



The
University
Of
Sheffield.

Research Support:

How it all works.

Issue

01

Understanding and maximising
the impact of our research outputs.

sheffield.ac.uk/ris

“As researchers, we all want the publications and other outputs of our research to make a difference – to be noticed by other researchers around the world, to help shape the arguments and have a real influence on our fields. At the same time, we need to be aware of increasing (and sometimes confusing) demands being placed on us by funders – for example, around open access and open data. Colleagues in Professional Services – in Research and Innovation Services, in the Library, in CiCS – are working together to provide the best possible help and support to researchers in navigating these complex waters. The aim of this guide is to help researchers find the help and support they need.”

Professor Richard Jones

*Pro-Vice-Chancellor for
Research and Innovation*

Introduction: *Taking a Shared Approach*

Research Support: How it all works is a series of guides targeted at researchers. Each edition will explore the emerging policy and regulatory changes around specific themes and introduce you to the connected support that is available across the University.

This first edition of *How it all Works* focuses on the services and support available to researchers to maximise and monitor the visibility and impact of your research output.

Undertaking our research and innovation activity is becoming increasingly competitive and complex. Part of this complexity is as a result of more collaborative and partnership working and the growing need for our funders to demonstrate both relevant and accessible high quality outputs as well as value for money.

In this changing world, the quality of our research environment, both physical and cultural, is becoming a determining factor in the nature and extent of our success. Many aspects of University support for research, whether at the departmental, faculty or institutional level has, until recently, been largely delivered in a compartmentalised way. To continue to be successful within the current dynamic national policy and regulatory framework, we will all require a better collective understanding of how the various components and processes fit together as well as an appreciation of their growing interdependencies.

Taking a shared approach, Research and Innovation Services (R&IS), the Library and CiCs are working together with our academic departments and faculties to develop the technical infrastructure, workflows, expertise, advocacy, training and services required to deliver a comprehensive approach to output management. This first issue explains more.

Sarah Fulton,

Director of Research & Innovation Services



Section 1



The Impact of Our Research Outputs

Key contact:

Deborah McClean, Head of Operations
Research and Innovation Services
d.mcclean@sheffield.ac.uk

Research Outputs: Scene Setting

There is increasing focus from funders, publishers, commentators and among the academic community on the output of publicly funded research. In this context, 'output' encompasses a range of scholarly communications from research data through publications and other means of dissemination, to downstream outputs such as licences and patents, public engagement and impact beyond academia, on society and the economy. A period of constrained public finances has made it ever more critical that we make a strong ongoing case for the science budget, and to do that we must understand the nature and impact of our institutional output – in all its forms.

It would be easy to focus on certain aspects of our output such as Research Data Management and the Open Access agenda from a purely compliance perspective, as our funders have very particular requirements in these respects (see Page 12). However, by doing this we would be missing an important strategic opportunity to extend the academic impact of our research output by ensuring its visibility to the research community to shape the changing scholarly record; we also need to appreciate the value of our output and showcase it. Institutional support for outputs and ensuring public access to them is fundamentally part of our research environment and, therefore, our ongoing competitiveness in applying for research funding and maintaining an excellent reputation.

Compliance drivers

We are aware that a compliance-driven approach risks a lack of engagement from our research community with what could easily be seen merely as an additional administrative burden or interference in the research process. We cannot, however, ignore the significant compliance drivers in this area e.g. to be eligible for the next REF, open access is required at the point of acceptance for journal articles and conference proceedings; and our biggest sources of public research funding, RCUK and the EU, all have expectations about access to research data underpinning their funded outputs.

Reducing the burden

In order to deliver a comprehensive approach to output management, each professional service is taking a coordinated lead on various strands of support with Associate and Assistant Directors ensuring that the parts make up a whole which is as seamless as possible from a doctoral or academic researcher's perspective.

The number of publications with a Sheffield author since 2011 is 54,426.

