

## **Building a Future-Ready Workforce - Embedding Bibliometric Capabilities at UNSW Library**

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# BUILDING A FUTURE-READY WORKFORCE - EMBEDDING BIBLIOMETRIC CAPABILITIES AT UNSW LIBRARY

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## Abstract

The growing reliance of institutions, governments, funding bodies and world rankings schemes on quantitative indicators of research performance has increased demand from researchers and research administrators for advice, services and tools to measure and understand the impact of research activities. The pitfalls and potential perverse outcomes of the metrification of research management are well documented and a growing concern across the library and university sectors. This paper will explore how UNSW Library is equipping library staff to respond to the growing demand for advice and services in this area. A staff capacity building program, the Bibliometric Capability Framework, has been initiated to achieve this aim. The framework has been adapted from a UK model to meet the specific needs of the Australian context. This program has been established to support library staff in an ongoing process of self-reflection and learning, and to provide skill development opportunities to build a future-ready workforce. A key challenge of the project is delivering training across units with varying levels of familiarity with bibliometrics, ranging from daily immersion to novice. The delivery of the program will employ a scaffolded learning approach, combining self-reflection surveys, hands-on workshops, and peer led learning to support deep engagement with new knowledge. The training program will take the form of '10 Research Impact Things', a module-based learning experience with a range of levels of engagement. A broader goal of this project is to establish the Library as a domain expert in responsible metrics use across UNSW and to empower the Library Leadership Team to advocate at an institutional, national and international level for best practice in publishing and assessment of research.

**Keywords:** bibliometrics, research impact, professional competencies

## Background

UNSW is a research and teaching intensive university in Kensington in the eastern suburbs of Sydney, Australia. UNSW Library provides a range of services to more than 6000 staff and over 55,000 students across three campuses in Sydney and at the UNSW Canberra campus. UNSW Library is the Business Owner for UNSW's Current Research Information System (CRIS), Symplectic Elements, which was implemented in 2013. UNSW's CRIS, the Research Outputs System (ROS) is the institutional source of truth for publications. As such, the Library is central in the collection, maintenance and reporting of research outputs data at UNSW. The Library also facilitates access to multiple bibliometric and altmetric databases and provides advisory services on strategic publishing and impact measurement. Current trends in the sector suggest that demand for these tools and services will increase over the coming years, and library staff will be required to respond to more complex queries and rapidly changing demands.

This growing demand for information and services around research impact at UNSW Library lead to the development of the Research Impact Measurement Service (RIMS), as discussed by Robyn Drummond (2014, 2016). RIMS was UNSW Library's response to the increasing measurement and evaluation of research outputs and performance. Initially a reporting focused service, RIMS evolved into an advisory service alongside the suite of reporting tools the Library facilitates access to. In reflecting on the service, Drummond highlights the challenge of resourcing the initial reporting focused model, a situation that the increasing sophistication of the reporting tools available to researchers and Faculty administrators alleviated to some degree. As RIMS developed, the focus shifted to facilitating self-service reports using ROS and a range of metric and altmetric platforms, allowing library staff to focus on providing more wholistic support in the area of research impact. The Library currently delivers research impact

related services in a variety of forms, ranging from one-on-one consultations to masterclasses in publishing for impact, tailored to specific disciplines. The approach is one that spans the research lifecycle, with the Library partnering across UNSW to support behavioral change around research impact from the initial planning stage. Units across the Library work to provide reporting and strategic advice, collaborating with subject matter experts who provide information and guidance. Requests for information and strategic guidance around research impact come not only from individual researchers but from Research Managers and senior Faculty staff. These interactions continue to develop the Library's relationships across UNSW and strengthen the Library's position as a domain expert in responsible metric use.

### **Bibliometric Capability Framework**

To support staff in developing competency in the skills required to meet the demand for the services described above, UNSW have implemented a learning program targeting bibliometric capabilities and research impact related skills. Alongside core competencies around analysing and communicating data, the program covers the landscape knowledge and analytical processes necessary to work in a nuanced and critical way when discussing and reporting on research impact. Developing these capabilities will strengthen staff capacity to participate in strategic discussions as informed stakeholders with analysis on sector trends and knowledge of discussions around responsible use of metrics for research impact planning, tracking and reporting.

