

Open research – why is it important?

Kevin Ashley
Director, Digital Curation Centre
www.dcc.ac.uk
@kevingashley
Kevin.ashley@ed.ac.uk

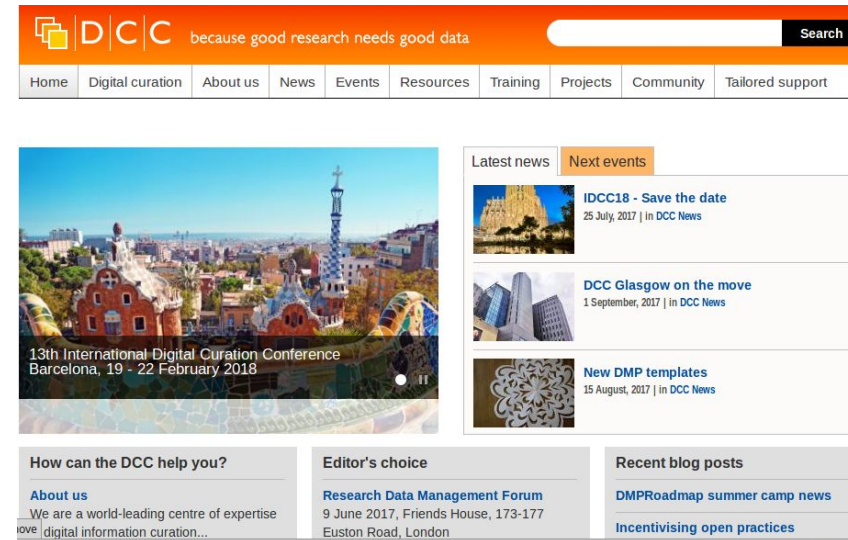
With thanks to many DCC colleagues for reuse of images

DMPonline, DCC, and the associated logos are registered trademarks of the University of Edinburgh



My home – the DCC

- Consultancy
- Training
- Research
- Services
- Guidance
- Events



...and an organisational member of RDA, Datacite, Digital Preservation Coalition & COAR

Why does open research matter?

- Moral and financial reasons:
 - Reusable data improves integrity, speed and cost of research
 - True even if reuse is only by the original creators
 - Working openly – open publications, data, workflows, software:
 - Increase speed of research
 - Reduces cost
 - Reduces needless duplication
 - Improves integrity

Open research benefits

Research quality

- How close can we get to the truth?

Research speed

- How quickly can we get to the truth?

Research finance

- How much does the truth cost?

Improving one or more of these is of interest to all actors:

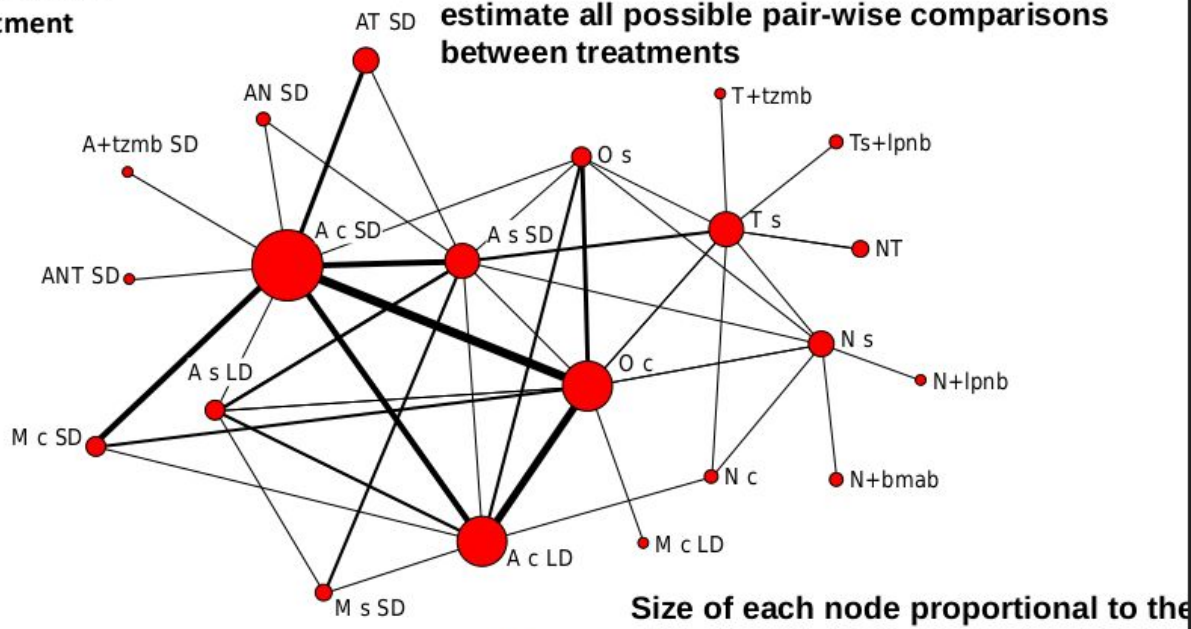
- Researchers as data creators
- Researchers as data reusers
- Research institutions
- Funders – hence government and society

