

New business models for open research

Todd Vision



Jared Lyle



Mark Hahnel



Reliance on the perpetual generosity of a single funding source is risky

Published online 18 November 2009 | *Nature* **462**, 258-259 (2009) | doi:10.1038/462258b

News

Plant genetics database at risk as funds run dry

National Science Foundation to cut support for *Arabidopsis* resource.

[Alison Abbott](#)

The world's most valued plant database faces extinction because its funding is being phased out by the US National Science Foundation (NSF), and no alternative source is on the horizon.

"This is the wrong way to go," says genomics researcher Ernest Retzel of the National Center for Genome Resources in Santa Fe, New Mexico. "I believe it will set the field back."

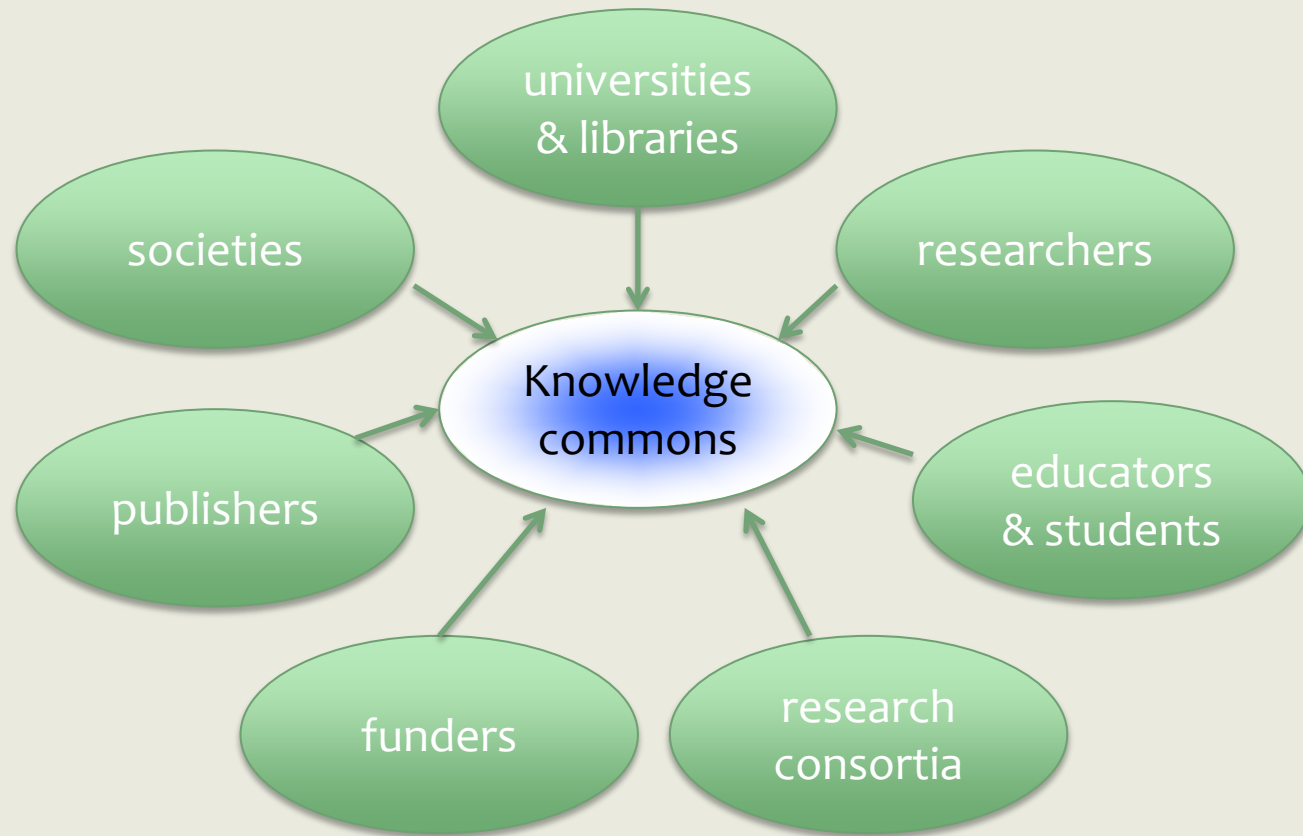
The NSF says that it does not have a policy to support long-term, established research-infrastructure projects such as the *Arabidopsis* Information Resource (TAIR), which maintains a free, open-access database of genetic and molecular-biology data for *Arabidopsis thaliana*, or thale cress, the widely used model plant. "We



