Social Interoperability in Research Support:

Cross-campus partnerships and the university research enterprise

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OCLC

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CONTENTS

FIGURES

FOREWORD

To develop robust research support services across the entire research life cycle, individuals and units from across the university, including the library, must work across internal silos. Previous OCLC Research publications like *The Realities of Research Data Management and Practices and Patterns in Research Information Management: Findings from a Global Survey* (2017-18),[1] prepared in partnership with euroCRIS, already describe this growing operational convergence. Libraries are increasingly partnering with other campus stakeholders in research support, such as the office of research, campus IT, faculty affairs, and academic affairs units.

This OCLC Research Report, ***Social Interoperability in Research Support: Cross-campus partnerships and the university research enterprise***, recognizes the growing imperative for libraries to work not only in support of the goals of their parent institution, as explored in the 2018 *University Futures, Library Futures* report,[2] but also as a valued member of a cross-institutional team. ***Social Interoperability in Research Support*** explores the social and structural norms that can serve either as roadblocks or pathways to cross-institutional collaboration and offers a model for conceptualizing the key university stakeholders in research support. It examines the network of campus units involved in both the provision and consumption of research support services and concludes with recommendations for establishing and maintaining cross-campus relationships, synthesized from interviews conducted with practitioners from all corners of campus.

Social Interoperability in Research Support offers a road map for acquainting librarians with the other research support stakeholders on campus. It additionally offers a resource for acquainting others on campus with the skills and expertise that the library brings to research support activities.

While the interviews informing this publication were conducted prior to the onset of the COVID-19 crisis, I believe the findings are no less relevant. In fact, the need for increasing cross-institutional research support collaboration is likely to be amplified due to the current pandemic and its longer-term effects.

Lorcan Dempsey, Vice President,
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Building Intra-Campus Relationships Around Research Support Services

Introduction

In early 2020, the University Libraries at the University of Rhode Island publicized a posting for a Library Chief Data Strategist, responsible for "enhancing library-based data services programs." The job description noted that:

> This position will work with the Office of Institutional Research and DataSpark (Library-based data analytics unit) to identify avenues to increase faculty and researcher success. Working with internal (e.g. MakerspaceURI, Launch Lab, Think Lab, and the AI Lab) and external (e.g. the Office of Advancement of Teaching and Learning, the Office of Community, Equity and Diversity, Division of Research and Economic Development and IT) partners, the incumbent will plan and implement experimental and innovative activities to cultivate and expand synergistic relationships.[3]

This description illustrates the deeply collaborative nature of providing research support services like data management, as well as the importance of developing and sustaining productive cross-campus relationships to make these collaborations work. The academic library is undoubtedly a key figure in the landscape of research support services, but it is not the only one. Successful management of the library's portfolio of research services requires interaction, coordination, and even direct partnerships with other campus units.

Research support services are those that enhance researcher productivity, facilitate analysis of research activity, and/or make research outputs visible and accessible across the scholarly community and beyond.

Research support is an increasingly visible and expanding part of the network of services and infrastructure that enable the university's research enterprise. Definitions of the term "research support service" range from the general to the precise. For example, North Carolina State University defines research support as "a service that allows a researcher to spend more time, more efficiently in his/her role as a researcher, and contributes positively to the quality of the research."[4] In contrast, Si, Zeng, Guo, and Zhuang suggest that research support services specifically include research data management, open access, scholarly publishing, research impact measurement, research guides, research consultation, and research tools recommendation.[5]

Because research support services extend over the entire research life cycle, as well as across the entire campus, we offer a relatively expansive definition in this report. Research support services are those that enhance researcher productivity, facilitate analysis of research activity, and/or make research outputs visible and accessible across the scholarly community and beyond.[6]

The provision of research support services is seldom the responsibility of a single campus unit; nor is the consumption of research support services limited to a single campus cohort. Instead, both provision and consumption are distributed across many stakeholders—from the library to the research office; from faculty to administrators. The wide network of campus stakeholders involved in providing or using research support services underscores the importance of building strong intra-campus relationships to maximize their effectiveness and impact.

In this report, we document the perspectives of individuals representing a wide range of campus stakeholders in research support, either as a provider or user, with the goal of making the stakeholder groups from which they are drawn more distinct, and their potential role as a partner in research support more apparent. Building robust relationships means moving beyond a "stick figure" view of campus partners to a fleshed-out, three-dimensional understanding of their responsibilities, capacities, goals, and needs that bear on the provision and/or consumption of research support services.

Sheila Corrall observes that "*[o]perational convergence* (i.e., separate services/departments collaborating to coordinate their activities to improve conference and effectiveness) . . . is arguably more prevalent than ever, with libraries extending and deepening their collaborations and partnerships beyond IT and educational development colleagues to other professional services, such as research offices."[7] Operational convergence in turn is facilitated by *social interoperability*, which we define as the creation and maintenance of working relationships across individuals and organizational units that promote collaboration, communication, and mutual understanding. While "technical interoperability"—different technical systems working smoothly together—may be a more familiar concept, social interoperability is of growing importance in a landscape where cross-campus partnerships are becoming both more prevalent and more necessary.

> *Social interoperability* [is] the creation and maintenance of working relationships across individualsand organizationalunits that promote collaboration,communication, and mutual understanding.

While this report is written primarily for academic librarians, we expect and hope that it will prove useful to the many other campus professionals involved in research support activities. Our premise is that cross-campus partnerships are a necessary condition for building effective research support services, and the best chance for developing these relationships is to cultivate a deep understanding of potential campus partners: their responsibilities, pain points, and areas of common interest where engagement can take root and flourish. The goal of this report is not just to acquaint academic librarians with other campus stakeholders in research support, but to acquaint other campus stakeholders with the library.

The remainder of the report is as follows. This section concludes with a brief description of the scope of our study and our data-collecting methods. The next section, "The campus environment," provides background on the organizational and decision-making environment at US universities. "A model for conceptualizing university research support stakeholders" introduces a model defining campus functional areas relevant to research support, illustrated and contextualized by our informants' perspectives on their own roles. "Social interoperability in research support services" describes major categories of research support services on campus, and documents—through the lens of our informants' experiences—the importance of social interoperability in building effective and impactful research support services. The final section draws out some general insights or "lessons learned" from our informants on developing good social interoperability skills that lead to successful cross-campus partnerships.

Scope and Methods

Our study is focused on research support in US universities. In focusing on research support, we see an opportunity to address a gap in existing literature,[8] which extensively documents educational support services but is less rich in addressing research support services and intra-institutional research support challenges.

Focusing on the United States was a pragmatic choice. Extending the analysis internationally raises significant challenges for meaningful comparison across different higher education systems. Each national higher education context is different, and worthy of separate study.

Data was collected for this study through semi-structured interviews with individuals working in a wide range of research support-related roles across campus. We chose interviews as our strategy for data collection because we sought a more in-depth, personal perspective on cross-campus collaboration than other methods, such as a survey instrument, could afford. A key impetus for our research is that knowledge resides in people: therefore, there is great benefit in gathering and synthesizing what people know. That is the aim of this study and the rationale behind our method.[9]

Our interviews explored the functions and responsibilities of each individual in the context of their respective campus unit; the importance of their work—and their unit—to the university and its research enterprise; and how mutual research support interests have been or could be advanced through intra-campus relationships. The interviews sought to draw out our informants' on-the-ground experiences in establishing and sustaining productive, cross-campus relationships. Our interviewees include individuals involved in the provision of research support services, as well as those whose responsibilities require or would benefit from consuming research support services.

In examining research support services, we felt it very important to get the complete campus view. Research support services represent a dynamic service space, with new services emerging and existing services maturing, merging, or being re-defined. Services that are sourced in one campus unit (or units) today may be shifted to other providers (on campus or off) in the future. Given this, it is important to look at the overall campus landscape to better understand the scope and opportunities of the library's role in this space. Our interviews therefore focused on collaborative experiences in research support regardless of whether the library was involved, rather than focusing strictly on collaborations involving the library.

To identify interview candidates, we used a variety of sources, including personal networks and recommendations from colleagues and contacts. All told, we spoke to 22 individuals from 17 research-intensive universities in the United States. Sixteen of the 17 institutions are public institutions. Our interviewees included individuals with existing intra-campus relationships with

the library as well as those with little library engagement; senior leaders as well as early-career staff; technical as well as nontechnical roles; and those with faculty status as well as those with nonfaculty positions. We spoke with academic deans and senior administrators in addition to an array of professionals working in the library, research development, faculty affairs, communications, and beyond. The fact that our informants straddle all of these categories is indicative of the wide impact of research support across the university. Our interviews did not include researchers, as we sought to examine collaborations and relationships between campus units.

We did not enter the interview process with a specific number of interviewees in mind; instead, we halted the interview process when we felt that the relevant parts of the campus had been covered by at least one interviewee, and, more importantly, when we began to detect significant overlap in the perspectives related by later interviewees compared to earlier ones. The result, we hope, is a diverse array of perspectives, highlighting many facets of the intra-campus collaboration story.

In conducting the interviews, we spoke to our informants about their personal perspectives on building intra-campus relationships around research support; we did not ask them to "represent" the campus unit in which they are embedded or to present a summary view detached from their own experiences. Relationship building is ultimately about people interacting with people; we tried to find out from our interviewees what worked for them—and what did not—as they reached out across the campus.

Our interviews were recorded and transcribed prior to review and analysis. All our interviewees were guaranteed anonymity to remove obstacles to relating their experiences. To preserve their anonymity, therefore, we do not reveal the names of the interviewees, their job titles, nor their institutions. We also use the nongendered pronoun "they" when referring to our informants.

Limitations

Selecting a representative and informative cohort of interviewees required making choices, acknowledging trade-offs, and recognizing the distinct challenges presented by this domain:

- **Complexity:** many campus units could potentially be stakeholders in the provision or consumption of research support services; moreover, within each unit, there are potentially many different roles relevant to research support. The result is a vast array of individuals with different informative perspectives to offer, far beyond the threshold of our resources to address them all.
- **Comparison:** the delineation of campus units, or the titles and roles designated within those units, varies from university to university. This makes it difficult to choose a sample from an enumerated set of campus units and associated roles within those units.
- **Context:** every university is different, so the experiences of an individual at a given campus in building intra-campus relationships in research support will be influenced by local circumstances.

With these challenges in mind, we opted to assemble a collection of interesting and informative perspectives from individuals serving in a variety of roles across the campus, rather than attempting a comprehensive view of campus stakeholders in research support,[10] with the goal of comparing and contrasting their experiences in cross-campus collaboration and drawing out general lessons and insights.

The Campus Environment

Being in a decentralized institution, I have to persuade people that it's in their best interest to do [something]. But if I can do that successfully, it's much more likely to lead to climate change than mandating.

—**Academic Dean**

It all takes longer and has more dependencies than you think.

—**RIM System Administrator**

Social interoperability takes place within the unique environment of the modern university. One key feature of this environment is the diffusion of authority and decision-making responsibility. For example, Deane and Clarke note that "it is rare for [presidents and provosts] to give anything like an order to deans, who enjoy considerable autonomy in leading their schools. This softness of command cascades down the ranks, as department heads have wide latitude in how they lead their departments and individual faculty have considerable discretion in how they conduct their teaching and research."[11] In this section, we discuss some of the organizational attributes of US universities and how they reinforce the importance of social interoperability as a key ingredient for getting things done.

