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The digital transformation of research support

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# THE DIGITAL TRANSFORMATION OF RESEARCH

## SUPPORT

ALLISON MCNABB &  
ANDY TATTERSALL

NORTHERN COLLABORATION 2017



@AlisonMcNab  
Academic Librarian  
University of Huddersfield

Disruptors  
Agents of change  
Technology  
experts  
Horizon scanners  
Communicators  
Champions  
Teachers  
Trainers  
Academics



@Andy\_Tattersall  
Information Specialist  
University of Sheffield

# Outline

- Researchers in a digital landscape
  - The digital transformation of the research lifecycle
  - The digital transformation of research support
- Meeting the challenge:
  - The research technologist manifesto
  - Key competencies
- Resources

Go to [www.menti.com](https://www.menti.com) and use the code **37 30 76**



# Where do you sit in your organisation?



Go to [www.menti.com](https://www.menti.com) and use the code **37 30 76**

i

 Mentimeter

# Where does research support sit in your organisation?



0

0

0

0

0

0

Academic  
department

IT

Library

Corporate  
Communications

Research office

Other

# THE DIGITAL TRANSFORMATION OF THE RESEARCH LIFECYCLE

A top-down view of a wooden desk with a laptop, a smartphone, a pen, and a notebook. The text 'THE DIGITAL TRANSFORMATION OF THE RESEARCH LIFECYCLE' is overlaid in white, bold, sans-serif font. The laptop is silver and open, showing a black keyboard and a trackpad. To its right is a black notebook, a white smartphone, and a black pen.

# Research has changed forever

Open Access

Impact Agenda/REF

Big Data

Evolving manuscripts

Altmetrics

Open pre/post publication review

ORCID

Transparent Journals

Cloud reference management

Mobile research apps

Institutional publishing

Overlay journals

Data citation

Scholarly communications

Research data management

Public engagement/Storytelling

Working with the media

Sci-Hub

Predatory Publishing/Conferences

Open Data



# The Research Life Cycle 2.0



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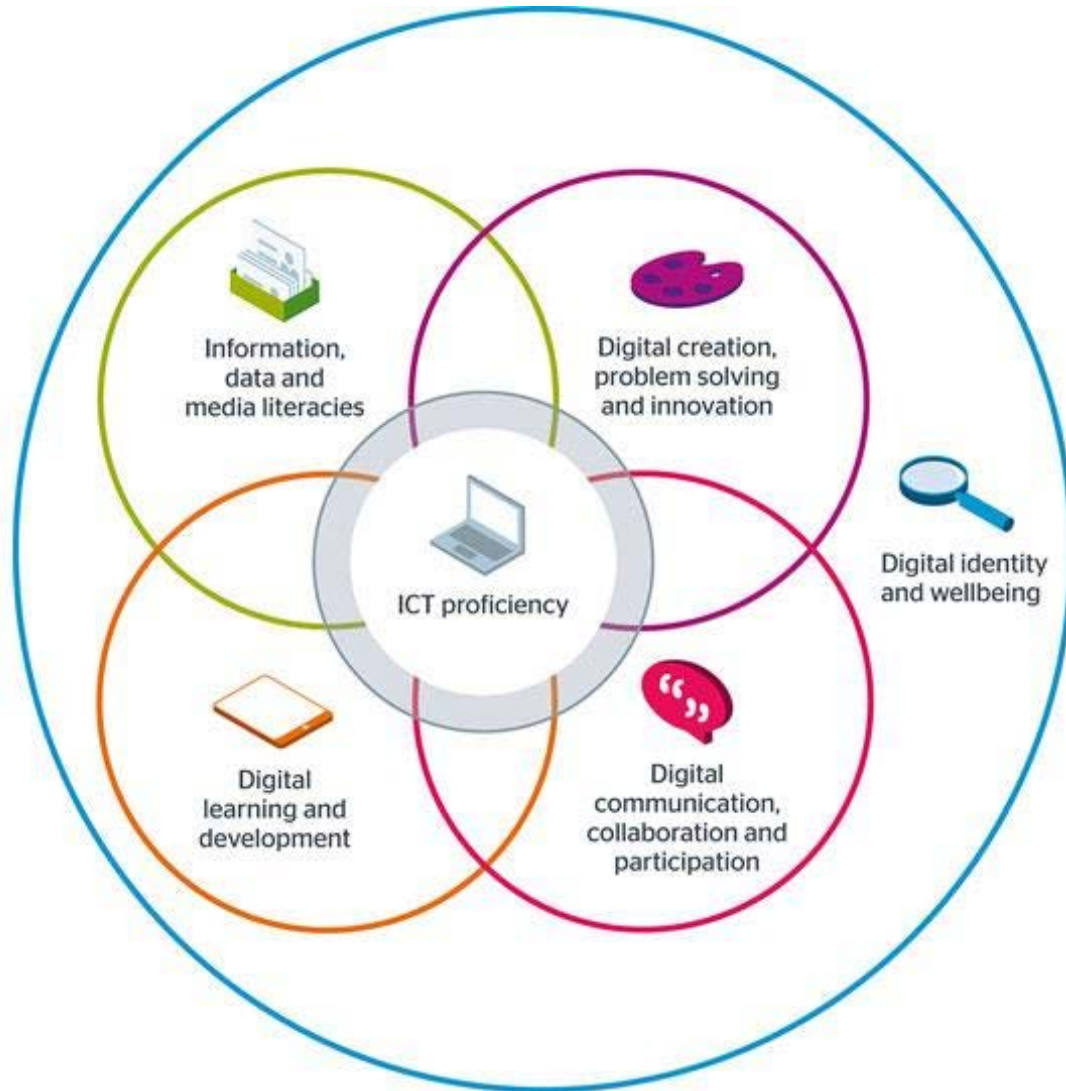
# What matters to academics

