

# **Making the most of what we have got: Enhancing the RADAR institutional repository to support researchers**

## **Abstract**

This article discusses how RADAR, the institutional repository (IR) at the Glasgow School of Art (GSA), has been modified to house an Annual Research Planning (ARP) template. A case study on the implementation of this research planning tool will outline the role that a repository and its staff can play in supporting individuals, enhancing processes and helping to reach strategic institutional goals in preparing for the next REF. The paper will also investigate how the extension of RADAR to incorporate CRIS-like elements has led to increased user engagement, and has successfully demonstrated a new use for the repository beyond its scholarly communication function.

## **Keywords**

Institutional repository; Researchers; Roles; Scholarly communication

## 1. Background

### 1.1. An introduction to the Glasgow School of Art

The Glasgow School of Art (GSA) was founded in 1845, and is one of Europe's leading independent university-level institutions for the visual creative disciplines. The GSA is designated as a Small Specialist Institution, and its degree programmes are studio-based and practice-led. There are over 2,000 students studying across architecture, design, simulation and visualisation, fine art and history and theory. The GSA has 185 academic staff, 80% of whom are research active. One of the GSA's strategic aims is to further develop its research profile through the development and mentoring of GSA's own research talent, and the securing of higher levels of external research funding to support research projects.

### 1.2. RADAR, the GSA's research repository

RADAR (<http://radar.gsa.ac.uk/>) is the GSA's institutional repository (IR), providing a digital archive of research and enterprise output produced by its staff and postgraduate research students. RADAR (**R**epository of **A**rt **D**esign **A**rchitecture **R**esearch) makes information publicly available about a wide range of research outputs, from books and journal articles to exhibitions and artefacts, with contents made available to download wherever possible.

RADAR runs on EPrints repository software, and is hosted by EPrints Services at Southampton; it has also been customised to fit in with the GSA website template. By upgrading to EPrints from a Filemaker database in 2012, RADAR can provide staff with anytime, anywhere access to an online system they can use to record and promote their research, simply by logging in with their usual GSA

username and password. It is worth noting that the GSA does not have a research management system, such as a Current Research Information System (CRIS)<sup>1</sup>.

Of key importance for RADAR is the ability to showcase research outputs visually, given the nature of GSA's research in the creative disciplines. Figure 1 shows the image carousel that has been integrated into the RADAR home page:

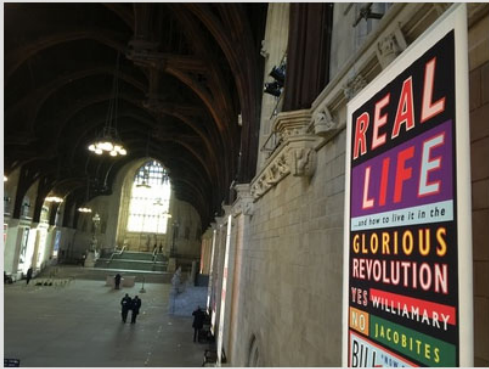

Study	Life	Research	Visit GSA	About GSA	Support GSA
<b>RADAR</b>	<b>WELCOME TO RADAR</b> →	RADAR is the Glasgow School of Art's research repository, providing a digital archive of research and enterprise output produced by Glasgow School of Art staff and postgraduate students. RADAR (which stands for Repository of Art Design Architecture Research) makes information publically available about a wide range of research outputs, from books and journal articles to exhibitions and artefacts. Full text is available where possible, and some additional content is available on request.			
Browse					
Author					
Year					
School & Author					
School & Year					
Theses					
GSA Staff Profiles					
Search					
Latest					
Policies					
Help & Contact Information					
FAQ					
Statistics					
GSA User Menu					
Login					
		 <p><b>The Beginnings of that Freedom</b> Sinclair, Ross (2015) <i>The Beginnings of that Freedom</i>, Westminster Hall, UK Parliament, Palace of Westminster, 2015 [Show/Exhibition]</p>  <p>RADAR supports OAI 2.0 with a base URL of <a href="http://radar.gsa.ac.uk/cgi/oai2">http://radar.gsa.ac.uk/cgi/oai2</a></p>			
				<b>Latest items</b>	
				<p><b>Inflection Point</b> The 20th Annual Academic Design Management Conference Proceedings</p> <p>Fremantle, Chris, Gulari, Melehat, Fairburn, Susan, Hepburn, Leigh Anne, Valentine, Gail and Meagher, Laura (2016)</p> <p><b>Impact By Design: Evaluating Knowledge Exchange as a Lens for Evaluating the Wider Impacts of a Design-Led Business Support Programme.</b> In: 20th DMI: Academic Design Management Conference, 22-29 July 2016, Boston, MA, USA.</p>	
				<p><b>Inflection Point</b> The 20th Annual Academic Design Management Conference Proceedings</p> <p>Hepburn, Leigh-Anne (2016)</p> <p><b>Towards a Theory of Produced Design Space.</b> In: 20th DMI: Academic Design Management Conference, 22-29 July 2016, Boston, MA, USA.</p>	
				<a href="#">More..</a>	

