



Developing Your Scholarly Identity

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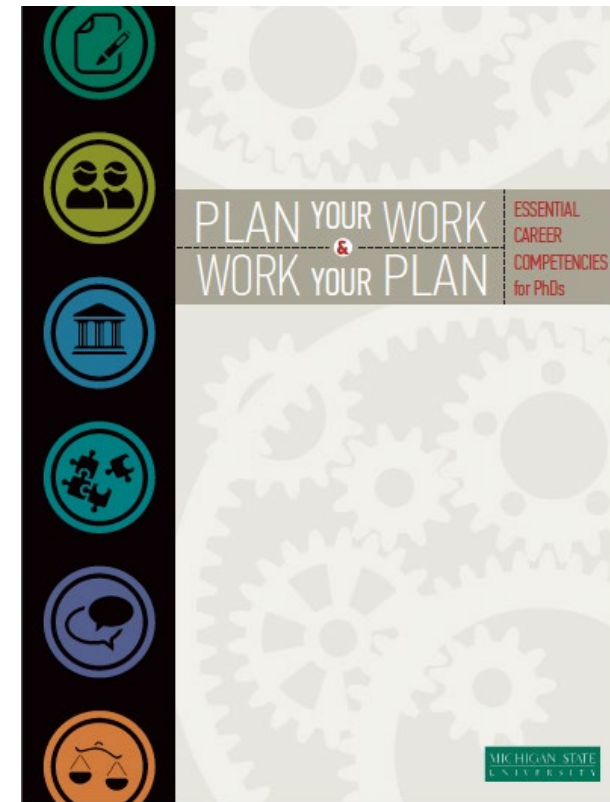
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Developing Your Digital Identity as Part of an Educational Strategy

PREP: Michigan State Graduate School Career and Professional Development Model

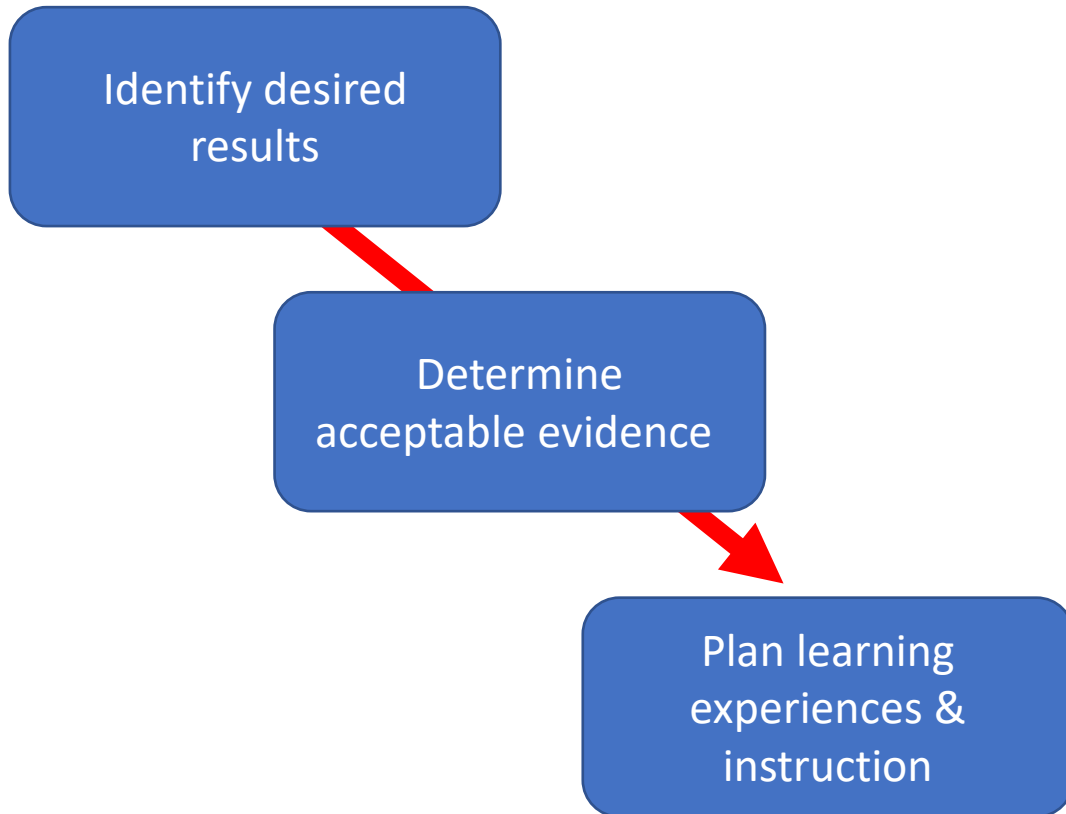
- **planning** throughout the graduate program to identify and successfully achieve career goals
- developing **resilience** and tenacity to thrive through personal and professional stages
- practicing active **engagement** in making important life decisions and in acquiring the skills necessary to attain career goals
- attaining high standards of **professionalism** in research and teaching



<https://grad.msu.edu/sites/default/files/content/prep/planyourwork.pdf>



Developing a Personal Professional Development Plan



Where do you want to take your career?

What does your resume need to look like?

What do you need to do to generate that resume?

Stages in the Backward Design Process

(Wiggins, G. & McTighe, J. 1998)

(Re)Claiming Your Narrative



<http://www.aaup.org/reports-and-publications/academe>

Research Identity

Representing Your Expertise

Tell a Story of Your Work

“Publish” Your Whole Portfolio

Enhance the Discoverability of Your Work

How to Maintain Your Digital Identity as an Academic



See more at:

<https://chroniclevitae.com/news/854-how-to-maintain-your-digital-identity-as-an-academic>



1. Develop Your Online Identity

101 INNOVATIONS IN SCHOLARLY COMMUNICATION



Jeroen Bosman @jeroenbosman
Utrecht University Library

THE CHANGING RESEARCH WORKFLOW



Bianca Kramer @MsPhelps
Utrecht University Library

Science is in transition. This poster gives an impression of the exploratory phase of a project aiming to chart innovation in scholarly information and communication flows from evolutionary and network perspectives.