New research with old data

A network meta-analysis offers a wider picture than a single traditional meta-analysis

700 trials of advanced breast cancer treatment

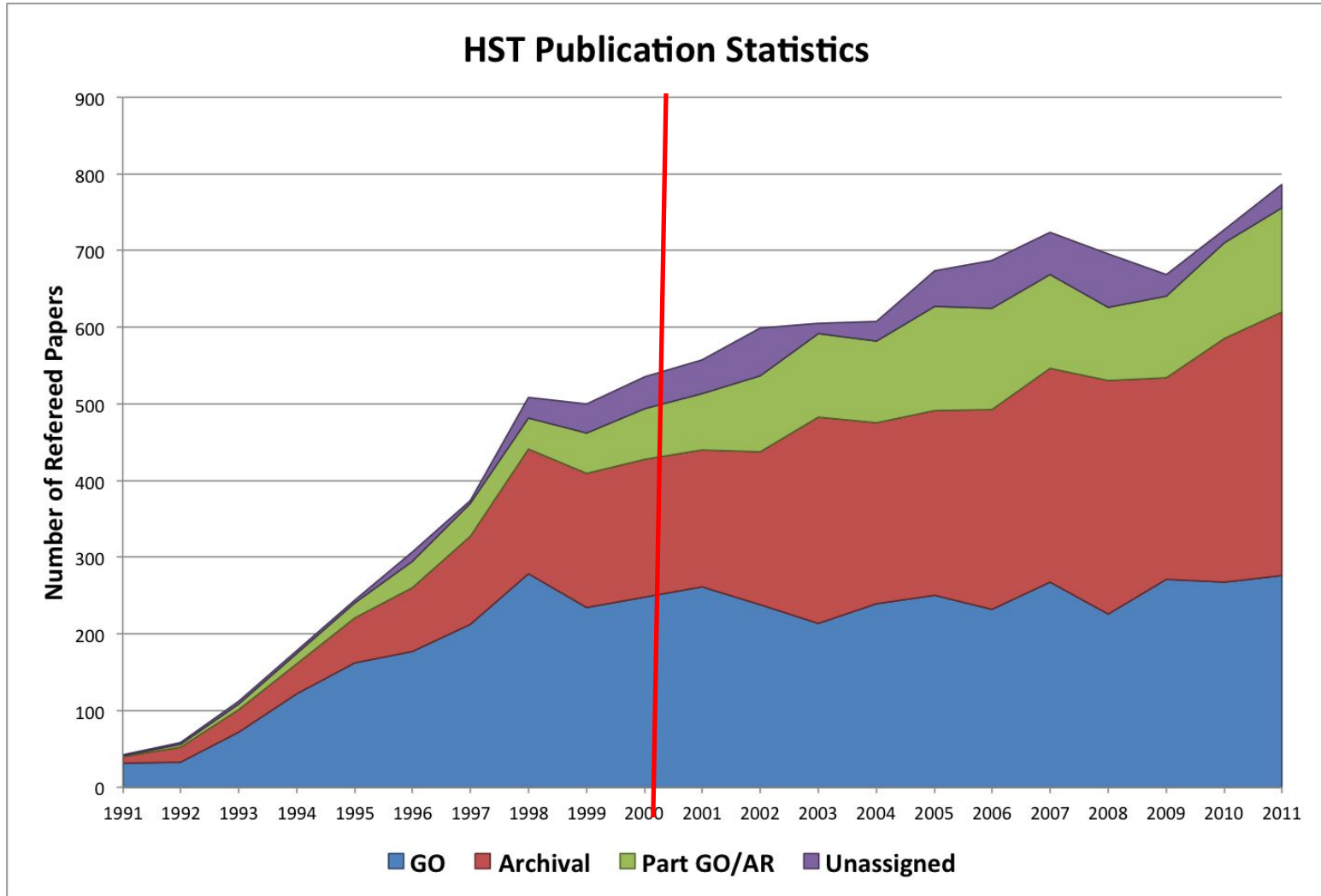
Quantitative synthesis allowing to combine direct and indirect information and allowing to estimate all possible pair-wise comparisons between treatments