- The REF (and TEF)
- Winning funding bids
- Getting cited
- Publishing papers
- Getting promoted
- Gaining esteem
- Showing Impact
- Retaining tenure
- Getting enough sleep

# THE DIGITAL TRANSFORMATION OF RESEARCH SUPPORT



# Jisc digital capability framework



How well is the organisation supporting digital scholarship and innovation?

Issues to consider:

- » Research environment
- » Support for digital copyright and IPR
- » Support for open and public scholarship
- » Influence of digital scholarship on research impact
- » Subject specialist requirements
- » Researcher development
- » Support for digital enterprise and innovation
- » Centres of digital excellence

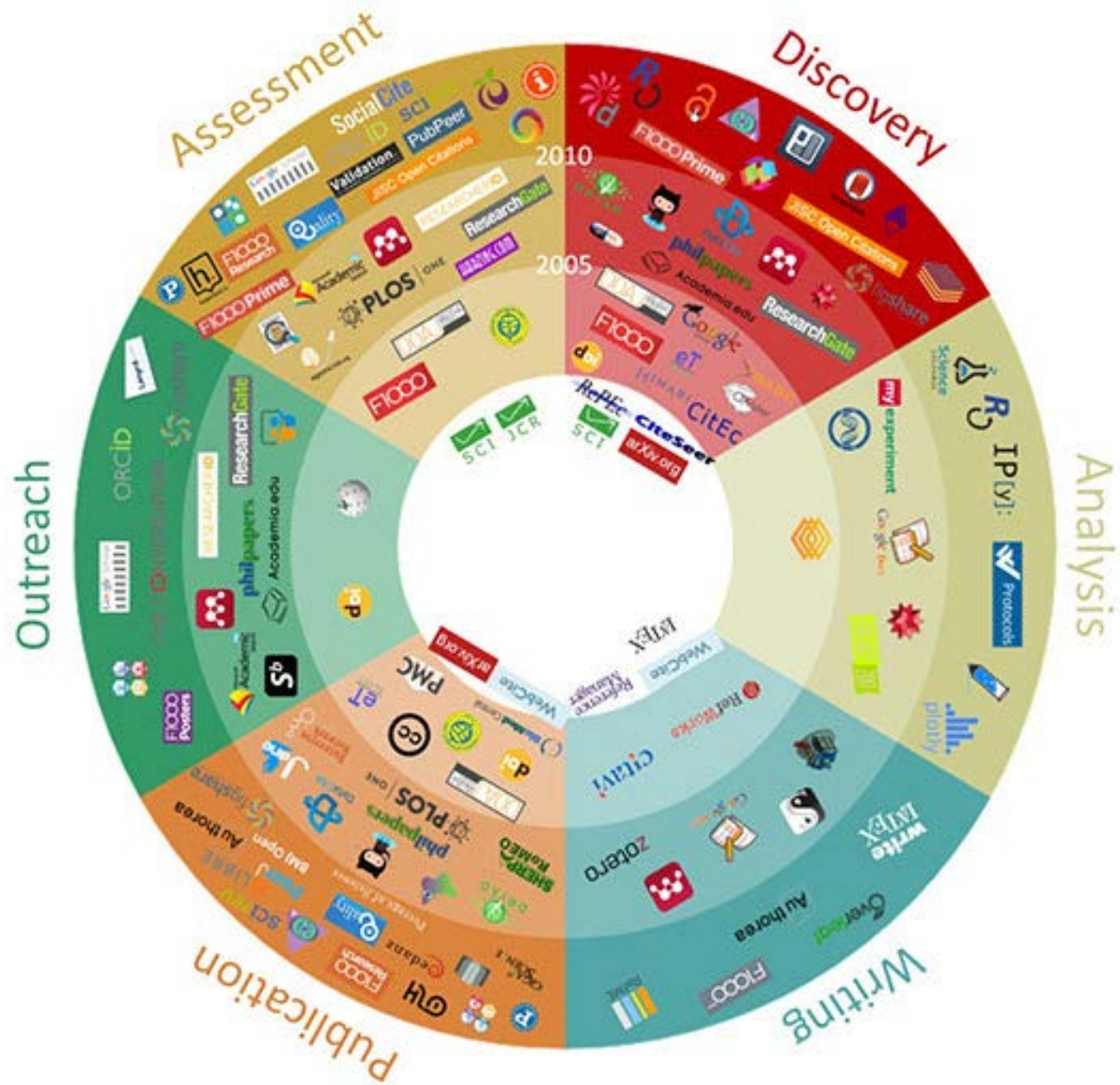


*Increasing the Productivity of Scholarship* - Paul Groth <http://dl.acm.org/citation.cfm?id=2742031>

# Where today's library and information professional may support the new research life cycle

- Preparation
- Discovery
- Analysis
- Writing
- Publication
- Outreach
- Assessment

Across entire workflow



## Meeting the challenge

- What skills are needed?
- Where can these be obtained?
- Recent discussions around academic library skill sets and future roles (see Further Resources)
- Where should we be located? (Does it matter?)



# The research technologist manifesto

For decades skilled LIS professionals have provided researchers with excellent services around collection management, content curation and discovery, critical appraisal and reference management. More recently they have stepped into new areas of support and applied their wealth of knowledge around social media, altmetrics, scholarly communications and research data management. All of this requires a good working knowledge of research practices and technologies. Importantly it also requires knowledge of research office culture - something which can be difficult if based at arm's length in a centralised department.

