Becoming the library? Research librarians and the future of academic libraries
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Introduction

Academic libraries are changing. They are moving away from the ‘cosy library’—the home of traditional library roles, collections and spaces—towards the ‘scary library’ (Whitehead, 2010), where projects such as repositories are mainstreamed into the library, where both the library’s collection and users are increasingly offsite, and where the role of the librarian is less and less familiar (Parker & McKay, forthcoming).

At the heart of this revolution is a dramatic change in the needs, wants and expectations of academic library users—and perhaps also in librarians’ understanding of them. In 2013, library director Samantha Schmehl Hines (2013) encouraged librarians to look at what libraries might be when they grow up. She came to the conclusion that maybe ‘the librarian becomes the library’ (Schmehl Hines, 2013). In this future, librarians would take a step a back from collections and refocus on building relationships with academics to embed library services in the academic context. But Schmehl Hines warned that this change could only happen if librarians were willing to ‘loosen [their] attachment to [their] buildings and collections and develop [themselves] as trusted community anchors in a variety of ways external to physical place’ (Schmehl Hines, 2013).

What does this mean for library professionals in the 21st century? How does an academic librarian ‘become’ the library? Does it require a new definition of one or both of these concepts? Do librarians need new technologies, or just new ideas? Well, the perception of what a library is has already changed, for academics as well as librarians. Academics no longer enter the physical library space as often as they did when it housed a primarily print collection, yet they still really
value the role of the librarian, especially in managing information and facilitating access to collections (Research Information Network, 2007). Academics are already starting to see the librarian as more important than the library—but are librarians ready for this change? Has the role of the librarian evolved? And if so, what has it become?

This chapter looks at the rising field of research librarianship (with a particular focus on the author’s Australian experience), and how it has allowed librarians to use their skills to reach a new group of academic library users. The 21st century research academic will derive more value from the skills and knowledge of the librarian than the print collection and the building that houses it. This chapter looks at what researchers continue to value in librarians, what libraries might be able to leave behind, and what new services are required to support researchers in a changing academic environment.

Tell me, who are you?

To understand how the librarian can become the library, librarians must first ask an important question: who are academic library users in the 21st century? Traditionally there was a tendency for academic libraries and librarians to focus almost exclusively on supporting the information needs of students when building partnerships with academics (Winner, 1998); (Bruce, 2001); (Doskatch, 2003); (Ivey, 2003); (White, 2004); (Bhavnagri & Bielat, 2005); (Kobzina, 2010); (Mounce, 2010); (Meulemans & Carr, 2012). This is understandable—higher education is a multi-billion dollar industry worldwide, and supporting students is clearly in alignment with the goals and vision of parent universities. Providing an environment for successful completion of degrees can be reasonably regarded as ‘the primary mission of academic institutions’ (Stebelman, Siggins, Nutty, & Long, 1999). Undergraduate students are
also the most visible cohort of users, and the ones most likely to interact with librarians in the library.

But since the rise of online resources, library users are definitely not just the ones who come into the library. And if librarians restrict their focus to students and the teaching and learning activities of universities, they ignore the existence of another vital user group. Teaching and learning may be universities’ bread and butter, but their strategic direction revolves around strengthening their position in research.

Even with some of the best teaching standards in the world, universities in small countries such as Australia cannot compete on international league tables without world-class research activity. New initiatives such as the *Excellence in Research for Australia* (ERA) assessment seek to measure the quality—rather than the quantity—of research output as the basis for funding, suggesting that research is not only valued by universities as a mark of esteem, but also expected by the government as a source of income. Most universities in Australia are publicly funded, and a significant proportion of income from the government depends on the productivity of researchers, including their ability to win grants, attract top research students, and to publish. These figures, when aggregated for the Higher Education Research Data Collection (HERDC), become a surrogate metric for Australian universities’ research intensity.

The focus on research in academic institutions is not unique to Australia, however when comparing European and Australian universities, Keller (2015) found that research was more strongly emphasised in Antipodean universities than their northern counterparts. Keller noted that teaching is regarded by European universities and their academics as ‘an equally important task’ to research, but it takes a backseat at ‘the top Australian universities’ (Keller, 2015). She suggests that this difference might be ascribed to the strong pressure that government is able to
exert on universities in Australia because of their complete dependence on public funding, thus ‘research in Australia is seen as a contribution to [the] economy’ (Keller, 2015).

While volatile funding in the Australian higher education environment might be seen to heighten the competition for research between its universities, Australia was certainly not the first country in the world to introduce a culture of research assessment. Comparable activities measuring the quality of research in the United Kingdom (the Research Excellence Framework) and New Zealand (the Performance-Based Research Fund) predate the ERA process and show that publicly-funded research institutions all over the world are being called to show return on taxpayer investment in research.

So if the merit of universities is judged almost solely on research performance, what can academic libraries do to support their universities, and how are librarians addressing these new requirements? Are they providing a balance of support for teaching and research? Are their staffing models equitable across these two important foci? This chapter looks in depth at the growth of new academic library roles specifically designed to tackle the challenges of institutional research support, and to understand the needs of researchers as a specific user group. It examines skills and responsibilities for these roles and gives an overview of active research services in Australia and beyond. The author proposes that library services to researchers work alongside the liaison model already practised by most academic libraries. And furthermore, the author supports the view that library services for researchers need to be developed as part of a whole-of-library and whole-of-university framework for research support, and not in isolation from the work of other institutional support structures.
Not so dangerous liaisons?