The competencies detailed in the framework at UNSW Library are adapted from the set of capabilities developed by Cox, Gadd, Petersohn, & Saffi (2017) and adapted to suit the specific research landscape and use of bibliometrics at UNSW. Cox et al. (2017) conducted a survey of Universities and research administration organisations of the current frequently performed bibliometric tasks and the tasks anticipated to be in increasing demand over the next five years. The tasks were grouped into entry level, core and specialist to come up with a set of competencies that progress across a range of skill levels. This structure was useful in adapting the framework for UNSW as staff at UNSW Library have varying requirements around the nature of the bibliometric capabilities they engage with.

### **The 10 (Research Impact) Things Program**

At the 2018 Research Support Community day held at the University of Melbourne, Stephanie Bradbury, Queensland University of Technology (QUT), delivered a presentation highlighting the relevance of the capabilities developed by Cox et al in helping practitioners to do bibliometrics well, and as a framework for recruiting and training staff (Bradbury, 2018). The Research Reporting Unit at UNSW Library, led by Dr Vanessa Crosby, have used the bibliometric capabilities framework as a starting point to describe the skills that are increasingly expected as core for Academic Librarians. In adapting the capabilities for the UNSW Library project, the Research Reporting Unit conducted initial skills mapping across units using the service definitions in the UNSW Library service catalogue. This draft mapping was then discussed and developed at a workshop involving Library Executive and Associate Directors to form a picture of the skills currently employed by staff to deliver the existing range of services at the Library. Additionally, this phase of the program also involved mapping future skills that will ensure Library staff are equipped to meet the growing demand for advice and services to support the strategy of the University and actively promote the responsible, discipline appropriate use of metrics. Foundational skills were identified in this initial phase of the project as capabilities that were an expected entry level for all staff at the Library. As the program rolls out, activities related to these core skills will be highlighted and communicated to all staff. The project launch materials have established the training program as an opportunity for all staff to develop their capacities in the use of bibliometrics and altmetrics and receive training in any intermediate and advanced skills relevant not only to their current job role but also to equip them with capabilities that will be relevant to their future career development.

The outcomes of the program are:

- UNSW Library articulates a clear position on the use of research metrics and is established as a domain expert in the responsible use of research metrics with University stakeholders.
- Senior executives seek the advice of the Library when making strategic decisions about the responsible, discipline-appropriate use of metrics in academic promotions, KPIs, assessment exercises and strategic decision making.
- UNSW Library provides a suite of up-to-date resources in line with best practice in responsible use of metrics to support UNSW stakeholders in selecting and using appropriate research metrics.
- UNSW Library staff are encouraged to participate in wider conversations and steer debates around research metrics through attendance at relevant professional conferences and workshops, and in national and international working groups.

To achieve these outcomes, the following steps have been mapped out:

1. Assess current bibliometric capabilities and identify training needs to fill gaps in knowledge
2. Develop training programmes and resources to ensure Library staff develop bibliometric skills necessary for their current roles and future careers
3. Increase capacity for data-driven decision making within the Library
4. Provide advice, tools and services to researchers and research administrators based on best-practice in responsible use of metrics

Initial assessment of the current capabilities has taken the form of a consultation with unit managers. Following this, staff self-assessments were carried out as online self-reflection surveys that were completed in workshops facilitated by RRU. The responses were collected at a unit level to provide a benchmark prior to the commencement of the program with the self-assessment survey to be repeated after the program has been completed. The results from the survey have been used in selecting materials appropriate to the current knowledge and skill level of staff.

A core aim of the program is to facilitate meaningful learning and engagement across staff with varying levels of familiarity with bibliometrics, ranging from daily immersion to novice. Staff at UNSW Library have previously hosted other Learning 2.0, or 'Things' programs, organising groups to work together through the Australian National Data Service (ANDS) 23 (research data) things learning program, which was an opportunity for staff to develop knowledge and skills in a supported and scaffolded peer learning setting. This program, made available for reuse, has been a useful source of content and ideas in the development of the 10 Research Impact Things program at UNSW Library.