Researchers increasingly need to understand a multitude of topics including digital copyright, impact, altmetrics, communications, social media, research data management and sharing, open access, infographics, video, animation and mobile apps. Yet all too often they have little time, support or encouragement to explore these topics within their own departments. With what limited time they do have they need to make informed judgements on the growing number of technologies and tools to employ. As we have seen with the development of learning technologists to guide teachers through the myriad of new technologies, is it not time that a new role was created - that of the research technologist or digital academic specialist?

Given that the modern research LIS professional is adept of working across platforms, good at problem solving and the use of new technologies that they are well equipped to fill such a role. Many already have the skillsets for such a role that includes superb networking, horizon scanning, teaching and training skills as well as the ability to solve a diverse set of evolving problems. Whilst embedded into faculties and departments, all of this can then be supported by the central LIS specialist roles around journal, research data, open access, scholarly communications to ensure a better connection between researcher and the 21st Century research cycle.



# KEY COMPETENCIES



## Where LIS Professionals can help

- Scholarly communications (infographics, social media, video creation)
- Research data management (RDM plan, hosting, sharing)
- Analysis (altmetrics, traditional metrics, capturing impact)
- Forming an online identity (digital literacy, information management, social media)
- Horizon scanning (working with champions and interested parties to explore new technologies and ideas)

# Prescribing a Digital Technology

- You need to understand why you are taking it
- You need to understand the benefits
- You need to understand the side-effects
- You need to understand that the benefits may take time
- You may need two courses
- You may need a different intervention
- Do not feel pressured to use it - as it won't work