The popular model plant *Arabidopsis thaliana*.

J. BURGESS/SPL

A diversity of beneficiaries allows for a diversity of revenue sources





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Phadke S, Zufall R, Paixao T, Pham S, Pham T (2013) Data from: Genetic background alters dominance relationships between mat alleles in the ciliate *Tetrahymena thermophila*. *Journal of Heredity* [doi:10.5061/dryad.qv731](https://doi.org/10.5061/dryad.qv731)

Chiu C, Jost L, Chao A (2013) Data from: Phylogenetic beta diversity, similarity, and differentiation measures based on Hill numbers. *Ecological Monographs* [doi:10.5061/dryad.vr4k2](https://doi.org/10.5061/dryad.vr4k2)

Salgado-Salazar C, Rossmann AY, Chaverri P (2013) Data from: Not as ubiquitous as we thought: taxonomic crypts, hidden diversity and cryptic speciation in the cosmopolitan fungus *Thelonectria discophora* (Nectriaceae, Hypocreales, Ascomycota). *PLoS ONE* [doi:10.5061/dryad.q3s66](https://doi.org/10.5061/dryad.q3s66)

Morgan EMJ, Green BS, Murphy NP, Strugnell JM (2013) Data from: Investigation of genetic structure between deep and shallow populations of the southern rock lobster, *Jasus edwardsii* in Tasmania, Australia. *PLoS ONE* [doi:10.5061/dryad.656gf](https://doi.org/10.5061/dryad.656gf)

Robinson BW (2013) Data from: Evolution of growth by genetic accommodation in Icelandic freshwater stickleback. *Proceedings of the Royal Society B*

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12-June-2014

Open Repositories

4



Sources of revenue



- **Membership fees**
 - \$500-\$5000/yr
 - Stakeholder governance
 - Scale with community size
- **Data Publishing Charges** cover operating costs
 - Storage (10x current annual cost)
 - Curation (currently 1hr per data package)
 - System upkeep (software, servers, services, etc.)
 - Business administration
- **Grants for R&D**
 - Special projects
 - Technology innovation

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 - **Grants for R&D**
 - Special projects
 - Technology innovation
- Scale linearly with deposits*



Plan	Charge ¹	Popularity
Subscription	Annual fee based on journal volume, \$25-30 per research publication ²	44%
Pay on submission	\$80 per data package, paid by the submitter	26%
Deferred Payment	\$70-75 per data package ²	25%
Pre-paid voucher	\$65-70 per data package ²	4%
Waivers	\$0	1%

¹ Additional fees for large data packages and non-integrated submissions

² Member discount applies


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Integrated Journals and Costs for Submitters

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All journals with either [integrated data submission](#) or sponsored [Data Publishing Charges](#) are listed below. Note that for large data packages, submitters will be asked to pay an additional \$15 for the first GB beyond 10GB and \$10 for each GB thereafter.

