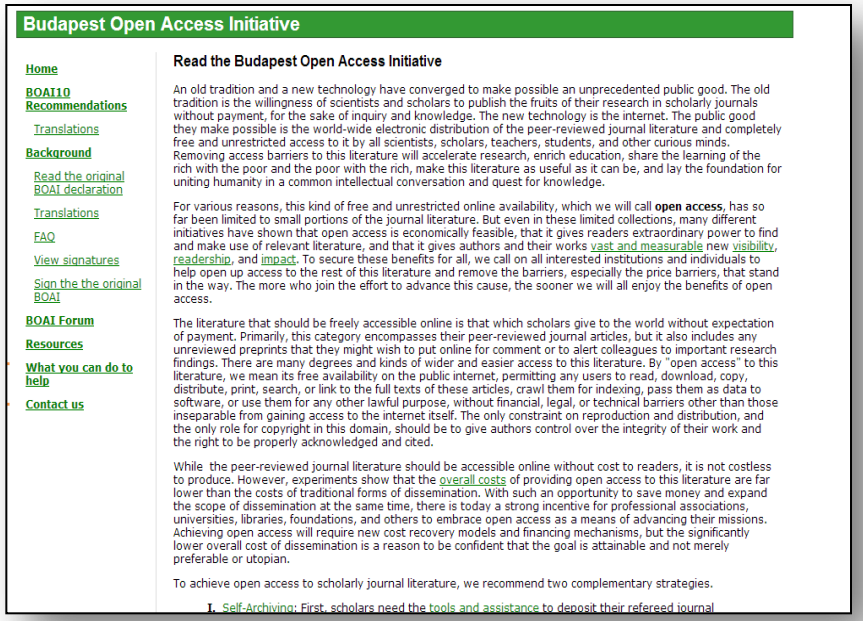


Number of research articles:
>1.5 million in 2010

OECD; ISI; Scopus

What is Open Access Publishing?

- Free availability on the public internet
- Permitting users to read, download, copy, distribute, print, search, or link to the full texts of these articles
- Crawl them for indexing
- Licenses to allow use and re-use without financial, legal, or technical barriers



Budapest Open Access Initiative

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BOAI10 Recommendations
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Background
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Translations
FAQ
View signatures
Sign the the original BOAI
BOAI Forum
Resources
What you can do to help
Contact us

Read the Budapest Open Access Initiative

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.

For various reasons, this kind of free and unrestricted online availability, which we will call **open access**, has so far been limited to small portions of the journal literature. But even in these limited collections, many different initiatives have shown that open access is economically feasible, that it gives readers extraordinary power to find and make use of relevant literature, and that it gives authors and their works vast and measurable new visibility, readership, and impact. To secure these benefits for all, we call on all interested institutions and individuals to help open up access to the rest of this literature and remove the barriers, especially the price barriers, that stand in the way. The more who join the effort to advance this cause, the sooner we will all enjoy the benefits of open access.

The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal articles, but it also includes any unreviewed preprints that they might wish to put online for comment or to alert colleagues to important research findings. There are many degrees and kinds of wider and easier access to this literature. By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

While the peer-reviewed journal literature should be accessible online without cost to readers, it is not costless to produce. However, experiments show that the overall costs of providing open access to this literature are far lower than the costs of traditional forms of dissemination. With such an opportunity to save money and expand the scope of dissemination at the same time, there is today a strong incentive for professional associations, universities, libraries, foundations, and others to embrace open access as a means of advancing their missions. Achieving open access will require new cost recovery models and financing mechanisms, but the significantly lower overall cost of dissemination is a reason to be confident that the goal is attainable and not merely preferable or utopian.