Source: MyPublications, 22/01/16

Section 2



Open Access and Data Handling

Key contact:

Angela Davies

Head of Research Services and Scholarly Communication

Angela.Davies@sheffield.ac.uk

Library Research Services Unit:

sheffield.ac.uk/library/liaison/research

Open Access: *Scholarly Communication*

Scholarly Communication is evolving

'An old tradition and a new technology have converged to make possible an unprecedented public good' (Budapest Open Access Initiative, 2002). Free and open access to research articles and other research outputs provides anyone with an enquiring mind the power to find, read and make use of the literature when developing new research. New models of access and distribution for scholarly communication in a digital world extend reach, visibility and the potential impact of authors' works. Open access principles support the removal of barriers to access, but not the right of authors to be properly acknowledged and cited, and to have the control over the integrity of their work.

In the UK, there is a strong commitment by government and the Research Councils to ensuring the outputs of research that has been publicly funded should be freely accessible. Research Councils see it as their obligation to ensure that the investment of public funds in research has the potential to bring wide-reaching benefits to businesses, charities and the public sector, as well as other researchers and the general public. HEFCE has written into policy the need for certain research outputs to be open access for the post-2014 Research Excellence Framework (REF). In order to realise the public good principle underpinning the government's open access policy and funder requirements, a transformation in academic publishing is required. The UK is providing incentives, through funding Article Processing Charges (APC), for authors and publishers to make access to research outputs more accessible and faster.

Open Access also provides a mechanism for improving visibility and the potential impact of the University's research. There is evidence that Open Access outputs are more highly cited. In the past 12 months alone, our research outputs on our institutional repository White Rose Research Online (WRRO) have been downloaded almost half a million times.

eprints.whiterose.ac.uk

Open Access and the University

The University of Sheffield has produced a Position Statement that fully endorses the principles of open access and requires all academics to make their research open access where possible to maximise research impact and to comply with funder policies. In outline, it states that all research outputs are to be recorded on the University research information system 'myPublications' and a suitable version of all new journal or conference articles be put into WRRO as soon as possible after acceptance by a publisher. The Position Statement can be downloaded from:

sheffield.ac.uk/library/openaccess

Anne Horn,

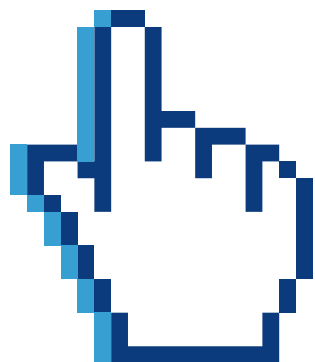
*Director of Library Services and
University Library*



How to handle it: Routes to Open Access

Researchers have more to consider when choosing how and where to communicate the outputs of their research. There is a new vocabulary for authors to learn in order to communicate effectively with publishers and with funding bodies. The Library introduces the concepts and mechanisms to doctoral candidates through the Doctoral Development Programme as well as advising and assisting early career researchers.

There are two mechanisms for authors to publish in open access journals that are described as 'Green' and 'Gold' routes to open access. Reference is also made to 'hybrid journals', indicating that publishing is in transition.



GREEN OA (self-archiving)

Authors deposit or self-archive a final peer-reviewed version of their article in their institutional repository, such as WRRO. This is required under the University's open access position statement. Authors may also choose a subject repository, including PubMedCentral and ArXiv, for depositing their research outputs. Most publishers will insist on an embargo period before the output is made available, to protect their revenue from journal subscriptions. The benefit is that anyone has free access to the full-text of the repository version once the embargo period has passed.

GOLD OA (publishing)

Authors publish in an OA journal that allows immediate access to anyone electronically and free of charge. Publishers can recoup their costs through a number of mechanisms, including through payments from authors called APCs, or through advertising, donations or other subsidies. Some research funding bodies, including the RCUK and the Wellcome Trust, are providing funds to the University to pay gold open access charges as an incentive to speed up the transition to new academic publishing models.

