

Patterns of information use and exchange: case studies of researchers in the life sciences

A report by the Research Information Network and the British Library

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Patterns of information use and exchange uses a series of case studies to examine how researchers in the life sciences find, create and use information resources, and how their practices relate to the policies being promoted by funders, libraries and information services.

New analytical techniques and increasingly powerful tools and services are bringing changes to the information needs and practices of life science researchers. At the same time, the success of large-scale projects in fields such as genomics and proteomics has raised awareness of the possibilities offered by data sharing, and research funders are showing an increasing interest in this approach.

Through a series of innovative case studies, our report captures the day-to-day patterns of information use in seven research teams in a wide range of disciplines, from botany to clinical neuroscience. It shows how researchers are grappling in different ways with the functionalities and possibilities offered by new developments in information policies, tools and services. It demonstrates how the views and practices of life science researchers differ sharply from the strategies being promoted by policymakers and funders, libraries and other information service providers – showing that the attempts to implement such strategies have had only limited impact.

If we are to achieve effective, scientifically productive and cost-efficient information use and exchange in the life sciences, policies and support systems for researchers must be built around the wide range of successful tools and practices emerging within life science research communities themselves.

A summary of the key findings is overleaf.

The full report is available at www.rin.ac.uk/case-studies

Policy-makers need to work together to produce effective and sustainable models for training and careers in managing information, catering for the varying requirements of different areas of research.

Key findings and recommendations

1. Diverse patterns of information use and exchange

- Researchers in the life sciences use and share information in many different ways. Within research groups, differences in information practices reflect divisions of labour, expertise and responsibility.
- Different research groups show a huge and intricate range of formal and informal approaches to discovering, collecting, processing and disseminating information. Patterns of information use and exchange vary hugely, according to the specific research challenge being addressed, even in apparently similar areas of study.

2. Frameworks of support

- Research groups tend to manage and share data in an informal way, without accessing professional support from institutional library and information services. But researchers express a strong desire for professional advice, training and support, with a particular demand for support to be closely integrated with research teams and laboratories.
- Better engagement with information professionals could add to the efficiency and effectiveness of research in the life sciences. Support for researchers must be based on a close understanding of their work, its patterns and timetables.
- Current career development and reward structures are not effective in recognising and rewarding the emerging specialist roles of informaticians, statisticians, modellers and curators, or in strengthening the information skills of life sciences researchers.
- Policy-makers need to work together to produce effective and sustainable models for training and careers in managing information, catering for the varying requirements of different areas of research.

3. Barriers to sharing data and information

- Life sciences researchers use a range of formal and informal mechanisms to exchange data and information with each other. But incentives for communicating the results of research other than through formal publication in journals and conference proceedings are weak and indirect.
- Most research councils require researchers to set up formal mechanisms for managing and sharing the data they created, but many researchers are reluctant to comply with these requirements. They are concerned about potential misuse of their data, and about the risk of losing control over what they consider to be a key part of their intellectual capital.
- Given the limited understanding of which forms of sharing and exchange are most effective, and under what circumstances, policy-makers should work further with researchers to identify the constraints, as well as to preserve the informed choice that is fundamental to scientific research.

Your feedback

We welcome feedback and input on this report from any interested organisations. Please contact Sarah Gentleman by email on sarah.gentleman@rin.ac.uk or telephone **020 7412 7241**. You can find further information about our current research projects at www.rin.ac.uk. To find out more about the British Library's life sciences resources, development projects and events visit www.bl.uk/science.