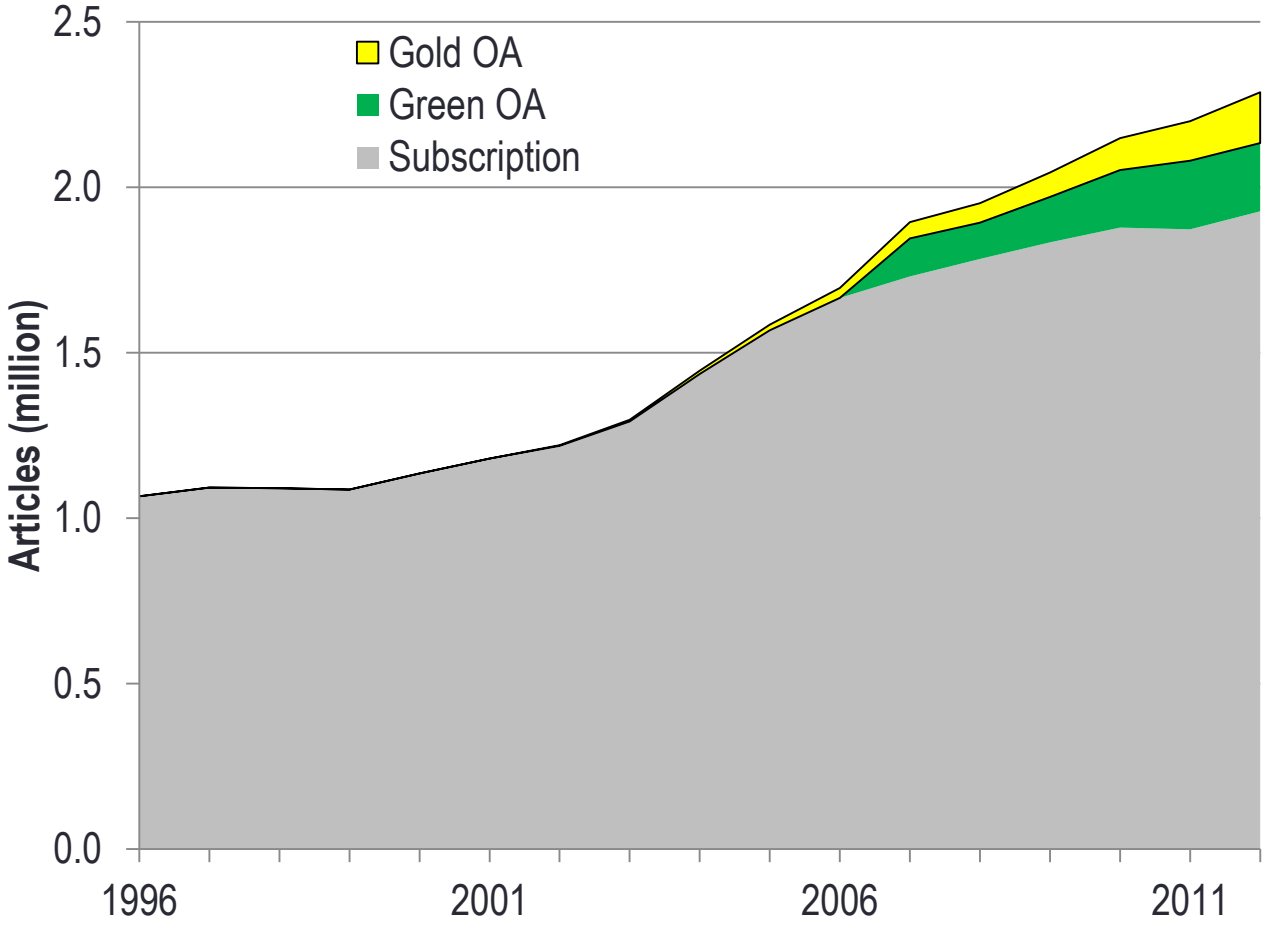
To achieve open access to scholarly journal literature, we recommend two complementary strategies.

1. Self-Archiving: First, scholars need the tools and assistance to deposit their refereed journal

- Accessible online without cost to readers, but not costless to produce. So, funding needed by authors, institutions, funders or others.