# Which tool is right?

<https://osf.io>  
<https://projects.ac>  
<http://direct2experts.org/>  
<http://www.scholaruniverse.com/>  
<http://beta.briefideas.org/>  
<http://thinklab.com/>  
<http://www.kaggle.com/>  
<https://www.consano.org/>  
<https://experiment.com/>  
<http://myprojects.cancerresearchuk.org/>  
<http://www.petridish.org/>  
<http://sciflies.org/>  
<http://walacea.com/>  
<https://fconline.foundationcenter.org/>  
<http://search.crossref.org/fundref>  
<http://www.grants.gov/>  
<http://newtonslis.crdfglobal.org/>  
<http://pivot.cos.com/>  
<http://info.researchprofessional.com/>  
<http://www.worldcat.org/>  
<http://www.standardanalytics.io/>  
<http://www.linknovate.com/>  
<http://www.crossref.org/SimpleTextQuery/>  
<https://nanohub.org/>  
<https://www.neuinfo.org/>  
<https://www.ncbi.nlm.nih.gov/pubmed/>  
<http://scicurve.com/>  
<http://citeseerx.ist.psu.edu/>  
<http://www.gopubmed.com/web/gopubmed/>  
<http://www.nlm.nih.gov/pubs/factsheets/medline.htm>  
<http://pubget.com/>  
<http://www.quertle.info/>  
<http://repec.org/>  
<http://www.ocoph.org/>  
<http://philpapers.org/>  
<http://data.worldbank.org/>  
<http://scibite.com>  
<http://www.ncbi.nlm.nih.gov/genbank/>  
<http://www.openphacts.org/>  
<https://en.expernova.com>  
<http://www.nactem.ac.uk/medie/search.cgi>  
<http://libraccess.org/>  
<http://www.oalib.com>  
<http://paperity.org/>  
<http://researchpad.co/>  
<https://www.scienceopen.com/home?5>  
<http://www.scilit.net>  
<dbpedia.org>

<http://scholar.google.com/>  
<http://academic.research.microsoft.com/>  
<http://thomsonreuters.com/thomson-reuters-web-of-science/>  
<http://www.scopus.com>  
<http://www.bookgenie451.com>  
<http://www.delpher.nl/>  
<http://www.openedition.org/?lang=en>  
<http://www.base-search.net/>  
<http://core.ac.uk/>  
<http://network.bepress.com/>  
<http://www.oclc.org/oaister.en.html?urlm=168646>  
<https://www.openaire.eu>  
<http://www.rockyourpaper.org/>  
<http://stackexchange.com/sites#>  
<https://www.biostars.org/>  
<http://www.wolframalpha.com/>  
<http://contentmine.org/>  
<http://scholar.aci.info/>  
<mloss.org/>  
<http://search.crossref.org/>  
<http://sciencetoolbox.org/>  
<https://www.biosharing.org/>  
<http://sciencestage.com/>  
<http://www.zanran.com>  
<http://timetravel.mementoweb.org/>  
<http://www.proquest.com/products-services/AquaBrowser.html>  
[http://arrowsmith.psych.uic.edu/cgi-bin/arrowsmith\\_uic/start.cgi](http://arrowsmith.psych.uic.edu/cgi-bin/arrowsmith_uic/start.cgi)  
<http://labs.europepmc.org/evf>  
<http://paperscape.org/>  
<http://www.wikidata.org>  
<http://www.ebscohost.com/discovery>  
<http://www.exlibrisgroup.com/category/PrimoOverview>  
<http://www.proquest.com/products-services/The-Summon-Service.html>  
<https://www.worldcat.org/>  
<http://www.oclc.org/worldcat-local.en.html>  
<http://oag.cottagelabs.com/>  
<https://www.openaccessbutton.org/>  
<scoap3.org>  
<https://unglue.it/>  
<https://www.deepdyve.com/>  
<http://extranet.who.int/hinari/en/journals.php>  
<http://www.research4life.org>  
<http://sparrho.com/>  
[https://twitter.com/fly\\_papers](https://twitter.com/fly_papers)  
<http://inowomics.com/>  
<http://myscizle.com/>  
<https://www.pubchase.com/>  
<https://sciencescape.org/>  
<http://thirdiron.com/browzine/>