Universities are Complex Adaptive Systems

There is no single model that can illustrate a "typical" research university structure—every institution is a bit unique, with a dizzying variety of hierarchies, positions, titles, units, and budget models. However, we find useful the description of universities as "complex adaptive systems" by systems engineering expert and former university leader William B. Rouse.[12] Similar in complexity to urban systems, he describes universities as sharing these six main characteristics of complex adaptive systems:

1. **Nonlinear, dynamic behavior.** The behaviors in the university can appear random and chaotic. Individuals in the system may ignore stimuli, remaining oblivious to activities outside of their immediate purview, reacting infrequently, inconsistently, and perhaps overzealously when they do take notice.
2. **Independent agents.** Individuals, and especially faculty, have a lot of freedom to be self-directed: in research, teaching and course development, and behaviors. Their behaviors are not dictated by the university, and in fact, the independent agents may feel free to openly resist institutional initiatives.
3. **Goals and behaviors that differ or conflict**. The interests and needs of the independent agents acting within the university are highly heterogeneous, leading to internal conflicts, professional discourtesy, and sometimes outright competition.
4. **Intelligent and learning agents.** Not only are people independent agents, they're also smart independent agents, who can learn how the complex university works and adapt their behaviors to achieve their personal goals. With such heterogeneous goals across the enterprise, individuals can end up working at odds with each other.
5. **Self-organization.** While universities have established hierarchies (like colleges, schools, and departments), there can also be self-organized interest groups that arise to meet evolving needs. This can also lead to duplication of effort and services, as a group working to address a problem may be unaware of similar efforts and act independently instead.

6. **No single point(s) of control.** Universities are characterized by a significant degree of decentralization where units, as well as individuals, operate in a federated manner with a high degree of autonomy. Our interview informants described this ecosystem as a major pain point. Universities are not sites where mandates usually work; they aren't characterized by a command and control system. Instead, they work through incentives and inhibitions. Or, as one of our informants told us: "Mandatory is your first and fastest way to fail . . . [because] you aren't going to dictate anything to anybody." This can also mean that centralized efforts are more difficult.[13]

It's also easy to make mistakes because "units don't want to give up their autonomy . . . making it easy to step on toes." Developing and stewarding trusted relationships in a decentralized organization is essential.

William Rouse's model offers context for understanding why cross-institutional collaboration can be so difficult. Instead of traditional organizational systems that rely more upon command and control management methods, a hierarchical network, contractual relationships, and a focus on efficiency, universities respond poorly to these methods. Instead, the more heterarchical and self-organized network is "better led than managed," relying upon personal relationships, persuasion, and consideration of the interests, incentives, and inhibitions of others.

Developing and stewarding trusted relationships in a decentralized organization is essential.

There are also a few other, interrelated themes that emerged in the course of our interviews that are important for understanding both the imperative of cross-institutional collaboration as well as the challenges of achieving good social interoperability within the system.

Intense Competition for Prestige, Rankings, and Resources

Research universities today are participating in a high stakes reputation race, seeking higher rankings on national and international league tables. The quest for prestige and rankings—and the promise of greater resources with greater prestige—is driving incentives and activities throughout institutions, particularly as revenue streams decline or become less certain.[14]

A variety of research support-related activities relevant to institutional reputation management and research competitiveness are emerging, such as the implementation of RIM systems; support for research data management planning, storage, sharing, and preservation; and the desire for improved research analytics and benchmarking tools. These efforts require the buy-in, knowledge, and engagement of numerous campus units; they are also challenging, time-consuming efforts on decentralized campuses.

Within this highly competitive environment, strategic alignment across campus units is more important than ever. Several of our interview informants emphasized this imperative, as well as the importance of senior leadership to signal the most important issues and activities. For instance, one library leader said,

> I don't think that [research data management support] or the [RIM system] would have been successful as library-only initiatives. . . . It's been absolutely critical that they were backed by the [office of research] because I think that's also helped keep it to be more of a campus-wide perspective. I do think it's pretty easy for the library to get sucked into that library world, so it could happen.

This is true not only for research support activities, but also for supporting student learning and success,[15] and there is a significant literature addressing the importance of close alignment between the library and the parent institution.[16]

Leadership Challenges

A major challenge mentioned by several of our informants was the significant amount of leadership instability, or "churn," as senior leaders enter and exit with regularity. This leadership discontinuity can particularly hamper progress on enterprise wide efforts, as executive sponsorship for campus level projects is essential for forward progress. One informant from campus IT shared,

> The change in leadership up and down the chain is so frequent, that we get a strategic direction in place and then no one is in place long enough to actually see it through. Then you spend another year or two kind of rudderless, with everyone kind of doing what they . . . think is best but unless you have the leadership at that level actually focusing resources on a particular effort, you're not going to get very far on campus with these campus wide efforts.
>
> We can do lots of smaller things that you can garner the resources and backing to do, but you can't do really big things without [senior leadership] aligned.

The lack of sustained leadership and vision can inhibit social interoperability as well, as individuals and units may have no encouragement or leadership to create and maintain cross-institutional relationships in order to work toward a common goal. One of our informants, a senior academic affairs leader, used a tug-of-war metaphor to describe the role of a good leader in focusing attention on shared goals: "You need to make it clear that it's a rope. That it's this rope. And this is what pulling on it means."

The lack of sustained leadership and vision can inhibit social interoperability.

Frustration and Isolation in Emerging Roles

Several of the informants we interviewed were professional staff members, without faculty status. In recent years there has been a proliferation of nonfaculty professionals working at US universities, providing student and research support in a variety of areas, such as IT, career advising, counseling, research administration, and more. In fact, many of the people we spoke with were in positions that are relatively new roles within the university, particularly

those serving in positions leading campus-wide research development efforts or RIM implementations. Celia Whitchurch describes these individuals as "Third Space professionals" working in emerging areas, within traditional organizational structures that simultaneously offer security and constraints, and working within and across these hierarchies in ways that are both appreciated and can sow friction.[17] Many of our informants reported feeling isolated in their emergent roles, without (yet) a supportive community of practice within and beyond the university.

In order to be successful, these professionals must develop trust relationships across campus, which will in turn also develop a socially interoperable community of practices. But this isn't easy, especially in the university environment where decentralization, administrative churn, and local autonomy are standard. Sometimes our informants reflected frustration with their inability to lead change on campus, sometimes explicitly stating that they thought they were unable to move things forward because they weren't faculty, and that they felt implicit bias and are seen as less respected members of an implicit caste system, or mere "administrators."[18] For example, one informant shared, "One of the reasons it may not have . . . gone anywhere was that it was coming from this staff perspective and that it may have to come through faculty members."

Social interoperability is a means of cutting through these complexities and obstacles, promoting mutual understanding, highlighting coincidence of interest, and cultivating buy-in and consensus.

Leveraging relationships with faculty can be essential in this landscape, including with librarians with faculty status:

> We work really well with our library colleagues, because most of them are faculty librarians. They are tenured, or on the track. It's a lot easier for us at times to hand some things over to them to let them carry it forward, especially around policy.

However, one of our librarian informants cautioned that "even though we are members of the general faculty . . . we're not always seen at the same level."

In sum, social interoperability is an essential skill in developing successful, high-impact research support services in the kind of complex adaptive system described by Rouse, and which is complicated further by intense international competition, local leadership discontinuity, and the disconnect that often attends emerging roles such as those associated with many aspects of research support. A staff member (not one of our interviewees) leading the implementation of a campus-wide RIM system half-jokingly referred to this effort as "herding flaming cats" to express the significant challenges of trying to coordinate highly independent individuals with different goals and interests, spread across a large, decentralized organization. Social interoperability is a means of cutting through these complexities and obstacles, promoting mutual understanding, highlighting coincidence of interest, and cultivating buy-in and consensus.

A Model for Conceptualizing University Research Support Stakeholders

Nobody knows what the %@# a provost does.*

—**Provost**

This section describes a conceptual model of campus stakeholders in research support identified in the course of our interviews with 22 individuals from 17 research-intensive institutions in the United States. The model helps visualize the broad functional areas on campus from which stakeholders in research support services often emerge and places the specific roles represented by our informants in a broader, campus-wide context.

Campus stakeholders are not identical across institutions: the functions, responsibilities, and even nomenclature of both individual positions and campus units will differ. Therefore, the descriptions we offer below are stylized and intended to express the broad sweep of stakeholder interests in research support. These interests will be organized in different ways on different campuses.

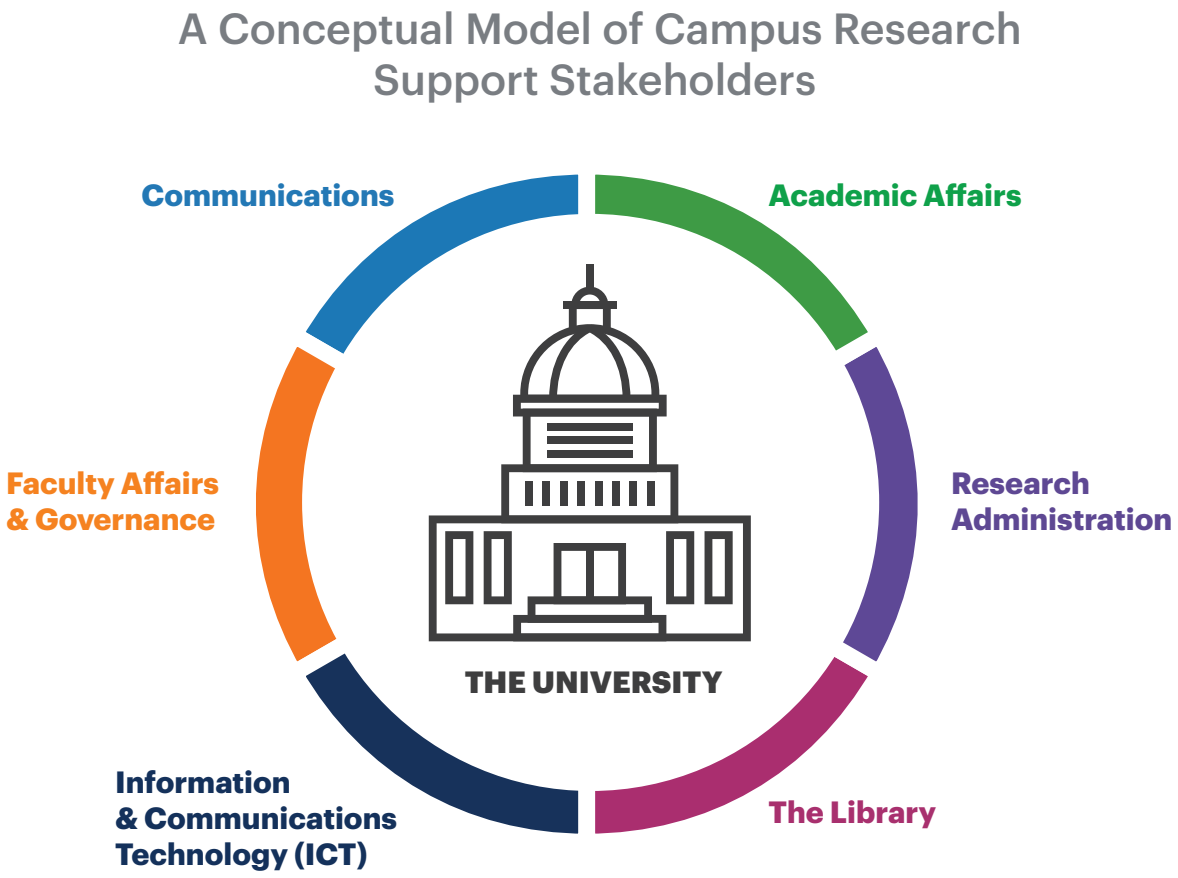

FIGURE 1. A conceptual model of campus research support stakeholders

Our informants were associated with a diverse array of campus functional units. We have grouped them into six broad functional areas (figure 1). Note that these are not mutually exclusive; the distinctions across areas are those of focus, rather than clear administrative boundaries. Moreover, this is not a complete model of all the functional units found within a university, but instead is focused on those most relevant to research support services. Finally, we note that this model does not take into account any hierarchical relationships that may exist within and across these areas.