Open Access Drivers

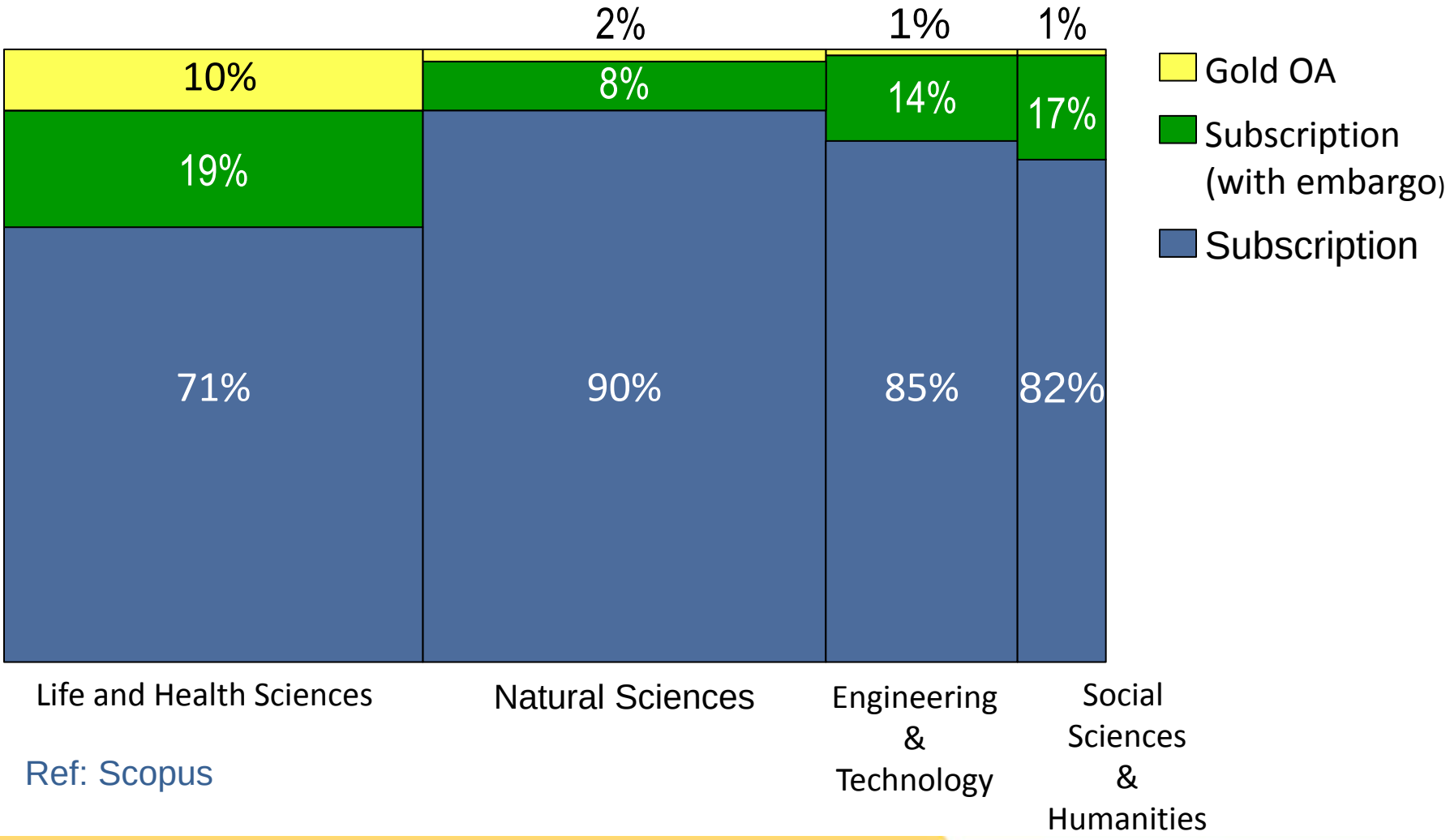
Growth of Open Access 1996 - 2012



- Gold ("Author Pays") articles made up 7% of total in 2012
- Green (open access after an embargo)
- The level of uptake varies by field – highest in Life and Health Sciences

Ref: Scopus

Open Access Update By Discipline



Ref: Scopus

Recent Timeline on Public Access

	2009	US House sponsored *Scholarly Publishing Roundtable*
	2010-11	America COMPETES Act of 2010 passed/signed into law **includes many Roundtable recommendations*
2012	**March**	OSTP report: "Interagency Public Access Coordination"
2012	**May**	FundRef pilot program announced by CrossRef
2012	**June**	Finch report published in the U.K.
2012	**Feb**	OSTP issues directive to federal agencies to develop public access plans within six months
2013	**Spring**	NIH proposes **PubMed Central** as a multi-agency solution; Publishers propose **CHORUS**; Universities propose **SHARE**
2013	**May**	FundRef program formally launched
2013	**Aug**	Agencies were due to submit draft plans to OSTP by Aug 22
2013	**Sep/Oct**	CHORUS pilot launched/CHOR, Inc. forms

2013 OSTP Public Access Memo

"Increasing Access to the Results of Federally-Funded Scientific Research"

Agencies that fund $100M in research must submit plans for public access. Parameters:

- provide for **free public access to a full-text version** of publications and associated **data** resulting from publicly funded research (after an embargo, 12-month guideline, adapted to agency/discipline needs)
- contain a strategy for leveraging existing resources, fostering **public - private partnerships**; consult stakeholders
- Optimize search and dissemination features to encourage innovation; provide for archiving/long-term stewardship
- identify resources **within existing agency budgets** for implementation

Publishers Offer:

The CHORUS Collaboration
A partnership with the federal agencies to deliver:

The CHORUS Project
A multi-agency, multi-publisher, portal and information bridge that identifies, provides access, enhances search capabilities and long-term preservation to journal articles resulting from agency funding

- **100+ Supporting Publishers** (as of 3/14)
- **CrossRef** is an important service provider
- The **Professional/Scholarly Publishing Division of the Association of American Publishers (PSP-AAP)** provided start-up funding

CHORUSaccess.org

CHORUS

Clearinghouse for the **Open Research** of the United States

- Evolved from an ad-hoc group of publishers who initiated partnership discussions with several agencies in Spring 2011
- Incorporated as a not-for-profit entity – **CHOR Inc.** – on October 1, 2013.
- Applying for US IRS 501(c)(3) tax-exempt status
- Received significant sponsorship pledges at the Frankfurt Book Fair (industry event) in October, 2013.

CHORUS

CHORUS Goals

- **Provide public access** to manuscripts/articles reporting on federally funded research
  - Goal furthered by CHORUS' open-technology platform.
- **Leverage existing infrastructure** and investment of the agencies and publishers
  - CHORUS is built upon protocols/partnerships, i.e., CrossRef, FundRef, Prospect, CLOCKSS, Portico, ORCID.)
- **Ensure compliance** and **archival presentation**
- **Preserve agency funds** for mission critical activities/programs
  - There is no significant cost for agency use or participation.
- Provide for **international scalability**

CHORUS

How does CHORUS Help Key Stakeholders?

Funding agencies

Identifies and **provides access** to articles reporting on research they fund, **ensures preservation** of research articles, **ensures** researcher and publisher **compliance**

Authors/researchers/institutions

Simplifies compliance with funder mandates, **provides access** to research results

Libraries

Ensures preservation of research articles, **provides access** to research results

The public

Provides access to articles reporting on publicly funded research

Publishers

Simplifies compliance with funder mandates, retains traffic

CHORUS

As a service provider, **CrossRef** offers the primary project deliverable: **access to a freely available version of a scholarly publication resulting from federal funding**.

CrossRef's and the member publishers' **existing infrastructure provides ~80% of what is required** for this deliverable.

A tested partnership model, **FundRef** identifies articles resulting from agency funding.

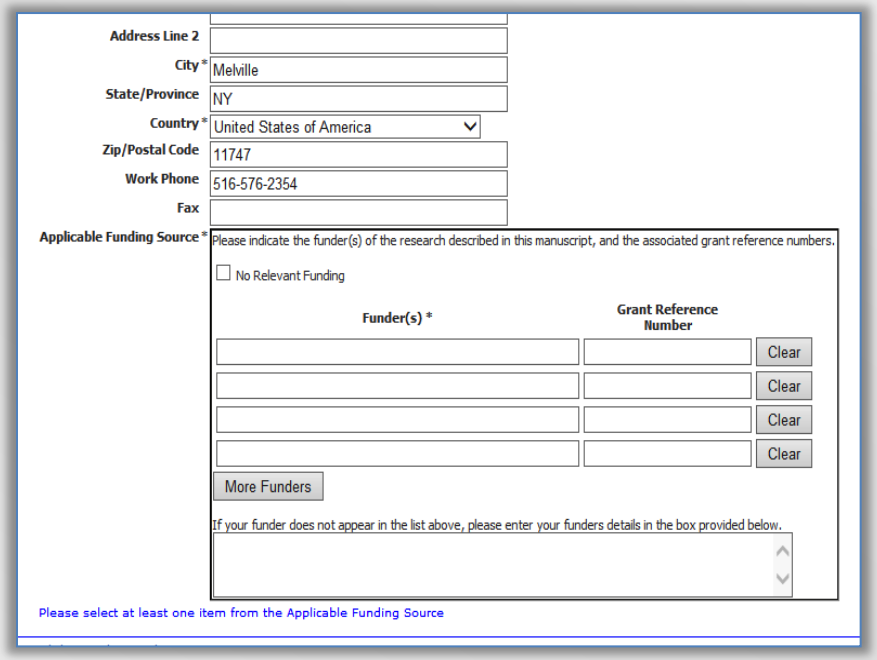
Launched in May 2013 by CrossRef after completion of a pilot involving DOE, NSF, NASA, Wellcome Trust and seven partner publishers.