Journal	Submission				Payment
	Integrated	Submit: R: Prior to A: On Acceptance	Data embargo allowed	Metadata hidden until publication	Sponsor/Cost to submitter
<i>If your journal is not listed below...</i>	<i>N</i>	<i>A</i>	<i>Y</i>	<i>Y</i>	<i>\$90</i>
American Naturalist, The	Y	A	Y	N	American Society of Naturalists
Biodiversity Data Journal	N	A	Y	Y	Pensoft
Biological Journal of the Linnean Society	Y	A	Y	N	\$80
Biology Letters	Y	A	Y	Y	The Royal Society
BioRisk	Y	R	Y	N	Pensoft
BMJ Open	Y	R	N	N	\$80
Comparative Cytogenetics	Y	R	Y	N	Pensoft
Ecological Monographs	Y	A	Y	Y	Ecological Society of America

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Some of the many ways organizations can contribute through this model



- **Any organization can**
 - become a member
 - sponsor DPCs through one of several payment plans
- **Publishers can**
 - integrate data and manuscript submission
- **Universities, publishers, & funders can**
 - sponsor DPCs. Failing that, they can facilitate pay on submission.
 - adopt open data policy policies
 - guide researchers to reputable repositories
 - fund or collaborate on R&D projects

New Business Models for Open Research: openICPSR

Jared Lyle

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Open Repositories 2014

Helsinki, Finland

12 June 2014





What is ICPSR?

- Repository of social science data established in 1962 for data sharing and preservation
- Membership-based organization -- over 750 institutional members (colleges and universities) from around the world
- Source for training in statistics and data curation through the Summer Program

ICPSR

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The 1915 Iowa State Census Project (ICPSR 28501) [RSS](#)

Principal Investigator(s): Goldin, Claudia, Harvard University, and National Bureau of Economic Research; Katz, Lawrence, Harvard University, and National Bureau of Economic Research

Summary:

The 1915 Iowa State Census is a unique document. It was the first census in the United States to include information on education and income prior to the United States Federal Census of 1940. It contains considerable detail on other aspects of individuals and households, e.g., religion, wealth and years in the United States and Iowa. The Iowa State Census of 1915 was a complete sample of the residents of the state and the returns were written by census takers (assessors) on index cards. These ca... ([more info](#))

Access Notes

- These data are freely available.

Dataset(s)

Dataset - [Download All Files](#) (90,107 KB)

Documentation: [Codebook.pdf](#) [User guide.pdf](#)

Data: [SAS](#) [SPSS](#) [Stata](#) [ASCII](#) [Delimited](#)
ASCII + [SAS Setup](#) [SPSS Setup](#) [Stata Setup](#)



Data Sharing for
Demographic Research

A data archive for demography
and population sciences

This study was originally
processed, archived, and
disseminated by [Data Sharing and
Demographic Research](#), a project
funded by the Eunice Kennedy
Shriver National Institute of Child
Health and Human Development
(NICHD).