<http://www.bibsonomy.org/>  
<http://www.citeulike.org/>  
<https://www.citavi.com/>  
<https://www.colwiz.com/>  
<http://www.docear.org/>  
<http://endnote.com/>  
<http://f1000.com/beta/>  
<http://www.mendeley.com/>  
<http://www.papersapp.com/>  
<https://flow.proquest.com/>  
<http://www.refman.com/>  
<http://www.refworks.com/>  
<https://www.zotero.org/>  
<http://www.qiqqa.com/>  
<http://wizfolio.com/>  
<http://jcb-dataviewer.rupress.org/>  
<https://www.readcube.com/>  
<http://utopiadocs.com/>  
<http://www.crossref.org/crossmark/>  
<https://code.google.com/p/surf-incontext/>  
<http://www.ncbi.nlm.nih.gov/pmc/about/pubreader/>  
<http://olabout.wiley.com/WileyCDA/Section/id-819787.html>  
<http://onlineibrary.wiley.com/subject/code/000128/homepage/new.htm>  
<http://jonreeve.com/projects/annots/>  
<http://hypothes.is>  
<https://www.annotate.co/about.html>  
<http://www.annotatedbooksonline.com/>  
<http://screening.metaxis.com/EMBASE/login.php>  
<https://www.historypin.org/>  
<https://mark2cure.org/>  
<http://peerlibrary.org>  
<http://www.resquotes.com>  
<https://www.manylabs.org/>  
<https://books.google.com/ngrams>  
<https://import.io/>  
<http://www.unixuser.org/~euske/python/pdfminer/index.html>  
<https://scraperwiki.com/>  
<http://tabula.technology/>  
<http://arohatgi.info/WebPlotDigitizer/>  
<http://1degreebio.org/>  
<https://www.addgene.org/>  
<http://www.biocompare.com/>  
<http://www.geosamples.org/>  
<http://scicrunch.com/resources>  
<https://www.sampleofscience.net/>  
<http://www.selectscience.net/>  
<http://www.straincontrol.com/>  
<http://www.genomecompiler.com/>  
<www.wings-workflows.org>

<http://findingsapp.com/>  
<https://www.labfolder.com/>  
<http://www.labguru.com/>  
<http://lblog.sourceforge.net/>  
<http://www.esurveyspro.com/>  
<http://fluidsurveys.com/>  
<freeonlinesurveys.com>  
<http://www.google.com/forms/about/>  
<https://www.limeservice.com/en/>  
<http://www.proprofs.com/form/>  
<http://www.qualtrics.com/>  
<https://www.socialsci.com/>  
<http://www.surveygizmo.com/>  
<https://www.surveymonkey.com/>  
<http://www.typeform.com>  
<http://www.alltrials.net/>  
<https://clinicaltrials.gov/>  
<http://www.crd.york.ac.uk/PROSPERO/>  
<https://www.docollab.com/>  
<http://www.hivebench.com/>  
<http://www.labarchives.com/>  
[http://onsnetwork.org/of\\_1st: http://usefulchem.wikispaces.com/](http://onsnetwork.org/of_1st: http://usefulchem.wikispaces.com/)  
<http://openwetware.org>  
<http://neuralensemble.org/sumatra/>  
<www.protocol-online.org>  
<http://www.benchfly.com/>  
<https://benchling.com/>  
<http://www.protocols.io/>  
<https://www.scientificprotocols.org>  
<http://www.crowdlabs.org/>  
<http://www.jove.com/>  
<http://www.myexperiment.org/>  
<https://appsoma.com>  
<http://www.arvados.org/>  
<http://dhbox.org/>  
<http://galaxyproject.org/>  
<http://www.broadinstitute.org/cancer/software/genepattern/>  
<http://ipython.org/notebook.html>  
<https://kepler-project.org/>  
<http://www.kitware.com>  
<http://openrefine.org/>  
<http://pegasus.isi.edu/>  
<http://ropensci.org/>  
<http://www.statcrunch.com/>  
<http://hermeneuti.ca/voyeur/>, <http://voyeurtools.org/>  
<https://wakari.io/>  
<http://boinc.berkeley.edu/>  
<http://folding.stanford.edu/>  
<http://www.opensciencegrid.org/>

# Issues around supporting research technologies

- Duplication of platforms
- Issues relating to third party software - support, data security
- Hybrid platforms (Mendeley and Figshare both host data, Research Professional and Mendeley both promote funding sources)
- Limited time for personal research and development
- Technologies can come and go
- Users have different needs/levels of technical competencies

# Taming the research treadmill



REF



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# What competencies do you already have?

