The Many Challenges of Our Itinerant Researchers
Report of a CNI Executive Roundtable
Held December 10, 2018
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Background and Synthesis

At the Fall 2018 CNI membership meeting in Washington, DC, we held a session of our Executive Roundtable on **The Many Challenges of Our Itinerant Researchers.** Today's researchers collaborate across institutional boundaries. They also move from institution to institution, both on a temporary basis (sabbaticals, visits, etc.) and permanently, moving from one faculty to another; sometimes they even hold multiple institutional affiliations simultaneously. They do fieldwork, which is increasingly data and computationally intensive, including the capture, initial processing, and export of often irreplaceable observational data. Sometimes the challenges here are mostly the regulatory and coordination problems involving international borders; other times, they are related to working in places that are very distant, remote and inhospitable, and the lack of fundamental infrastructure and services may be a major issue.

Supporting these researchers includes providing access to data, computation, and information resources, and increasingly complex networking support. It implies a series of policy choices about reciprocity, collaboration, and both gracefully accepting and gracefully transferring responsibility and perhaps custody of content.

Eduroam, Shibboleth and the more recent TIER work from Internet2 are very significant developments in this area. Eduroam, as memorably pointed out recently by Geoffrey Bilder of Crossref at the Jisc/CNI roundtable in Oxford in summer 2018, is probably the best infrastructural improvement to the overall life of researchers in the last decade due to its ubiquity, reliability, and ease of use–and its near invisibility. Access management for scholarly content resources has proven to be more challenging, though there is a somewhat controversial initiative (RA21: Resource Access for the 21st Century) that is currently underway seeking to improve this, with support from some of the major STM publishers.

These issues were discussed by representatives from public and private universities, a cultural institution, and a service provider organization. Some of the key points raised are described below.

Institutional Perspectives

- Institutions must provide easy ways for researchers (and others, including students) in their own university institutes or branch campuses in other parts of the country or abroad to access IT and library resources. This can become quite complex and confusing when license arrangements for, say, a branch campus abroad are not the same as those for the main campus in the US. Also, when faculty are teaching abroad, questions like fair use and classroom use exemptions get very complex and unclear.

- Many institutions have affiliate programs for individuals who are involved in research partnerships or other activities, in some cases through medical centers, and some of these programs have many hundreds of members; one university stated that they had more "guest" users than active university users. These guest or affiliated users qualify for access to compute resources and, in some cases, library licensed resources, and they need authentication mechanisms and network access. There is great variation from one institution to another in what such affiliate status gets you.

- Universities in rural communities often gather an additional group of "affiliates" – local residents. They often also have engagements with local museums, historical societies, and other content stewards and curators, which can include tribal or indigenous communities. Content licenses are often very unclear about who has access to what is covered.

- Some institutions have thousands of visiting researchers per year, and it is a challenge working with visitors and identifying the best ways to support them.

- The itinerant researcher issues apply to more than faculty. In some institutions, tenured faculty are a smaller group than post-docs plus graduate students. In addition, undergraduate students studying abroad, engaging in internships or service learning, serving as student teachers, or doing field work, have some similar needs to itinerant researchers and have affiliations outside of the home institution.

- Many research universities have itinerant faculty who move in and out of industry and government. The university welcomes these individuals as partners but it is a challenge to determine how and when to give them access to IT and library resources. Note that this is not simply a situation where a faculty member goes on industrial leave or government service leave; some have ongoing joint appointments with facilites operated by various federal or state government agencies, for example.

- The number of credentials some people are maintaining is spiraling out of control. There is concern about researchers signing up for external resources and services individually without concern for university or (where relevant) government policies, and even in contravention of these policies.

- One institution now has a group whose role is to identify what every researcher needs to know at every level regarding information technology and the library; this includes information on ORCID IDs, where to place research data, and information on what they can and cannot do regarding legal agreements, including publisher agreements. Clearly this also quickly moves into areas related to grant administration and compliance as well.

- A university improved its onboarding processes for faculty to discuss how to bring their websites, tools, data, or other materials into the university. When the university branded the sessions "career management," they tripled attendance. Around half of the institutions attending the roundtable have an onboarding process, but none has a process that deals with researchers' information when they leave the university.

- To the extent that services to onboard & offboard exist, how do faculty find out about them, and what these services offer?

- There is a particular problem with newly minted PhD graduates who are transitioning to assistant professor or post-doc roles elsewhere; the institution where they were a student may cut them off too rapidly, and the transition to the new institution can be particularly problematic.

- Institutions and research groups use environments in the cloud, often operated by Amazon or Google. Researchers are very loyal to their groups, more so than to their institutions. Google is thinking seriously about this, and universities need to understand the policy implications of these environments.

- One institution is developing a project consisting primarily of moving images and is working with partners both internationally and locally; the material is held in a distributed fashion. Not all of the materials should be fully open to the public due to cultural sensitivities, and it is challenging to figure out how to provide access in a way that works for the policies of the individual archives within the collection. They are considering a secure network option for researchers.