Figure 1: The RADAR home page

<sup>1</sup> CRIS systems have been developed to “assist the users in their recording, reporting and decision-making concerning the research process, whether they are developing programmes, allocating funding, assessing projects, executing projects, generating results, assessing results or transferring technology.” (De Castro et al., 2014, p. 40).

This image carousel is also used by other EPrints repositories, which have taken advantage of the KULTUR project (<http://kultur.eprints.org/>) to make repositories more suited for use in the creative and applied arts. The KULTUR project aimed to create a flexible multimedia repository that is able to showcase a wide range of outputs, from digital versions of painting, photography, film, graphic and textile design, to records of performances, shows and installations.

Figure 2 provides an example of an “Exhibition” research output in RADAR

(<http://radar.gsa.ac.uk/4128/>) by Dr Ross Sinclair, including several openly available images:

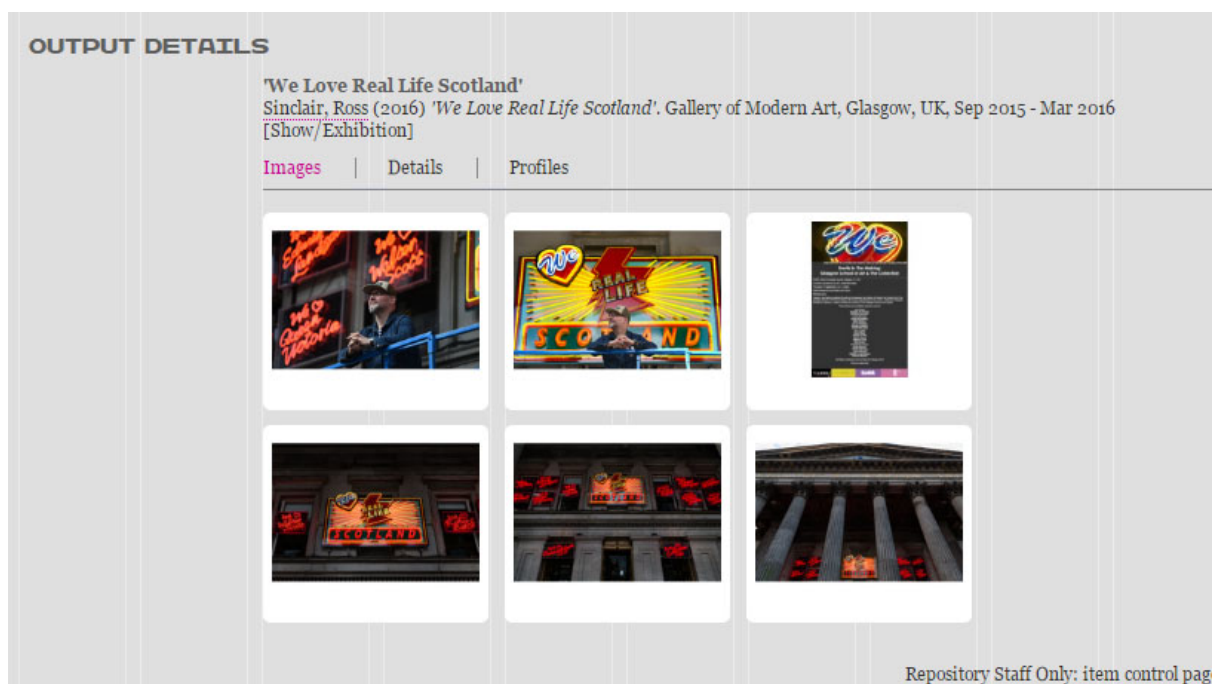


Figure 2: Example of an Exhibition research output by Dr Ross Sinclair in RADAR

### 1.3. The flexible positioning of RADAR at the GSA

RADAR is managed by a small team of two, consisting of a Research Information Co-ordinator, who reports to the Institutional Repository and Records Manager (IRRM). GSA research staff submit their own outputs to the repository, and a RADAR administrator reviews the metadata and copyright of any attached files, before making an output live in the repository.

There is often interest in a repository's position within an institution, and whether it falls under the Library or Research Office's remit. At the GSA, RADAR has experienced both, and is now located within the Research and Enterprise department. This decision was arguably a pragmatic one, based on an increasing need for closer liaison between the RADAR team and Research Office colleagues about preparations for the next REF exercise, coupled with a restructure of the Research department.

The ability to position RADAR and its team in either department is underpinned by the repository's simultaneous information management function, and its research dissemination and promotion purpose. There is a strong relationship between the Research Office and the Library, which has proved to be invaluable, for instance when collaborating on the management and dissemination of PhD theses held in physical form in the Library, and electronically in RADAR. The current RADAR team members are both qualified librarians, and the role of academic librarian (and the transferability of information management skills) lend themselves well to a niche such as research support, planning and administration. As we will set out below, the specification, development and management of the ARP in RADAR represented new responsibilities and learning opportunities for its team; and the successful delivery of the ARP demonstrates the value of these transferable skills.