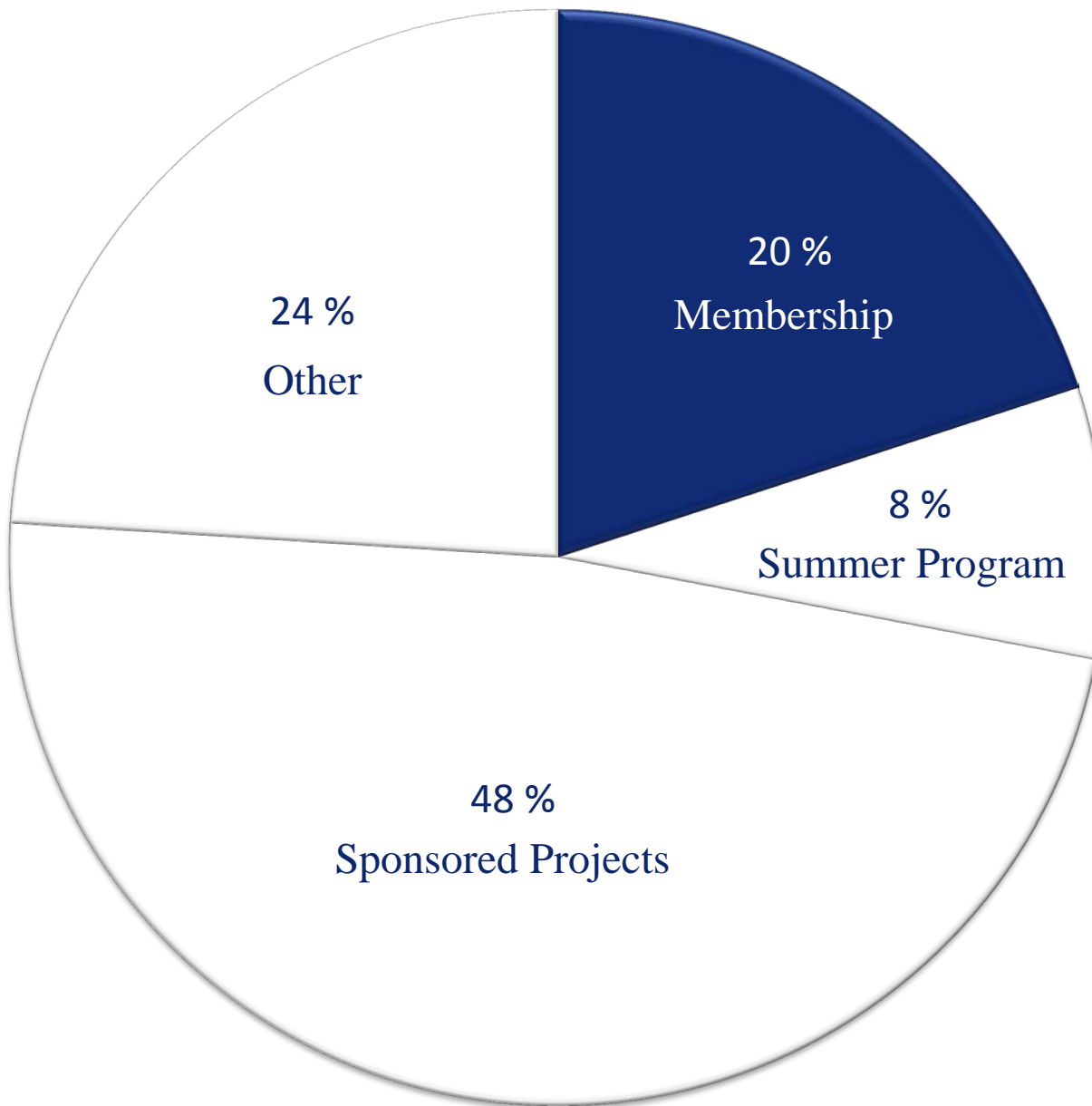
Existing Funding Models

- Fee for access model (membership)
- Agency model (agency funds public access)
- Fee for deposit model (depositor funds public access)