The remainder of this section provides brief descriptions—often in the words of our informants—of each functional area represented in the model. In talking with our informants about their roles, we were impressed by the variation and nuance in responsibilities, interests, and institutional circumstances evident across seemingly similar functions or positions located at different universities. While this makes generalization difficult, we did identify a "takeaway message" in each campus area that seemed to resonate across our discussions.

Academic Affairs

Academic Affairs in our model includes individuals responsible for overseeing teaching, learning, and research activities at the university. Examples include the provost—the university's chief academic officer—as well as deans and directors of colleges, schools, and institutes; department heads; directors of graduate study; and faculty and staff. It is important to emphasize that while Academic Affairs personnel are perhaps most commonly understood in relation to their oversight of academic programs (e.g., course offerings, teaching assignments, degree requirements) they also have responsibilities concerning research activities at the university. This underscores the need to understand the *research* interests of those in Academic Affairs positions, and by extension, their potential role as campus stakeholders in research support services. In some cases, academic and research interests may be intertwined, such as in graduate education, where the Graduate School takes a leading role in supporting the interests of early career researchers, including both graduate students and postdoctoral researchers.

The functions falling within this area are vast and varied, but a common theme that emerged from our interviews is that individuals working in Academic Affairs often expressed their responsibilities in the language of campus-wide strategic imperatives. We spoke to a provost who described their responsibilities as "operationalizing the institution's imperatives"—in other words, implementing the university's strategy and vision. They went on to note the importance of the provost's voice as a source of leadership in signaling and encouraging engagement with institutional priorities. Advocacy was a central responsibility of a graduate dean we interviewed, motivated by a concern that the interests of graduate students and postdoctoral researchers might be overlooked amidst an institutional focus on undergraduate education. And a dean of arts and sciences remarked on the need to demonstrate research impact and link it to institutional reputation and prestige.

Moreover, emphasis on strategic imperatives—whether communicating the university vision, advocating for the interests of a student cohort, or enhancing the institutional brand and reputation—is not confined to senior leadership, but filters down, in one form or another, through the various layers of staff underneath. For example, one of our informants stressed the importance of all faculty and staff understanding their unit's philosophy, its values, and its stance vis-à-vis other units. In working with individuals in Academic Affairs, whether executive or "front-line," it may be especially important to understand the strategic interests motivating both their needs and the capacities they have developed or are developing. Although this observation was evident from our interviews with Academic Affairs personnel, it can be usefully applied to the other functional areas defined in the conceptual model (figure 1) as well.

Research Administration

Research Administration covers a vast array of services and activities, supporting one of the three great missions of most universities (education, research, and service).[19] Broadly speaking, campus units associated with research administration provide services that help advance the university's research activities, such as securing external funding, developing institutional strategy and policy, and providing oversight of issues having to do with responsible research conduct, ethics, and grant administration. Often, campus units aimed at supporting research administration are collected under a university Office of Research (or similar name) led by a vice president or vice chancellor, with responsibilities that extend over the entire research life cycle. For example, The Ohio State University Office of Research defines its mission as supporting "the development, submission, management and integrity of Ohio State research."[20] Similarly, the Office of Research Administration at Stanford University provides "an array of high-quality services and expertise to support the research mission and sponsored projects administration at Stanford University."[21] One of our informants in this area remarked that their primary responsibility was to

> help our researchers advance the research. . . . So it also means helping them make their lives easier. I often tell them, "You guys don't . . . realize the disasters I've prevented you from seeing." . . . So really it's important because I am passionate about the research mission and we do whatever we can to keep our researchers focused on doing their research so that they're not doing other things that they shouldn't have to do.

One theme that we heard from several informants, occupying different roles and responsibilities, was the importance of managing the competitiveness and growth of the university's overall research administration. One informant described their responsibilities as "increasing the competitiveness of our faculty when they are seeking extramural support." Another informant explained their unit's role as "related to strategic planning, strategic investment opportunity for the institution to grow and expand . . . as an institution, where do we invest our dollars in order to expand our research enterprise" Yet another of our interviewees described their focus as "enterprise-level strategy" for the university's Research Office. A key message from these responses is that the university research administration, while fragmented among many different disciplinary cohorts with different priorities and objectives, is nevertheless also viewed and managed as an enterprise-wide activity. Understanding *campus-wide* priorities and objectives regarding research administration is an important aspect of working with this area, as well as a helpful perspective in campus partnerships aimed at providing research support services across a diverse university research community.

The Library

The library is a familiar campus presence, and its traditional mission—broadly speaking, to connect students and faculty with the information resources they need for education and research—is likely familiar to most as well. We spoke to a number of individuals working in the library, or in library-adjacent services, and the diversity of their roles and responsibilities were indicative of the many points of contact between the library and the university research administration. For example, one informant manages a university press, while another directs a digital humanities institute. Other informants were involved in activities such as scholarly communication and disciplinary liaison work. As these roles suggest, today's academic library is deeply embedded in all phases ofthe research life cycle. Moreover, the library is often seen, as one informant put it, "as a trusted, agnostic partner on campus." Speaking of an effort to develop academic and research analytics, the informant went on to observe:

> If the provost had implemented these programs, everybody would have assumed it was for some kind of evaluation process, and they wouldn't have trusted it. . . . Because we're not doing the evaluation, we can go in and just, "Hey, we're here to help you. Tell us what your story is. We'll help you find some way to tell that story better." So that worked quite well and was really empowering.

Although the library often deploys a wide range of research support services, it can be burdened by its historical role as a physical repository of print collections. One informant remarked on this challenge, observing:

> Because so often, librarians are forgotten. Our expertise is completely forgotten, and we're the last people [to be considered]. So faculty are shocked when they realize, "oh, you can help me with my data? Oh, you can help me think through this . . . publishing considerations, whatever it might be."

Effective partnership with library staff involves relinquishing preconceived notions of what the library is and where its expertise lies. . . . The library in turn must communicate clearly to campus partners its full value proposition and expertise.

Another informant alluded to similar issues, while at the same time noting the importance of the university librarian's role in communicating the value of the library to other campus stakeholders, "to make that case to university administrators who previously have had a limited understanding of what things the libraries do." Effective partnership with library staff involves relinquishing preconceived notions of what the library is and where its expertise lies to understand its role as a key campus player in supporting research activities throughout the research life cycle. The library in turn must communicate clearly to campus partners its full value proposition and expertise, making clear that this value and expertise extends to a broad range of services beyond books.

Information and Communications Technology (ICT)

Information and communications technology (ICT) corresponds to units responsible for supporting a wide array of technology needs on campus, including those related to education (e.g., learning management systems, distance learning), research (e.g., storage and high-performance computing resources, digital collaboration tools, and research software), and general campus technology (e.g., email services, telecommunications, networking, personal computer access and support). ICT also provides technical consultation and support.

A key feature of ICT units is their provision of centralized services in a decentralized campus administrative environment. One of our interviewees in this area observed that the "campus IT unit provides a lot of value in that they can offer a lot of centralized services to campus and make them available to everyone, make the experience more uniform across different audiences

across the campus." A similar sentiment was expressed by an IT professional responsible for managing a campus research information management system, who noted that the system was a central hub for a variety of campus-wide needs, such as facilitating cross-campus collaboration, serving as a central registry for research outputs, and providing a consolidated source of metrics and other information for campus administration. And it is important to emphasize that, like Academic Affairs, ICT staff are often deeply connected to broader institutional strategic priorities: an IT director, for example, noted their unit's prominent role in enhancing the university's grant proposal success rate.

An important consideration for research support services is determining at what scale a service should be deployed, which in turn influences who the appropriate campus partners may be.

Although centralization of key services is an important function of ICT, we learned that it is challenging to draw the line between services that are best scaled to a campus-wide level, and those that are best provided at a college or department level. As one interviewee pointed out, "what we hope for is the things that make sense to be run from a central point kind of gravitate and migrate towards the central unit," while discipline-specific services are managed by the relevant institutional units themselves. Our interviewees also noted that many units on campus such as colleges, research institutes, and departments have their own dedicated ICT capacity and staff; one of our informants emphatically remarked: "We stay out of that. There're local division level and department level system administrators that have some systems that they spin up and we might guide people to them but it's those folks who have the role of supporting them." Given this, an important consideration for research support services is determining at what scale a service should be deployed, which in turn influences who the appropriate campus partners may be.

Faculty Affairs and Governance

Faculty Affairs and Governance in our model encompasses a wide range of services and functions aimed at supporting faculty members in their careers and scholarly activities, including those usually associated with a faculty affairs unit in the provost's office, as well as those related to faculty governance, such as the faculty senate or the local American Association of University Professors (AAUP) chapter.

A recent *Chronicle of Higher Education* article catalogs the many areas addressed by specialists in faculty affairs: "pay parity, leaves of absence, merit increases, annual reviews . . . tenure and promotion, contract renewals, sabbaticals, research grants, start-up funds, and faculty searches . . . counting faculty members for annual IPEDS and other national surveys"[22] Faculty affairs is an emerging functional area on many campuses, and an important stakeholder in research support, conducting work critical "to facilitate a lot of the research work on campus," as one informant expressed it. Another informant remarked that their "record-keeping" activities meant that they were "one of the sources of good data about the amazing

accomplishments our faculty take part in every year." However, challenges abound, as one informant mentioned their unit was still in the process of raising its profile across the university and establishing itself as a trusted service provider. Another informant noted that understaffing often led to long and demanding work weeks.

The informants we spoke to represent a range of different functions within faculty affairs, but recurrent themes of both concentration and coordination emerged despite the differences across their specific responsibilities. For example, one informant responsible for research analytics observed that their unit was the sole data source for many of the metrics and analytics consumed by other campus units. Another informant highlighted the importance of "the human touch and coordination behind the scenes to make sure that all the units are working together in the way that they should, that all the efforts are strategically aligned."

Faculty governance involves pathways for faculty participation in institutional decision-making: as one former university president (not an interviewee in our study) put it, "While faculty are, by nature, independent actors who are rarely motivated en masse, there are faculty organizations that can play an important and constructive role. I worked hard to develop close, cooperative relationships with each of these groups, and the effort paid off with the faculty as a whole in gaining their support for what I was trying to accomplish."[23] One of our informants, speaking of their participation in a faculty senate and its role as a forum for raising and discussing issues, noted that the "Senate is very central to campus . . . the Senate has the standing to be able to call those people to actually speak to those things. So I think that's probably the most important function that it has is that it can bring these things to the surface and make people come and publicly answer questions and speak to us."

A key benefit of working with Faculty Affairs and Governance may be that they often occupy roles that cut across the campus stakeholder network, such as providing centralized data resources, coordinating cross-unit activities, and convening and/or participating in venues for discussion and problem solving.

Communications

Communications staff are responsible for promoting, marketing, or otherwise raising awareness about university programs, accomplishments, initiatives, and other activities. Communications professionals appear at various levels of the university organizational structure, whether concentrated in a university communications or public affairs office, or being embedded in a wide range of campus functional units, including academic units, corporate relations, the research office, alumni relations, and many more. Communications specialists are also involved in efforts to manage and promote the university's brand and reputation. The information disseminated by communications staff may be directed at an internal audience (for example, a campus newsletter highlighting news and events associated with the university's research activities) or an external audience (for example, communications targeted to local and state media, legislators, or potential donors). One of our informants summarized their communications work as "telling the story of safe, ethical, productive . . . research . . . and then on the flip side, helping to sell the ideas and the creativity of our researchers to our funding agencies."

An important insight that emerged from our interviews with communications specialists was the importance in communications work of building networks and community. One of our informants remarked on their efforts to promote interdisciplinary communication, and in doing so, cultivating a sense of community across the diverse cohort of researchers at the university. This individual went on to observe that "that kind of connecting, communicating, developing of networks . . . is probably the most vital thing that I do." Another informant noted the importance of collaboration in their work:

> So we have to be really collaborative to get our work done and just to rely on each other . . . It's part of our DNA. . . . So I work very closely with all everyone in strategic communications, from marketing and brands to the media team, to the internal communications folks on a variety of different things.