## **2. Annual Research Plans at the GSA**

In April 2015, a proposal was made to provide GSA's researchers with access to an Annual Research Plan (ARP) template in RADAR, which would capture details of research projects, planned outputs and impact. The ARPs would not be made openly available in the repository at any point of the process, due to the planned projects and outputs being subject to change, as well as the confidential nature of some their contents.

The need for the GSA to introduce an ARP arose from the outcome of the 2014 Research Excellence Framework (REF) assessment. The REF (<http://www.ref.ac.uk/>) is a system for assessing the quality of research in UK higher education institutions, and in 2014, the GSA was placed fifth out of 84 for Art and Design in the UK, with the best research power<sup>2</sup> in Scotland for Art and Design. However, subsequent changes to the Scottish Funding Council's calculation of institutional research grants left the GSA facing a reduced research income, and needing to strengthen its researchers' capacity (by way of time and increased quality). The ARPs are intended to support this capacity building, and form part of the GSA's Staff Development and Career Review Cycle, to ensure an academic's teaching, research and other duties are balanced appropriately.

One of the explicit aims of annual research planning is to maximise the number of high quality submissions to the next REF, and completion of an ARP is compulsory for research active staff. The ARP is then peer reviewed, resulting in the allocation of research time (either enhanced time;

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<sup>2</sup> Research power "is calculated by multiplying the institution's overall rounded GPA [grade point average] by the exact total number of full-time equivalent staff it submitted to the REF. This is an attempt to combine volume and quality to produce a ranking that gives a more accurate indication than GPA of the relative amount of quality-related research funding each institution is likely to receive."  
<https://www.timeshighereducation.com/features/ref-2014-results-by-subject/2017594.article>

normative time; or no time). The internal Peer Review Group comprises discipline-specific knowledge, as well as expert knowledge of REF-style quality measures.

The ARP template consists of sections on personal details (including position and any applicable research centre or unit), as well the following elements:

- research profile, focus and expertise
- research projects and research outputs (completed and planned)
- PhD supervision
- research environment (such as invited talks; hosting conferences; editing journals; consultancy etc.)
- impact (including public engagement; changes to public policy; economic, social or cultural impact; etc.)
- a five year plan.