 Mentimeter



 0

**Which three competencies do you feel you most need to develop?**

# FURTHER RESOURCES



# Books

- Bastow, S., Tinkler, J., & Dunleavey, P. (2014). *The impact of the social sciences: how academics and their research make a difference*. London: Sage.
- Carrigan, M. (2016) *Social media for academics*. London: Sage.
- Mollett, A. et al (2017) *Communicating your research with social media: a practical guide to using blogs, podcasts, data visualisations and video*. London: Sage
- Hall, M., Harrow, M., & Estelle, L. (Eds.) (2015). *Digital futures: expert briefings on digital technologies for education and research* London: Chandos Publishing
- Lupton, D., Mewburn, I., & Thomson, P. (Eds.) (2018). *The Digital Academic: critical perspectives on digital technologies in higher education*. London: Routledge.
- Lyons, R. E., & Rayner, S. J. (2015;2016;). *The academic book of the future*. Basingstoke: Palgrave Macmillan UK. doi:10.1057/9781137595775 (OA)
- Tattersall, A. (2016). *Altmetrics: a practical guide for librarians, researchers and academics*. London: Facet Publishing.
- Veletsianos, G. (2016). *Social media in academia: networked scholars*. Abingdon: Routledge.
- Weller, M. (2011). *The digital scholar: how technology is transforming scholarly practice*. London: Bloomsbury Academic. dx.doi.org/10.5040/9781849666275 (OA)

# Meeting the challenge: readings

- Ekstrøm, J., Elbaek, M., Erdmann, C., & Grigorov, I. (2016). *The research librarian of the future: data scientist and co-investigator* [Blog post]. Retrieved from <http://blogs.lse.ac.uk/impactofsocialsciences/2016/12/14/the-research-librarian-of-the-future-data-scientist-and-co-investigator/>
- Kingsley, D. (2016), *Changing roles and changing needs for academic librarians* [Blog post]. Retrieved from <https://unlockingresearch.blog.lib.cam.ac.uk/?p=1189>
- Kingsley, D. (2017). *Shifting sands – changing academic library skill sets* (UKSG Conference 2017 Breakout). [PowerPoint slides]. Retrieved from <https://www.slideshare.net/UKSG/uksg-conference-2017-breakout-shifting-sands-changing-academic-library-skill-sets-danny-kingsley>
- Tattersall, A. (2017), *Following the success of the learning technologist, is it time for a research equivalent?* [Blog post]. Retrieved from <http://blogs.lse.ac.uk/impactofsocialsciences/2017/03/27/following-the-success-of-the-learning-technologist-is-it-time-for-a-research-equivalent/>

# Aspects of research support

- Research Data Management
  - RDMRose [http://rdmrose.group.shef.ac.uk/?page\\_id=1061](http://rdmrose.group.shef.ac.uk/?page_id=1061)
  - MANTRA <http://mantra.edina.ac.uk/>
  - Audiovisual research data <https://www.jisc.ac.uk/guides/audiovisual-research-data>
- Scholarly Communications
  - Unlocking Research blog <https://unlockingresearch.blog.lib.cam.ac.uk/>
  - Planning scholarly communication training in the UK <https://unlockingresearch.blog.lib.cam.ac.uk/?p=1517>
  - Handbook for Open Access good practice [http://repository.jisc.ac.uk/6565/1/JISC\\_OAGP\\_OUTPUTS\\_HANDBOOK\\_FINAL.PDF](http://repository.jisc.ac.uk/6565/1/JISC_OAGP_OUTPUTS_HANDBOOK_FINAL.PDF)
- Metrics
  - The Bibliomagician blog (see Resource Hub) <https://thebibliomagician.wordpress.com/>
  - Research Impact Metrics Quick Guide (Elsevier) <https://libraryconnect.elsevier.com/articles/librarian-quick-reference-cards-research-impact-metrics>
- Impact and visibility
  - Living Bibliography for The Impact of the Social Sciences: How academics and their work make a difference. Retrieved from <http://blogs.lse.ac.uk/impactofsocialsciences/living-bibliography-impact-of-social-sciences-research-book/>
  - Rapple, C. (2016) Broadening the visibility of your research: ideas from a workshop at the 2016 ARMA conference. Retrieved from <https://blog.growkudos.com/2016/06/14/broadening-the-visibility-of-your-research/>
- Digital communication
  - Social media <https://www.timeshighereducation.com/a-z-social-media>
  - jobs.ac.uk. (2017). The Digital Academic Resources and information to help you enhance your research. Retrieved from <http://www.jobs.ac.uk/media/pdf/careers/resources/the-digital-academic.pdf>
  - Images and infographics:
    - 12 common types of infographics <https://infogram.com/blog/12-types-of-infographics/>
    - Information is Beautiful (sample visualizations) <http://www.informationisbeautiful.net/>

# THANK YOU



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