The concept of the faculty liaison or outreach librarian will not be new to this audience. Most academic libraries follow a model of faculty liaison designed to connect academic departments and the library. For some, this is one liaison librarian per faculty or department—for others, a whole team. As Rodwell and Fairbairn (2008) observed, the early literature around liaison started with a very broad directive of ‘assigning librarians to work with specific departments in a systematic and structured way ... [to create] a channel of communication that allows the faculty’s needs to be understood by the library and the library to be interpreted to the faculty’ (Schloman, Lilly, & Hu, cited in Rodwell & Fairbairn 2008). This definition implies a role somewhat embedded in the academic context, but with the flexibility and authority to bring about change within the library. Schloman et al (1989) suggested a wide range of activities for liaison, many of which are common to the role today:

‘establishing contact with user groups; communicating information about library policies and programs; eliciting information about curricula changes; selecting materials and collection development; instructing in library use; providing current awareness, reference, and bibliographic services; serving as a library ombudsman for users; and bringing user perspectives to the technical services departments’ (Schloman, Lilly, & Hu, 1989).

The distinct focus on enabling student success through academic libraries is evident in the faculty liaison role. The model has traditionally supported academics more in their capacity as teachers (or ‘faculty’) than as researchers. Some librarians even couch liaison with academics
in terms of gaining an important entrée to students (Lipow, 1992). The definition of ‘understanding the needs of faculty’ (Schloman, Lilly, & Hu, 1989) should have left room for research liaison in addition to teaching, yet the role quickly broke into two ‘dominant streams’: collection development and ‘information services, in particular the educative role of librarians’ (Rodwell & Fairbairn, 2008). This development places faculty liaison squarely within a framework of support for teachers, leaving academic libraries drastically short of professional outreach resources to invest in research.

A study investigating researcher engagement with institutional support in the United Kingdom (Research Information Network, 2010) found that despite heavy library investment in information literacy, researchers:

‘showed little interest in making use of information skills training from the library … [and were] confident in their awareness and understanding of both the generic and the specialist tools that are relevant to their research area, and especially in their ability to identify the references … relevant to their specific research proposals and projects’ (Research Information Network, 2010).

Surely it stands to reason that scholars are unlikely to advance to research roles within universities without the necessary expertise to find and evaluate material in their own disciplines. Yet it is quite common for academic library support for research to have a strong focus on the provision of research training.

To truly understand the needs of academics, as Schloman et al (1989) believe librarians are called to do, it is essential to appreciate how an academic operates within the 21st century
academic institution. Academics wear many hats in their roles as university staff, and some of these conflict with one another. They are teachers of undergraduate students during semester; supervisors and mentors of research students all year; and research practitioners whenever possible, often having to squeeze in grant writing and scholarly publishing between other academic activities. Academic libraries have a long and proud history of supporting success in undergraduate and research student learning through information literacy and collection development (Bruce, 2001). Academic librarians have always strived to provide expertise to support the subject knowledge of research students. But prior to the rise of research librarianship, interactions between academics and librarians have paid little attention to that third critical role: the academic as researcher.

To adequately support academics in their research activities requires a shift in focus away from students and information literacy. Researchers are clear that they do not need assistance from librarians in their information seeking (Research Information Network, 2010). What they do need is someone with a clear understanding of the motivations and challenges they face every day in the current research environment. They need librarians who are visible, and keen to think outside their traditional role as information brokers within the physical library space. Rodwell and Fairbairn (2008) recorded some criticism of the librarian-to-academic outreach model in the past, including Frank et al. (2001), who described the liaison model as ‘too passive and lack[ing] impact’. In a similar vein, Yang (2000) highlighted the lack of studies of academic perception of library liaison programs, compared with the surplus of literature on ‘what librarians deem effective liaison activities that should be offered to the faculty’.

These works are now fifteen years old, but they still resonate today, and they remind academic librarians of the need to continuously reaffirm their role and ensure it remains aligned
with the needs of university academics. It is arguable that even today, academic librarianship still suffers from the same passivity and navel-gazing that these critics saw over a decade ago. Liaison librarians often express concern and hesitation in contacting academics out of the blue, lest they are seen to be causing a distraction from academics’ important work. Certainly there is a risk of the library’s communication being unwelcome, but it’s not as much of a risk as being ignored altogether, or seen to be passive, out of touch, lacking in value, and not having anything legitimate to offer. If this is the perception academic libraries project to their academics and parent universities, they could end up spelling the end of academic libraries altogether (Parker & McKay, forthcoming). Passivity has no role in research support, and there is no reason for librarians to be afraid of contacting researchers. If librarians can ease academics’ administrative workload, or support them in government research reporting, they should not hesitate to make contact. The key is to know at which points of the calendar year promotions, grant applications and research reporting activities fall, then to actively promote only those services that the library offers to help with each of these tasks as they come up. After all, what can be more important to researchers than ensuring their research profile is up to date and accurate? A visible and complete online research profile is critical to gaining future employment, and to attracting the right research students and collaborators. Librarians’ reticence to approach academics can puzzle them, and those who do engage with library services are sometimes left wondering why libraries don’t do more to promote them (Research Information Network, 2010).