It is worth highlighting the benefits of some of the above sections. For example, the “Planned outputs” section enables the RADAR team to maintain an awareness of the research being undertaken at the GSA, which in turn helps us to monitor outputs that may fall within the new REF OA requirements<sup>3</sup>. This section will also help the Research Office to identify where enhanced research time may be required. The “Impact” sections will help the GSA to build impact case studies for the next REF, and encourage researchers to capture the impact that their work may have.

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<sup>3</sup> The new REF open access policy states that to be eligible for the next REF, journal articles and papers published in conference proceedings with an ISSN must be deposited and made openly accessible in a repository such as RADAR, within 3 months of the date of acceptance. Further information be found on their website: <http://www.hefce.ac.uk/rsrch/oa/>

### **3. Literature review**

To put the enhancement of RADAR to house an ARP template in context, this literature review will focus on the current research and developments surrounding repositories, and innovative enhancements of repositories in the academic library community.

It is difficult to define exactly what a repository is, due to the landscape being increasingly diverse. However, for the purposes of our research into repository innovation, we limited our search to how the library community itself defines institutional repositories (IRs). Clifford Lynch usefully described IRs in 2003 as "a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members" (p. 328). Gibbons (2004) argues that Lynch's "set of services" can only be "institutionally defined", because "to be successful an IR must provide the set of services needed by its unique community of users, and these services will and should differ from institution to institution" (p. 6). There is also some debate about what should and should not be added to repositories; however none of the literature consulted made explicit reference to the addition of research plans. Although most definitions of repositories agree that their role is primarily to "make their contents freely available to the world" (Suber, 2004), it is important to note that the ARPs will not form part of this open access element of repositories, and will remain private due to the confidential nature of some of their contents. Although this use of an IR may not correspond with Suber's definition, Connell (2011) argues that academic libraries often undercut their own attempts to get wider campus participation in their IR when they are overly selective about what to include. Indeed, Connell asserts that enacting restrictive policies on IR content can "potentially diminish a sense of ownership and participation among other units on campus" (p. 253). Although there can be disagreements within institutions about IR content, Jain (2011) discusses the benefits of an institution having a repository. Jain asserts they are a "vital tool" for scholarly communication, and an "important source of



institutional visibility” (p. 125). Furthermore, Jain states that IRs create “a mechanism to keep track of and analyse research performance” (p. 128); the GSA’s placement of the Annual Research Plan in its repository takes advantage of this function.

Although there are many agreed benefits for institutions in adopting IRs, getting research active staff to engage with the repository is seen as a real challenge for academic librarians (Bell and Sarr 2010; Creaser et al. 2010; Jain 2011; Kocken and Wical 2013). Creaser et al. (2010) believe the lack of engagement is due to the fact that IRs “have not fully become part of the established workflow” (p. 146); because of this, deposit rates are low, “hence the worldwide rise of institutional mandates” to encourage engagement with IRs (p. 146). As Jain (2011) notes, “the real challenge is not the technical implementation of the IR but rather the *cultural change* [our emphasis] necessary for it to become embedded and commonplace in the activities and normal behavioural pattern of researchers” (p.132).

One way to achieve the cultural change Jain (2011) suggests is to introduce innovative enhancements to IRs that will be of use to researchers, and can change their ingrained workflows. Bell and Sarr (2010) discuss the “re-engineering” of their IR to increase its usage, by offering features relevant to the true needs of academic professionals (p.79). The decision to enhance an established IR, rather than introduce new systems, is a strategic one. Bell and Sarr’s ethnographic study of established researchers’ workflows showed that academics restricted the technology they used to a “small core set of tools”, in an effort to keep work relating to computers “easy and flawless,” and to “reduce chaos” (p.81). This desire amongst researchers to save time is a strong reason to enhance IRs, rather than introducing new research management software. Bell and Sarr’s study focuses on enhancements such as profile pages and private work areas, but does not include the addition of elements that can enable researchers to record impact and planned projects, which will be of use to UK researchers keen to record this information in preparation for the next Research Excellence