We intend to address the questions of what drives innovation and how these innovations change research workflows and may contribute to more open, efficient and good science.

101 Innovative tools and sites in 6 research workflow phases (< 2000 - 2015)

Most important developments in 6 research workflow phases



	Discovery	Analysis	Writing	Publication	Outreach	Assessment
Trends	social discovery tools	datadriven & crowdsourced science	collaborative online writing	Open Access & data publication	scholarly social media	article level (alt)metrics
Expectations	growing importance of data discovery	more online analysis tools	more integration with publication & assessment tools	more use of "publish first, judge later"	use of altmetrics for monitoring outreach	more open and post-publication peer review
Uncertainties	support for full-text search and text mining	willingness to share in analysis phase	acceptance of collaborative online writing	effect of journal/publisher status	requirements of funders & institutions	who pays for costly qualitative assessment?
Opportunities	discovery based on aggregated OA full text	open labnotes	semantic tagging while writing/citing	reader-side paper formatting	using repositories for institutional visibility	using author-, publication- and affiliation-IDs
Challenges	real semantic search (concepts & relations)	reproducibility	safety/privacy of online writing	globalization of publishing/access standards	making outreach a two-way discussion	quality of measuring tools
Most important long-term development	multidisciplinary + citation-enhanced databases	collaboration + data-driven	online writing platforms	Open Access	more & better connected researcher profiles	importance of societal relevance + non-publication contributions
Potentially most disruptive development	semantic/concept search + contextual/social recommendations	open science	collaborative writing + integration with publishing	circumventing traditional publishers	public access to research findings, also for agenda setting	moving away from simple quantitative indicators

Typical workflow examples



Most important developments in 6 research workflow phases

	Discovery	Analysis	Writing	Publication	Outreach	Assessment
Trends	social discovery tools	datadriven & crowdsourced science	collaborative online writing	Open Access & data publication	scholarly social media	article level (alt)metrics
Expectations	growing importance of data discovery	more online analysis tools	more integration with publication & assessment tools	more use of "publish first, judge later"	use of altmetrics for monitoring outreach	more open and post-publication peer review
Uncertainties	support for full-text search and text mining	willingness to share in analysis phase	acceptance of collaborative online writing	effect of journal/publisher status	requirements of funders & institutions	who pays for costly qualitative assessment?
Opportunities	discovery based on aggregated OA full text	open labnotes	semantic tagging while writing/citing	reader-side paper formatting	using repositories for institutional visibility	using author-, publication- and affiliation-IDs
Challenges	real semantic search (concepts & relations)	reproducibility	safety/privacy of online writing	globalization of publishing/access standards	making outreach a two-way discussion	quality of measuring tools
Most important long-term development	multidisciplinary + citation-enhanced databases	collaboration + data-driven	online writing platforms	Open Access	more & better connected researcher profiles	importance of societal relevance + non-publication contributions
Potentially most disruptive development	semantic/concept search + contextual/social recommendations	open science	collaborative writing + integration with publishing	circumventing traditional publishers	public access to research findings, also for agenda setting	moving away from simple quantitative indicators



Emerging Issue: Identity & Reputation

Scholarly Identity on the Internet



The research community has lacked the ability to link researchers and scholars with their professional activities.

Name ambiguity

Discoverability within and across databases

Author, grantee, and faculty record management

Output tracking

Research reporting and impact assessment

Emerging Issue: Identity & Reputation

ORCIDs

DISTINGUISH YOURSELF IN THREE EASY STEPS

ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. [Find out more.](#)

1 REGISTER Get your unique ORCID identifier [Register now!](#)
Registration takes 30 seconds.

2 ADD YOUR INFO Enhance your ORCID record with your professional information and link to your other identifiers (such as Scopus or ResearcherID or LinkedIn).

3 USE YOUR ORCID ID Include your ORCID identifier on your Webpage, when you submit publications, apply for grants, and in any research workflow to ensure you get credit for your work.



2. Representing Your Expertise

Representing Your Expertise



ResearchGate



Build Scholarly Profiles with SCHOLIA

SCHOLIA Author Work Organization Location Event Project Award Topic Tools Help Search

author / Q26322 Improve data

Carol Greider (Q26322)


Carolyn Hingey Greider is an American molecular biologist and Nobel laureate. She joined the University of California, Santa Cruz as a Distinguished Professor in the department of molecular, cell, and developmental biology in October 2020. [\(Read more on English Wikipedia\)](#)

Related: Janet Rowley · Jennifer Doudna · Carolyn Bertozzi · Eleanor A. Maguire · Beatrice Mintz · Ada Yonath · Carolina Blynum · Ilme Schlichting · Philipp Marack · Linda S. Buck

<https://orcid.org/0000-0002-5494-8128> | <http://greiderlab.org/>

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 - Timeline
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List of publications 620 Reload

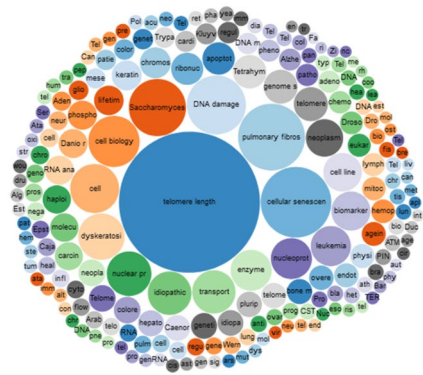
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Date	Work	Type	Pages	Venue	Authors
2021-04-01	Rif1 regulates telomere length through conserved H3AT repeats	scholarly article		Nucleic Acids Research	Carol Greider
2020-06-29	The Role of Rif1 in telomere length regulation is separable from its role in origin firing	scholarly article		eLife	Celia B Shubin, Carol Greider
2019-11-01	Increasing gender diversity in the STEM research workforce	scholarly article	4	Science	Gary S McDowell, BethAnn McLaughlin, Joan A. Sater, Nancy Hopkins, Carol Greider
2019-10-23	Tel1 Activation by the MRE11 Complex is Sufficient for Telomere Length Regulation but Not for the DNA Damage	scholarly article		Genetics	Cate Connolly, Rebecca Keener, Carol Greider