Networking is a key ingredient for successful communications work—whether building networks with colleagues in other parts of the campus to carry out communication initiatives, or to build networks on campus through communication initiatives. Building cross-campus partnerships in research support services would therefore benefit from tapping into the networking and community-building skills of communications specialists, who may also be consumers of research support services.

In sum, our interviews helped uncover the wide diversity of roles and functions across the campus that touch on the university's research activity, and by extension may potentially be stakeholders in research support services. This diversity is evident not only across the six broad functional areas highlighted in the model above, but also within these areas.

Building cross-campus partnerships in research support services would therefore benefit from tapping into the networking and community-building skills of communications specialists, who may also be consumers of research support services.

It is important to look beyond traditional and/or superficial perceptions of what campus units do to understand how the responsibilities of these units evolve, expand, and re-prioritize over time. One library told us that as part of a strategic planning process, they conducted a ten-question interview with various stakeholders around campus:

> So it started very meta. And it wasn't until question eight that we talked about libraries. So it narrowed in, went down to their school in that department ... and then into the libraries. And actually we got some of the richest information out of those first seven questions when they didn't know that we're talking about libraries because they didn't know that we could do things in areas that they were talking about.[24]

The essential first step in building successful campus partnerships is to know your partners—what they do, what they prioritize, and how they see themselves contributing to the university mission.

Social Interoperability in Research Support Services

Well up front, I would say I can't get anything done without partnerships. I mean it's just absolutely essential to partner, whether it's with centers, institutes, department chairs, academic deans, research deans, all the above.

—Research development professional

You have to recognize that you're part of an organization and you want to advance your collective interests. Because advancing your collective interests will almost always roll down to your own benefit.

—Senior university leader

As discussed earlier in this report, there is increased operational convergence, as units and individuals across the campus must work together to provide support across all phases of the research life cycle: from project ideation, to grant development, to research, to publication and reuse. Increased interoperability across silos is necessary.[25] This interoperability must exist in a technical sense, of course, but it is also the *social interoperability* within the complex adaptive system of the university that is needed to make efforts successful.[26] In this section, we examine four research support topical areas in order to see how this interoperability between campus stakeholder groups plays out (figure 2).

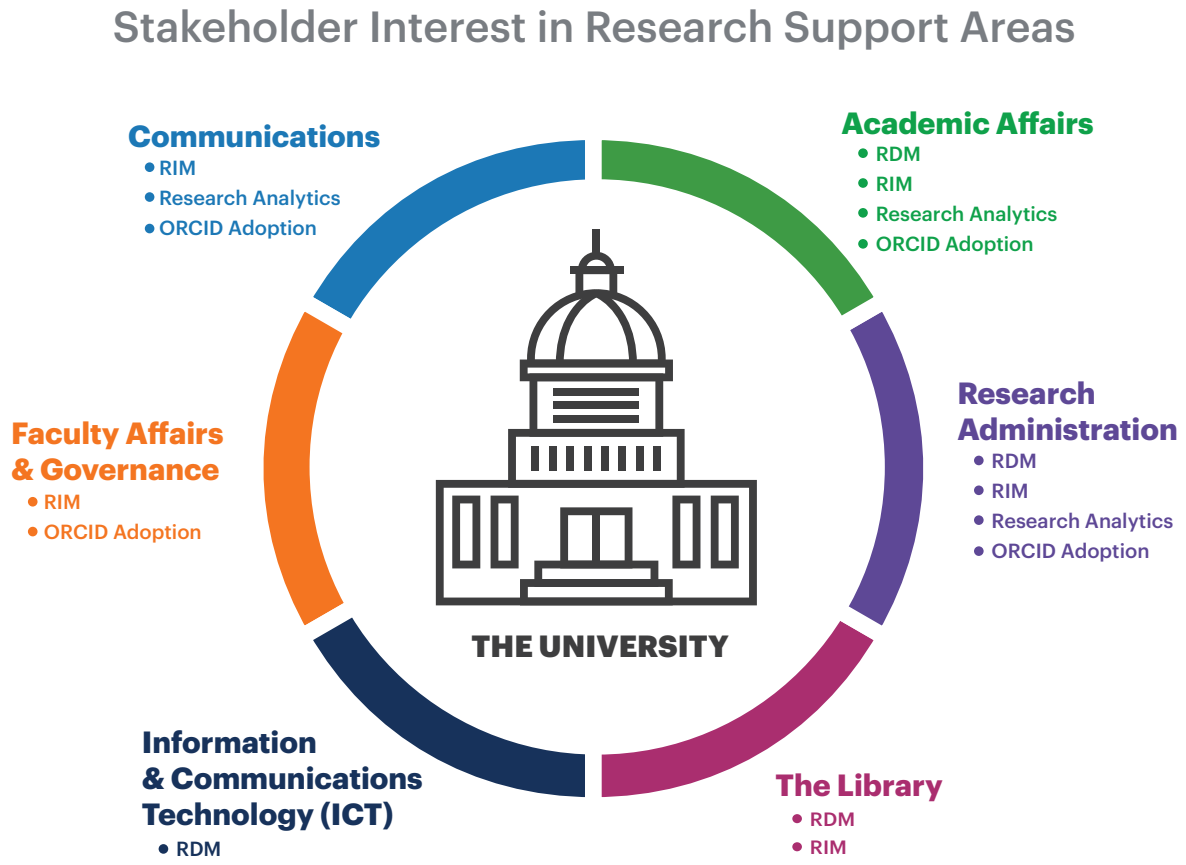

FIGURE 2. Stakeholder interest in research support areas

These areas were frequently discussed in our interviews as the locus of intra-campus research support collaborations and provide rich examples of social interoperability between stakeholder groups on campus:

1. Research Data Management (RDM)
2. Research Information Management (RIM)
3. Research analytics
4. ORCID adoption

Research Data Management (RDM)

Research data management has quickly grown in interest in higher education, with significant investment in services, resources, and infrastructure to support researchers' data management needs. External funding agencies like the US National Science Foundation (NSF) require the inclusion of supplemental data management plans (DMPs) in grant proposals, noting that "[i]nvestigators are expected to share with other researchers . . . the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants."[27] Institutional support for this type of mandate dovetails with activities related to proposal development, grants administration, active data management, and data curation, sharing, and preservation.[28]

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As a result, resources and support related to research data management are distributed broadly cross campus. Research administration, the library, and campus ICT are leading stakeholders in this area, and our informants reported highly synergistic relationships. On one campus, the data librarian is embedded in the research development office, a subunit of the office of research, providing guidance on DMPs, data requirements, and library data curation resources. On another, research development staff offer training for researchers on funding opportunities, proposal writing, and industry collaboration through the library's research commons, in conjunction with research data management programming. In a third institution, research data management resources are primarily housed in the library, with significant financial support from the office of research. In this case, our informant said,

> I don't think that either the [research data management services or campus RIM system] would have been successful as library only. It's been absolutely critical that they were backed by the [office of research] because I think that's also helped keep it to be more of a campus-wide perspective.

One of our informants from ICT described how their unit provides direct consulting to researchers, developing long-term relationships and deep knowledge of user needs in order to provide expert support. This includes identifying workflow and data management solutions

and even advising faculty on proposal development, particularly on the technology sections of proposals. They avoid answering quick questions via email, instead seeking to deepen relationships and understand the larger context of the researchers' needs through attendance at laboratory meetings and quiet observation. Our informant remarked that "this is not trying to be an efficient operation," and emphasized that local provision to researchers is necessary to understand and address researcher needs. Their unit is "joined at the hip with the library" and always looking for new ways to collaborate.

While many stakeholders are working synergistically to provide data management support to campus, it can still be difficult for researchers to know which resources are available, as there is rarely a central resource that indexes these services. One of our informants said if they could wave a magic wand to solve any problem there, they would "cultivate a network of . . . research consultants and have a portal or something to point to" to direct researchers to an array of services such as high performance computing resources, DMP development tools, and publishing concerns.

Several key stakeholders have a keen interest in RDM service provision:

- **Research administration** units such as research development are eager to support RDM services. Research administrators in the sponsored programs pre-award work to ensure that grant proposals include all required sections, including data management plans, while post-award administrators work to ensure that required data management policies are documented and followed. Research development professionals are eager to connect researchers with any and all services that will help ensure their productivity and success, making the research development office a natural partner with the library. The VP Research may provide significant executive and monetary support.
- The **library** has a significant role to play in the education, expertise, and curation areas of research data management, and libraries may offer individual guidance, monitor agency data curation requirements, and support local deposit and curation of datasets.
- **ICT** professionals also play a major role in RDM support, supporting access to technology and also potentially providing expert support on workflow solutions.
- **Academic affairs** units are keen to support research data best practices among their scholars, and the graduate school may also be interested in promoting education and training about RDM practices among graduate students and postdocs.

Research information management (RIM) is the aggregation, curation, and utilization of metadata about research activities. It's a registry of information about research produced rather than the research data generated by researchers.

Research Information Management (RIM)

Research information management (RIM) is the aggregation, curation, and utilization of metadata about research activities. In other words, it's a registry of information about research produced rather than the research data generated by researchers and includes information about locally-produced scholarly journal articles, monographs, datasets, presentations, and more.[29] While national and regional reporting requirements are strong drivers of RIM practices in Europe and Australia, US practices are driven more by competition and reputation management needs, resulting in the emergence of two primary use cases—public profiles, and faculty activity reporting (FAR) workflows—both involving an array of stakeholders from across the institution.[30] Other RIM use cases in the US, including internal decision support, data reuse, and institutional repository integrations, are currently of secondary relevance. Readers wanting to learn more about these uses are encouraged to consult previous OCLC Research reports.[31]

PUBLIC RESEARCHER PROFILES

The first primary US use case is the implementation of public profiles of institutional researchers, with the hopes of facilitating the discovery of experts and collaborators, and to catalyze business and university relationships. One of our informants emphasized that at research universities, "we build reputation like businesses build profit," and their institution, with library leadership, has implemented a researcher profiling system that harvests publications metadata on the work of every faculty member at the institution, with search engine optimization to support expertise discovery and boost the reputation of the parent institution.

A variety of descriptive terms exist to describe these types of platforms, including Research Networking System (RNS) and Research Profiling System (RPS), and in our interviews, we found the campus profile system housed in the library, the office of research, or in campus ICT. In all cases, there was significant cooperation between units. One informant from research development described working "hand in glove with the library" on their campus profiles, and another informant emphasized the importance of library expertise with publications metadata as well as vendor negotiation. At another institution the profile system was administered by the library, with funding from the office of research.

Many campus units are strongly interested in campus profile systems:

- **Research administration** units are keen to connect researchers, develop strong interdisciplinary scientific research teams, and yield successful grant applications. Sponsored programs and medical center staff within the office of research may also use public profile systems to comply with US National Institutes of Health (NIH) Clinical and Translational Science Awards (CTSA) recommendations, which call for participating institutions to support collaboration among clinical and translational investigators through the provision of tools, training, and technology.[32]
- The **library** values these systems for registering the institutional record of the institution, a manifestation of the "inside out" library, and offers bibliographic expertise.
- **ICT** professionals may be called upon to provide technical support as well as to support system-to-system interoperability, for instance, through the facilitation of automated data feeds or support for APIs. In one case, we found campus ICT as the home for the institutional profile system.
- Campus **communicators** value resources that can help support discovery of experts for press requests and public interest stories within academic affairs units as well as research units.

- Other stakeholders in **academic affairs** and **other units in the office of research** are interested in how the aggregated content might inform institutional decision support. They also share the goal of connecting researchers with other potential collaborators within the institution.