HYBRID journals

Are commercial subscription journals, which also offer an option for immediate open access on the payment of an APC by the author.

More detailed guidance is also available on the Library's open access web pages:

sheffield.ac.uk/library/openaccess
OAEnquiries@sheffield.ac.uk

In order to make papers more open, 304 articles were published open access via the gold route at a cost of £533,464

What you need to do: Uploading Articles

Uploading your articles to WRRO is quick and easy via myPublications. Guidance is available on the RIS web pages. The Library's Research Services Unit will check every output to set an appropriate embargo and ensure that we do not breach copyright.

sheffield.ac.uk/ris/systems/mypublications

Funder requirements:

- All RCUK-funded outputs must be made Open Access. They have a strong preference for Gold, although Green is acceptable providing that embargo periods do not exceed 6 months for STEM subjects, 12 months for A&H and Social Sciences. The University has received a block grant for 2015/16 to pay for APCs.
- Wellcome Trust, Arthritis Research UK, Bloodwise, Breast Cancer Campaign, the British Heart Foundation, Cancer Research UK and Parkinson's UK funded outputs must be made Open Access within 6 months of publication. The University has received a block grant to cover costs of APCs.
- EU-funded outputs (including ERC, FP7 and Horizon 2020) must be made Open Access. The EU has no preference over Gold or Green, and funding is available to cover costs

openaire.eu/intro-researchers

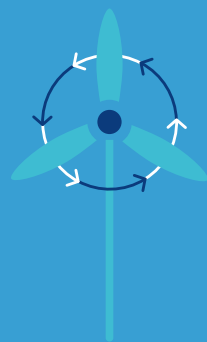
Requirements for the REF

To be eligible for the next REF, all journal articles and conference proceedings must be deposited in an open access repository (Green-route). Papers accepted for publication after 1 April 2016 should be deposited within three months of acceptance. An appropriate embargo period can be set in compliance with any restrictions placed by the publisher, although the bibliographic details describing the output will be published online. Full details of this policy are available on our REF website:

sheffield.ac.uk/ris/other/ref/oaoutputs

There have been 1,544,128 downloads of 7,554 items from White Rose Research Online since August 2007

Section 2.1



Research Data

Key contact:

Jez Cope, Research Data Manager
Library Research Services Unit
rdm@sheffield.ac.uk

What Are They? Data Handling

Across all disciplines, technology is enabling us to collect, generate and process data more quickly and easily than ever before. Lone researchers, small teams and multinational consortia alike now have access to digital sensors, cameras and facilities such as high-throughput gene sequencing and the natural language processing systems of the digital humanities. On top of this, the Internet gives us the opportunity to share data easily and effectively with collaborators around the world.

But what is 'data'? Different disciplines have varying definitions of data, but broadly speaking the term 'research data' refers to **materials created or collected to inform and validate research conclusions.**

In science and engineering, the concept of data is quite familiar. Data may be observations and measurements of phenomena made under carefully-controlled conditions or in the world around us; they may be generated by mathematical models; or they may be derived by combining and transforming existing data. In the arts and humanities, research data are harder to define and require different treatment, often comprising carefully-curated collections of materials gathered over long periods of time. Data in the social sciences covers a wide range, including both quantitative data such as census results and qualitative data such as interviews and diaries.

Research *data management* refers to the practices we use to look after research data: a) while actively collecting and analysing the data; and b) when archiving them for long-term preservation.

This includes:

- Documenting the data so they can be understood, and to ensure they are valid, accurate and complete
- Organising them so that they can be found quickly and easily when needed
- Protecting them appropriately so that they are not accessed by unauthorised people, lost or corrupted
- Selecting and preserving a subset for the long term
- Optionally sharing these preserved data, either publicly or under certain restrictions

Taken together, these practices:

- Bring peace of mind from reduced risk of data loss or accidental disclosure
- Reduce wasted effort from repeated work
- Improve the profiles of individual researchers and attract new collaborators by making research more visible
- Improve the impact of research by promoting knowledge transfer between academia and society
- Aid continuity of research when students and staff move on
- Contribute to the global body of knowledge available to society
- Enable new insights to be gained from the application of new research methods and the combination of datasets in new ways

Planning and management of data is part of a rigorous approach to research and the University's Good Research and Innovation Practices (GRIP).

sheffield.ac.uk/ris/other/gov-ethics/grippolicy

What do different funders want?

