...of research workflows – and changing roles – and the challenges it brings

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‘Top down’ and ‘bottom-up’ pressures are changing researcher’s behaviour
What have you done this year? How will this change?

Traditional content publishing activities remain dominant, but changes in emerging ‘service’ areas

<table>
<thead>
<tr>
<th>Now</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2022</td>
</tr>
<tr>
<td>71% Author / co-author traditional journal article</td>
<td>80%</td>
</tr>
<tr>
<td>69% Present / publish conference proceeding</td>
<td>77%</td>
</tr>
<tr>
<td>43% Upload your article to a scholarly sharing network</td>
<td>49%</td>
</tr>
<tr>
<td>37% Author / co-author open access journal article</td>
<td>52%</td>
</tr>
<tr>
<td>24% Place final accepted or published article in repository</td>
<td>35%</td>
</tr>
<tr>
<td>18% Place pre-print article in repository or pre-print archive</td>
<td>27%</td>
</tr>
<tr>
<td>11% Upload algorithmic code to specialized site</td>
<td>23%</td>
</tr>
<tr>
<td>5% Upload dataset with a data repository</td>
<td>16%</td>
</tr>
<tr>
<td>5% None of the above</td>
<td>2%</td>
</tr>
</tbody>
</table>
Value of research tools and services used in last 5 years?

Traditional services highly used and highly valued, however new workflow tools and services are more highly valued where they have been adopted.

Research Tools Used in Last 5 Years

- Altmetrics: Tools found most useful 55%, Tools used in last 5 years 3%
- Reproducibility tools: Tools found most useful 85%, Tools used in last 5 years 3%
- Co-author finders: Tools found most useful 82%, Tools used in last 5 years 5%
- Preprint server for pre-submission feedback: Tools found most useful 57%, Tools used in last 5 years 7%
- Kudos: Tools found most useful 48%, Tools used in last 5 years 9%
- Publons peer review: Tools found most useful 61%, Tools used in last 5 years 9%
- Collaboration tools: Tools found most useful 77%, Tools used in last 5 years 16%
- Article submission guide / wizard: Tools found most useful 70%, Tools used in last 5 years 39%
- ORCID: Tools found most useful 52%, Tools used in last 5 years 49%
- Abstracting & Indexing Services: Tools found most useful 57%, Tools used in last 5 years 57%
- Journal Impact Factor: Tools found most useful 71%, Tools used in last 5 years 15%

IET/IEEE research 2018
What does your funder require from you where more assistance is required?

Grant funding increasingly comes with requirements that researchers need help with to ensure compliance.

- Knowledge or technology transfer: 62.5%
- Research impact plan: 39.6%
- Open access publication: 31.3%
- Data sharing: 12.5%
- Communications to key stakeholders (e.g. policy maker, public, industry): 20.8%
- Public access deposit of research output: 37.5%
- Other (please specify): 6.3%
Who can positively influence your work?

Time for learned societies to step forward?

What will change the way you work?
Changing the way we work

Specifying workflow pain-points (and solutions) with Agile thinking
Researcher

Blending discovery, research and analysis
- inter-disciplinary discovery
- funding, collaboration, networking
- authoring and impact planning
Strategic planning and impact assessment
- institutional analysis and comparisons
- research work-group impact assessment
Corporate research engineer

Competitive intelligence
- customised solutions focus
- intelligence and insight
- client-side integration
Becoming an Open Research Institution

Mapping the research workflow to deliver the mission of the organisation – new services required to supplement traditional content.
Welcome to Inspec Analytics

Explore the interconnected data within Inspec to uncover patterns and trends in engineering, computing & physics research to understand your place in a global landscape. With these precision research analytics, you can set the direction for your research outputs and monitor their impact.

28,230
Organisations
Monitor the research output for your organisation and compare trends with collaborators and competitors.

3,567
Subject classifications
Explore our subject classifications to identify global trends for high-level research areas or niche fields.

9,967
Controlled terms
Discover emerging topics related to your field, find collaboration opportunities and identify relevant publications.
Co-occurring controlled terms for image enhancement

- learning (artificial intelligence)
- neural nets
- feedforward neural nets
- convolutional neural nets
- recurrent neural nets
- neural net architecture
- cellular neural nets
- fuzzy neural nets
- Hopfield neural nets
- wavelet neural nets

Update graph
- Check for co-occurring controlled terms
- Neural nets
- Articles
- 597
- including neural net training
- 367
- 147
- 94
- 15
Partnership

Learned societies and libraries
Open and responsive

Trusted and independent
Subject Librarians & Research Workflow
The Role of a Subject Librarian at a Research University

My interpretation may not be the same as another subject librarian in my department.