Topics

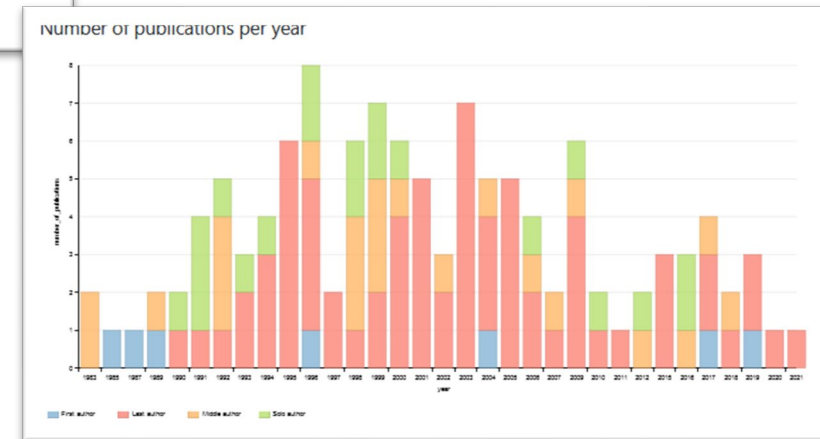
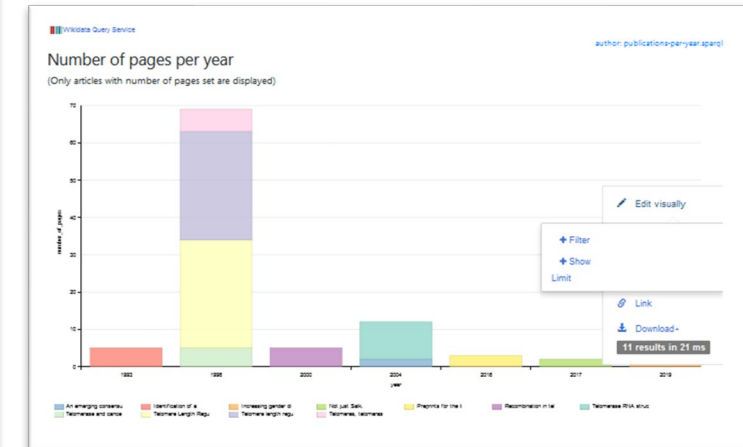
Topic scores

Topics based on a weighting between fields of work, topics of authored works and topics of citing works.



Topics of authored works

This query yielded no results.



Scholia is a project to present bibliographic information and scholarly profiles of authors and institutions using Wikidata, the community-curated database supporting Wikipedia and all other Wikimedia projects.



3. Tell a Story of Your Work



Engaging Readers

CASE STUDY



(wileyonlinelibrary.com) doi: 10.1002/leap.1251

Received: 24 May 2019 | Accepted: 17 June 2019

Maximizing dissemination and engaging readers: The other 50% of an author's day: A case study

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Key points

- Dissemination should be the other 50% of what authors do: being read and having impact will not happen by itself.
- Authors can influence discovery and readership through owned media – i.e. their own communication activities.
- Earned media – i.e. when influencers write about your work – is key to reaching larger and more diverse audiences.
- There is plenty of data for tracking engagement and use of articles, but it is scattered across multiple tools and providers and can be misleading or even incorrect.
- Listservs can have higher engagement than modern, 'cool', social networking tools.

INTRODUCTION

It takes much time and effort to write a paper – but how much time and effort do authors put in to finding readers? In this case study, I explain why I decided to devote an equivalent amount of time and effort into finding and then engaging with my audience. Drawing on available data for three papers I published in 2017, 2018, and 2019, I describe how I promoted them, what happened, and what I learned. You will learn about the Conversion Funnel and how tools like Kudos and Altmetric can help drive and track your audience through its four layers: awareness, interest, desire, and action (downloading and reading). You will learn the difference between owned and earned media and why finding influencers and riding waves can be so important. I also identify areas inside the funnel where an author is dependent on others, lacks control, or where data is missing, each of which makes influencing the click-through rate more difficult. The case study ends with a set of 10 lessons learned.

WHY ACTION IS NEEDED

The urban legend that many academic papers go unread beyond their authors' 'collegiate bubbles' (Meho, 2007) was

seemingly validated in 2014 when the World Bank reported that a third of its own papers were never downloaded (Doemeland & Trevio, 2014). However, as with most urban legends, the data tells another story. The World Bank's authors drew on data from a defunct repository and so missed data from a new one which showed that all reports were downloaded (C. Rossel, personal communication, May 2014). Ironically, the fuss that greeted the World Bank paper certainly drove its readership beyond its authors' bubble: it has been downloaded more than 8,000 times and, as of 19 April 2019, has an Altmetric score that tops 200. However, an essential question remains: how can authors boost their audience beyond their immediate peer group?

Whilst a paywall might be a commonly cited barrier to being read (e.g. O'Brien, 2016), others exist, such as arcane and foreign language, discoverability, and even the comparative difficulty in using journals compared with other media (Waller & Knight, 2012). Plainly, you can only download what you know exists, so discoverability must be a primary barrier, especially because paywalls are now relatively easy to skirt with tools like Unpaywall (<https://unpaywall.org/>) able to find free versions of many paywalled articles, and as a last resort, there is what I like to refer to as the 'Scottish Service' (Note: According to theatrical superstition, speaking the name of Shakespeare's play Macbeth invites

- Dissemination should be the other 50% of what authors do: being read and having impact will not happen by itself.
- Authors can influence discovery and readership through owned media – i.e. their own communication activities.
- Earned media – i.e. when influencers write about your work – is key to reaching larger and more diverse audiences.
- There is plenty of data for tracking engagement and use of articles, but it is scattered across multiple tools and providers and can be misleading or even incorrect.
- Listservs can have higher engagement than modern, 'cool', social networking tools.