www.crossref.org

CHORUS

How CHORUS Works: Identification

…built into the author's submission process



eJournalPress

SCHOLARONE™

Editorial Manager

BenchPress HighWire

crossref fundref

CHORUS

MOLECULAR STRUCTURE OF NUCLEIC ACIDS

A Structure for Deoxyribose Nucleic Acid

How CHORUS Works: Access

Funding Agency Embargo Period Expires
or Author/Funder Pays for Public Access

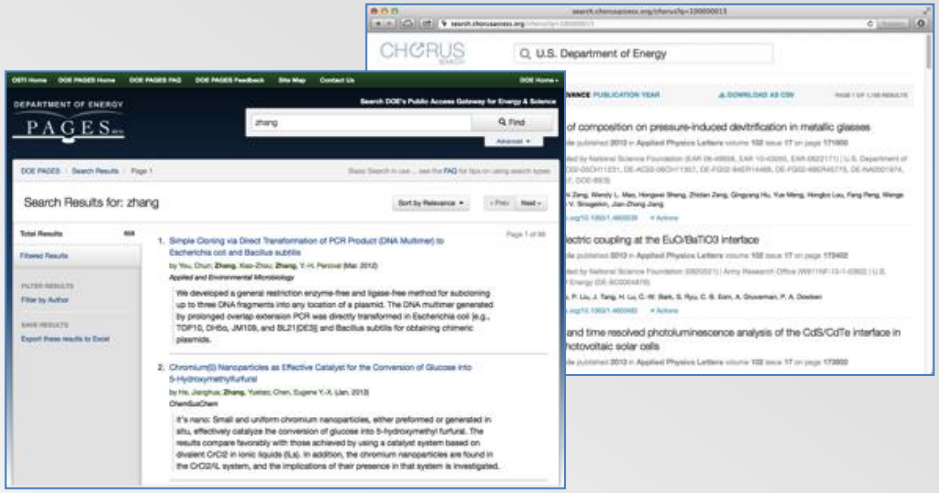
Accepted Author Manuscript
becomes publicly accessible

Version of Record
becomes publicly accessible

How CHORUS Works: Discovery

…by any existing search engine

CHORUS API



Google

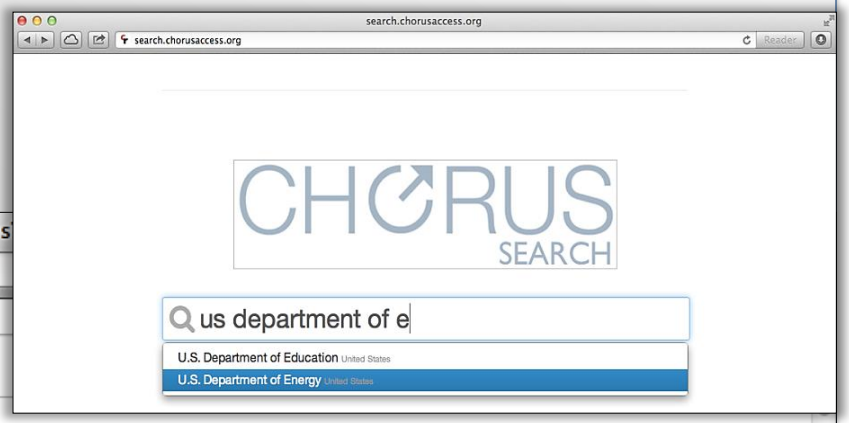
crossref

Text and Data-Mining Services

CHORUS

How CHORUS Works: Discovery

The live pilot:
example of DOE content from
search.chorusaccess.org



search.chorusaccess.org/chorus

search.chorusaccess.org/chorus?q=100000015

CHORUS SEARCH

U.S. Department of Energy

Include funding from sub-organizations

U.S. DEPARTMENT OF ENERGY

- Research and Development, Office of Electricity Delivery and Energy Reliability
- Technology Innovation and Development, Office of Environmental Management
- Public Information, Office of Public Affairs
- Nuclear Facility Operations, Office of Nuclear Energy
- Clean Coal, Office of Fossil Energy
- Advanced Scientific Computing Research, Office of Science
- Biomass Program, Office of Energy