A brief review of the literature shows that libraries around the world have invested significant time and resources in developing best practice models for teaching support. Librarians frequently experiment in partnership with academics to teach information literacy skills directly into courses (Bhavnagri & Bielat, 2005), (Brasley, 2008); to facilitate curriculum
development (Jonathan, 2004), (Kotter, 1999); and to build the collection (Chu, 1997). These ventures on the whole seem to have been successful. Yet the literature shows little evidence of libraries investing similarly in support models for research activity. When questioned, academics express equal interest in receiving research support from their libraries as teaching support (Schonfeld & Housewright, 2010). For some universities, the changing funding climate and universities’ strategic response to it has been a catalyst for the development of new roles for librarians in research support (Mamtora, 2011). For others, lobbying for adequate resourcing, and building the interdepartmental relationships required to bring about this kind of change, will be a major challenge.

There’s no place like home

If supporting researchers means that the librarian must become the library, what happens to the library as a space? The answer is that it changes too—in fact, it already has. The shift towards the librarian (rather than the library building) as the centre of librarianship challenges the view of the library as a hallowed place of scholarship. Yet evidence shows that this perception has already passed its use-by date. A number of observational studies on the use of library spaces show that students use the academic library space very differently from how they used to (Fried Foster & Gibbons, 2007); (Bryant, Matthews, & Walton, 2009); (McKay & Buchanan, 2014). The growth of new digital means of accessing information has allowed librarians to rethink their spaces so they are not designed entirely around the arrangement of the book collection, especially as print loans are on the wane (Harboe-Ree, 2010); (Sheargold, Medwell, Hayward, & McGuiness, 2010); (Whitehead, 2010). Fried Foster and Gibbons (2007) found that students saw the library as a ‘third place’ between class and home (Parker & McKay,
forthcoming). Third places are very useful but often underrated communal locations that contribute to a sense of self (Oldenburg & Brissett, 1982), so there is no doubt that academic library spaces are critical to the success of students.

Yet if library architecture is being redesigned around the needs of students, what value does the space hold for academics? Certainly, librarians can ensure that students are given the best possible environment in which to succeed, which meets the needs of academics as teachers. But what about their role as researchers? With the library building no longer the only place where they can access the collection, researchers have a diminishing need to come into the library space. In fact, if librarians are redesigning physical libraries to meet students’ needs for social and group study space, they are simultaneously making them unattractive to researchers, who are still looking for spaces that allow quiet reading and reflection (Antell & Engel, 2006).

**Something old, something new**

If researchers don’t need library buildings, what do they need from libraries? And what is meant by the term ‘research support’? Unfortunately the term suffers from duplicity of use in the library field, and this makes its definition muddy and vague. Research support in this chapter means providing services to academic researchers, rather than to ‘students who are conducting research’ (Lucas, 2011). For librarians to clarify their terminology, they need to move away from using ‘research support’ when they mean providing reference services or prescribed resources for students to complete their homework assignments. In the future libraries may develop new language for how they assist university scholars who are carrying out novel research, but in the meantime, in keeping with Borchert and Callan (2011) and Parsons (2010), this chapter defines ‘research support’ as the library’s role in assisting to ‘increase the productivity of research and scholarship’ (Parsons, 2010).
The changing place of research within higher education funding models points to a need for libraries to provide stronger support for research. Academic libraries see teaching liaison as integral to successful outcomes for their universities, and this sentiment is echoed by faculties. At the same time, university strategic goals point towards the need for library research support in addition to the current levels of teaching support. Academic libraries need to find ways to balance their current proficiency in support for teaching with their commitment to research in order to reinforce their value to their parent universities. And it needs to be done quickly.

In the longer term, it stands to reason that the research support profile returns to the liaison role, where it logically belongs in accordance with early works scoping the breadth of the role (Schloman, Lilly, & Hu, 1989). However, while research librarianship is in its infancy, and faculty liaison librarians are simultaneously faced with meeting the needs of a growing cohort of increasingly demanding students, many will not have time to focus on developing new services for researchers in addition to the needs of supporting their teaching staff.

In response to this need, and supported by a transforming higher education sector, a new role specifically designed to support research activity has emerged across many academic libraries. The concept of librarians as the heart of librarianship is key to the rise of research librarianship over the last five to ten years. The author of this chapter became the inaugural Research Services Librarian at Swinburne University of Technology in 2010, and was responsible for designing and developing support services for researchers, and for liaising with the university’s research office. At the time, the concept of research librarianship was relatively new in Australia, although its beginnings can be traced in the literature through activities in metrics (Drummond & Wartho, 2009), research data (Henty, 2008) and repositories (Parker & Wolff, 2009).
The role at Swinburne was established to address increased involvement from the Library in supporting research reporting exercises, and with the intention of ‘ensur[ing] a coherent approach for services, [and providing] a vision for new and improved services’ (Swinburne Library, 2010). Key responsibility areas for the role included service development, relationship management, systems development, content management, and project management. The position was originally located in the Library’s online projects area, mostly due to its close relationship with the institutional repository, which at that stage still had project status within the library. It is significant that at the time, the role was not co-located with the liaison and reference team, but more closely aligned with the library’s web presence. Later in this chapter, the author returns to a discussion of where research support roles belong within library structures, including the importance of mainstreaming projects into the library to develop skills across areas and to give additional profile to the role of research support.