Synthesis allows new analyses

Research that cannot be done with any one of these datasets

Data reuse from Hubble



Centres like these provide a return on investment of between 400% and 1200%

http://www.jisc.ac.uk/whatwedo/programmes/di_directions/strategic_directions/badc.aspx

Mandates by funders

- DCC has been conducting funder policy analysis for over 12 years
- For the last 5 years, we've been working with SPARC Europe to monitor national data policy in Europe

Findings

- ‘Policies’ have many forms – roadmaps, laws, concordats, Codes, funder policies
- In 2019 - 11 EU member states have national policy relating to research data
 - ERA: 2 have policy, 1 (Iceland) has active plans
- 9 more have known plans or intentions
- Primarily driven by research funders

Changes over time

2017

11 EC national policies

2 ERA policies

9 more countries with activity or declared intentions

2019

14 EC national policies

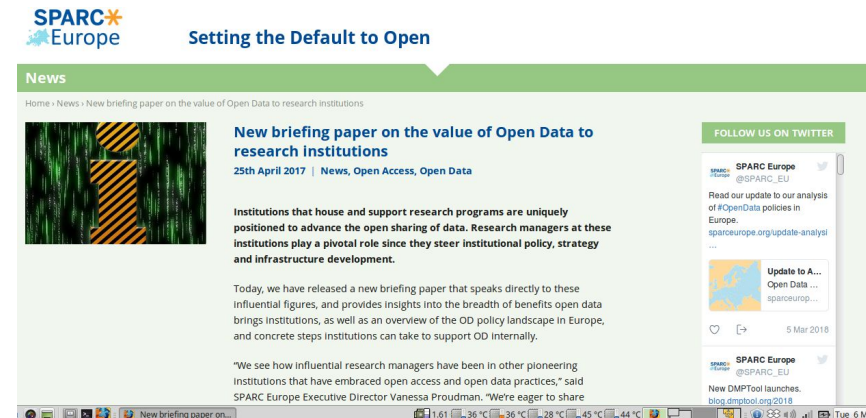
4 ERA policies

14 more countries with activity or declared intentions

1 EC member state with no national policy & no known plan to have one.

Open research for selfish reasons

- Sparc Europe/DCC briefing on value of open data to institutions:
<https://sparceurope.org/new-briefing-paper-value-open-data-research-institutions/>
- Self-interest – such as citation advantage
 - Alter, Pienta, Lyle – 240%, social sciences *
 - Piwowar, Vision – 9% (microarray data) †
 - Henneken, Accomazzi – 20% (astronomy) #



Edwin Henneken, Alberto Accomazzi, (2011) Linking to Data - Effect on Citation Rates in Astronomy. <http://arxiv.org/abs/1111.3618>

* Amy Pienta, George Alter, Jared Lyle, (2010) The Enduring Value of Social Science Research: The Use and Reuse of Primary Research Data. <http://hdl.handle.net/2027.42/78307>

† Piwowar H, Vision TJ. (2013) Data reuse & the open data citation advantage. PeerJ PrePrints 1:e1v1 <http://dx.doi.org/10.7287/peerj.preprints.1v1>

The alternative...

Not being open often has negative consequences.

The case for open data: the Duke clinical trials

9 May, 2011 | in Blogs

By: [Kevin Ashley](#)

A recent story in the [Times Higher Educational Supplement](#), backed up by leader comment, provides a highly readable summary of a long and complex case of flawed clinical research and the difficulties encountered by those trying to expose the flaws. It also provides a strong argument for being open with data and code at an early stage, even where sensitive data is involved.

Since this research involved cancer chemotherapy, the lives of people and their quality of life whilst undergoing treatment potentially depended on the truth of the research findings. As the article shows, falsifying the findings would have been far easier and quicker had the original data, and the methods used to analyse it, been made available from the outset. Expensive clinical trials could have been avoided. Potentially, better treatments could have been brought to trial more quickly once the false promise of this particular intervention was clear.