SORT BY: **RELEVANCE** PUBLICATION YEAR DOWNLOAD AS CSV PAGE 1 OF 1,156 RESULTS

The effect of composition on pressure-induced devitrification in metallic glasses

Journal Article published **2013** in **Applied Physics Letters** volume **102** issue **17** on page **171905**

Research funded by National Science Foundation (EAR 06-49658, EAR 10-43050, EAR-0622171) | U.S. Department of Energy (DE-AC02-05CH11231, DE-AC02-06CH11357, DE-FG02-94ER14466, DE-FG02-99ER45775, DE-NA0001974, DE-SC0001057, DOE-BES)

Authors: Qiaoshi Zeng, Wendy L. Mao, Hongwei Sheng, Zhidan Zeng, Qingyang Hu, Yue Meng, Hongbo Lou, Fang Peng, Wenge Yang, Stanislav V. Sinogeikin, Jian-Zhong Jiang

http://dx.doi.org/10.1063/1.4803539 Actions

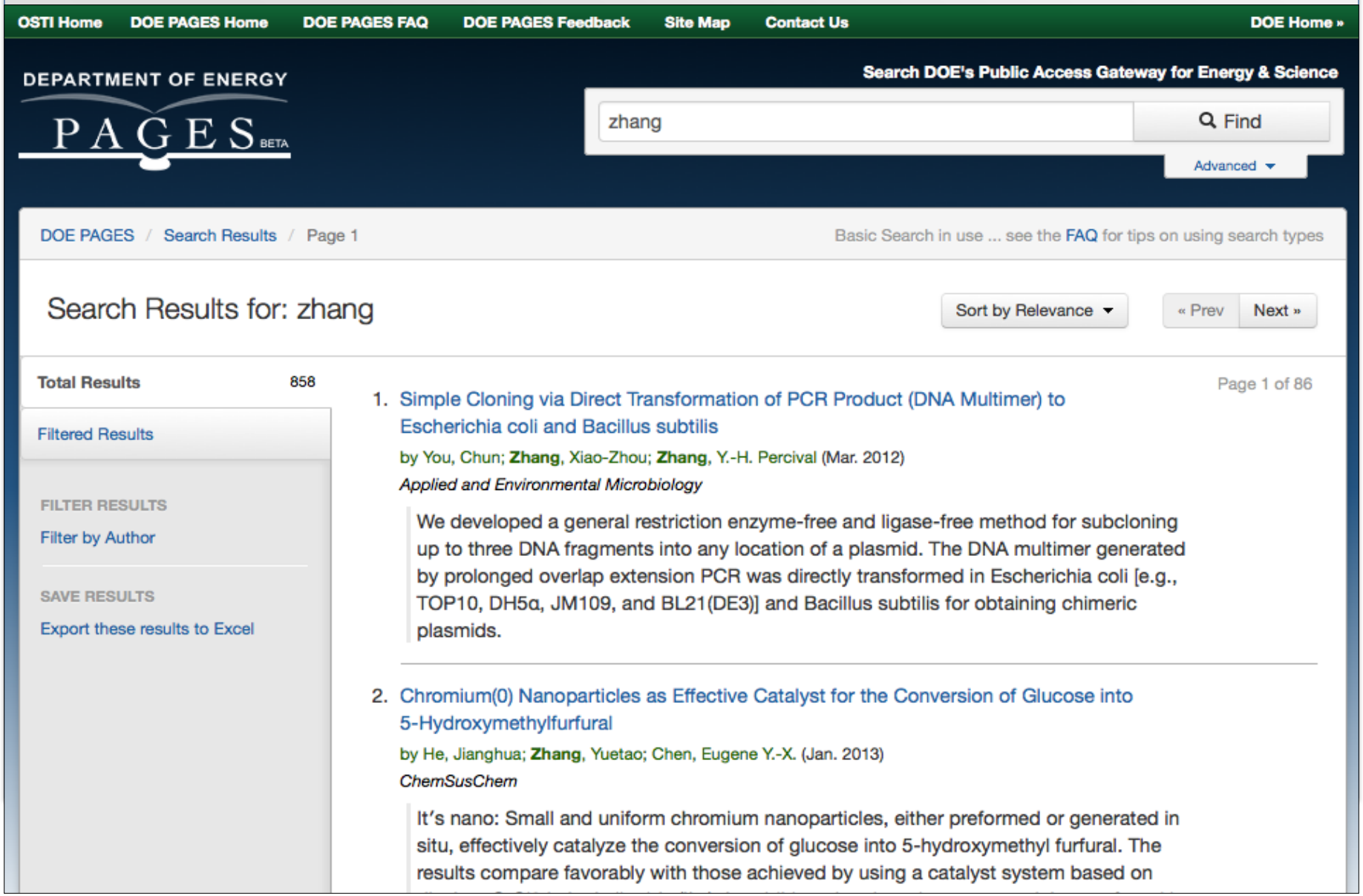
Magnetoelectric coupling at the EuO/BaTiO3 interface