FACULTY ACTIVITY REPORTING (FAR)

A second important RIM use case in the United States is annual academic progress reviews of faculty, frequently called Faculty Activity Reporting (FAR).[33] Because of the disciplinary expertise required for reviews, these processes have long been administered at the departmental level, with a variety of workflow solutions ranging from Dropbox folders to dedicated FAR platforms. Like the public profile use case, the FAR workflow also captures information about scholarly products like publications, plus additional information about the teaching and service responsibilities of faculty.

With so many research information management stakeholders, duplication of systems and services is possible, even likely, because of a lack of social interoperability. In particular, independent academic affairs units like colleges, departments, or research institutes may develop their own systems, instead of working with others across the institution. This was commented upon by several of our informants, including one who remarked that on their campus "we have six or seven research profiling systems. That is duplication of service, for sure." In addition to being a duplication of effort, the failure of multiple stakeholders to work together on a unified system can unintentionally dilute the hoped for impact, as the institution delivers multiple profile discovery platforms instead of a single source of expertise. These are also silos of data that may not be easily combined to provide a broader, expertise snapshot of research activity.

Duplication of systems and services is possible, even likely, because of a lack of social interoperability.

For institutions that are centralizing faculty activity workflows, these are often managed by a faculty affairs office. The annual review of faculty may be mandated from the campus board of trustees, system, or even the state. One institution ties FAR participation to eligibility for merit pay increases, but even so, there are still a few noncompliant faculty. One of our informants reported how the faculty affairs unit at their institution is valued by many stakeholders on campus, including the provost and other senior campus leaders, for the business intelligence and benchmarking their unit provides. FAR workflows, which by definition are annual reviews of faculty activities, are still usually separate from the less frequent promotion and tenure (P&T) review processes, although one of our informants reported that FAR data can be extracted for reuse for P&T.

For this use case we observed campus leadership from faculty affairs as well as from academic affairs units. In particular, FAR is of interest to several campus units.

- **Academic affairs** units, including departments, colleges, and the provost's office, are interested in faculty activity reporting practices. Colleges and campus level units are particularly interested in both improved workflows and the improved aggregated data that can used for decision support. However, there is often a great deal of unit autonomy, leading to heterogeneous practices and duplication of effort and systems. The data

aggregated in FAR workflows can also be reused for academic program reviews and program accreditation.

- **Faculty affairs** units at some institutions, usually housed in the office of the provost, may take a leading role in implementing and managing a single FAR system for the institution.
- **ICT** professionals play a role in supporting FAR workflows—at all levels of operation, whether it's at the departmental or institutional level. And they may also work to provide data from other campus systems to populate the system, such as HR appointment data.
- The **library** is also a stakeholder, providing expertise related to publications metadata, metadata harvesting workflows, and research impact metrics. The library may also play a role in vendor negotiations.
- There are **other stakeholders** whose roles are important because their unit or system provides data for the FAR system, such as human resources (for appointment information), the registrar and/or the data warehouse (for course information), and the graduate school (for doctoral mentoring and committee service).

Our informants also emphasized that public profiles and FAR are currently separate workflows and managed in separate systems even though these systems collect a lot of the same information, such as the publications and other scholarly outputs of institutional researchers. But because of a lack of both technical and social interoperability, these systems may exist in duplicate across campus, even requiring repeated manual data entry by faculty into multiple systems. As one of our interviewees emphasized, "There just needs to be the human touch and coordination behind the scenes to make sure that all the units are working together in the way that they should, that all the efforts are strategically aligned."

Research Analytics

While university offices of institutional research have long collected and reported on educational outcomes, providing information to campus on student enrollment, retention, and career outcomes, US institutions have been slower to aggregate content on research activities. There are good reasons for this difference: institutions have collected their own measures of student progress while indicators of research productivity—things like journal articles and monographs—have been harder to capture, as they were processed and distributed outside of the organization. Institutions relied upon proxies of research productivity—measures like the number of research doctorates awarded or extramural funding received—to provide information on research productivity and prestige.

With radical changes in digital publishing, persistent identifiers, and big data in the past two decades, as well as the growing influence of international rankings and league tables, there's growing interest in looking beyond these proxies for a more nuanced view of an institution's research strengths, weaknesses, and networks of opportunity. Today administrators across the institution want improved research analytics and decision support tools.[34]

This was a recurring trope in our interviews. One informant in research administration, when asked what problem they would solve with a magic wand, responded: "Data. Data! I'd have data at my fingertips that I could search!" Instead, they described much of the analysis of research activity on their campus as "ad hoc" and insufficient. Another informant described how the office of research at their institution wants improved "push-button reporting" about grants submitted/received, as well as to support the identification of prospective collaborators. A third informant described how

Research Development Community at the University of Illinois at Urbana-Champaign[35]

The Office of the Vice Chancellor for Research and Innovation at the University of Illinois at Urbana-Champaign is working to support research on a highly decentralized campus through an inclusive Research Development Community. This community is open to all members of the campus community interested in advancing research at Illinois, and is intended to:

- Share information about policies, events, and opportunities
- Develop and maintain templates, processes, and best practices
- Build and support member literacy in a range of topics related to research development
- Collaborate across the campus research community to identify research development challenges and support changes that enhance research at Illinois.

In particular, the research development council encourages participationfrom anyone with connections to research—including individuals and units that might not fully realize they have a relationship with the research enterprise, such as facilities management and corporate relations. The group hosts a campus wide "research development day" as an opportunity to celebrate research at Illinois and to also bring in all the disparate stakeholders and service providers, including the library, campus ICT, supercomputing center, corporate relations, and institutional research.

their institution's new president is "appalled" at the difficulty of understanding institutional research strengths in a data-rich way.

We observed institutions responding to this need in a variety of ways. One institution is investing resources into a single, centralized data analytics office under the Chief Financial Officer (CFO), which will incorporate traditional institutional research professionals, as well as a reporting and analytics group that can provide expanded expertise on research metrics as well. (In another institution, the office of research has hired staff to support dedicated decision support and research analytics. This unit maintains its own local data warehouse, pulling data from external sources as well as numerous internal campus systems. Internal data sources include sponsored projects and extramural projects administrative databases, institutional financial data, and Enterprise Data Warehouse (EDW) data on HR appointments, space/room usage, and much more. External tools like SciVal and Pivot are also essential data sources. We also heard informants share how institutions are increasingly investing resources in managing institutional data through the development of campus data lakes and institutional data governance committees.

Libraries are also often supporting the institution with data analysis. For instance, Virginia Tech Libraries (not part of our interview cohort) shared with OCLC Research Library Partnership institutions in April 2020 about their use of data analysis to identify synergies and partnerships between Virginia Tech researchers and their counterparts in industry and government.[36] In our interviews, a data analyst in the office of research emphasized that impact librarians have a lot of the knowledge needed by data analysts—to understand bibliographic metadata as well as the strengths and limitations of bibliometrics.

There is keen interest in improved research analytics from across campus.

- **Research administration** units want improved intelligence about research productivity, campus strengths, trends, and opportunities for private research

partnerships. Research development officers can also use research intelligence to inform the development of large "grand challenge" grants. Improved research analytics is seen as increasingly important for securing the prestige and competitive advantage of the institution.

- **Academic affairs** units likewise want quality data to inform understanding and decision support. These leaders also see the value in aggregating institutional data to streamline existing processes such as academic program review, and quality data can bolster budgetary requests.
- The **library** is an important stakeholder because of its expertise with bibliographic metadata. In particular, research impact librarians understand the indexes, tools, and limitations of bibliographic analysis and play leadership roles in advising on the responsible use of metrics.
- Campus **communicators** also want improved information at their fingertips, data that can offer an improved understanding of institutional strengths, to help them identify stories to tell that will boost institutional reputation.
- **ICT** professionals are crucial stakeholders in this landscape, playing a role as data stewards, supporting interoperability, and maintaining data warehouses. They are also key players as institutions move toward new data governance structures and develop data lakes for improved and shared analysis.

Identifying synergies at the University of California, San Diego[37]

Campus ICT and the library at the University of California, San Diego, have long partnered to support researchers. In an effort to enrich cross-unit relationships, the two units arranged a working meeting for relevant staff members, to identify a possible joint project or collaboration. Through an icebreaking post-it note exercise they started out collecting all the services and resources offered by both units, audiences served, areas of expertise, and service gaps.

Participants suddenly realized how little they knew about the offerings of the other unit. "You have that? We didn't know you have that!" was a common refrain, and spontaneous peer consulting and planning erupted. While the originally-planned project never happened, it didn't matter. Instead, the greater knowledge and social interoperability gained through this exercise facilitated trusted relationships, collaborations, and ultimately, better support services for researchers at UCSD.

In the course of our interviews, we thought we would find significant interest and engagement in research analytics from institutional research professionals, who collect, analyze, interpret, and report educational outcomes data, but we did not. One informant offered an opinion on this gap, saying that institutional research units are largely unfamiliar with the research domain, and are instead focused on Department of Education reporting on student outcomes. The informant expects institutional research offices to remain focused on educational assessment. As a result, a variety of stakeholders from across campus must work in increasingly socially interoperable ways to contribute knowledge and skills to develop improved data and analysis about the research enterprise.[38]

ORCID Adoption

ORCID (Open Researcher and Contributor ID) is an open, nonprofit organization that works to create and maintain a global registry of unique identifiers for individual researchers. ORCID provides a framework for trustworthy identity management by linking research contributions and related activities with their contributors across the scholarly communication ecosystem. The ORCID identifier can be integrated into a number of campus workflows and systems such

as institutional repositories, grant administration workflows, RIM systems, HR systems, and institutional identity management systems. Consequently, cross-campus social interoperability is important for optimizing the technical interoperability that ORCID can help support.[39]

However, our informants reported that ORCID implementation efforts at their institutions were slow. For instance, one institution reported how securing buy-in and making any meaningful progress on campus ORCID adoption had taken years, finally resulting in ORCID integration with the institutional identity management system and campus directory. Another described the need for significant campus collaboration: "we had an ORCID integration committee that was looking for recommendations and an implementation plan and that was fairly formal because there were folks from the information systems side of the house, HR, graduate school, and the office of research. We had to come up with a plan and kind of make a recommendation of leadership in the libraries."

There are a multitude of campus stakeholders who must be engaged in ORCID adoption.

- The **library** is frequently the institutional leader on ORCID planning, as it has the greatest familiarity with scholarly communication practices across disciplines. Libraries frequently assume a role as advocates for ORCID adoption and assume institutional responsibility for the training and outreach to scholars.
- **Research administration** and faculty affairs are particularly interested in ORCID integration into RIM systems as ORCID can help disambiguate researchers and improve metadata harvesting workflows, data quality, and the need for manual entry.
- **Academic affairs** units share this interest in improving workflows and reducing administrative burden on faculty.
- Campus **ICT** is a key stakeholder because integration of the ORCID identifier into the central campus identity management system is an approach being used at many US institutions[40] and can facilitate the more seamless integration of ORCID identifiers into other systems across the institution.
- Campus **communicators** are eager for information and storytelling opportunities about campus, which improved, disambiguated scholarly communications data can offer.[41]

Comments on the Library as Partner

Throughout the course of interviews, we heard several accounts from nonlibrary stakeholders on how the library is a valued partner in research support activities. In particular, our informants commented on the expertise of the library in licensing, vendor support and negotiations, and research impact and bibliometrics expertise. We heard numerous cases of library staff serving on search committees for the hiring of research development staff members and vice versa, with research development staff serving on search committees for library positions in data management, data visualization, and research impact. One informant saw the library as capable of making progress on things like RIM systems in part because "the library was seen as a trusted, agnostic partner on campus," while another emphasized how the library has an important role to play as a central campus unit that serves as a trusted partner for sustainable services, not just short-term projects.