Tell a Story of Your Work

Websites

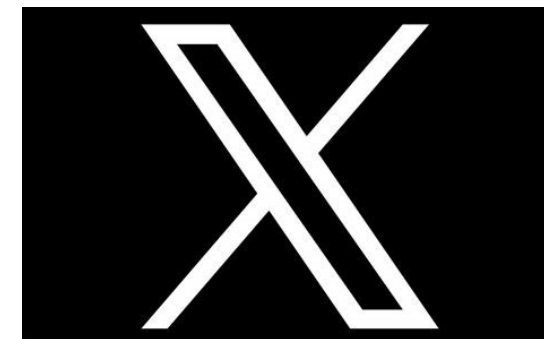


Blogger

Linked 

The LinkedIn logo, which consists of the word 'in' in white lowercase letters inside a blue rounded square.

THE CONVERSATION

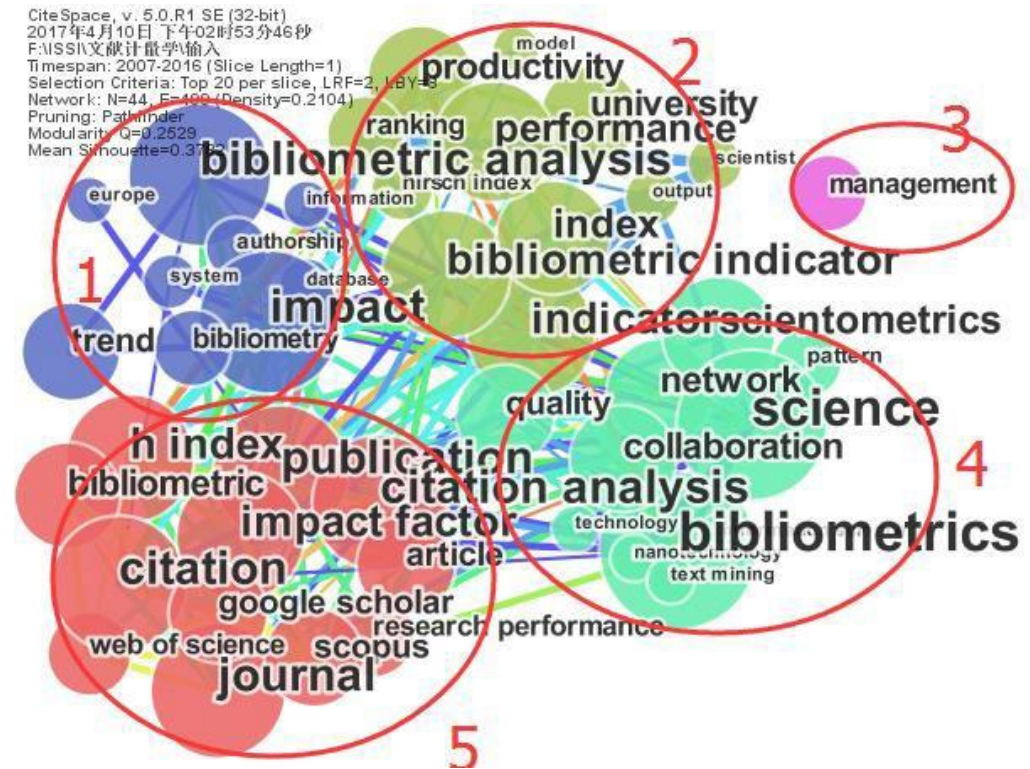


Metrics to show Research Impact

Bibliometrics – citation-based metrics

Journal Impact - measure of the influence that a particular journal has in its field

- Web of Science - Journal Impact Factor (JIF)
- Scopus - Scimago Journal Rank* (SJR), Source Normalized Impact per Paper* (SNIP), CiteScore



https://www.researchgate.net/publication/318940072_Are_Sci entometrics_Informetrics_and_Bibliometrics_different



Metrics to show Research Impact

Bibliometrics – citation-based metrics

Individual Research Impact

- Citation analysis - Google Scholar, Scopus, & Web of Science
- H-index the maximum value of h such that the given author/journal has published at least h papers that have each been cited at least h times.

<https://guides.lib.k-state.edu/c.php?g=181705&p=4492830>



Metrics to Show Research Impact

Altmetrics – complements bibliometrics – tracks the volume and nature of online attention to research, indicating how others are engaging with your research









- Policy
- Blogs
- News sites
- Social Media
- Wikipedia
- Syllabi
- Citation Databases
- YouTube
- Reference Managers

Google Scholar Profile

Google Scholar Search profiles

Profiles

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	Lovdeep Saini Research Associate - High Energy Physics, Kansas State University Verified email at phys.ksu.edu High Energy Physics	Cited by 172495
	Nikoloz Skhirtladze Research scientist, Kansas State University and CERN Verified email at phys.ksu.edu Experimental particle physics data analysis detector physics	Cited by 153906
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	Michael Kanost	Cited by 25120