**Both sides now**

As with Swinburne Library, many academic libraries are appointing research librarians to ensure they can make a concrete commitment to research services, in addition to maintaining high-quality support for teaching. Many of the skills required of research librarians are the same as Stebelman et al. (1999) articulated as ‘desirable characteristics’ (p. 127) for librarians in faculty outreach roles. These include: leadership skills, entrepreneurship, ability to approach and communicate with academics, willingness to learn and experiment with different ways of promoting library services, excellent written and analytical skills, and the ability to work independently on new or established projects (Stebelman, Siggins, Nutty, & Long, 1999, pp. 127-128). The core mission of a research librarian is still liaison: ‘connect[ing] the library’s work
to the academic mission of their university’ (Whatley, 2009). However, this time the audience is researchers, and as is discussed later in this chapter, also the university as a whole. Depending on what falls within the scope of library research services at each university, some new and different skills may also be required. For example, some research librarians will need to be skilled in social media, metrics, copyright, repositories and research data curation. Keller (2015) notes that some of these skills are outside the remit of the traditional academic librarian.

Library research support also requires a dramatic shift in thinking. It should be planned strategically and applied systematically, rather than on an ad hoc basis for the individual researcher who visits the library. Research librarians by the very nature of their role do not work to semesters; they are actually more likely to have a heavier load during semester breaks when academics are freed from the burden of teaching duties and have more time to carry out their research. Librarians should also not expect to see these clients at the reference desk—indeed this user group will be largely invisible in the library building. The Research Information Network (2007) shows that researcher visits to UK academic libraries declined steeply from 2001 to 2006. This tallies with studies in Sweden (Haglund & Olsson, 2008), the US (Hemminger, Lu, Vaughan, & Adams, 2007) and Australia (Moncrieff, Macauley, & Epps, 2007) that indicate researchers’ information seeking habits have changed dramatically in line with the move to online information provision. If researchers can now access everything from their own offices, libraries need to tailor their service design and communication channels to ensure they accommodate these changes to academic workplace behaviour. Email and online learning environments have been essential to connecting with research staff and students at Charles Darwin University (Mamtora, 2011), just as they have with academic staff in teaching roles at many universities.
Librarians involved in research liaison require a broad overview of researcher needs across disciplines and the scope to design new services for researchers based on the changing landscape. The issue of subject expertise is significant to establishing a balanced and trusted relationship between faculty liaison librarians and research librarians. Research librarians do not need to have subject expertise—ideally, they should aim to be discipline agnostic and avoid any visible allegiance with specific faculties. Still, they do need to maintain awareness of fundamental differences between fields that may impact on the research environment, or on their service design or delivery modes. Faculty librarians have subject expertise relevant to the departments they support, and should know more about subject-specific resources for the faculty than research librarians. The roles should complement—rather than conflict with—one another. This is apparent in services provided to PhD candidates, who traditionally approach the library for individual consultations on subject-specific resources. As research apprentices, these academic library users can benefit from both the research environment knowledge of the research librarian, and the subject expertise of the faculty librarian.

As Parsons (2010) and Whatley (2009) note, building relationships is central to successful liaison, and this applies just as much to internal relationships between faculty librarians and research librarians as to their external communication with academics. When library research support is provided by someone other than the faculty librarian, there needs to be constant communication between the two roles to ensure consistency and efficiency of service provision. Academics at many universities are expected to operate as both teachers and researchers, which means that these two librarian roles will have some overlap in their client base. Ultimately the key is that all academics should have someone in the library they can approach when they need help, whether this is the faculty or the research librarian. If either has
existing ties with an academic, these should be utilised, not ignored. If a query is outside the expertise of one role, it can always be referred to the other.

Due to the overlap in skills required, many research librarians come from a traditional reference background. However as a consequence of the changing academic library landscape over the last decade, librarians with expertise in institutional repositories and scholarly communication have emerged as alternative candidates for these roles. Swinburne’s first Research Services Librarian came via this second path, and this necessarily affected her view of research service development. She had a stronger focus on information management and system-level service development than on research training, which is still a focus of many research librarian roles at other institutions.

Following a restructure at Swinburne Library in 2014 and new staff taking up the mantle of the research librarian role, the position is now part of the faculty liaison and reference team and works alongside teaching support. This is a logical and advantageous decision that allows sharing of resources across faculty and research liaison teams. It is also an important step in mainstreaming support for research back into the outreach team in the library—it increases involvement from faculty liaison staff in delivering and influencing research services, and expands the liaison role from student and teaching support to a holistic academic support service. Over time, as research services are embedded into all liaison roles, the need for a separate role focused on research service development may not be required in this and many other academic libraries.
[Not] stuck in the middle with you

In the late 2000s, Luce (2008) and Whatley (2009) introduced the concept of librarians as ‘middleware’. Middleware is a computing term for ‘software that acts as a bridge between an operating system and applications’ (Oxford English Dictionary, 2002). By using it in a library context, Luce likens the librarian’s role to one as connector between information and people. It is also a good metaphor for the role of library research support within a whole-of-university framework. Libraries have known for decades that liaison with faculties is pivotal to the communication and use of library services by academics. Yet it is easy to forget about the need to build mutually beneficial relationships with other internal corporate departments as well. The success of whole-of-university projects such as research data management is not possible without input from research offices, faculty administrators, IT services and other key institutional stakeholders.