However, we also heard that there are sometimes senior leaders in research administration or campus ICT who do not always understand how or why the library should be a partner in research support activities, often because these leaders were "coming from the outside [academia] and really have no concept." In these cases, libraries and their advocates on campus must effectively and regularly communicate their value and offerings.

Our informants described how the library was sometimes seen as less effective than it might be. Communication and scope were big issues, as its services and value proposition could be diluted by a desire to "be everything for everyone" as well as by an overemphasis on values, without appealing to the needs and interests of others.

We also heard several comments about how a lack of confidence among librarians hindered their effectiveness. One of our library informants noted that "even though we are members of the general faculty . . . we are not always seen at the same level." Another interviewee commented that librarians "don't feel very comfortable. They don't feel like they're equals with the rest of campus . . . [even though] there's no reason why they shouldn't feel like equals because they [provide] an amazingly valuable expertise." A feeling of implicit bias, in the sense of not being perceived as being on an equal footing with faculty, was also reported by nonlibrary administrative professionals, including by one interviewee who recommended confidence in one's own abilities:

> I think the number one ingredient is the understanding that I bring a certain expertise to the table that [a faculty member] might not have. You are a faculty member in your areas, and you're a leading world expert on it. Great! It doesn't mean you know how to do data analytics related to your publication citation count.

The library has an important role to play as a central campus unit that serves as a trusted partner for sustainable services, not just short-term projects.

Another informant thought it imperative that librarians see themselves as "equal partners to make teams of diverse expertise to accomplish significant, important objectives quickly."

In our interviews, the library was sometimes also seen as "slow," moving less quickly and with less urgency than other parts of campus: "they absolutely do not move at the same pace that research faculty move." A couple of informants also commented on the library's discomfort with financial realities or cost recovery, describing an "unrealistic" desire for everything to be "free" resulting in the criticism in that libraries "don't focus on the freaking bottom line."

In sum, our interviews highlighted the importance of cross-campus social interoperability in the successful provision and use of major categories of research support services. In the next section, we will focus on strategies for increasing social interoperability and the success of cross-institutional research support efforts.

Cross-Campus Relationship Building: Strategies and Tactics

When things work well, it's about people and relationships. When things don't work well, it's often also about people and relationships.

—Academic Dean

You can make more friends in two months by becoming interested in other people than you can in two years by trying to get other people interested in you.

—Dale Carnegie,
***How to Win Friends and Influence People*[42]**

Strategies and Directions

Considerable energy is invested in relationships and trusted partnerships in the provision and use of research support services. The amount of time and stewardship required is necessary given the complexities of the campus environment, which is characterized by highly heterogeneous interests and needs of smart independent agents, no single point of control, and a high level of self-organization. Strategies and challenges of cross-campus relationship building were discussed repeatedly in our interviews, and some recurrent themes emerged.

SECURE BUY-IN

One of the strongest common themes in our interviews was the need to get people "bought in to what you want to do." Collaborations work best when everyone "thinks they are getting something they want." This is especially important when working with independent agents in a decentralized campus environment. Persuading someone that something is in their own best interest to act upon is a powerful tactic in an environment where mandates do not exist or do not work. More than one of our interviewees called this "selling"—selling the idea and the role of the unit in it. "Of course, you've got to sell all the time!" Another interviewee explained: "Really, it's building your services so that they're meeting the needs that you think need to be met as well as possible so they're attractive to people to use them. Kind of just like competing in regular free market."

Self-interest is a powerful motivator and can be leveraged in mutually beneficial ways. Our interviewees described directly appealing to the other party's needs and goals as far more powerful than highlighting shared values or noble principles. "So being in a decentralized institution, I have to persuade people that it's in their best interest to do it. But if I can do that successfully, it's much more likely to lead to [institutional] climate change than mandating." Appealing to people's self-interest requires the ability to offer something that speaks to those needs, in a language that is clearly understood by the other party.

This will help the unit to be more successful and to better align with campus goals and perspectives. People who are promoting their own agenda only, or their unit's, rather than the entire university's were seen as counterproductive by our interviewees. One senior university leader said, "that agenda thing is something that really, especially in academia, is the thing that really turns people off. . . . And I don't even think it has to be a mutual benefit. . . . We can dissolve it if it's better to be in another unit, and I can go do something else with my life. That's all okay as long as it's not for some stupid, frivolous territorial thing that somebody needs

A script for learning about other units used at Rutgers University–New Brunswick[43]

1. In what major ways do you see the University's work and focus changing during the next 2-3 years?
2. How are these changes affecting the work and focus of your school/department/program (unit)?
3. What are your unit's goals for the next 2-3 years?
4. What about your responsibilities within the unit? What are your top responsibilities now, and how do you see these changing over the next 2-3 years?
5. What challenges must your unit overcome in order to meet its goals?
6. If you were a new hire, what tools and services would you need to be successful?
7. The next several years will not only be all about challenges. What are the opportunities that your unit will be pursuing? What do you see as exciting during the next few years?
8. How do the librarians and libraries contribute to your work now?
9. Considering the University's goals and your unit's goals, how could the libraries best contribute to the work of your unit—and to you—during the next few years?
10. What do you want the libraries to give careful consideration to as we craft our strategic plan.

to own everything. If it's truly in the best interest of the campus and our researchers, then it can be okay."

KNOW YOUR AUDIENCE

Deeply understanding other stakeholders on campus becomes crucial when appealing to their self-interest is the best way to succeed. Throughout all our interviews we heard a variation of: Do your research on them first and then be "meaningfully relevant" to them. Relationship building to this level exceeds knowing job titles. It requires real engagement and a deep understanding of other people's responsibilities, priorities, and activities. It means being curious and courteous: taking the time to learn about what others do, developing trust, and stewarding the relationship over time.

One of our library interviewees shared how they used a fixed set of ten questions for conversations with stakeholders (see sidebar). These questions were not immediately focused on what the library can bring to the table. Instead, the first seven questions explored larger issues about how the other stakeholder perceived campus priorities and how their unit might be affected by changing priorities. In the course of working through the ten questions, the focus narrowed, until the final questions touched only on library services. The informant noted that they "got some of the richest information out of those first seven questions when they didn't know that we're talking about the library because they didn't know that we could do things in areas that they were talking about." This strategy increased library awareness of the priorities and challenges of other units and provided the context the library needed to strategically align their work successfully with stakeholders. It also raised awareness among the other stakeholders about the offerings of the library and even provided the spark for some new programs and collaborations.

Paying attention to what is happening on campus more broadly is part of this effort to understand your existing or potential audiences. This can mean something as simple as reading emails coming from other units instead of filtering them out as spam, attending events to demonstrate

interest in others, and serving on campus committees. Interviewees repeatedly warned against underestimating the importance of "just knowing what other people are up to or having other people know what you're up to." Even a small-scale project undertaken by a single campus unit and aimed at a limited audience may be an indicator of an unfulfilled large-scale need that can be identified and addressed through cross-unit cooperation. Understanding the landscape of one's institution, including the national landscape, was listed as high priority by many of our interviewees. "If you think you don't understand, you have even more of an obligation to kind of immerse yourself and understand more."

Conversely, no unit should assume others know what they do, but should actively reach out, make it easy for others to learn about its services and needs, and routinely make the case for what it needs.

SPEAK THEIR LANGUAGE

Different units on campus use different terms for the same things, for historical or cultural reasons. What some call *financial viability*, others call *sustainability*. Some talk about *profit*, others are more comfortable with calling it *surplus*. Some prefer the term *support* over *subvention*. Some units, such as the library, tend to avoid terminology with a corporate or business inflection, other units use that language and can best be served by adopting it too. *Metadata* is a particularly fraught example; it means something specific to librarians but something very different to IT and/or data warehouse administrators.

Interviewees across the board emphasized the importance of the ability to speak the audience's language. Obviously, if a service or project is not understood to be addressing a problem because of the language used, it may not capture the attention of whoever has that problem. Being prepared to deliver an elevator speech, when necessary, is one aspect of this. As one informant put it, "Do you know how long you [have] to make that case? Two minutes. Two minutes. And if you are not successful, the meeting is over." Some of our informants shared how they help other units package their information in more suitable ways (e.g., by producing one-page information sheets on topics, or key talking points for outreach and engagement with others on campus).

OFFER CONCRETE SOLUTIONS TO OTHERS' PROBLEMS

Another important theme in our interviews was the importance of understanding others' pain points and of demonstrating how your offerings can help alleviate them. Interviewees shared how it is useful for them to not go into meetings empty-handed, to anticipate needs, be proactive about building skills, and to offer solutions in advance of demand—not just vaguely ask how they could help. One of our interviewees was particularly outspoken on this, recalling a situation in the past when they worked as a faculty member and was asked that question by a library representative: "What can I do for you?" . . . That's like the most freaking passive-aggressive crap-ass thing you could ever do to a faculty member because how the hell should I know what he could do for me? I don't know what he knows. I don't know what resources he has. I don't know how much time he has. So it's not my job to educate him on how he can help me. It's his job to figure out what my needs are, and to come in with, "Hey, I'll bet you're trying to."

More than once, initiating the first step was mentioned as a tactic on campus: offering concrete assistance or cooperation without expectation of immediate payoffs or advocating for others to get invited to a meeting potentially relevant to them in the hopes that one day they remind others to include you where you should be included.

TIMING IS ESSENTIAL

No pushing will help when the timing is not right, when needs are diffuse and urgency low, or when current priorities differ entirely. One informant said, "Until they need to hear it, they're not going to hear it." Creating awareness, informing repeatedly, and patiently waiting for the right moment—or even until the right partner comes into a role—can be the best strategy in an environment of nonlinear dynamic behavior and differing goals. All of this takes considerable time and effort, our interviewees agreed, as well as patience and perseverance:

> I think certainly at a big university like [ours], remembering the information lag factor, it takes people a while to realize you exist and then it takes people a while to remember what you do, and then they'll remember what you do and then you've gone on to do several other things, but they still only remember the first thing that they learned about you. And then if you screw up then that's the last story they remember, and they might not update their data on you for a while.

Creating awareness, informing repeatedly, and patiently waiting for the right moment—or even until the right partner comes into a role—can be the best strategy in an environment of nonlinear dynamic behavior and differing goals.

Relationship Building: Practical Advice

Building new and maintaining existing relationships on campus requires considerable commitment and investment. We asked our interviewees to share how they made this happen, what opportunities there were to learn about stakeholders on campus, and which ones they found to be more useful than others.

MEETING OPPORTUNITIES

Our interviewees emphasized the importance of making regular contact with other stakeholders to build trust and steward relationships. These contacts existed on a continuum from formal and informal, scheduled and spontaneous, and there is value in every type of interaction. Committee work—serving on research committees, the faculty senate, or other bodies—was mentioned repeatedly as an invaluable opportunity for relationship building: to present oneself as a potential partner and to demonstrate good citizenship and support of larger university goals. It is excellent for temperature taking and trust building, and it helps sharpen skills in many ways. Faculty governance, in particular, was mentioned as something important for library staff to be engaged in, to find out what other people were talking about and how it might impact the library, as well as to increase library staff's visibility and confidence as faculty members on an equal footing with other faculty: "I think that my work in Senate gave me so much more opportunity and ability to build these relationships with faculty that I really wish my staff had more of. . . . I do feel like participating in governance can really help you to grow those skills that you need to be an effective liaison as a collaborator rather than as a servant."