Framework (REF) . Another reason to enhance existing IRs is noted by de Castro, Shearer and Summann (2014), who argue that using an IR for research planning and monitoring may be a better solution for small specialist institutions (like the GSA), who do not have resources to maintain “full [sic] fledged CRIS systems” (p. 41). Furthermore, de Castro, Shearer and Summann note that many institutions use their IRs as their “main research information management tool” (p. 42), and specifically mention the example of the University of Hong Kong, which has developed its IR to perform “reputation management” and “impact management” (p. 40). Another example of a repository being enhanced to engage researchers and support the institution’s needs is Warsaw University of Technology’s repository “Base of Knowledge” (Kubrak, 2015). Kubrak explains how the repository was created to disseminate scholarly publications, but can also report on the internal needs of the University, and “generate reports for academic staff assessment”, as well as presenting the institution’s “scientific achievements and transfer of knowledge within the university and outside” (Kubrak, 2015, p.3). We are also aware of other repositories in the UK, such as the University of Glasgow’s Enlighten<sup>4</sup> repository, which has been enhanced to capture “impact and press clippings”, (V. McCutcheon, personal communication, 21 Oct, 2016).

Although there are examples of other institutions adapting their IRs for internal research monitoring purposes, our case study forms a new contribution to the literature around research *planning* in an IR. We will show that the addition of CRIS-like features to an IR can help both the researcher and the institution plan research time, making a valuable contribution to the next REF exercise.

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<sup>4</sup> <http://eprints.gla.ac.uk/>

#### **4. Case study on Annual Research Plans in an IR**

In April 2015, the GSA's Head of Research identified RADAR as a potential location for the ARP template, given RADAR's key role in supporting the GSA's REF 2014 submission, and its ongoing use by researchers. As previously noted, researchers prefer to use a "small core set of tools" (Bell and Sarr, 2010, p.81), and by utilising RADAR for the ARPs, this obviated the need to acquire a new system for researchers to familiarize themselves with. The RADAR team also recognized that this institutional research planning initiative would further embed RADAR in researchers' workflows, whilst continuing to promote researchers and their work.

##### 4.1. The specification and development process

In September 2015, following preliminary discussions, EPrints Services were commissioned to build the ARP template into RADAR, based on a Microsoft Word document created by the GSA's Research Office.

One particular aspect of the specification was that the ARP must only be accessible by a researcher themselves within RADAR, with the facility for RADAR administrators to access and export a separate PDF copy of each ARP for the reviewers on a set date. The ability to provide researchers with access to their archived ARPs was a further requirement in the specification, as was a link with MEPrints to enable profile information to be pulled through to the ARP. MePrints is a plugin for EPrints that provides users with a profile page to promote their work within the repository and beyond. These profile pages are customisable, and provide the user with an overview of information relevant to them. This plugin was due to be installed in RADAR, and we initially believed that the ARP's fields would form part of the MEPrints workflow. However, it became clear that an ARP needed to be a distinct dataset (with its own workflow screen), due to the amount and type of metadata we were