Journal Article published **2013** in **Applied Physics Letters** volume **102** issue **17** on page **172402**

Research funded by National Science Foundation (0820521) | Army Research Office (W911NF-10-1-0362) | U.S. Department of Energy (DE-SC0004876)

Authors: S. Cao, P. Liu, J. Tang, H. Lu, C.-W. Bark, S. Ryu, C. B. Eom, A. Gruverman, P. A. Dowben

API Integration with Agency Portals



How CHORUS Works: Preservation

…use of existing, multiparty preservation strategy

MOLECULAR STRUCTURE OF NUCLEIC ACIDS

A Structure for Deoxyribose Nucleic Acid

PRESERVED IN CLOCKSS

PORTICO

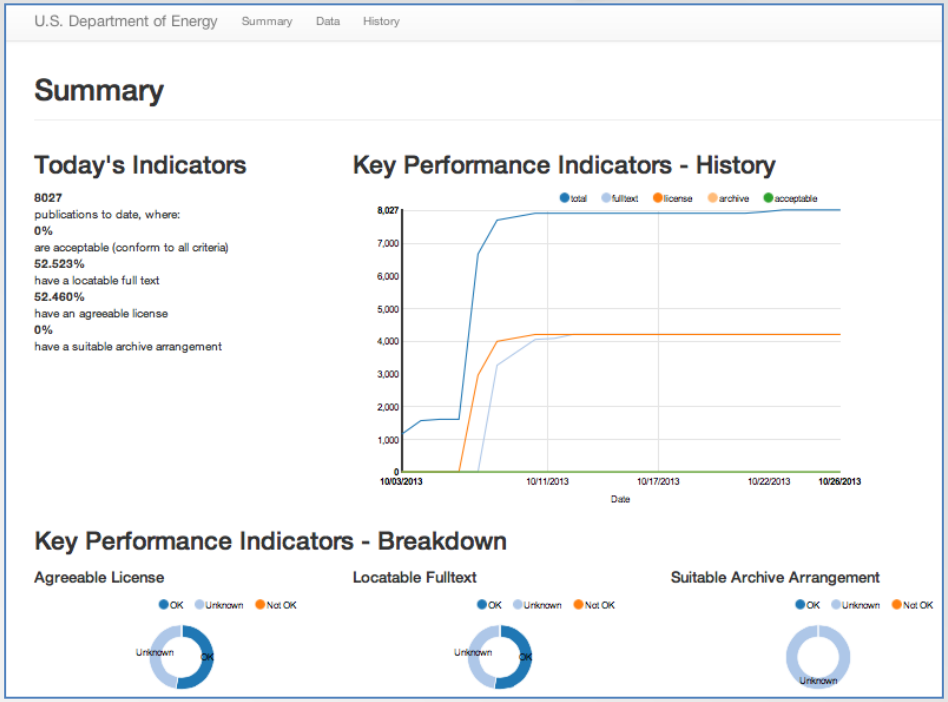
Government maintained or other 3rd-party dark archive

CHORUS

How CHORUS Works: Compliance

API and dashboards for monitoring and tracking publisher contributions to CHORUS

CHORUS API



- Government Agency Reports
- Institution Reports
- Publisher Reports

Live dashboard: dashboard.chorusaccess.org/usdoe

CHORUS

CHORUS

Clearinghouse for the **Open Research** of the United States

CHORUS

US Office of Science and Technology Policy (OSTP) + CHORUS

OSTP Requirement

- Free public access to peer-reviewed research articles
  (guideline: 12 month embargo adapted to agency/discipline needs)
- Optimize search, archival, and dissemination features to encourage innovation
- Ensure interoperability and long-term stewardship
- Policies on public data also called for
- Develop plans in consultation with stakeholders