Scheduling standing meetings with stakeholders was strongly recommended by several interviewees, both for general knowledge sharing and as a welcome option to raise or discuss topics of relevance without unnecessarily ringing alarm bells. Especially when new staff come on board in other units, creating opportunities to meet them early and regularly was mentioned as good practice. Executive level support can be particularly helpful with creating the right sort of relationships at the right point in time. Some interviewees saw an opportunity to create communities that cut across campus silos to unite people with shared interest on campus. We learned about examples of open and inclusive groups on campus that regularly convene with the express purpose of facilitating communication and networking—such as the Research Development Community at the University of Illinois (see sidebar, page 22). Such initiatives are good examples of the self-organized interest groups, arising to meet evolving needs, that are so typical of complex adaptive systems.

Finally, informal or "hallway" conversations before or after more formal meetings were highlighted as important ways of engaging. In these conversations, free of pressure or expectations, real progress can be made. People are less suspicious, and "frankly less guarded," one interviewee remarked.

SHARED STAFF AND EMBEDDED RESOURCES

Another recurring theme was the benefits that staff movements can bring to the relationships between units, be it shared staff, embedded staff, or staff that moves around when changing roles. A network of former colleagues spread out across campus can be immensely beneficial.

Members of staff familiar with one unit and closely working with another can function as trusted "ambassadors," "allies," and "champions," and can effectively "translate" goals, processes, or values between units, as well as connect people. They can help with "cross-pollination," the cross-unit flow of information and expertise, or simply with "getting a feel for their day-to-day struggles and activities." And while most staff moves occur organically in the course of natural career progressions, encouraging them can even become a strategy. One of our interviewees told us they purposefully nurture talent in their unit to help them move elsewhere on campus. Based on what we heard in our interviews, the units the library shared staff with or library staff was moved to most often were campus IT or technology and the research office, sometimes as a result of previous project cooperation.[44]

Troubleshooting in Relationship Building

MAKING CONNECTIONS

A common issue our interviewees reported dealing with was that of making connections with the right people. Referrals and recommendations were often described as being immensely helpful, much more so than any cold calling. One informant shared how through their investment in long-term relationships with faculty members, "sometimes we get faculty who then introduce us to the next faculty member because they say, 'These folks have helped us.'"

In particular, the importance of a "connector" or "hub" person was recognized by several of our interviewees. The value of someone well-connected on campus, someone who can help identify partners or recommend connections, people to meet with, and workshops to attend—a "hub of hubs"—cannot be overestimated. The best of these people "can see both the details and the whole and bring them together on a campus to talk through the research enterprise. How do we make it better, faster, stronger, easier? How do we identify ways that the system can help support that better?" Some of our interviewees identified with the role of a connector on campus themselves and said their job was "to be a facilitator."

This is also an area where senior leadership support can be very helpful. Several of our informants emphasized that it is important for relationships and conversations to take place within multiple levels of the parent units up and down the organizational hierarchy. And while top-down directed collaborations tend to fail, having executive support behind collaborations can be good to move people along, as we heard some of our informants say.

PERSONALITIES

One of the common issues our informants reported dealing with was that of having to get along with the personalities on campus. Relationship building is all about people. Interviewees often mentioned how their relationships and partnerships depended on the personalities involved, and in some cases failed because of this. Even when the difficulties seemed to lie in the unit or program, interviewees felt that, ultimately, they originated from differences in personalities, rather than disciplinary perspectives. In such cases, it can be helpful to deeply understand not only professional priorities, but also personal sensitivities so you can "sell to" those more personal needs, too.

Still, sometimes an individual can prove impossible to work with. In these cases, walking away for a time and waiting for someone else to fill a role can be the most productive way to deal with a situation. One interviewee clearly recommended to not "spend time trying to work with areas that are less receptive" and instead work with who you can. "The good news of being at a big university is there's plenty who are happy to make progress. . . . So in the meantime [while a certain unit is not amenable], we'll work with those who want to make changes and do these things." Good relationships cannot be forced but must be stewarded over time.

However, more than one interviewee also recommended *not* to assume malicious intent. Following up to inquire if something potentially offending happened may be all it takes to see it fixed—and the relationship maintained. In any case, our informants warned against ever burning bridges.

Being everything to everyone will not work. Stay focused on what you want to achieve: saying no or limiting scope can strengthen your value as a reliable partner.

KNOW YOUR VALUE / BE CONFIDENT

It is important to adapt to one's audience, but it is equally important to be very clear and confident regarding one's own role and value, including the scope of one's work. Being everything to everyone will not work. Stay focused on what you want to achieve: saying no or limiting scope can strengthen your value as a reliable partner.

Challenges: Managing Resistance and Sustaining Energy

In complex adaptive systems it is not uncommon to see differing goals and behaviors result in internal conflicts and outright or perceived competition.

Interviewees talked about how they are constantly trying to anticipate negative responses from different corners of campus and, at the same time, avoid losing control over their communications and efforts. This type of risk management is an important component in developing research support activities in the complex university environment of diffuse interests and conflicting perspectives.

MANAGING RESISTANCE

Independent agents may feel free to openly resist institutional initiatives in a system lacking single points of control. One successful tactic of dealing with the risk of upsetting others is that of consulting early and often with other stakeholders. For example, one informant recommended sharing ideas or drafts early in the process in order to take the temperature and collect preliminary feedback from stakeholders, top to bottom, so they all can feel consulted, concerns are addressed, and buy-in developed upfront. That way, one interviewee said, stakeholders will not feel blindsided by the launch of something new. Another informant emphasized the need to anticipate if and how new collaborations, or collaborative projects, impact business or administrative processes. Process changes often create resistance, and it is important to deal with them early and wisely.

Resistance can also result when units feel their work or autonomy is at risk or initiatives are perceived as competing. One interviewee shared an example where they "ended up stepping on toes across the organization" because their unit offered services in a research support area (impact analysis) that others felt they owned. Departmental units felt their local autonomy was threatened. In such cases, the informant recommended, it is wiser not to try to replace existing services, but rather to find ways to complement and support them—with data, for example—while acknowledging the units' independence. Earlier consultation with these audiences might have also reduced this friction.

> Relationship building is a significant but valuable investment. It is not cost-free, but as our informants made clear, the rate of return is usually quite high.

INVESTING THE ENERGY

With risks to manage, relationships to steward, and plenty of work to do, it is not surprising that we heard that people could feel "overwhelmed." But our informants also emphasized the effort they invest in relationships. "It's going to take quite a bit of effort to learn and listen about the other person's perspectives and where they're coming from." And the work of relationship building never ends "because if somebody changes, you've got a new person in a position, then you've lost all that historical agenda in that relationship." This can be frustrating over time, even grueling. Collaboration can slow down progress—collaboration and speed can end up

being trade-offs that must be balanced, potentially resulting in the duplication of systems and services on campus mentioned earlier. But despite this, our informants overwhelmingly agreed that taking the time to build strong cross-institutional relationships was essential for attaining individual and collective goals.

People in emergent roles especially also report feeling isolated. They often lack a team to support them—or just free them up for their mission-critical work. Interviewees mentioned several examples where lack of resources or support—for example, help with marketing tools, assistance with event planning—made it harder for them to do impactful work. Having to attend to work outside their immediate expertise is an additional stress point for staff in emerging roles. We also heard of 80-hour work weeks and talked to informants who felt overworked and tired. In this situation, making an effort at relationship building can seem overly burdensome. But getting out of the office to learn more about what others are doing can also reduce the feeling of isolation and provide opportunities for building community and getting support.

Relationship building is a significant but valuable investment. It is not cost-free, but as our informants made clear, the rate of return is usually quite high.

FIGURE 3. Key takeaways about successful intra-campus social interoperability

Conclusion

We undertook this project to explore the role of social interoperability in research support following previous OCLC Research efforts where we observed the need for libraries to work closely with other campus stakeholders to advance resources and services.[45] Our goal was to focus entirely on the topic of cross-campus, cross-domain institutional collaboration, and, using the human intelligence offered by our interview subjects, offer guidance for successful social interoperability in the complex adaptive system of the university.

Effective social interoperability across campus units is an important, and increasingly necessary, feature of successful research support services, and requires a thorough knowledge of campus partners. In this report, we have gathered information from stakeholders in research support around the university, describing their goals, interests, expertise, and crucially, the importance of cross-campus relationships in their work. Based on our informants' experiences, we drew out lessons and good practices on fostering social interoperability in the provision and use of research support services (figure 3).

Our key findings include:

- US research universities are highly decentralized, dynamic institutions, filled with heterogenous, independent agents that sometimes work at cross purposes. This environment creates specific challenges and calls for the creation and maintenance of working relationships across individuals and organizational units that promote collaboration, communication, and mutual understanding—in short, *social interoperability*. This is of special significance for stakeholders in research support, where roles are often new, responsibilities emerging, and staff often report feeling isolated in the absence of an established community of practice within and beyond the university.
- The essential first step in building successful campus partnerships is to know who the other stakeholders are: what they do, what they prioritize, and how they see themselves contributing to the university mission. In "A model for conceptualizing university research support stakeholders," we present a conceptual model of key stakeholders in the provision and consumption of research support services: Academic Affairs, Research Administration, Library, Information and Communications Technology, Faculty Affairs and Governance, and Communications.
- In "Social interoperability in research support services," we document our informants' experiences in building and maintaining cross-campus relationships in key research support service areas: research data management (RDM), research information management (RIM), research analytics, and ORCID adoption. Our interviews highlight the importance of social interoperability in the successful provision and use of research support services. But challenges remain; even when stakeholders are working synergistically, it can still be difficult for researchers to know which resources are available if there is no central resource that indexes these services provided by different stakeholders. Duplication of systems and services is common. And progress can be slowed by the necessity of first securing buy-in across stakeholders on campus.
- "Cross-campus relationship building" suggests lessons and best practices from our informants on how to optimize social interoperability in research support. For instance, persuading someone that something is in their own best interest to act upon is a powerful tactic in an environment where mandates do not exist or do not work. In addition, knowing your audience, speaking their language, offering concrete solutions to their problems, and getting the timing right are important strategies. Considerable investment of energy and time is necessary for building and maintaining cross-campus relationships, but as our informants made clear, the rate of return is usually quite high.

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APPENDIX: INTERVIEW PROTOCOL

Institutional Stakeholders in Research Support Project, oc.lc/stakeholders

Date of interview	
Informant's name	
Informant's title	
Informant's unit	
Informant's institution	

0. Introductions (5 minutes/xx:00-xx:05)

Thanks for talking with us today. We want to spend 75 minutes with you today, talking about your role at your institution, in order to learn more about your unit's goals, tasks, challenges, and collaborations.

This discussion is part of our information gathering for a project entitled "Institutional Stakeholders in Research Support," in which we are examining and documenting the numerous campus stakeholders that – as we observe – are increasingly called to work together, **to support one or more research activities** on the university campus today.

The three of us here are the core research team working on this project being conducted by OCLC Research, a leading research institute or think tank investigating issues relevant to the world's libraries. At the conclusion of our project, we will publish a synthesis of our findings as an OCLC Research Report. I will be leading the discussion while my colleagues take notes.

Introductions [ask each participant to quickly share their name and role]

Your interview today is confidential and your comments will be useful to us as we attempt to synthesize the variety of goals and roles taking place at research universities today. **We would like to record our conversation today—but only for our own personal use**; we will not share the recordings with others.

Did informant agree to allow recording? (Y/N)	

1. Why is the work that you do important? (15 minutes/xx:05-xx:20)

Question purpose: to understand their main goals and how these align with institutional goals. This question should also help us understand the drivers, although the follow-up questions may be necessary to get there.

Follow-up questions:

a. Redirect to focus on research support services. Do you feel that part of what you do is providing research support? [relevant to only some informants]

b. Why is this work valuable to your institution? Your campus unit? Researchers?

c. Who are the main stakeholders who care about the work that you do? These may be people or organizations inside or outside your university. [this is an incentives question: can we maybe use the RDM incentives model?]

2. HOW do you do it? (15 minutes/xx:20-xx:35)

Question purpose: to get them to describe what their unit does—the tasks.

