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Conversations with Chemists Redux

Preliminary Results from an Interview-Based Study on the Information Needs and Habits of Chemistry Faculty

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Background

- Purpose: Inform next generation of research support services
- Ithaka S+R Research Support Services – model
- UT Austin's Ithaka replication projects
- UK Chemistry Faculty study, 2013
- "Redux" – refers to local 2003 interview project
- Final chemistry report expected in fall 2018

Methods

- Develop “semi-structured” interview questionnaire
- IRB approval
- Target: 15 interviews (Feb-Apr 2018)
- One-on-one interviews conducted in faculty offices
- Recorded and transcribed; average 30 minutes each
- Analyzed and annotated transcripts

Demographics

- Chemistry Department Faculty: 28 members
- 19 professors invited via email: 15 accepted, 4 did not respond
- Rank: 5 Assistant, 2 Associate, 8 Full
- 4 Divisions: Organic (3), Physical (5), Analytical (4), Inorganic (3)
  - Biochemistry in separate department since 2013

Major Themes of Questions

- Research Focus; Funding; Collaborations
- Instrumentation; Data Output; Recordkeeping
- "Primary" and "Secondary" Information Sources: Discovery, Challenges, Management
- External Data: Need, Discovery
- Keeping up with trends and new research
- Publication practices; Open publication and data sharing
- Research Data Management: archiving, preservation
- "Magic Wand"

In the Lab

- **Instrumentation**:
  - MS; NMR; IR; XPS; EPR; Microscopy; Lasers; X-ray crystallography; Chromatography; Computers (primary)
  - In-lab vs Shared Facilities
- **Data Handling**:
  - File outputs and sizes of every description
  - Storage and sharing
- **Lab Notebooks**
  - All paper; no ELNs
  - ELN awareness but no uptake: only 1 indicated past consideration

Literature Formats

- **Journals are #1**
  - 13 of 13 who answered the question
  - No surprise here
- **Other "primary" formats mentioned as sources of ideas and information**:
  - Personal communications (4)
  - Conferences (attendance and networking, not published) (3)
  - Patents (2)
  - Dissertations (1)
  - Other sources: CSD (1)
- **Ambivalent attitudes towards books/monographs**
- **Need for external data is minimal**

Discovery Tools of Choice

	Top Choice	Secondary
Web of Science	5	2
Google	3	2
SciFinder	2	5
Google Scholar	2	2
PubMed/MEDLINE	1	2
Reaxys	0	1
Inspec	0	1
USPTO	0	1
None specified	2	

Publishing Choices

- **Stated preferences for non-profits, esp. ACS and RSC portfolios**
  - Decisions based on reputation, audience, likelihood of acceptance
  - Reviewing choices reflected too
  - 2 noted dislike of "cascade" model of publisher portfolios

- **Web of Science analysis of 15 interviewees' articles, 2013-18:**
  - 66 journals with 2+ articles: ACS or RSC = 52%

ACS	21
RSC	13
WILEY	10
ELSEVIER	9
AIP	3
NATURE GROUP	3
OTHER	7

Beyond Publication

- **Tradition trumps trendiness**
  - Speaking at conferences or seminars (9)
  - Only 1 noted social media; 3 indicated “No social media”
  - Research group web sites are valued platform

Open publication

- **Open is good, "but not on my dime"**

- **Bias against Gold OA and APCs**
  - Hostility or indifference
  - 2 indicated they post published versions on personal web sites
  - "Publication pachinko" – journal cascades derided

- **WOS analysis of 579 articles authored by interviewees (2013-18):**
  - 193 have open versions (33%)
  - 111 of 193 (58%) are "gold or bronze" status; 82 (42%) are "green"
  - Most green OA is probably compliance-related deposit, not deliberate
  - Only 1 indicated deliberate green deposit (arXiv)

Quoted on Open publication

- "I'll send it somewhere else, thank you, and save my money."
- "It's just not an issue at all. My audience are people at places like UT. I'm not worried about people who don't have access to those journals."
- "I think [paying APCs] is a waste of money…. I am opposed to paying a fee if there's something that I can upload to another site myself or if it just has to wait a year, then so be it."
- "The presence or absence of a journal's open access policy basically has no bearing on whether or not we would choose to submit…to that journal."
- "I'm a firm believer in Open Access, but I guess not to the extent of paying a thousand bucks per article."
- "Personally I don't think authors should have to pay to publish their stuff. Publishers make plenty of money."
- "I think it's a neat idea that you can just let anyone have access to your results."

Data – It's complicated…

- Understanding of data concepts varies widely
- Ad-hoc procedures and solutions: Box backup most common for local storage and sharing within group
- Headaches everywhere: Hardware, software, file formats and sizes, networking, backups
- PIs: hands-on vs hands-off; Varying levels of confidence
- Compliance vs practical needs
- Reliance on published supporting information in journals vs repositories
- Sharing on request is acceptable; open deposit generally not
- Need for long term preservation and archiving unclear to some
- Value of raw/unpublished data not evident to some

Quoted on Data Management

- "We might not do so well."
- "I know my students have some archival data. I personally don't manage any of that. … Who knows where the data is. It's probably on their computers."
- "There's nothing that we do that can't be recreated if we need to."
- "Up to now, we've kind of patched it along using these externals hard drives or what-not."
- "I might know we have to keep it. We're doing our best. But years go by and nobody requests that data."
- "I've been a little remiss."
- "I need to think about that."

Key takeaways

- Dependence on peer-reviewed journals is universal
- Use of other formats is low
- Information-seeking strategies vary, within limits
- External data needs are minimal
- Open is understood but not a priority; APCs are unpopular
- Keeping up with literature is very difficult; confidence varies
- Data management strategies ad-hoc, underdeveloped or nonexistent
- Little uptake of support technology (e.g. ELNs, ref mgt, data archiving)
- Low awareness of library support services (e.g. repositories)
- Approach is traditional rather than innovative, constrained by time, resources, career and disciplinary norms
- Never enough time in the day!

Potential targets for research support

- **RDM training, best practices, assistance**
  - Tailored to PI and lab requirements – one size doesn't fit all
  - Uptake will vary too – not always a priority
  - Local repositories not always the answer
- **Awareness of and help with support technology**
  - Reference managers
  - Better alerting services needed
- **Proceed with Caution**
  - Open Access attitudes aren't easily changed ($$)
  - "Sharing" means different things to different people
- **Focus on saving their time, not changing their world**

Questions?

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