It's often felt that whilst some subjects may be prime candidates for openness with data, those involving human subjects, and in particular clinical medicine, present too many ethical and regulatory challenges. Examples such as this show that such a position is wrong. Even if ethical and regulatory barriers exist, wider ethical issues - the avoidance of unnecessary human suffering being one - demand that we be as open as possible with clinical data. In this case, no identifying information needed to be released to allow others to validate or invalidate this work. Even when the inclusion of identifying information is inescapable, data can still be open in the sense that its existence is public and it is made available to anyone who can satisfy the

Most Read

Site Comments

- ▶ [Re-skilling for Research - observations on an RLUK report](#)
- ▶ [Re-engineering Libraries for the Data Decade](#)
- ▶ [New book: Managing Research Data](#)
- ▶ ['What's New' Issue 42: February 2012](#)
- ▶ [How can we evaluate data repositories? Pointers from DryadUK](#)

Incremental project





Available now: See www.nwdtc.ac.uk

E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

[Search Jobs](#)

[Search Archive](#)

All roles

All locations

Enter your keyword

Go

[Advanced Search](#)

Systems failure

Like 1

3

5 May 2011

A scandal involving clinical trials based on research that was riddled with errors shows that journals, institutions and individuals must raise their standards, argues Darrel Ince

Chemotherapy is painful and debilitating. The side-effects include nausea, diarrhoea, extreme tiredness, loss of balance and loss of hair. All this happens while you wonder whether you will see your family and friends again.

A chemotherapeutic treatment that exacts less of a physical toll would benefit a great many people. In 2006, a group of researchers at Duke University announced in a research article a major breakthrough that promised precisely that. This was followed by several articles in the same vein; all were published in leading journals and had citation counts that any academic would envy. One paper, in the *New England Journal of Medicine*, was cited 290 times.



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

[APPLY NOW](#) →

THE SUBSCRIPTION OFFER

96p an issue,
that's a saving
of 64%



[SUBSCRIBE NOW](#) →

[Printable version](#)

[Comment on this story](#)

(1 item remaining)



Internet



1

Everything

[Breaking news: lawsuit filed against Duke for fraudulent cancer study](#)

www.naturalnews.com/033561_cancer_study_fraud.html

13 Sep 2011 – The plaintiffs claim **Duke researchers** were engaged in **fraudulent** and negligent behavior when they set up a clinical trial using cancer patients ...

Images

Maps

Videos

News

Shopping

More

[How a New Hope in Cancer Fell Apart - NYTimes.com](#)

www.nytimes.com/2011/07/08/health/research/08genes.html

7 Jul 2011 – But the **research** at **Duke** turned out to be wrong. Its gene-based tests proved worthless, and the **research** behind them was discredited.

[Journalist Reports Duke Cancer Research Fraud-Duke Reacts ...](#)

www.advocateyourself.org/?p=433

13 Mar 2011 – Journalist Reports **Duke Cancer Research Fraud** & **Duke** Hires Her to Ensure Silence. Medical **research** is at the heart of why health care is ...

Sherburn in Elmet, UK

Change location

[Breaking news: lawsuit filed against Duke for fraudulent cancer ...](#)

drleonardcoldwell.com/.../breaking-news-lawsuit-filed-against-duke-f...

13 Sep 2011 – The plaintiffs claim **Duke researchers** were engaged in **fraudulent** and negligent behavior when they set up a clinical trial using cancer patients ...

The web

Pages from the UK

[Fraudulent Cancer Treatment Pushed by Major University](#)

www.gaia-health.com/.../000488-cancer-treatment-fraud-university.s...

8 Jul 2011 – Cancer & Corruption words with **Duke** University logo ... This **fraud** finally resulted in **Duke** stopping the pseudo-**research** and the patient trials.

All results

Related searches

More search tools

[Duke Sued Over Cancer Trials - ABC News](#)

abcnews.go.com/blogs/health/2011/.../duke-sued-over-cancer-trials/

9 Sep 2011 – The trials, which began in 2007 and 2008, were based on work by Dr. Anil Potti — a former **Duke** cancer **researcher** who claimed to have ...

Some elements of working openly

- Make the EXISTENCE of data, software, workflows etc known – even if the content is not open
- Use permanent identifiers (PIDs) for everything
- Document your plans
 - In clinical research – register your trials
- Use the work of others – and credit them
- Use recognised standards for metadata & data
- Deposit data with trusted repositories