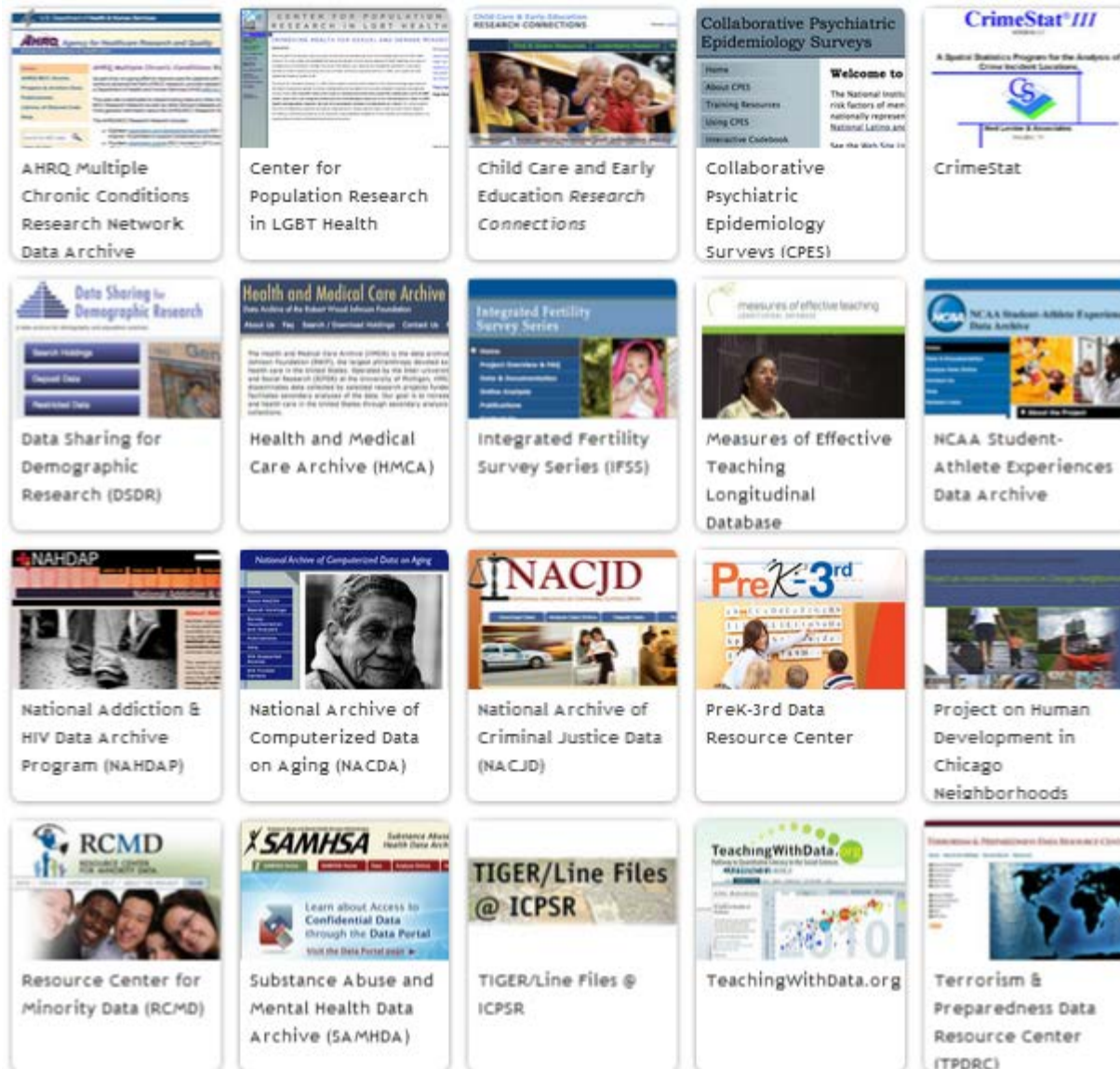
See also:

http://datacommunity.icpsr.umich.edu/sites/default/files/WhitePaper_ICPSR_SDRDD_121113.pdf

ICPSR Funding Sources (FY14)



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Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica

Principal Investigator(s) : Gertler, Paul; Heckman, James; Pinto, Rodrigo; Zanolini, Arianna; Vermeerch, Christel; Walker, Susan; Chang-Lopez, Susan; Grantham-McGregor, Sally

Title	Date Entered	Type
 Jamaica Earnings Analysis Gertler, Paul; Heckman, James; Pinto, Rodrigo; Zanolini, Arianna; Vermeerch, Christel; Walker, Susan; Chang-Lopez, Susan; Grantham-McGregor, Sally	2014-05-07 5:27 PM	folder

Citation: Gertler, Paul; Heckman, James; Pinto, Rodrigo; Zanolini, Arianna; Vermeerch, Christel; Walker, Susan; Chang-Lopez, Susan; Grantham-McGregor, Sally. Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2014-05-07. <http://doi.org/10.3886/E2402V3>

Persistent URL: <http://doi.org/10.3886/E2402V3>

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openICPSR data are distributed exactly as they arrived from the data depositor. ICPSR has not checked or processed this material. Users should consult the investigator(s) if further information is desired.