Carefully Evaluating Your Research

COMMENT

SUSTAINABILITY Data needed to drive UN development goals p.432

CONSERVATION Economics and environmental catastrophe p.434

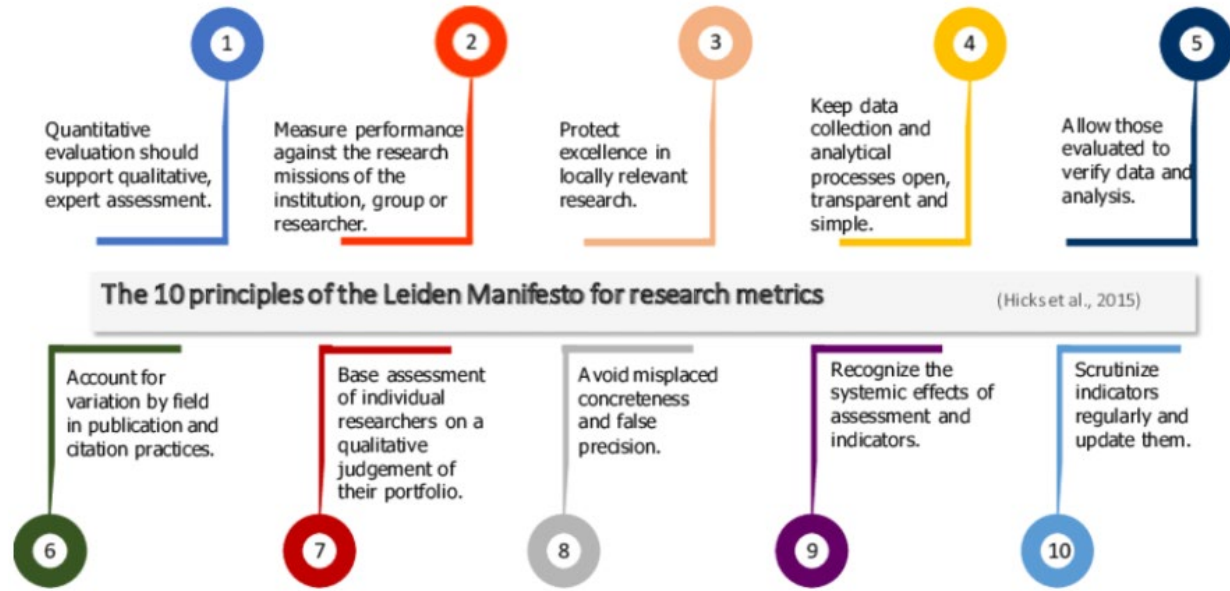
GEOLOGY Questions raised over proposed Anthropocene dates p.436

HISTORY Music inspired Newton to add more colours to the rainbow p.436



The Leiden Manifesto for research metrics

Use these ten principles to guide research evaluation, urge **Diana Hicks**, **Paul Wouters** and colleagues.

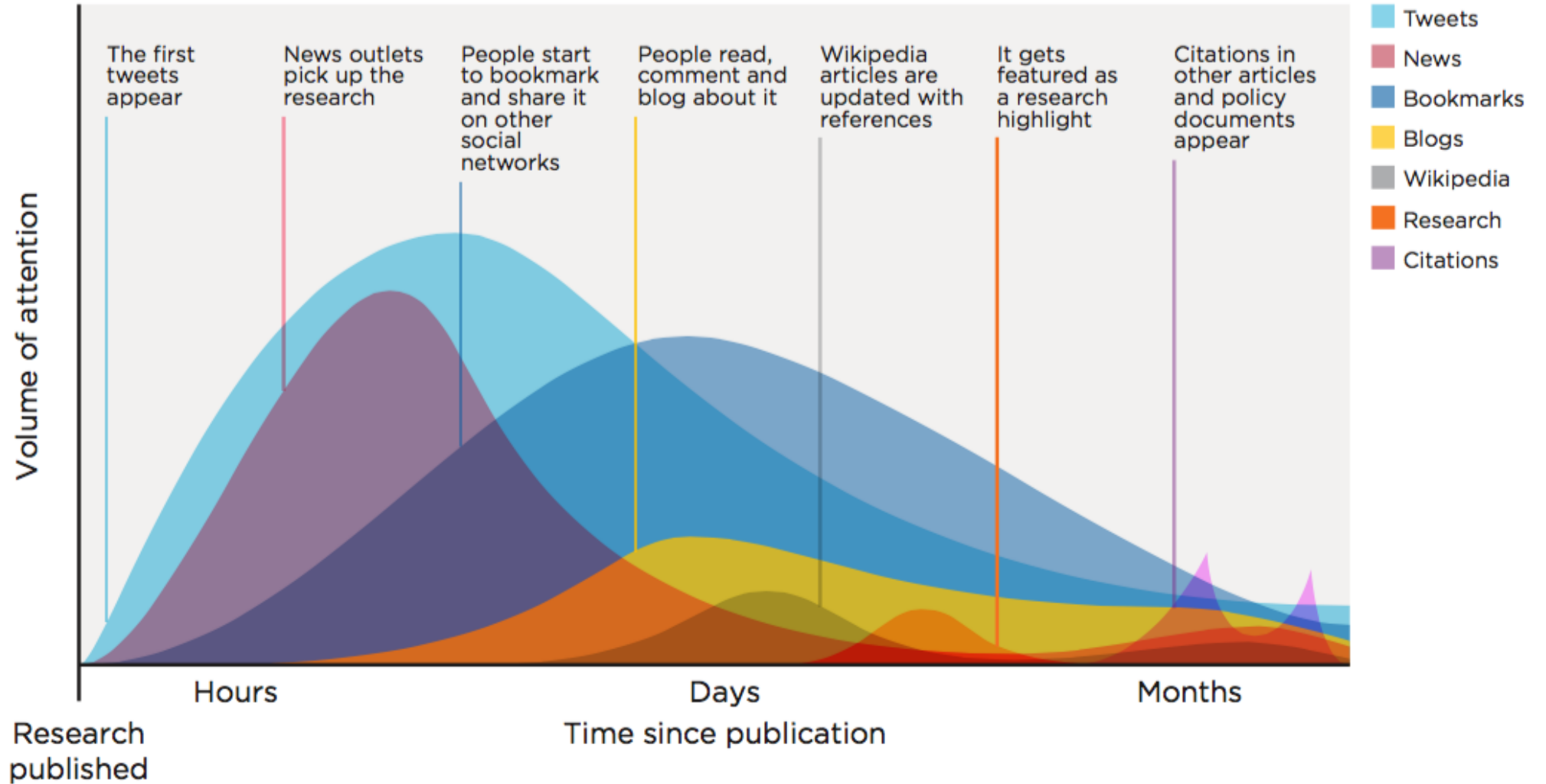


-The 10 principles of the Leiden Manifesto for research metrics

Hicks, D., Wouters, P., Waltman, L. *et al.* Bibliometrics: The Leiden Manifesto for research metrics. *Nature* **520**, 429–431 (2015). <https://doi.org/10.1038/520429a>

Duarte, Kedma. (2017). Assessing Researcher Quality for Collaborative Purposes.