Data Repositories

The organisations that fund our research are keen for us to take full advantage of these benefits, and have introduced policies to encourage robust management and sharing of data. These policies vary depending on type of research supported by each funder, but all the RCUK policies are based around the principle that “publicly-funded research data are a public good, produced in the public interest, which should be made openly available with as few restrictions as possible in a timely and responsible manner.” (RCUK Common Principles) rcuk.ac.uk/research/datapolicy

The most important thing to be aware of is the requirement that **all published articles supported by Research Council funding should indicate where, and under what conditions, the underlying data may be accessed.**

The easiest way to do this is to make the data publicly available through a data repository that has processes in place to guarantee long-term access, and simply include a link to the data. Wherever possible, a Digital Object Identifier (DOI) should be obtained and referenced, as this can continue to function even if the underlying data is later moved.

Many disciplines have existing repositories, and many of these can be found by searching the Registry of Research Data Repositories re3data.org. Where these aren't available, there are a range of general-purpose repositories, including:

- University of Sheffield Figshare: sheffield.figshare.com
- Zenodo (funded by EU): zenodo.org
- UK Data Service (for economic and social science datasets) ukdataservice.ac.uk

Where data are sensitive or proprietary and cannot be shared publicly, this should be made clear in the article. Alternative arrangements should be made to ensure that the data are still preserved and can be provided on request under a data sharing or non-disclosure agreement. It may be appropriate to share anonymised data or summary statistics in place of the full dataset.

All funded research projects should also have a data management plan (DMP). A DMP outlines how the data will be managed and shared (if appropriate). The DMPonline dmponline.dcc.ac.uk tool has a range of templates and is an excellent starting point, having been developed by the Digital Curation Centre in conjunction with the Research Councils and several charities. We are working to ensure up-to-date guidance specific to the University of Sheffield is also available within DMPonline. For departments and larger research groups with a portfolio of projects, it may be useful to publish a group research data management strategy on the web to reduce repetition in DMPs.

How are we handling it?

Advice and Training

A combined advice service, co-ordinated by the University Library, is available: just email rdm@sheffield.ac.uk, with any queries about research data management and we will do our best to hook you up with the best expert for guidance.

We run regular training sessions for PhD students as part of Faculty inductions and the Doctoral Development Programme. We are also working to set up appropriate training opportunities for research and technical staff, and can provide training to departments, research centres and research groups if required.

CiCS are working with departments to provide fast, reliable network storage to all researchers. For the majority of users this will be free of charge, and CiCS will work directly with those researchers who have specialist requirements to ensure the best solution can be found. This augments existing storage provided through the U: drive, departmental shared drives and Google Drive.

The needs of 'big data' users are being met by ongoing investment in the University's High Performance Compute (HPC) service, and a dedicated Research IT service is being set up to provide technical help and ensure these facilities are accessible to more people than ever before (see Page 15).

All researchers should:

- Make data underlying published results available, either open access or under reasonable restrictions
- Include a brief statement in all published articles stating how, and under what conditions, the underlying data can be accessed
- Either upload or register these datasets in the University of Sheffield data repository: sheffield.figshare.com

All funded research project teams should develop a data management plan: go to sheffield.ac.uk/library/rdm/dmp to get started

We are also rolling out access to Figshare for Institutions, which fills two key roles:

- an online platform to enable researchers to share modest amounts of research data publicly or privately;
- a registry of *all* research data collected or generated at the University, to aid discovery

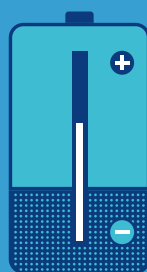
Looking to the future, we are investigating further systems and services to better integrate management of data into your existing workflows, including electronic lab notebooks.