A Research Information Network report (2010) canvassing the needs of researchers showed libraries were in danger of falling off the research support grid if they did not work more collaboratively with research offices. The report makes the logical conclusion that ‘more support, in more varied forms … can benefit from economies of scale’ (Research Information Network, 2010). The same study concludes that ‘the key requirement from most researchers’ perspectives is for services which are there when they need them’. It is reasonable then to surmise that researchers are much less concerned than libraries about who is actually providing each service. If researchers are looking for seamless support from multiple university support structures, libraries need to find allies within their universities to ensure the delivery of maximum benefits to researchers, and perhaps even to guarantee the place of their services within the institutional
framework. University departments are strategic partners (Stebelman, Siggins, Nutty, & Long, 1999), but can also be potential user groups, as is discussed later in this chapter.

Of course, liaison with corporate departments can be a tightrope balance for libraries. Librarians fear their professional identity is already diminishing, and working closely with colleagues in other areas admittedly allows for scope creep while new research support roles are emerging. Nevertheless, if they want to provide services that matter to researchers, and not be seen as ‘passive and lack[ing] impact’ (Frank, Raschke, Wood, & Yang, 2001), practicality needs to prevail. Researchers are expected to develop multidisciplinary teams to ensure they have all the skills they need to reach an outcome—why are libraries reluctant to do the same in the corporate environment? Parsons (2010) believes that successful corporate liaison just requires groups to establish ‘an ethics of relating ... knowing how and when to compete, to co-operate and to collaborate and also how and when to shift back and forth among competition/commerce, co-operation/public service and collaboration/reciprocity’.

**Four sides of the same coin?**

As highlighted earlier in this chapter, key to understanding the needs of academics is a good day-to-day comprehension of how research works. To design suitable services for researchers, librarians need first to look at the framework in which researchers operate, and then to match their needs to the services libraries can provide. Some research support requirements (such as network storage access and research commercialisation advice) will reside more naturally with other corporate departments, and this is to be expected. Libraries need to work in partnership with these groups, presenting a collaborative—not competitive—research support service to academics.
The Research Information Network (2010) has produced a simple diagram that demonstrates the continuum of research activity:

<Insert Figure 1 here>

This diagram shows the need for libraries and other support services to assist researchers with every stage of the lifecycle, not just one or two. Traditionally libraries have provided assistance primarily in idea discovery, through literature searches, state-of-the-art research collections, and inter-library loan services for material not readily available on the shelves. These are valuable existing services that can be freshly repackaged as research services. Yet there is also considerable scope for libraries (in consultation with researchers and their universities) to develop new services that assist with these and other elements of the research lifecycle.

Research in publicly-funded universities is heavily affected and influenced by changes in government policy, including fiscal constraints, national research priorities, funding body regulations and research assessment exercises. Researchers operate in a constant environment of performance assessment, and they know it. Libraries intending to provide support for researchers must be acutely aware of this landscape and be careful not to be a cause of further anxiety for researchers.

The key lesson from Figure 1 is that researchers do not have very much time. In fact, they may simultaneously prepare publications at the end of one project while applying for funding for the next. In between all of this comes teaching, supervisory and administrative duties. To develop services that are indispensable to researchers and enhance their productivity,
libraries are well advised to seek out ways to make their researchers’ lives easier. Cohen (2004) tells a familiar tale in talking to academics:

‘One of the commonest refrains amongst academics is that we can never get any “work” done when we go into work. In other words we are so busy and stressed out by our ever increasing teaching and admin loads that we literally have no time or place to think—let alone to do anything approximating sustained research.’ (Cohen, 2004)

Having established a clear focus for research liaison within libraries (saving researchers time), this chapter now moves on to examine the breadth of research support services currently available in academic libraries. Using the framework of the research lifecycle in Figure 1, the author starts with the first phase (idea discovery), the traditional domain of researcher-library interaction, then jumps to the fourth phase (results dissemination), where academic libraries have already made encouraging progress. Lastly the chapter will look at how libraries might engage with the traditionally less visible phases of research: applications for grant funding, and data gathering and results analysis. Drawing on the experience of the author, the setting of Australian libraries such as Swinburne University of Technology will necessarily provide the basis for this study. Swinburne approaches research services from a particular perspective, aiming to be ‘client-centred and service-oriented’ and looking for opportunities to apply information management skills to save researchers time—even if it means librarians taking on more work themselves (Whitehead, 2010). Other universities’ experiences may be similar.
1. Access to high-quality research materials

Even if no other research services can be adequately resourced, academic libraries must ensure that their researchers have access to first-rate research material. Inter-library loan services must be readily available to researchers for cases where material cannot be held in the collection. When surveyed, Charles Darwin University researchers found inter-library loans ‘particularly useful in filling gaps in the journal collection’ (Mamtor, 2011). However an inter-library loan service is just that—a stopgap. As librarians know, these services are both costly for libraries and slow for researchers, and therefore should not be relied on as a proxy for a good institutional research collection. If academic libraries are struggling to justify their expenditure on collections, they can argue that the benefits of a good research collection aren’t only felt by researchers—there is a growing body of literature on the positive correlation between library resource usage and student retention (Stone & Ramsden, 2013); (Jantti & Cox, 2013); (Mezick, 2007).