A typical timeline of attention





4. “Publish” All of Your Work



“Publish” Your Work





Enhance the Discoverability of Your Work: Make Your Work Accessible



Open Access

A movement in higher education to increase access to scholarly research and communication, not limiting it solely to subscribers or purchasers of works.

- Open Access literature is digital, online, free of charge, and free of most copyright and licensing restrictions
- Works are still covered by copyright law, but Open Access terms apply to allow sharing and reuse
- All major OA initiatives for scientific and scholarly literature insist on the importance of peer review

OSTP Memorandum August 25, 2022

This memorandum provides policy guidance to federal agencies with research and development expenditures on updating their public access policies. In accordance with this memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:


1. Update their public access policies as soon as possible, and no later than December 31st, 2025, to make publications and their supporting data resulting from federally funded research publicly accessible without an embargo on their free and public release;
2. Establish transparent procedures that ensure scientific and research integrity is maintained in public access policies; and,
3. Coordinate with OSTP to ensure equitable delivery of federally funded research results and data.



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

August 25, 2022

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Dr. Alondra Nelson 
Deputy Assistant to the President and Deputy Director for Science and Society
Performing the Duties of Director
Office of Science and Technology Policy (OSTP)

SUBJECT: Ensuring Free, Immediate, and Equitable Access to Federally Funded Research

This memorandum provides policy guidance to federal agencies with research and development expenditures on updating their public access policies. In accordance with this memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:

1. Update their public access policies as soon as possible, and no later than December 31st, 2025, to make publications and their supporting data resulting from federally funded research publicly accessible without an embargo on their free and public release;
2. Establish transparent procedures that ensure scientific and research integrity is maintained in public access policies; and,
3. Coordinate with OSTP to ensure equitable delivery of federally funded research results and data.

1. Background and Policy Principles

Since February 2013, federal public access policy has been guided by the *Memorandum on Increasing Access to the Results of Federally Funded Research* (2013 Memorandum).¹ Issued by the White House Office of Science and Technology Policy (OSTP), the 2013 Memorandum directed all federal departments and agencies (agencies) with more than \$100 million in annual research and development expenditures to develop a plan to support increased public access to the results of federally funded research, with specific focus on access to scholarly publications and digital data resulting from such research.

Nearly ten years later, every federal agency subject to the 2013 Memorandum has developed and implemented a public access policy in accordance with its guidance.² As a result, the American public has experienced great benefits: more than 8 million scholarly publications have become accessible to the public. Over 3 million people read these articles for free every day. The 2013 federal public access policy set the stage for a paradigm shift away from research silos and

¹ See the 2013 Memorandum: https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
² See the 2021 OSTP Public Access Congressional Report: https://www.whitehouse.gov/wp-content/uploads/2022/02/2021-Public-Access-Congressional-Report_OSTP.pdf

K-REx

K-State Research Exchange

K-State's Open Repository

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The K-State Research Exchange (K-REx) provides a platform to collect, preserve, and discover the creative and scholarly works of K-State students, staff, and faculty; it also houses K-State's digitized historical documents and images from the University Archives and Special Collections. K-REx raises the prestige of K-State's scholarly output, increases scholarly communication, and makes materials more widely available.

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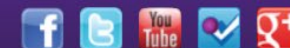
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Subject areas

- Evolutionary Studies
- Paleontology
- Zoology

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Ontogeny in the tube-crested dinosaur *Parasaurolophus* (Hadrosauridae) and heterochrony in hadrosaurids

Andrew A. Farke¹, Derek J. Chok², Annisa Herrero², Brandon Scolieri², Sarah Werning³

Published October 22, 2013

PubMed 24167777

PeerJ Picks - 2014 Part of the PeerJ PeerJ Picks 2014 Collection

Part of the PeerJ Top Paleontology Papers - October 2014

July 1, 2014: **(Minor Correction):** "FMNH" was inadvertently omitted from the list of institutional abbreviations. The abbreviation list should include: FMNH, Field Museum of Natural History, Chicago, Illinois, USA.

Also see the associated PeerJ guest blog post by author Andrew Farke on this paper as well as the "Dinosaur Joe" website built specifically for this new find.

Author and article information



Open Data Open Sharing of the Paper and the Data

Segmentation data for braincase of Parasaurolophus sp. (Hadrosauridae: Dinosauria)

- RAM14000_braincase_Slicer
- bone.vtk
- brain_endocast.vtk
- braincase-bone-label.nrrd
- braincase-connective_tissue-label.nrrd
- braincase-label.nrrd
- braincase-mass-label.nrrd
- braincase-nerve-label.nrrd
- braincase-pituitary_gland-label.nrrd
- braincase-tissue-label.nrrd
- braincase.hdr
- braincase.img

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1120 views 0 shares cites coming soon

Published on 22 Oct 2013 - 10:48 (GMT)
Filesize is 39.11 MB

Categories

- Geology
- Paleontology
- Anatomy
- Evolutionary Biology

Authors

Andrew Farke
Raymond M. Alf Museum of Paleontology

Tags

- ontogeny
- lambeosaurinae
- Hadrosauridae
- Parasaurolophus
- hadrosaur
- dinosaur