The 'Things' model, which focuses on peer supported self-directed learning and self-reflection, has been applied in numerous library settings (Stephens & Cheetham, 2011). Studies on the efficacy of this model of program have suggested the impact of the programs can be primarily personal rather than organisational, with respondents to a survey conducted by Stephens & Cheetham providing reflections on the difficulty of embracing new technologies and concepts without the support of organisational leaders. At UNSW Library, this version of the 'Things' program has been established with the endorsement of leadership and has been developed in line with the strategic aims of UNSW as outlined in the current guiding document, UNSW 2025 (UNSW Sydney, 2015).

As discussed by Ramirose Attebury (2017), duration and interaction are key factors in facilitating professional development experiences that have a meaningful impact on staff. Attebury highlights the importance of sustained, long-term interactions that promote self-reflection and develop self-awareness of gaps in knowledge are important elements of learning programs that facilitate meaningful professional learning. The 10 Research Impact Things program has been designed to facilitate self-reflection, interactive peer supported learning, and will provide built-in opportunities to apply new knowledge to the improvement of service delivery. The program materials will be available to all staff during the program, and afterwards as a learning tool for new staff, or staff expanding their skills and knowledge.

## Supporting institutional strategy

A strong focus of the program is supporting a matrix model where units collaborate and support the work of the Library as a whole, maintaining awareness and building engagement with the Library's broader work to support the strategic aims of UNSW. The increasing focus on research impact and measurement has provided increasing opportunities for academic libraries to align their services with the strategic goals of the institution, and strengthen partnerships with researchers, academic units and administrators (Corrall, Kennan & Afzal, 2013). UNSW Library's work in the area of staff capacity around research impact through the 10 Things program supports the institutional aims of:

UNSW 2025 focus	Measures
Research Quality	<ul style="list-style-type: none"><li>- World rankings</li><li>- Improved quality and impact of UNSW publications</li></ul>
Grand Challenges	<ul style="list-style-type: none"><li>- Number of outputs from interdisciplinary research across the programs</li><li>- Evidence of national and international recognition of our research impact</li></ul>
Knowledge Exchange	<ul style="list-style-type: none"><li>- Measures of economic impact (e.g. patent citations)</li><li>- Ranking in Reuters Top 100 Innovative Universities</li></ul>
Partnerships	<ul style="list-style-type: none"><li>- Number of collaborative publications</li><li>- Partnerships with Universities in Asia-Pacific and Africa</li></ul>
World Class Environments	<ul style="list-style-type: none"><li>- Benchmarking against other Australian Universities for service access and quality in digital/service delivery</li></ul>

## Responsible use of metrics

The overarching approach to this program is the responsible use of metrics, a principle that has informed the development of the 10 Research Impact Things and is summed up by the following quote from Elizabeth Gadd, Research Policy Manager (Publications) at Loughborough University: "Metrics can't be responsible, only people can...we need robust, humble, diverse, transparent and reflexive people doing metrics." (Gadd, 2018). Implementing this program at UNSW Library aims to equip staff with the skills and knowledge required to critically engage in discussions around the use of a range of metrics around research impact, and to increase the confidence of staff to participate in discussions around the use and limitations of particular metrics. Another central set of principles that have informed this program are the ten Leiden Manifesto principles for best practice in metrics-based research assessment which advocate for an approach to research evaluation that combines quantitative and qualitative evidence, using high quality data to inform decisions (Hicks, Wouters, Waltman, de Rijcke & Rafols, 2015). Developing staff capacity in research impact related competencies enhances the ability for UNSW Library to work effectively in embedding a culture of responsible use of metrics. Supporting our researchers and institution in developing wholistic and nuanced approaches to planning, measuring and discussing research impact requires staff who are confident and well informed about the trends and evolving infrastructure of the research landscape.

## Conclusion

The 10 Research Impact Things program aims to equip Library staff with the skills and capabilities to meet the growing demand for advice and services on research impact in such a way as to support the strategy of the University and actively promote the responsible use of metrics. A central aim of this program is to support library staff in operating with confidence, to recognise their existing skill sets, build upon these, and to encourage knowledge sharing across the library, fostering conversations and collaboration with subject matter experts across our teams. The approach is in line with the broader focus at UNSW Library of working across units in a matrix model. This work also contributes to the broader project of establishing UNSW Library as a domain expert in ethical publishing and responsible metrics use and empowering the Library Leadership Team to advocate at an institutional, national and international level for best practice in publishing and assessment of research.

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