Conversations with researchers are essential to ensuring our collections are responsive to user needs. Traditional collection development skills play a role in building a strong research collection, but there are other methods that work, too. As Moncrieff, Macauley and Epps (2007) found, there can sometimes be a mismatch between librarians’ view of what constitutes a good collection, and researchers’ perceptions of these same collections. Patron-driven acquisition models at Swinburne allow researchers to play a role in the selection process (Hardy & Davies, 2007), an idea strongly supported by Lucas (2011). In addition to this and standard library selection tools, research librarians can make collection decisions based on data that is readily available to them. Swinburne Library analyses publishing trends to ensure that the collection reflects the current research strengths of local researchers. It is not always possible to own everything; many ready-made journal packages from large aggregators do not allow enough
flexibility to build tailored collections of serials. Nevertheless, libraries should at least attempt to ensure that major outlets in which their academics publish—both serials and monographs—are adequately represented in their collections. Lucas (2011) notes that ‘Getting to know the individual faculty member helps build a collection that houses this person’s scholarly achievements’.

In addition to researchers’ writing habits, it is also possible for librarians to discover desirable new material for research collections through academics’ scholarly reading habits. Book reviews have traditionally been a useful selection tool for libraries, but research librarians can look at them from a different angle. If researchers publish book reviews in academic journals in their disciplines, it stands to reason that these books should at least be considered for inclusion in a collection that aims to support research in that discipline.

2. Support for disseminating results after publication

The institutional repository movement in academic libraries has gone from strength to strength over the past decade. Academic librarians in some countries have banded together to develop common standards and approaches that enable the success of the movement (Keller, 2015). In New Zealand, all academic libraries use DSpace for their institutional repository software, and technical issues are handled centrally, allowing repository managers to concentrate on the more thorny challenges of maintaining user engagement and maximising author rights. In the United Kingdom, there is ‘a strongly coordinated approach [to open access] under the SHERPA umbrella’ (Keller, 2015) that has been benefiting repository managers worldwide for over a decade.
In Australia, government support from a number of initiatives ensured that all universities developed an institutional repository. Some were ‘dark archives’ and existed solely as the infrastructure for the ERA review process, but the majority were open access repositories designed to showcase a university’s research output and provide equitable access to scholarly literature. Keller (2015) notes that some Australian academic librarians see the coopting of the institutional repository for ERA as a mixed blessing: while it has grown the status of repositories within universities, it has often hijacked key repository resources that might otherwise have been directed towards growing open access. Keller rightly acknowledges this situation as highlighting ‘the potential conflict between serving your institution’s immediate goal or the global professional community that is striving for the breakthrough of open access’ (Keller, 2015). The author of this chapter is a former repository manager heavily involved in supporting research assessment exercises at her university—she believes that showing an ability to work closely with institutional colleagues in the research office to deliver a key outcome, and highlighting the value of the repository to the organisation through this activity, is a higher priority in the straitened higher education environment than contributing to the open access movement for its own sake. The complete set of metadata about locally authored publications developed in the repository for research assessment exercises can be built on with a concerted approach to maximising open access down the track.

Open access repositories are also being put to other purposes. Research funders around the world now expect researchers to deposit publicly-funded research publications—and data—in repositories as a condition of funding. As of 2013, both major research funders in Australia have an open access mandate. The Wellcome Trust in the United Kingdom and the National Institute of Health in the United States introduced policies some years earlier, and have even
begun to penalise researchers not complying with their mandates by withholding their funding (Van Noorden, 2014).

Worldwide, though, open access policies and statements are poorly enforced (Van Noorden, 2014), contain escape clauses that do nothing to discourage restrictive publisher licensing policies\(^1\), are inconsequential as a driver for contribution, and encourage researchers to use costly pay-to-publish models (UK Working Group on Expanding Access to Published Research Findings, 2012) that simply shift the cost of publishing to authors and are not in the spirit of open access. Academics libraries have instead looked for ways to emphasise the benefits of increased access to researchers’ publications.

In many cases the institutional repository is an exemplar of a (usually library-based) research support service. It suits the needs of both researchers—in providing a single place to manage all of their publications—and the university, as a comprehensive record of its research output. As Parker and Wolff (2009) explain, Swinburne’s repository was designed with significant input from researchers so it would be useful, relevant, and readily adopted. Swinburne repository managers went against the trend by abandoning self-deposit for authors and shifting content recruitment and permissions responsibilities to librarians. This has been a successful strategy, and following the changes wrought by ERA, is increasingly common in the Australian repository community. Since 2009, the Swinburne repository has evolved to play a key role in all research reporting exercises at the university—if a publication is not recorded in the repository, it will not be put forward as part of the submission. Not only does this provide a comprehensive collection of Swinburne-authored material: it also saves researchers time by allowing them to report their publications only once and then have the data distributed to a variety of channels.
The research office has become a dedicated user group, and repository content has also been analysed as a basis for content published in university promotional material.