To oversee this activity, a research data management steering group has been established to provide guidance on the developing RDM service. This is chaired by Professor Robert Freckleton and includes a range of academic representatives from all faculties, along with a representative from the University Library, R&IS and CiCS.

For further guidance on any of these:

- Visit <http://sheffield.ac.uk/library/rdm>
- Email: rdm@sheffield.ac.uk
- Read the research data management policy sheffield.ac.uk/ris/other/gov-ethics/grippolicy/practices/all/rdmpolicy

Section 3



Research IT Service

Key contact:

John McAuley, Assistant Director, CiCS
j.mcauley@sheffield.ac.uk

Research IT Service: Scene Setting

Until recently, CiCS support for Research computing was provided by a small team of dedicated staff working closely with research groups to solve problems and teach research students using High Performance Compute (HPC) facilities and academic software.

Across all disciplines research is using and generating increasingly large amounts of data; and with this there is a growth in the need for computational methods and technology to analyse and visualise the data. The use of HPC facilities for analysis, simulation and visualisation to solve novel and traditionally otherwise difficult problems is becoming more accessible and more affordable, leading some research groups to look towards procuring their own, bespoke HPC facilities.

Plans to grow the scale and ambition of our University's research will also require a new scale and capability from IT resources.

To meet the step change in demand that this brings, CiCS worked with the research community to establish how our research IT services need to grow to meet current and future needs.

Research IT refers to the provision of:

- **Data storage**, processing, visualisation, security
- **High speed computer networks** – internally and externally
- **Computing** from desktop to high performance computing (local, regional & national)
- **Research software, programming and applications**
- **Specialised support and advice** to make use of all of these

We found that a lack of capacity is forcing research groups and research facilities to provide these services for themselves; leading to practical problems when things go wrong, potentially putting business critical research data at risk, and diverting research staff away from their research.

How are we responding?

The University is setting up a dedicated Research IT Service that will deliver a tailored IT service shaped by the research community and will work closely with researchers to support their activities. The service will support three core areas:

- Research data storage – provision of access to a secure, accessible data storage service providing support and advice regarding issues of capacity, performance and compliance with data security regulations.
- Research computing – delivery of computing platforms that support computationally intensive research eg. the University HPC and the Regional N8 HPC. The team will also deliver training, raise awareness through engagement and contribute to research projects and provide consultancy.
- Research software – supporting the development of high quality research software, supporting researchers in their own development and use of software, and providing software engineering support such as version control, training and support. Software in this context means anything from simple scripts in Excel to coding within applications such as MatLab.

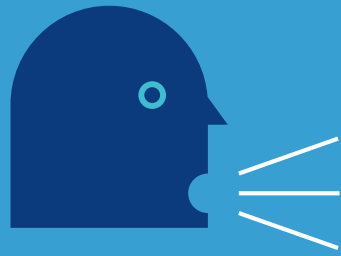
A new Head of Research IT has been appointed and will lead the recruitment programme to significantly grow the Research IT service team over a two-year period. By working in partnership with faculties and research groups, the new Research IT service will ensure that the needs of more than 2000 researchers are met.

Chris Sexton,

*Director of Corporate Information
and Computing Services*



Section 4



Accessing Support

Key contact:

Dave Jones, Research Information Team, R&IS

d.c.jones@sheffield.ac.uk

myPublications@sheffield.ac.uk

Visibility and Impact: *ORCID, Altmetric and myPublications*

As a researcher, your name is central to your profile and reputation. You use it on your papers, on your grant applications, conference contributions, peer review, public engagement and many other activities. Your name, however, is often not enough to reliably ensure that your outputs can be traced back to you and ensure that you get credit for your work. This is especially the case when information about you and your research is shared electronically between systems. Problems are not uncommon when trying to identify authors, especially with different publisher conventions, typographical errors, and varying use of initials and languages. Just because you don't have a namesake at the moment doesn't rule out one appearing in the future.