- If a researcher's publications and/or data resulting from grant-funded research are in the institution's institutional repository (or indeed, in a third-party repository), what obligations does the library have to the faculty member, the institution, or to funders to curate that information after the researcher leaves the institution? This raises risk

management questions for the university. Similarly, when a researcher joins a new university, does the library there import copies of publications and/or data into local repositories?

- When a researcher takes a position in a new university, does the old university have a policy that allows the researcher to make copies of their data stored at the university and if so, who monitors that policy? Where does the researcher store his/her data when in between positions, if necessary?

- Some researchers who began working on a funded project and then switched institutions keep the teams they trained at their former institution on the project, raising access and other policy challenges.

- When research universities develop regional collaborations including small colleges, they may find that those institutions do not have sophisticated access management infrastructure such as 2-factor authentication capabilities, which creates problems with institutional standards, security policies, and audit procedures.

- We need to think of providing infrastructure as services for researchers from their perspectives, not separately as IT services and library services. However, we need to develop institutional services that can scale and not just respond individually to separate researchers' needs.

- There are many poorly explored questions about how to deal with federated authentication (Shibboleth) in the context of advanced, shared resources (Jupyter notebooks, for example).

Concluding Thoughts

We need to think of higher education as a collaboration that supports researchers. Eduroam is an excellent example of this. This is really not primarily a technical issue, but a policy one: a focus on the collective public good rather than narrowly on institutional risks and objectives. Libraries may be well positioned to advocate for this shift in perspective, which is profoundly uncomfortable for some institutional leaders.

As one participant noted, we are in a stage of emerging infrastructure where it is messy. Bridges are being built and standards are being developed, but we do not yet know who are the winners. In the meantime, the commercial players are taking a lot of power. The research and higher education community does not yet have robust infrastructure solutions for researchers, and the library information technology organization, and research office may not have a unified vision of what that infrastructure should or could be. The

infrastructure ultimately developed may be centered more in researcher-driven disciplinary solutions than in those centered in the researcher's home institution.

It's hard to underestimate the importance of formally onboarding and offboarding faculty (and PhD graduates on the way to faculty or post-doc positions), and of communicating with faculty and graduate students about these services. A poll in the roundtable suggested slightly less that half of the participating institutions had some sort of formal or semi-formal onboarding service; no institution had a formal offboarding service. Onboarding and offboarding are extremely important processes that we belive demand much greater attention. An important perspective here is the Ithaka S+R issue brief, "Scholars ARE Collectors: A Proposal for Re-thinking Research Support," by Danielle Cooper and Oya Y. Rieger (Nov. 2018, DOI: https://doi.org/10.18665/sr.310702). These working databases or other collections that support ongoing research by the faculty member need to be able to migrate easily from institution to institution, or if this is impossible, provisions need to be made to leave them in place at the old institution while the faculty member can continue to make use of them. Another issue: the migration of a researcher's email archives from one institution to another (this was also explored in a slightly different context in another recent roundtable, see: *Strategies for Preserving Institutional and Researcher Email*, Report of a CNI Executive Roundtable held April 11-12, 2018 [Sept. 2018], https://www.cni.org/go/email-preservation-cni-er-s18).

Libraries and IT organizations are increasingly hearing from faculty about the portability, sustainability, and security of the products of their research. As we continue to fail to recognize, understand, or meet faculty needs in these areas we are driving faculty towards external, often commercial, solutions that allow them to move from one institution to another without disturbing their digital assets. If the academy collectively doesn't step up to these challenges, there are going to be some serious consequences (many not well understood at present) for individual institutions and for the higher education community as a whole, and the balance between academy-controlled infrastructure and services and those supplied by commercial vendors. This is an area that is ripe for timely policy and programmatic attention.

In September, 2018, CNI held a small meeting of IT and library leaders to identify current, fruitful areas for collaboration, and the results are available in a report https://www.cni.org/go/it-and-library-leaders-agenda-priorities-for-collaboration-cni-report. A number of themes identified in this executive roundtable were similar to those identified in that report: the importance of university policies for research data, the need for collaboration between the IT organization, research office, and the library, and the burgeoning need for large-scale solutions for the information products of research. CNI will continue to explore this set of issues through sessions at our membership meeting and

future targeted meetings focusing on library/IT collaboration in research and enterprise issues.

Addendum I

CNI Executive Roundtable
Call for Expressions of Interest
The Many Challenges of Our Itinerant Researchers
Omni Shoreham Hotel, Washington, DC
Monday, December 10, 2018
8:30 – 11:00 AM

At the Fall CNI meeting in Washington, DC we will continue our series of Executive Roundtables. The topic for this Fall's Roundtable will be **The Many Challenges of Our Itinerant Researchers.**

Today's researchers collaborate across institutional boundaries. They also move from institution to institution, both on a temporary basis (sabbaticals, visits, etc.) and permanently, moving from one faculty to another; sometimes they even hold multiple institutional affiliations simultaneously. They do fieldwork, which is increasingly data and computationally intensive, including the capture, initial processing and export of often irreplaceable observational data. Sometimes the challenges here are mostly the regulatory and coordination problems involving international borders; other times, they are related to working in places that are very distant, remote and inhospitable, and fundamental infrastructure and services may be a major issue.