Follow-up questions:

a. What is your unit really good at?
b. What's most important?
c. Is your unit typical of practices at similar institutions?
d. [for campus IT—you work at systems of scale. Are there differences in how this work for research services vs educational services?]
e. Research support services have become a much more visible part of the service portfolio on campus. Are you familiar with that term, and if so, what kinds of services come to mind? [if not familiar, here are some examples: RDM, RIM, bibliometrics support—services that support researchers and also services that support the institutional research enterprise, reporting, and reputation management.

3. What are the most beneficial relationships for helping you achieve your goals? What are the relationships that are important for achieving your unit's goals? (20 minutes/ xx:35-xx:55)

Question purpose: to understand who they are partnering with.

Follow-up questions:

a. What units are your most common collaborators/partners?
b. Are you trying to build new relationships across campus? Why?
c. Have you tried to collaborate with some units and failed?
d. Have you partnered with the library?
e. What about off-campus collaborations? Professional conferences?

4. If you could wave a magic wand, what would you change or fix? (10 minutes/xx:55-xx:05)

Question purpose: to understand their pain points.

Follow-up questions:

a. What are some new things on your road map that you'd like to accomplish?
b. Can you give us a specific example of something you are trying to do?
c. What are the primary barriers?

5. Is there anything else we should have asked? (5 minutes/xx:05-xy:10)

Comments/Perceptions

NOTES

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8 See Bradley, Cara. 2018. "Research Support Priorities of and Relationships among Librarians and Research Administrators: A Content Analysis of the Professional Literature." *Evidence Based Library & Information Practice* 13 (4): 15–30. https://doi.org/10.18438/eblip29478;

Bradley, for example, notes that "the importance of collaborating with others on campus (units, students, and faculty) in developing and delivering support for student learning has been well-documented . . . There has been less evidence collected about how academic libraries can best support campus research." (p. 16). Bradley goes on to observe that collaboration in research support documented in the literature tends to focus on research data management. (p. 17-18)

9 A copy of the interview protocol is provided in the report appendix.

10 Some specific gaps include in-depth discussions about the roles of Technology Transfer, Institutional Research, or Corporate Relations units, which may be stakeholders in research support services on some campuses.

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15 Connaway, Lynn Silipigni, William Harvey, Vanessa Kitzie, and Stephanie Mikitish. 2017. *Academic Library Impact: Improving Practice and Essential Areas to Research*. Chicago, Illinois: Association of College & Research Libraries, 31, 40. http://www.ala.org/acrl/sites/ala.org.acrl/files/content/publications/whitepapers/academiclib.pdf.

16 Cox, John. 2018. "Positioning the Academic Library within the Institution: A Literature Review." *New Review of Academic Librarianship* 24, no. 3-4: 217–41. https://doi.org/10.1080/13614533.2018.1466342.

17 Whitchurch, Celia. 2015. "The Rise of Third Space Professionals: Paradoxes and Dilemmas." In: *Forming, Recruiting and Managing the Academic Profession,* edited by U. Teichler and W. Cummings, vol. 14. The Changing Academy – The Changing Academic Profession in International Comparative Perspective. Switzerland: Springer, Cham. https://doi.org/10.1007/978-3-319-16080-1_5.

18 There's a significant literature accusing the bloating number of unnecessary, highly paid administrators as the cause of rising college costs. However, there's much more evidence that drastically reduced state support for public education is the primary factor. Many new positions have been added—and seen as necessary—as institutions have added IT infrastructure, compliance officers, and more student and research support services. As faculty member and author Robert Kelchen says,

> Faculty do complain about all the assistant and associate deans out there, but this workload would otherwise fall on faculty. And given the research, teaching, and service expectations that we face, we can't take on those roles.

See Kelchen, Robert. 2018. "Is Administrative Bloat Really a Big Problem?" *Blog (Kelchen on Education),* 10 May 2020. https://robertkelchen.com/2018/05/10/is-administrative-bloat-a-problem/;

For a good discussion of these misconceptions, see Dean, Jr, James W., and Deborah Y. Clarke. 2019. *The Insider's Guide to Working with Universities: Practical Insights for Board Members, Businesspeople, Entrepreneurs, Philanthropists, Alumni, Parents, and Administrators,* 131-133. Chapel Hill: University of North Carolina Press.

19 Dean, Jr., and Clarke. *The Insider's Guide*, 32 (See note 11).

20 The Ohio State University. "Office of Research." https://research.osu.edu/.

21 Stanford University. "Office of Research Administration." https://ora.stanford.edu/.

22 Pesce, Jessica R. "Student Affairs Has an Association; Faculty Affairs Needs One, Too," *The Chronicle of Higher Education*, 21 August 2018, https://www.chronicle.com/article/Student-Affairs-Has-an/244313.

23 Dean, Jr., and Clarke. *The Insider's Guide*, 32 (See note 11).

24 This ten-question interview script is included in the section "Cross-campus relationship building." (See "A script for learning about other units used at Rutgers University–New Brunswick," sidebar, p. 27.)

25 Sheila Corrall described the need for greater operational convergence in the provision of research support services, as libraries increasingly partner with other institutional stakeholders, such as the office of research;

See Corrall, Sheila. 2014. "Designing Libraries for Research Collaboration in the Network World: An Exploratory Study," 37. *LIBER Quarterly* 24 (1): 17-48. https://doi.org/10.18352/lq.9525;

Cara Bradley, in her review of the library and research administration literature, found that even in cases where these two professions engaged in the same topics, they focused largely on different aspects. And, more significantly, the literature of each profession demonstrated little awareness of the activities and interests of the other. See Bradley, Cara. 2018. "Research Support Priorities of and Relationships among Librarians and Research Administrators: A Content Analysis of the Professional Literature." *Evidence Based Library & Information Practice* 13 (4): 15–30. http://10.0.72.6/eblip29478, 26-28.

26 Lavoie, Brian. "RLP Research Data Management Interest Group: Acquiring RDM Services for Your Institution," *Hanging Together: the OCLC Research blog*, 6 February 2019. https://hangingtogether.org/?p=6997.

27 National Science Foundation. "Dissemination and Sharing of Research Results." https://www.nsf.gov/bfa/dias/policy/dmp.jsp.

28 Research Data Management has been an area of significant interest to OCLC Research, such as the Realities of Research Data Management series published in 2017-2018, as well as many other publications made publicly available on the OCLC web site, https://www.oclc.org/research/areas/research-collections/rdm.html;

Bryant, Rebecca, Brian Lavoie, and Constance Malpas. 2017. *A Tour of the Research Data Management (RDM) Service Space.* The Realities of Research Data Management, Part 1. Dublin, OH: OCLC Research. https://doi.org/10.25333/C3PG8J.

29 RIM is an emerging area of library interest and a subject of much previous OCLC research, such as Bryant, Rebecca, Anna Clements, Carol Feltes, David Groenewegen, Simon Huggard, Holly Mercer, Roxanne Missingham, Maliaca Oxnam, Anne Rauh, and John Wright. 2017. *Research Information Management: Defining RIM and the Library's Role.* Dublin, OH: OCLC Research. https://doi.org/10.25333/C3NK88.

30 European systems for collecting research information are typically called Current Research Information Systems (CRIS) and are used for collecting and reporting on institutional research productivity. Usage of the term CRIS is uncommon in the United States. See Wikipedia. "Current Research Information System." Updated 2 August 2020, at 14:51 (UTC). https://en.wikipedia.org/wiki/Current_research_information_system.

31 Bryant, Lavoie, and Malpas, *Research Information Management: Defining* (See note 29);

Bryant, Rebecca, Anna Clements, Pablo de Castro, Joanne Cantrell, Annette Dortmund, Jan Fransen, Peggy Gallagher, and Michele Mennielli. 2018. *Practices and Patterns in Research Information Management: Findings from a Global Survey.* Dublin, OH: OCLC Research. https://doi.org/10.25333/BGFG-D241.

32 Traditionally, libraries purchased and licensed materials from external sources, to be made available locally—an "outside-in" collection. In more recent years, there has been movement among research libraries to an "inside-out" model, where institutional outputs (digitized special collections, researcher profiles, etc.) are shared with an external audience. Explained in greater depth in Dempsey, Lorcan, Constance Malpas, and Brian Lavoie. 2014. "Collection Directions: Some Reflections on the Future of library Collections and Collecting." *Libraries and the Academy* 14 (3): 393–423. https://doi.org/10.1353/pla.2014.0013.

33 Rouse, William B. 2016. *Universities as Complex Enterprises: How Academia Works, Why It Works These Ways, and Where the University Enterprise Is Headed,* 61. New York: Routledge.

34 Through conversations with OCLC Research library Partnership institutions, we know that research analytics is a growing area of activity and investment for research libraries. These conversations, and institutional responses, were documented in the OCLC Research *Hanging Together* blog:

Lavoie, Brian. "Making Connections: Research Analytics at Virginia Tech," *Hanging Together: the OCLC Research blog*, 13 April 2020. https://hangingtogether.org/?p=7854, and

Lavoie, Brian. "Research Analytics: Where Do Libraries Fit In?" *Hanging Together: the OCLC Research blog*, 2 December 2019. https://hangingtogether.org/?p=7623.

35 See University of Illinois. "Research Development Center." https://rdc.research.illinois.edu.

Institutional permission was given to publicly recognize the institutions highlighted in the sidebar case studies.

36 Lavoie, Brian. "Making Connections: Research analytics at Virginia Tech," *Hanging Together: the OCLC Research blog,* 13 April 2020. https://hangingtogether.org/?p=7854.

37 Permission to publicly recognize this institutional activity was provided by a university representative.

38 The Association for Institutional Research (AIR) is the primary professional organization in the United States for institutional research professionals. It provides an overview of the "Duties and Responsibilities of Institutional Research" professionals on its web site at: https://www.airweb.org/ir-data-professional-overview/duties-and-functions-of-institutional-research.

39 The ORCID US Community, supported and led by LYRASIS in partnership with the Big Ten Academic Alliance, the Greater Western library Alliance (GWLA), and the NorthEast Research Libraries (NERL) provides resources, training, and community support for ORCID adoption in the United States. https://www.lyrasis.org/Leadership/Pages/orcid-us.aspx.

40 Lyrasis. "ORCID US Exemplars." https://www.lyrasis.org/Leadership/Pages/ORCID-US-Exemplars.aspx.

41 The ORCID US Community offers guidance to institutions on securing stakeholder support at: Lyrasis. "ORCID US Community Planning Guide for Research Institutions." https://www.lyrasis.org/Leadership/Pages/orcid-us-planning-guide.aspx.

42 Carnegie, Dale. 2009. *How to Win Friends and Influence People*. New York: Simon and Schuster.

43 Permission to publicly recognize this institutional activity was provided by a university representative.

44 Moving staff between the library and the research office was also encouraged in a recent symposium held in Washington, DC. "Critical Roles for Libraries in Today's Research Enterprise. In Symposium Proceedings," 11 December, 2019, https://library.ucalgary.ca/ld.php?content_id=35088958.

45 The need for library cooperation with multiple stakeholders was particularly documented in the Realities of Research Data Management series as well as the *Practices and Patterns* report on global RIM practices:

Bryant, Rebecca, Brian Lavoie, and Constance Malpas. 2017. *A Tour of the Research Data Management (RDM) Service Space*. The Realities of Research Data Management, Part 1. Dublin, OH: OCLC Research. https://doi.org/10.25333/C3PG8J.

Bryant, Rebecca, Anna Clements, Pablo de Castro, Joanne Cantrell, Annette Dortmund, Jan Fransen, Peggy Gallagher, and Michele Mennielli. 2018. *Practices and Patterns in Research Information Management: Findings from a Global Survey.* Dublin, OH: OCLC Research. https://doi.org/10.25333/BGFG-D241.

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