At Swinburne the institutional repository is part of the research librarian’s portfolio, but this may not be the case at all universities. This is seen as an opportunity for the library to build its visibility in institutional research support through new services based around skills in information management (Whitehead, 2010). Australian repositories have received more attention than ever through the ERA process, and there is an opportunity for academic librarians across the world to be entrepreneurial by familiarising themselves with, and interpreting the information requirements for, government research reporting exercises.

3. Help with research promotion and opportunities

Accurate repository content is a goldmine for universities, and a good example of the library controlling a resource that is sought after by both researchers and universities. Swinburne Library has developed a number of projects around the repository, building on its strong reputation for accuracy and attention to detail. These include dynamic faculty publications pages that replace static publications lists on staff and research centre websites. These were difficult to maintain and often relied on the HTML skills of a single administrative or academic staff member. The pilot group for this project was Swinburne’s software engineering research centre, who worked with the Library to design a user interface for group publications sorted by year and publication type. This project shows the value of partnering with academics to develop key library research services, and provides a model for a successful partnership between librarians and academics centred on research, rather than teaching.
Swinburne Library also managed a major collaborative project with researchers and the research office to develop an academic profile page database. This web-based information system drew dynamic feeds from three systems: human resources for contact details; the research management system for grants and research classification codes; and the institutional repository for publications. It was designed to communicate at a glance everything a potential collaborator or research student might need to know about a Swinburne researcher. Working on this project was a considerable learning curve for the research librarian, and helped her to understand first-hand the complexities, challenges and significance of maintaining an academic’s public research profile.

4. Help with publishing results in scholarly journals

Librarians are experts in promoting the end products of research, but they can do more to assist researchers with navigating the early stages of the publication process. Libraries already provide tools such as Journal Citation Reports to assist academics with making informed choices about where to publish, but sometimes authors are looking for a different kind of scholarly publishing support. This might include ensuring that their publisher agreements allow them to retain certain rights in their work (Borchert & Callan, 2011); (Hansen, 2012).

To assist researchers with disseminating the results of their research through scholarly channels, many academic libraries publish open access journals edited by local researchers or with strong university involvement. Publishing support at Swinburne includes: technical infrastructure using the Open Journals Software, assistance with search engine optimisation to increase the discoverability of publications, help with copyright, open access policies and author guidelines, a DOI minting service, allocation of ISSNs, subscriptions management where
necessary, advice on entry into abstracting and indexing services, and support for engagement with research assessment exercises to increase the visibility and prestige of these journals. The benefit of seeing these services as part of a holistic research support process is that academic librarians can take what they know about journal publishing, research metrics and research assessment and feed that back into the publishing process at the university to ensure that locally-produced journals have the best possible chance of success.

5. Help with measuring research impact and applying for funding

Few academic libraries appear to provide services aimed at helping researchers prepare grant applications; this is usually seen as an activity that is best managed by the research office. Every successful grant application needs a good idea, yet much of the proposal pro forma is an exercise in listing publications and maximising their impact through citation measures. Perhaps librarians hesitate in this area because of a fear that they might become grant writers, rather than grant advisors—or perhaps their reluctance stems from fear of stepping on boundaries with their research office colleagues. Both fears are legitimate, but this as a great opportunity to give libraries visibility in generating research income, as well as promoting its outcomes.

Several sections of the standard research grant applications require researchers to list their publications—usually both a list of recent work and a selection of career-best publications. Libraries can help researchers save time in preparing these sections through reference management software such as EndNote, and in many cases by allowing them to draw from a comprehensive list of their publications in the institutional repository. Librarians are ideally suited to grant support: they know that research metrics are woefully inadequate as a measure of quality (Lawrence, 2008); (Pendlebury, 2009) but that the value is in knowing how to turn
citation counts to a researcher’s advantage. Academic librarians are growing their skills in article-level and alternative metrics (Lapinski, Piwowar, & Priem, 2013); (Galligan & Dyas-Correia, 2013); (Loria, 2013); (Konkiel & Scherer, 2013); (Chin Roemer & Borchardt, 2012), an area that Zhao (2014) sees as an important part of ‘supporting scholarly publishing literacy’.

Librarians know that having a good handle on discipline metrics includes knowing not just where—but also in which format—researchers should publish. For some disciplines, a refereed conference paper is a dissemination format of prestige and may have been subject to rigorous review and a very low acceptance rate. But for others, conference papers are seen as a waste of good content that would have had more research impact as a journal article. Librarians also know that for academics to consolidate citation impact and promote their research identity effectively, they need to be able to resolve (or avoid) name variant conflicts (McKay, Sanchez, & Parker, 2010).

The University of New South Wales Library in Australia took an early lead in designing metrics services for researchers and institutional stakeholders (Drummond & Wartho, 2009); (Drummond, 2014). Understanding of and support for research metrics is a standard part of the portfolio for the 21st century research librarian in Australia, yet Keller (2015) notes that this is far from universal—in Europe, ‘bibliometrics is still regarded [as] a niche skill practised only by a small number of specialist “number cruncher librarians”’ (Keller, 2015). She notes that many librarians across the world do not have a working understanding of even the most rudimentary metrics such as the $h$-index.