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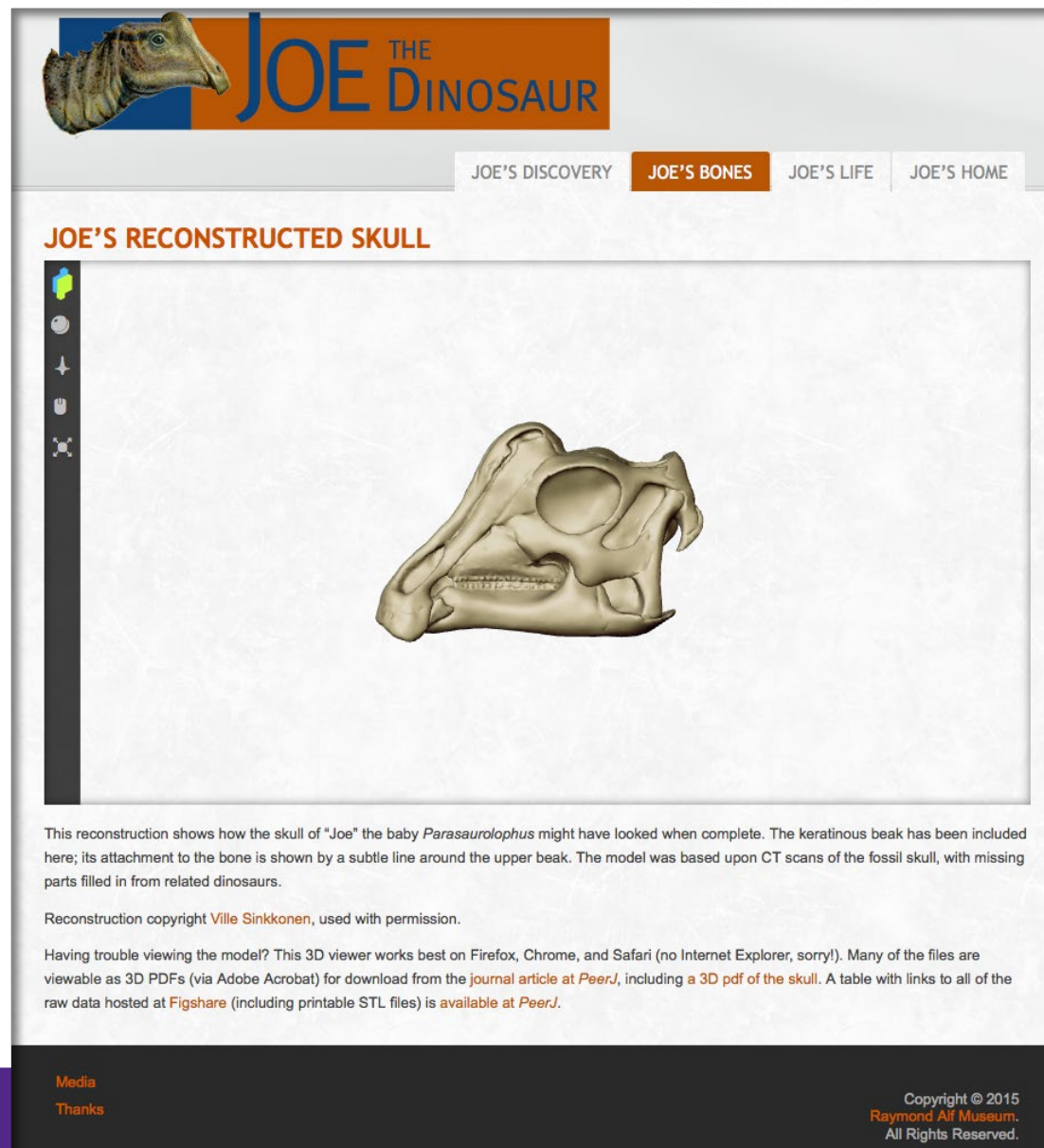
Cite this: Farke, Andrew; Paleontology, Raymond M. Alf Museum of (2013): Segmentation data for braincase of Parasaurolophus sp. (Hadrosauridae: Dinosauria). figshare. <http://dx.doi.org/10.6084/m9.figshare.664171> Retrieved 23:17, May 11, 2015 (GMT)

*The embed functionality can only be used for non commercial purposes... [more](#)

[http://figshare.com/articles/Segmentation data for braincase of Parasaurolophus sp Hadrosauridae Dinosauria /664171](http://figshare.com/articles/Segmentation_data_for_braincase_of_Parasaurolophus_sp_Hadrosauridae_Dinosauria_/664171)

Open Data Open Sharing of the Paper and the Data

<http://dinosaurjoe.org/joes-bones/digital-joe/joes-skull-reconstruction/>

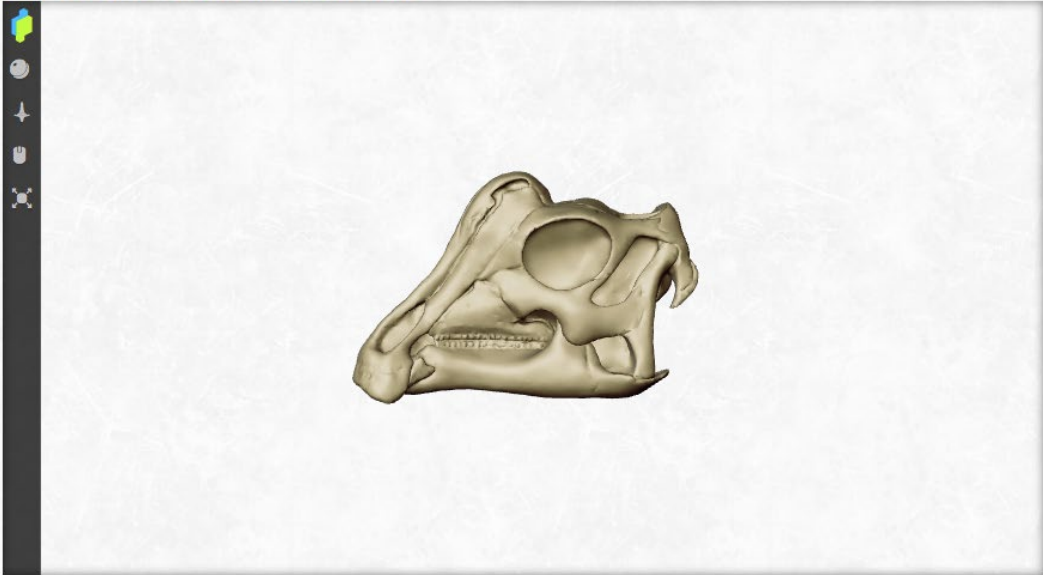


The screenshot shows the website for 'JOE THE DINOSAUR'. At the top left is a logo featuring a dinosaur head and the text 'JOE THE DINOSAUR'. To the right of the logo are navigation tabs: 'JOE'S DISCOVERY', 'JOE'S BONES' (which is highlighted), 'JOE'S LIFE', and 'JOE'S HOME'. Below the navigation is the section title 'JOE'S RECONSTRUCTED SKULL'. The main content area features a 3D model of a dinosaur skull, viewed from a side profile. To the left of the model is a vertical toolbar with icons for zooming, rotating, and other 3D viewer functions. Below the 3D viewer is a paragraph of text explaining the reconstruction, followed by a copyright notice and a paragraph providing information on how to view the model and access the raw data.