Project Description

Summary

In 1986-1987, the Jamaican Study enrolled 129 growth stunted and disadvantaged children aged 9-24 months that lived in Kingston, Jamaica. Half of the children were randomized into a cognitive stimulation intervention which lasted 18 months (*S. P. Walker, S. M. Chang, C. A. Powell, S. M. Grantham-McGregor, The Lancet 366, 1804 (2005)*). A matched non-stunted group was also followed for comparison purposes. We resurveyed both the stunted and non-stunted samples in 2007-08, some 20 years after the original intervention, when the participants were approximately 22 years old. We found and interviewed 105 out of the original 129 stunted study participants. We estimated the impact of the stimulation intervention on earnings by comparing the earnings of the stunted-treatment group to those of the stunted-comparison group.

Why openICPSR?

- Distribution in ICPSR's catalog and network
- Trusted, sustainable organization (50+ years)
- Discipline-specific metadata
- Interface
- Disseminate sensitive/restricted-use data

openICPSR Funding Model

- Fee for deposit model (depositor funds public access)
- Curation package (depositor funds curation)
- User fees (for costly services)
- Infrastructure supported by ICPSR



Other Possible Services (?)

- Bulk self-deposit
- Institutional/departmental repository
- Journal replicated data repository

Acknowledgements

- Linda Detterman
- Nathan Adams

See also:

<http://www.slideshare.net/ICPSR/orientation-to-openicpsr>

Thank you!

lyle@umich.edu

Extra

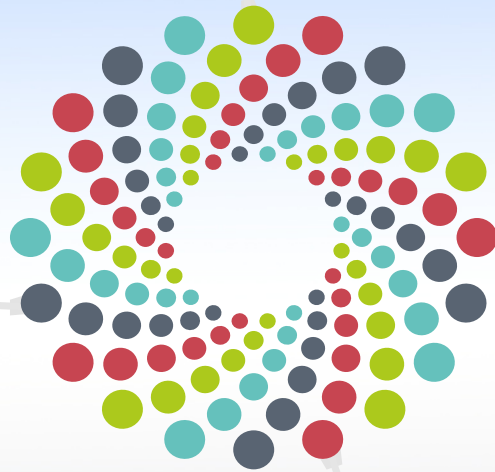
New Funding Models

- Commercial services
- User fees (for costly services)
- Overhead (% grants)
- Infrastructure (federal agencies support)

See also:

http://datacommunity.icpsr.umich.edu/sites/default/files/WhitePaper_ICPSR_SDRDD_121113.pdf

- What is the long-term funding stream?
- What happens if service fails?
- How to maximize discoverability?
- Reach a network of researchers?
- Abide by archival standards?
- Handle sensitive data?



figshare



citable | shareable | discoverable

▸ Policy and position statements

▸ Consultation responses

▸ Spotlight issues

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Policy on data management and sharing

The Wellcome Trust is committed to ensuring that the outputs of the research it funds, including research data, are managed and used in ways that maximise public benefit. Making research data widely available to the research community in a timely and responsible manner ensures that these data can be verified, built upon and used to advance knowledge and its application to generate improvements in health.

We believe that success in maximising the value of research data depends crucially on fostering a culture in which both data generators and data users adopt good research practice, and act with integrity and transparency in managing, using and sharing research data. Researchers, research institutions, resource providers, funders and publishers all have important roles to play in helping to develop this enabling environment and in developing the resources and systems required.

There is a growing international consensus on the need to preserve and share research datasets in a manner that maximises their long-term value. This has been articulated in key documents such as the OECD Principles and Guidelines for Access to Research Data from Public Funding (2007); the Fort Lauderdale Principles (2003) and the Toronto Statement (2009).

Our policy on data management and sharing reflects the principles set out in these statements. It is consistent with the Trust's position on [open and unrestricted access to published research](#), our [guidelines on good research practice](#) and our [policy on intellectual property and patenting](#).

The policy should be read in conjunction with the [associated guidance](#). We will keep both our policy and guidance under review.



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- Don't be afraid to reach out to *all* the beneficiaries of your resource.