Perhaps the role that citation metrics plays within the ERA assessment accounts for this geographical difference in skills. Yet it seems logical for libraries to take responsibility for metrics; librarians house the databases that are used to determine citation impact, and are adept at
using them. Surely this is an area in which librarians can truly prove that they are neither ‘passive’ nor ‘lack impact’ (Frank, Raschke, Wood, & Yang, 2001). However, they do need to be sensitive: libraries have always been seen as neutral territory—a safe harbour from research quality judgement—so librarians need to be careful about how they approach metrics work. If they are to become the primary face of research metrics, they need to be seen to be working on behalf of the academics, not as enforcers of the research performance culture.

6. Support for managing research data

Closing the gap in the research lifecycle, libraries have now found a way to apply their skills in information management to the experimentation, analysis and data collection stages of research (phase 3 in Figure 1). Previously this area was seen as the private domain of researchers and their assistants. In Australia, libraries were fortunate to receive government funding to support research data management through the Australian National Data Service (ANDS). This initiative allowed librarians to consider the possibility and scope of a role in data management, sharing and citation as early as 2008. Other international colleagues were not as fortunate with funding, but Keller (2015) identifies a homogeneity in research data management services in Australia that is not present in international initiatives, and this likely from the centralised approach coordinated by ANDS.

Data repositories are new but not entirely unfamiliar territory for librarians. Librarians, especially those associated with repositories, are experienced at emphasising the benefits of open access to research even when barriers to contribution are high (Parker & Wolff, 2009). Many researchers understand the value in sharing their data, but librarians understand that the rewards are at odds with the effort that goes into making data available (Parker, McKay, & Bennett,
2011). Librarians also know that there are complexities around clarity of ownership, description and preservation formats for research data, and that these are unlikely to be resolved soon.

Institutional research data management is an embodiment of the idea that universities and researchers benefit exponentially when multiple university stakeholders contribute to research support (Research Information Network, 2010). UK researchers see data management as a legitimate future role for librarians (Research Information Network, 2007), as does ANDS (Henty, 2008), but information management skills can only take a university’s research data management efforts so far. Data management also requires policy direction and leadership from research offices, plus storage, formatting and processing infrastructure from information technology services. In this case, because librarians can see at a glance that many of the skills required for effective research data curation are beyond the scope of libraries, they seem to be better at seeking out institutional partners to share the load. Queensland University of Technology’s model involves collaboration among library, research office and IT stakeholders. This allows the university to provide seamless access to not only research data storage and description, but also data modelling, visualisation and computational resources. Since ‘researchers prefer to conduct their research in their own way, with as little institutional advice and support—or interference—as possible’ (Research Information Network, 2010), a ‘one-stop shop’ for all research data services is ideal. More research support services could benefit from applying this model.

Are we there yet? The future of research librarianship

Researchers—and crucially, universities—are looking for something new and different from academic libraries. They are looking for a professional partner to work collaboratively with researchers and other university stakeholders to develop a user-centred research support
approach that meets researchers’ needs. Universities and researchers need their libraries to match the enthusiasm they have for teaching support with new services to increase the productivity of research. Many academic libraries can see that specialist research librarian roles are one way to allow time, resources and scope to develop service-oriented library support for research.

The last ten years have seen a shift in the level and type of support available. Many universities have established new positions to carry out research support activities. While academic libraries have already made impressive progress in increasing their capacity to support researchers, they still have a long way to go. Research services will need to evolve constantly to match the expectations of local and external research environments. Librarians will also need to be infinitely more flexible in their definition of what constitutes research—many library websites still refer to ‘staff’, without making a distinction between services aimed at teachers and those created for researchers. The term ‘researcher’ is still too ambiguous: where do PhD candidates belong? Are all research services created equal? Library services need to be able to accommodate these and other grey areas; they need to be role-based, rather than position-based, and they need to be willing to change alongside the constantly evolving research environment. There is still scope for libraries to extend these services, and their future development prospects depend to a large extent on how the research environment evolves.

Has the librarian become the library? Perhaps. In finding new and better ways to support both researchers and their universities, academic libraries continue to shift focus away from the building and towards the skills and knowledge of the academic librarian. The research librarian is not bound by the building, but by the research lifecycle—the same constraint that binds researchers. And in this, research services are a good model for service design across libraries—if librarians can always develop their services with the greater academic landscape in mind, and
in close proximity to their users, they will be guaranteed to provide services that meet their users’ needs, now and in the future.

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1 Both the Australian Research Council and the Australian National Health and Medical Research Council mandates include an identical statement that the funder ‘understands that some researchers may not be able to meet the new requirements initially because of current legal or contractual obligations’ (see [http://www.nhmrc.gov.au/grants-funding/policy/nhmrc-open-access-policy](http://www.nhmrc.gov.au/grants-funding/policy/nhmrc-open-access-policy) and [http://www.arc.gov.au/applicants/open_access.htm](http://www.arc.gov.au/applicants/open_access.htm)). This clause is effectively a ‘get out of jail free’ card for publishers whose current licensing conditions prevent researchers from meeting their obligations.
Figure 1: Four-stage model of the research lifecycle. Adapted from an image copyright 2010 the Research Information Network. Reproduced with permission.