JOE THE DINOSAUR

JOE'S DISCOVERY JOE'S BONES JOE'S LIFE JOE'S HOME

JOE'S RECONSTRUCTED SKULL



This reconstruction shows how the skull of "Joe" the baby *Parasaurolophus* might have looked when complete. The keratinous beak has been included here; its attachment to the bone is shown by a subtle line around the upper beak. The model was based upon CT scans of the fossil skull, with missing parts filled in from related dinosaurs.

Reconstruction copyright Ville Sinkkonen, used with permission.

Having trouble viewing the model? This 3D viewer works best on Firefox, Chrome, and Safari (no Internet Explorer, sorry!). Many of the files are viewable as 3D PDFs (via Adobe Acrobat) for download from the [journal article at PeerJ](#), including a [3D pdf of the skull](#). A table with links to all of the raw data hosted at [Figshare](#) (including printable STL files) is [available at PeerJ](#).

Media
Thanks

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Open Data Open Sharing of the Paper and the Data

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000308>

The screenshot shows the PLOS ONE website interface. At the top, there are navigation links for 'plos.org', 'create account', and 'sign in'. The main header includes the PLOS ONE logo, 'Subject Areas', 'Publish', 'About', and a search bar. Below the header, there are badges for 'OPEN ACCESS' and 'PEER-REVIEWED', and the article type 'RESEARCH ARTICLE'. The article title is 'Sharing Detailed Research Data Is Associated with Increased Citation Rate' by Heather A. Piwowar, Roger S. Day, and Douglas B. Fridsma, published on March 21, 2007. A statistics box on the right shows 545 Saves, 152 Citations, 43,264 Views, and 107 Shares. A navigation bar below the title allows switching between 'Article', 'Authors', 'Metrics', 'Comments', and 'Related Content'. The 'Article' section is active, showing an 'Abstract' with sub-sections for 'Introduction', 'Results', 'Discussion', 'Materials and Methods', 'Supporting Information', 'Author Contributions', and 'References'. The 'Abstract' text discusses the benefits of sharing research data. The 'Background' section provides context, and the 'Principal Findings' section reports that publicly available data is associated with a 69% increase in citations. The 'Significance' section notes that this correlation may motivate researchers to share data. The 'Figures' section is partially visible at the bottom. On the right side, there are buttons for 'Download PDF', 'Print', and 'Share', along with a 'CrossMark' icon and a list of 'Subject Areas' including Microarrays, Linear regression analysis, Internet, Archives, Gene expression, Clinical trials, Confidence intervals, and DNA sequence analysis.

Preservation

- Journals aren't around forever. What happens to your digital scholarship if they cease publication?
- Is there a print copy available?
- Does the publisher provide a DOI?
- Do you have permission to publish/share preprint or postprints in an institutional repository?
- What is the repository's retention policy?

MILLIONS OF PAPERS AT RISK OF DISAPPEARING FROM THE INTERNET

Analysis of DOIs suggests digital preservation isn't keeping up with burgeoning scholarly knowledge.

By Sarah Wild

More than one-quarter of scholarly articles are not being properly archived and preserved, a study of more than seven million digital publications suggests. The findings indicate that systems to preserve papers online have failed to keep pace with the growth of research output (*M. P. Eve, J. Libr. Sch. Commun.* 12, eP16288; 2024).

"Our entire epistemology of science and research relies on the chain of footnotes," explains author Martin Eve, a researcher in literature, technology and publishing at Birkbeck, University of London. "If you can't verify what someone else has said at some other point, you're just trusting to blind faith for artefacts that you can no longer read yourself."

Eve, who is also involved in research and development at digital-infrastructure organization Crossref, checked whether 7,438,037 works labelled with digital object identifiers (DOIs) are held in archives. DOIs – which consist of a string of numbers, letters and symbols – are unique fingerprints used to identify and link to publications, such as scholarly articles and official reports. Crossref is the largest DOI registration agency, allocating the identifiers to about 20,000 members, including publishers, museums and other institutions.

The sample of DOIs included in the study was made up of a random selection of up to 1,000 registered to each member organization. Twenty-eight per cent of these works – more than two million articles – did not appear in a major digital archive, despite having an active DOI. Only 58% of the DOIs referenced works that had been stored in at least one archive. The other 14% were excluded from the study because they were published too recently, were not journal articles or did not have an identifiable source.

Preservation challenge

Eve notes that the study has limitations: namely, that it tracked only articles with DOIs, and that it did not search every digital repository for articles (he did not check whether items with a DOI were stored in institutional repositories, for example).

Nevertheless, preservation specialists have welcomed the analysis. "It's been hard to know the real extent of the digital preservation challenge," says William Kilbride, managing director of the Digital Preservation Coalition, headquartered in York, UK, which publishes a handbook of good preservation practice.

"Many people have the blind assumption that if you have a DOI, it's there forever," says Mikael Laakso, who studies scholarly publishing at the Hanken School of Economics in Helsinki. "But that doesn't mean that the link will always work."

Kate Wittenberg, managing director of the digital archiving service Portico in New York City, warns that small publishers are at higher risk of failing to preserve articles than are large ones. "It costs money to preserve content," she says, adding that archiving involves infrastructure, technology and expertise that many smaller organizations do not have access to.

Eve's study suggests some measures that could improve digital preservation, including stronger requirements at DOI registration agencies and better education and awareness of the issue among publishers and researchers.

"Everybody thinks of the immediate gains they might get from having a paper out somewhere, but we really should be thinking about the long-term sustainability of the research ecosystem," Eve says. "After you've been dead for 100 years, are people going to be able to get access to the things you've worked on?"



Two million articles are not properly archived.

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