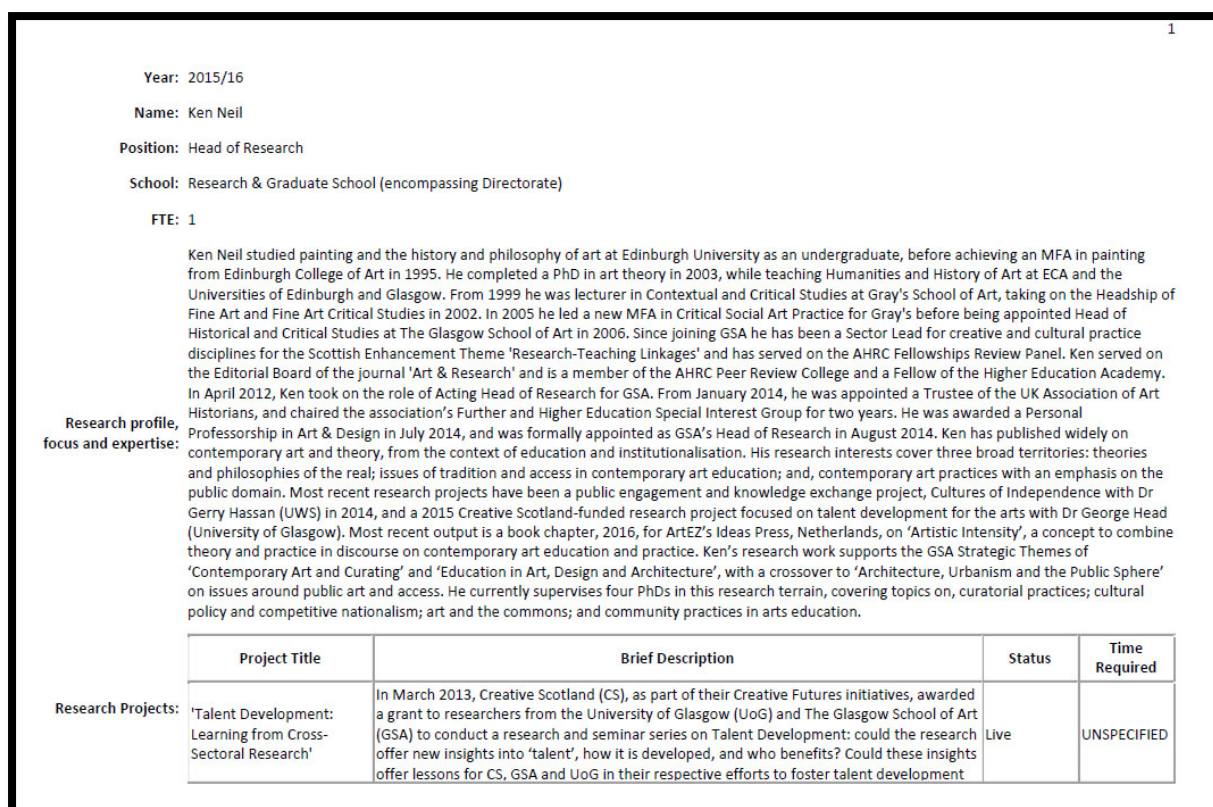
seeking to capture. The need to maintain records of previous years' plans, and to export an ARP in a user friendly format, were further factors in deciding that the ARP needed to be kept distinct from MePrints.

By December 2015, EPrints had made the ARP available to the RADAR team via a test server, and a three month period of iterative testing ensued, with adjustments and errors being identified, issues being resolved, and everything being documented in a "snagging list" comprising text, screenshots and their URLs. Examples of the issues that arose ranged from simple errors and typos, and reconciling standard EPrints formatting with the GSA's website design, to more involved issues such as designing the ARP export and archiving functionality, and matching EPrints character counts against the ARP's word limits. Some researchers were choosing to use a Word document to draft their ARP entries, then cutting and pasting sections into the RADAR template, and we noticed that some sections were being truncated and work was being lost. This was resolved by asking EPrints to update their character count to match the equivalent word counts more closely.

The ARP went live in RADAR in January 2016, and was launched to GSA researchers via a communication from the Head of Research. Figure 3 provides a screenshot of the ARP in RADAR, as seen by a researcher; a view of the way an ARP is exported can be seen in Figure 4 below.

Research Environment		Invited talks / keynotes / hosting conferences / editing journals / RCUK (or other) peer review activities / external PhD examination / consultancy etc / collaborations or networks	
1.	<div>Title</div> <div>Details</div> <div>Time Required</div>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="button" value="v"/>
2.	<div>Title</div> <div>Details</div> <div>Time Required</div>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="button" value="v"/> <input type="button" value="v"/>
3.	<div>Title</div> <div>Details</div> <div>Time Required</div>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="button" value="v"/> <input type="button" value="v"/>
<input type="button" value="MORE INPUT ROWS"/>			
Impact			
<b>Impact to date:</b> Please give details of impact relating to your research including public engagement, changes to public policy resulting from your work, economic, social or cultural impact in previous 12 months			
1.	<div>Underlying Research</div> <div>Impact Activity Undertaken</div> <div>Source Evidence</div>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="button" value="v"/>
2.	<div>Underlying Research</div>	<input type="text"/>	

Figure 3: An extract of the ARP in RADAR



**Figure 4: An extract of an exported ARP**

The ARP implementation and modifications to the template in RADAR continued for longer than anticipated, and the development was finally declared complete in October 2016.