ORCID is a community-driven, non-profit organisation, dedicated to helping researchers establish a unique professional identity. Put simply, each researcher can apply for a unique identifier – an ORCID ID – which is used on grant and manuscript submissions, or when participating in conferences, writing blogs or on social media profiles. Other researchers can then use the ORCID ID to visit a public profile of your research activity. You have complete control over this profile and decide what information to make publicly available. Such a persistent identifier will facilitate automation of information sharing. It is already required by some funders and publishers and other institutions in the UK and overseas are encouraging their researchers to adopt this standard.

It is quick and easy to link ORCID to data providers (such as Scopus), so that all existing and future outputs are automatically added to your ORCID profile. Likewise, it is easy to have myPublications automatically add new outputs from ORCID – all without any manual intervention. It takes just 30 seconds to claim your ORCID ID, and then perhaps a few more minutes to set up your profile and link it to myPublications. Full guidance can be found on the R&IS website sheffield.ac.uk/ris/systems/orcid. Claim your ORCID ID and start using it to improve the discoverability of your research and receive the credit you deserve.

Altmetric – see who is talking about your research

Altmetric tracks who is talking about research outputs and what they are saying. It constantly monitors news sites, government policy documents, social media, blog posts, and many other sources for mentions of your research. Each day 44,000 mentions are tracked (that's one every two seconds), with over 50,000 outputs shared each week.

These mentions are made available to you in one place through Altmetric. You can monitor, search and measure them, and compare the amount of attention received relative to your peers. You can see at a glance which outputs have been talked about and which have slipped by relatively unnoticed.

How do I access Altmetric?

You can see the altmetrics for an individual output by clicking on the Altmetric donut wherever you see it. The easiest way to access Altmetric for your outputs is via myPublications sheffield.ac.uk/ris/systems/altmetric/details

The more powerful Altmetric Explorer altmetricexplorer.com enables you browse the data for all outputs, create and save reports, set-up email alerts for new activity, and export data to Excel for further analysis. For more information, visit: sheffield.ac.uk/ris/systems/altmetric/explore



Manage your research outputs: *myPublications*

myPublications is the University's central online system to help you manage your research outputs and is integrated with the institutional repository WRRO. It is accessible to all research staff and postgraduate students via MUSE, using the link at the top of every University webpage.

- myPublications automatically searches a range of online data sources (including Scopus, Web of Science, PubMed, arXiv, CrossREF, and DBLP) and emails you if it finds outputs that may belong to you.
- You can connect myPublications to your ORCID, Scopus or Researcher IDs to have new outputs automatically added to your account.

- You can use myPublications to quickly make an output open access by uploading it to the WRRO repository.
- You can have myPublications automatically keep your staff profile page on your departmental website up-to-date with your latest outputs, including a link to the publisher website and WRRO repository.
- myPublications is linked to URMS, so you can link outputs to the grants that funded them.
- You can conveniently view the most recent citation and Altmetric data for each of your outputs
- All the information entered into myPublications can be exported in a variety of formats for re-use in your CV or grant applications.

Full help is available on the support website:
sheffield.ac.uk/mypublications

You can also access myPublications through [myResearch](#).



For academic year 2014–15, *Research and Innovation Services has...*

Supported

£146m

of new
research awards

Negotiated

2,188

research-related contracts
and agreements

Supported

653

PGR
degree awards

Assessed

140

commercial
opportunities

Engaged

41,000

people during public
engagement events

Supported

119

reviews of potential
external partnerships

Tweet us —
[@ResearchatSheff](https://twitter.com/ResearchatSheff)

View online —
sheffield.ac.uk/ris



The
University
Of
Sheffield.

Produced by Research
and Innovation Services

In collaboration with
CiCS and Library