• Research support
• Collections
• Instruction
• Scholarly communications
• Outreach
• Scholarship
Subject Librarian Challenges

• Keeping up with new tools, resources, and trends
• Giving up things to do new things (responding to new initiatives)
• Becoming a generalist/mini-expert
• Supporting groups with disparate needs (faculty, staff, post-docs, graduate students, undergraduates; entry level to advanced researchers)
• Finding the best opportunities and pathways to connect with busy faculty & graduate students
• Faculty & researcher perception of librarian roles
• Campus interconnectedness, helping other entities, like the Office of Research, understand where we can offer services at different points in the workflow
• Move from reactionary to evidence based strategies for outreach
Where does a subject librarian contribute to the research workflow?

*IET Research Workflow Diagram*
Research Planning, Design, & Implementation

Discovery & Ideation
- Identifying & acquiring new resources & tools
- Outreach & training – awareness of new tools & resources
- Strategies for staying on top of the literature
- Research metrics – output of other universities

Project Plan
- Probing literature searches – what exists; finding methods, protocols, patents
- Research organization & workflow management strategies
- Data organization & storage
- Campus advocate for supporting software

Funding
- Awareness of & training on funding discovery tools
- Literature searches in support of proposal development (context & scope)
- Campus collaborations – OSP & Proposal Development, Grad School
- Data management plans

Collaboration
- Awareness of & training on RIM system – Experts@Syracuse
- Broadening awareness of research networking tools
- Keeping research profiles up to date to attract collaborators
- Acting as a bridge to campus resources & services
Research Execution & Writing

Data Creation
- Data organization & storage
- Data sharing amongst team members
- Data sharing/DOI
- Data collection methods

Analysis
- Locate relevant methods, software
- Refer to data librarian
- Refer to campus partners

Writing
- Literature searches
- Citation management
- Journal identification
- Pre-Print Servers
Publication & Research Impact

Publication
- Journal selection & quality – education & communication
- Grant compliance – public access
- Navigating open access options
- Copyright questions

Outreach & Communication
- Data sharing/DOI
- Increased attention - institutional repository, open access
- Research profile development (ORCID, Google Scholar Citations)
- Social media

Impact & Assessment
- Collecting bibliometrics (journal, article, author, altmetrics)
- Telling their story (faculty, post-docs, graduate students)
- Tenure & promotion
- Department, college, or university level metrics – internal & external comparison
Organizing for Workflow
Current Organization
Liaison Work

Subject Specialty

Collections
Research
Instruction
Data
Scholarly Communications

Collections
Research
Instruction
Data
Scholarly Communications

Collections
Research
Instruction
Data
Scholarly Communications
Liaison Work...In Reality

Subject Specialty

Collections
Research
Instruction
Data
Scholarly Communications

Subject Specialty

Collections
Research
Instruction
Scholarly Communication

Subject Specialty

Collections
Research
Instruction
Data
Scholarly Communications
New Organization

Department Head

- Subject Instruction Team Lead
  - 3-5 Librarians

- Research Impact Team Lead
  - 3-5 Librarians

- Digital and Open Scholarship Team Lead
  - 3-5 Librarians

- Collections Team Lead
  - 3-5 Librarians
Subject Instruction Team

This team focuses on supporting the information literacy program and considers ways to optimize instructional services within the department through curriculum-based instruction, workshops, etc.

- Citation Managers
- Grad Series
- Boot Camp
- Writing 105
- SOURCE Workshops
Subject Instruction Team

- Ideation and discovery
- Impact and assessment
- Project plan
- Outreach and communication
- Funding
- Collaboration
- Publication
- Writing
- Data and Analysis
- Impact and assessment

Syracuse University
Research Impact Team

This team focuses on supporting the Research Enterprise of the University at both the institutional and individual level.

- RIM System
- Research Metrics Challenge
- Scholarly Impact Guide
- ORCID
- Funding Discovery
- Systematic Reviews
Digital and Open Scholarship Team

This team focuses on developing services that support new modes of scholarship and supports the creation and distribution of open content.

- Institutional Repository
- Copyright
- Public Access Mandates
- OA Week Events
- OER
- Issues in Digital Scholarship Series
Collections Team

This team focuses on developing collections that support academic excellence in the research, creative, and teaching pursuits of the University in all formats.

- Vendor Fairs
- Print Collection Management
- Analysis Projects
- Books in Humanities Event
- Displays
Collections Team

- Ideation and discovery
- Project plan
- Funding
- Collaboration
- Data and Analysis
- Writing
- Publication
- Outreach and communication
- Impact and assessment
Opportunities: Library & Society Collaboration

How can Libraries and societies collaborate to improve research workflow?

• Increased collaboration on what publishers collect/require from authors during the submission process - in terms of enhanced metadata that can be leveraged down the road. Such as grant/funding details, or location information.

• Continued collaboration with Libraries on product design - get us involved early in the process. Librarian advisory teams.

• Education & communication around librarians’ roles in research workflow, especially on the publishing side. We need your help to change the conversation!
Questions?

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