Supporting these researchers includes providing access to data, computation, and information resources, and increasingly complex networking support. It implies a series of policy choices about reciprocity, collaboration, and both acceptance and smooth transfer of responsibility and perhaps custody of content.

EDUROAM, Shibboleth and the more recent TIER work from Internet2 are very significant developments in this area. EDUROAM, as memorably pointed out recently by Geoffrey Bilder of Crossref at the JISC/CNI roundtable in Oxford this summer, is probably the best infrastructural improvement to the overall life of researchers in the last decade due to its ubiquity, reliability, and ease of use – and its near invisibility. Access management for scholarly content resources has proven to be more challenging, though there is a somewhat

controversial initiative (RA21) that is currently underway to improve this, with support from some of the major STM publishers.

We will discuss these topics at the CNI Executive Roundtable on Monday, December 10, the morning of the first day of the fall membership meeting. While our intention is to hold the roundtable exclusively on Monday, if we receive an overwhelming response from members, we will consider offering a second, separate session on Sunday afternoon December 9.

Any CNI institutional representative may apply to participate in this Roundtable, and the institution can be represented by either one individual or a pair of individuals who have different roles, e.g. a library director, a CIO, a head of research computing, or a VP for Research. If you wish to propose a team of more than two people, please contact Joan Lippincott. In order to have in-depth discussion, participation in the Roundtable will be limited to approximately 20 representatives**.**

Cliff Lynch will moderate this session and provide some framing remarks, and then participants will have an opportunity to discuss issues with peers from other institutions. The Roundtables build on the theme of collaboration that is at the foundation of the Coalition. We want to promote institutional dialogue and inter- and intra-institutional information exchange on digital information issues while informing CNI's planning process. We will disseminate a summary of the issues that emerge from the Roundtable, but in order to encourage frank discussion, there will be no individual or institutional attribution of statements without prior permission from the relevant party. Reports from previous Executive Roundtables are here
https://www.cni.org/resources/publications/other-publications-by-cni-staff

Among the topics we might explore are:

- Supporting faculty in the field, particularly when abroad.

- Interactions between EDUROAM and content access. This is a topic that has not been much discussed; empirically, it appears that often roaming faculty on a given institution's wireless are in fact treated as local community members or users incidentally present in the library in terms of access to licensed materials.

- To what extent and at what scale is there potential for explicit EDUROAM style agreements for content access rather than, or in addition to, network access? There are many bilateral, consortial, or even statewide resource sharing reciprocal agreements, and a history of credentialing visiting faculty at research libraries to make use of physical collections. Can we extend this into the digital world?

- How should we do cross-institutional authentication and access management for collaboration spaces, research materials and the like? As local infrastructure to support research becomes more complex and advanced (examples: national research platform discussions; electronic lab notebooks) how can these be conceptualized to support itinerant or migrating faculty?

- What happens when a faculty member moves from institution A to institution B? (Or for that matter, a PHD student becomes a junior faculty member at another institution.) Are materials such as email archives migrated or copied? What about material in institutional repositories? Research data? How does this interact with responsibilities under funder agreements? Are there policies in this area at your institution? Can we set up best practices or recommended policies for the R&E community? To what extent do these policies and practices genuinely help the researcher, as opposed to simply protecting the various institutions involved? Are there lessons to be learned from the very long process of making EDUROAM a reality; how was this presented to institutional general counsels?

- How are we informing faculty about the services available to them, and the inter-institutional questions and policies that they should be aware of? How do they get help when they run into difficulties?

- When dealing with multi-institutional scholarly collaborations, including those that involve limited lifetime "virtual organizations," how is stewardship responsibility for the research outcomes allocated among the institutions represented by participating faculty? Should this be established as part of the initial collaboration activity, and if so how? Are there best practices here?

- Ports of call for itinerant faculty do not only include other academic institutions and field work; they also migrate into positions in government, not for profits (such as foundations) and industry. Typically most of these organizations have been treated as "beyond the pale." Is this the best or most appropriate approach?

- What utilization or uptake data is available, and what are we learning from it?

To express interest in participating, please complete the form at:
https://cni.formstack.com/forms/er_challenges_of_our_itinerant_researchers **by end of day Wednesday, October 3, 2018** (if more than one person per institution wishes to participate, please coordinate and complete only one form). We will choose approximately 20 individuals for the session, using the criteria of position, experience, and balance of institutions (type, geographic area, etc.) to determine who will attend. **We will notify you by Friday, October 12 as to whether you have been accepted or whether you will be on a**

waiting list for participation. If you have any questions about the Roundtable, please contact Joan Lippincott at joan@cni.org.