

Title:

Now, New or Next Generation? How current iSchool studies on Research Support Services will inform Education Programs for Future Translational Data Roles

Organizers:

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Abstract:

This interactive workshop will examine the role of iSchools in data curation, research data management and bibliometrics for open science and open scholarship. It will draw on recent research by the team in a range of areas, and will update on these studies. Topics to be covered include research data management, and specifically a review of the current landscape in terms of research support service maturity, featuring a new maturity model. Bibliometrics will be addressed in the context of competencies required in this critical area. Finally, the Workshop will look into future challenges for iSchools associated with educating for next generation data roles in areas including Data Rescue and Re-Use, Transparency, Truth and Trust and Beyond Data Analytics. The challenges for iSchools in re-positioning the educational curriculum to support these emerging and translational roles will be explored, and there will be opportunities for participants to contribute to these key debates.

Description:

- *Purpose and Intended Audience:* This half-day workshop will be relevant to iSchool faculty, researchers and educators working in areas associated with research data management, data curation and bibliometrics. It will also be of value to practitioners, including librarians, archivists, curators and analysts.
- *Goals or Outcomes:* The workshop will explore the role of iSchools in the research data management / data curation / research support space in three main ways: i) by providing an update on the team's latest (unpublished) international survey-based research on the provision and maturity of Research Data Services, ii) an update on the development of bibliometric services to support research and iii) situating these findings in the context of future research and education challenges for iSchools. These challenges are positioned around open data, open science and open scholarship, where there is an expectation that data, code, methods, materials and publications i.e. all research outputs, will be shared to enable greater re-use, and the more rapid generation of new knowledge. Note that the current international survey builds on prior research published in *JASIST*; the bibliometrics piece builds on builds on a study funded by the lis-bibliometrics group and Elsevier that developed a model of competencies for bibliometrics and was published in *JOLIS*; the futures piece builds on an invited Opening Keynote at *JCDL2017* plus an accepted *CODATA 2017* paper and on prior research published in *IJDC*.

- *Proposed Format & Draft Schedule:* The workshop will comprise a mix of context-setting presentations, facilitated interactive activities, small/whole group discussion and consensus-reaching through wider consultation.

Timings mins	Description of Activity	Facilitator(s)
5	Welcome & Introductions	Liz Lyon
20	Investigating Research Data Services: international survey update and emerging maturity concepts	Stephen Pinfield
20	Competencies for Bibliometrics	Andrew Cox
20	Reflective discussion on research support scope (whole group)	
30	Group Exercise 1: Maturity Mapping using the maturity model, critical review and refinement	All
15	Coffee Break	
20	A futures view from the iSchool Part 1 Next Generation Research Data Services and Roles: Rescue & Re-Use, Transparency, Truth and Trust, Beyond Data Analytics	Liz Lyon
20	Part 2: Educating Next Generation Data Professionals: Translating Research into Practice	Mary Anne Kennan
20	Reflective discussion on scope, relevance, education opportunities (whole group)	
30	Group Exercise 2: Identifying future research data education challenges, needs, priorities for iSchools (post-it walls, sorting etc.) and consensus-setting consultation	All
5	Analysis and Closing Comments	Liz Lyon

- *Relevance to the iConference:* This Workshop will showcase ongoing iSchool research to identify, assess, and position a growing range of information services to manage, curate, analyse, measure and preserve research data. In the context of current trends towards open science and enhanced data sharing, the availability of supporting infrastructure, tools and services is of vital importance to maintain the long-term availability and integrity of the scholarly record. The role of academic libraries is seen as central to this endeavor and the research seeks to evaluate the maturity of candidate data services using an innovative model which draws on the results of a recent international survey. Whilst this research describes the current position, the workshop will also address future challenges and priorities for iSchool research and education programs by examining opportunities for next generation data services and the associated data roles around:
 - *1) Data Rescue and Re-Use:* scope will include multi-disciplinary examples of data loss and data at risk including the successful recovery of Arctic and Antarctic ice-sheet data by the US National Snow and Ice Data Center, US government climate data at risk and

unseen Andy Warhol images recovered by forensic retro-computing at Carnegie Mellon University, data rescue (aka 'guerrilla archivist') efforts in Pittsburgh, proposed new roles such as Data Triage Scientist, the development of data tools and services such as forensic data recovery using BitCurator, and perceived issues and challenges, such as developing accepted global standards for data triage workflows.

- 2) *Transparency, Truth and Trust*: scope will include high-profile examples of data falsification and fabrication from scholars in the biosciences and medicine, subsequent data publication retractions and institutional responses, multi-disciplinary researcher perceptions of the key concept of transparency and its application throughout the research data lifecycle, emergent new roles such as Reproducibility Librarian and associated data validation / verification services, plus wider implications for assuring research integrity, continuing public trust and the long-term value and sustainability of open science practices.
- 3) *Beyond Data Analytics*: scope will include current practice around data science in libraries, the exciting prospective application of cognitive computing and machine learning to a broader disciplinary range of data-driven research, new sub-disciplines and emerging institutional data roles such as Decision Engineer.

For the Workshop's second component, we will explore how iSchools should best respond to these Open Science challenges by developing new education programs to build capacity and capability for these emerging / next generation data roles. The discussion will include assessing the benefits of doctoral training versus other graduate programs and related initiatives such as x-Carpentry training, plus content development for an educational curriculum which encompasses the very rich blend of skills required for these new roles, and which will contribute to bridging the well-documented workforce data talent gap.

We will actively engage the iConference participants through two separate whole group discussions and two break-out group sessions. Group Exercise 1 will focus on critically reviewing the Maturity Model and its application to research support activities; Group Exercise 2 will ask participants to address educational requirements, curriculum content and skills from the perspective of the iSchool as a supplier and purveyor of data talent for the future. The group sessions will be highly interactive and will provide an opportunity for participants to contribute and influence the ongoing research. In addition, we aim to have a twitter feed which will solicit further input from iConference delegates who are unable to attend the workshop in person.

- *Access to Resources*: materials, slides, analysis and summaries will be openly shared via SlideShare and links to <https://www.sheffield.ac.uk/is/research/projects/rdmsurvey>