#### 4.2. Promoting the ARP in RADAR

To promote and provide guidance on completing the ARPs in RADAR, we utilised a variety of communications methods, such as creating a walk-through guide (<http://radar.gsa.ac.uk/4881/>). We ran workshops (some aimed at particular departments, plus generic sessions for anyone to attend), and met with individuals when needed. The workshops were co-run with the Head of Research or the Senior Research Manager, who were able to field questions about the wider research planning process.

We also utilised existing channels, providing demonstrations at departmental meetings, and contributing to the Research Office's SKI Tuesday (**Share Knowledge and Insights**) programme, a series of events aimed at helping colleagues across the GSA to discuss research ideas, skills and approaches. This strategy gave us an excellent opportunity to interact with GSA's researchers, encouraging them to keep their outputs and profile information up to date in RADAR, addressing any concerns with using the repository, and promoting Open Access.

#### 4.3. Lessons learned

Given that annual research planning was a new venture at the GSA, lessons were learned based on our own observations and experiences. We also received informal feedback from researchers, both during and after the ARP's development, as well as from Research Office colleagues. The following represent some key lessons learned:

- Ideally, user testing would have taken place with researchers prior to the ARP going live in RADAR. However, time pressures on getting the ARP ready for researchers to complete their plans meant avoiding delays, given the strong need for acceptance and take-up by researchers. Once staff started using the ARP template more intensively, unanticipated issues arose, and tweaks were needed.
- Comments on the format of the exported ARP have demonstrated that GSA's researchers care very much about the visual presentation of the document. The PDFs exported from RADAR were functional documents, and not visually impressive; they also required additional manual formatting. The format has now been improved in response to feedback from the peer reviewers.

- Linking profile information in MePrints to the “Research profile” field in the ARP was intended to enable information to be pulled through automatically, to save researchers duplicating information already held in RADAR. However, this caused confusion in cases where researchers wanted to keep this information distinct, arguably for different audiences (internal peer reviewer vs. the general public). There were concerns about which field would update the other, and whether sensitive information could end up in a public profile.
- The lack of a “Submit” button for a researcher to click when they had completed their ARP led to uncertainty, both for researchers and ourselves. As administrators, we were able to see commenced ARPs; but with no indication of whether an ARP was complete, we had to email researchers for confirmation, and ran daily reports on overall numbers to spot any new plans. In preparation for the next round of ARPs, a “Submit” button has been added to the ARP template, which should reduce the number of reports the RADAR team will have to run, and reassure researchers that their plan has been received.



## 5. Outcomes

Our flexible approach to communications and outreach contributed to a good number of completed plans in the approach to the March 2016 deadline. A total of 145 ARPs were submitted to RADAR in the first round of this new GSA process; following peer review, 73% of plans were allocated normative research time, 10% received enhanced time, and 17% received none.

The workshops and meetings enabled us to meet many people face to face, thereby promoting the RADAR team and its support to researchers more directly. The wider promotion of RADAR has also shown researchers that the repository is more than a tool for the REF, and is proving its worth both to senior management and researchers, who are now seeing other potential uses for RADAR. For example, having the ARP button positioned on the researcher's RADAR home page has led to greater interest in their most viewed outputs, and in their downloads, as these are also visible from their home page.