CHORUS Services

- Publishers provide free public access to best available version (accepted manuscript or Version of Record) post agency embargo or if paid by article processing charge
- CHORUS API enables content syndication and search services
- Enables archiving via CLOCKSS, Portico, and other government sponsored archives
- Infrastructure can link to data repositories when available
- CHORUS is ready to work with agencies

Supporting Organizations (April 2014)

Publishers

AAAS
Acoustical Society of America
ACSESS
American Association of Anatomists
American Association for Cancer Research
American Association of Physicists in Medicine
American Association of Physics Teachers
American Astronomical Society
American Chemical Society
American Crystallographic Association, Inc.
American College of Chest Physicians
American College of Physicians
American Dental Association
American Diabetes Association
American Geophysical Union
American Inst of Aeronautics and Astronautics
American Institute of Biological Sciences
American Institute of Physics
American Mathematical Society
American Meteorological Society
American Medical Association
American Nuclear Society
American Physical Society
American Physiological Society
American Psychiatric Publishing
American Psychological Association
American Society for Biochemistry and Molecular Biology
American Soc of Agricultural & Biological Engineers
American Society of Agronomy
American Society of Civil Engineers
American Society of Mechanical Engineers
American Society for Microbiology
American Society of Plant Biologists
American Speech-Language-Hearing Association
Asociacon Columbiana de Infectologia
Assoc for Computing Machinery (ACM)
Assoc for Research in Vision and Ophthalmology
AVS: Science & Technology of Materials, Interfaces and Processing
Biophysical Society
Bioscientifica
Botanical Society of America
British Editorial Society of Bone & Joint Surgery
BMJ
Cambridge University Press
Columbia University Press
The Company of Biologists
Crop Science Society of America
Dove Press
Duke University Press
Ecological Society of America
EDP Sciences
Elsevier
Emerald Group Publishing Limited
The Endocrine Society
Entomological Society of America
European Respiratory Society
Fabricators and Manufacturers Association, International
Genetics Society of America
GeoScienceWorld
Human Factors and Ergonomics Society
IEEE
iMedPub. Internet Medical Publishing
INFORMS
Institute of Physics Publishing
Institution of Engineering and Technology (IET)
Journal of Bone and Joint Surgery
Journal of Infection in Developing Countries
Journal of Rehabilitation Research and Dev
Lynne Rienner Publishers, Inc.
Materials Research Society
McGraw-Hill
Mycological Society of America
New England Journal of Medicine
The Optical Society
Oxford University Press
The Physiological Society
Revista Medica de Risarlda
The Royal College of Psychiatrists
The Royal Society
Royal Society of Chemistry
Sage Publications
Society for the Advancement of Materials on Process Engineering
Society for the Study of Reproduction
Soil Science
Society of America
Springer Science+Business Media LLC
Taylor & Francis
Thieme Publishers
University of Chicago Press
John Wiley & Sons
Wolters Kluwer Medical Research

Plus 10 more service providers & organizations

CHORUS aspires to be inclusive and interoperate with scholarly repositories and other systems providing access to scholarly articles

Met in July 2013 and February 2014 to discuss initiatives and explore areas of possible collaboration

Agreed to work jointly on persistent identifiers, metrics, and notification system.

What about Data?

Unclear whether there is one unified mechanism for data and publications

Value in linking data to the papers it supports

Simplify procedures for researcher compliance and funding agency monitoring

CHORUS infrastructure can link to data repositories when available

CHORUS will use standard identifier schemes

What Happens Next?

- Agency draft plans returned by OSTP; awaiting final approval
- Further engagement with agencies and other stakeholders
- Continued discussions between CHORUS and SHARE
- Process feedback from CHORUS Pilot; full production
- CHORUS as a model partnership with agencies (TBD)

With Thanks to….

My colleagues on the CHOR, Inc. Board
(Chaired by Susan King, American Chemical Society)

Howard Ratner, Executive Director, CHOR, Inc.

Ed Pentz, CrossRef

Brian Hitson, Mark Martin, Jeff Salmon, Walt Warnick (ret.),
US Department of Energy

Brad Fenwick, Elsevier

David Crotty, Oxford University Press

David Weinreich, Weinreich Strategic Group

Pat Kelly, John Wiley & Sons

Joe Serene, American Physical Society

Liz Dart Caron, American Institute of Physics