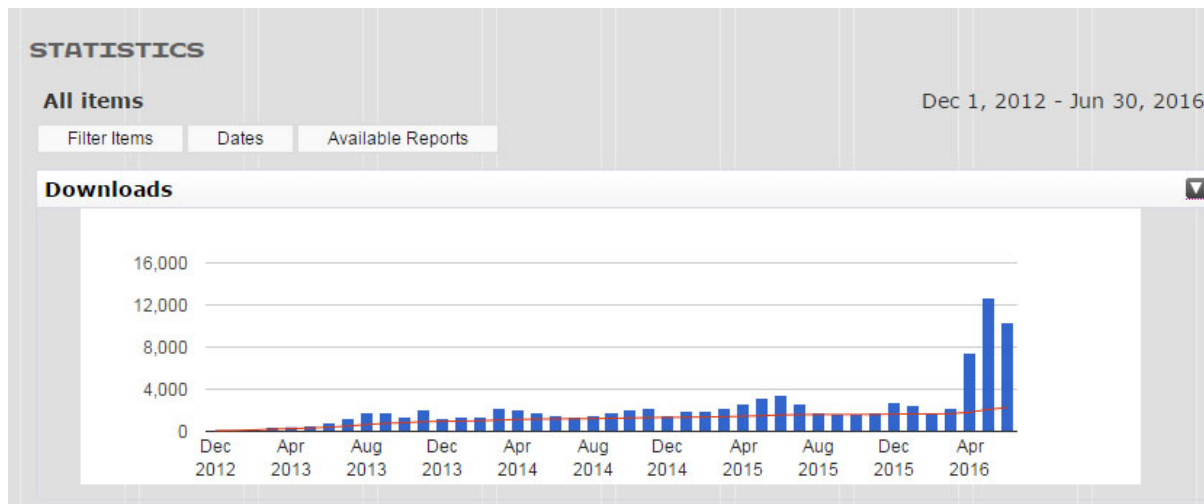
The ARPs have served as a prompt to researchers to keep their RADAR outputs up to date; this led to a large number of deposits being made in parallel to the completion of ARPs. Between 1<sup>st</sup> March and 30<sup>th</sup> June 2016, 355 items were added to RADAR, with four times as many deposits made in April 2016 as in April 2015, for example. We also observed a large spike in downloads<sup>5</sup> around the same period, and the national aggregation service IRUS-UK<sup>6</sup> validated our download statistics. It appears that as more content is being pushed out by RADAR, and crawled by search engines, it is bringing more visitors to RADAR, who are finding and downloading material of interest – in other words,

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<sup>5</sup> We elaborate further on this in our blog post "GSA authors: Have you seen your RADAR download stats this month?": <https://gsaradar.wordpress.com/2016/07/05/gsa-authors-have-you-seen-your-radar-download-stats-this-month/>

<sup>6</sup> IRUS-UK (Institutional Repository Usage Statistics UK) is a Jisc-funded national aggregation service, which provides COUNTER-compliant usage statistics for all content downloaded from participating UK institutional repositories (IRs): <http://www.irus.mimas.ac.uk/>

RADAR is getting noticed. Figure 5 shows the spike in the number of downloads from RADAR around the period of ARP completion and increased deposits in the repository.



**Figure 5: Increase in downloads from RADAR**

Our understanding of researchers' workflows has improved, and engagement with RADAR has increased greatly, resulting in invitations to participate in new research staff inductions, for example. RADAR has become a trusted tool: researchers see the benefit of depositing their work in RADAR, and GSA committees are taking advantage of RADAR reports as "a mechanism to keep track of and analyse research" (Jain, 2011, p.128). RADAR is now providing the GSA with a more integrated research management system; future plans for the ARP in RADAR include the potential development of a peer review workflow, to replace the exporting of ARPs as PDFs, and to encapsulate the entire ARP workflow within RADAR. This would provide researchers with an improved feedback mechanism, and greater assistance for the GSA's peer reviewers.

Part of the success of the ARP in RADAR was having the support of the GSA's Head of Research. He was ultimately responsible for delivering the annual research planning initiative, and his participation in the promotional workshops secured greater attendance and buy-in from

researchers. In turn, the ARPs will benefit the GSA by underpinning preparations for the next REF submission.

## **6. Conclusion**

The implementation of ARPs at the GSA represents no small degree of change for the institution, its researchers, and its repository. In particular, the extension of RADAR to incorporate CRIS-like elements has not only minimised disruption to researchers' workflows, but has also supported researchers in engaging with wider institutional change. The ARP process is currently being evaluated after its first year of implementation, which will result in elements being changed, and tweaks being made to the RADAR template in advance of the next planning cycle.

Managing the development and administration of a new research planning tool has been a steep learning curve for the RADAR team. However, the benefits of rising to this challenge and successfully demonstrating a new use for the repository mean that RADAR is now further embedded in the GSA's research infrastructure, reinforcing the value of the institution's investment in its repository. This corresponds with Gibbons' (2004) assertion that "to be successful an IR must provide the set of services needed by its unique community of users" (p.6); we believe that the placement of the ARP template in RADAR provides such an example of a bespoke service.

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