

# **Enrich: Improving integration between an Institutional Repository and a CRIS at the University of Glasgow**

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## **Summary**

This paper provide details of the work and the lessons learned by the JISC funded *Enrich* project run by the University of Glasgow in the United Kingdom. *Enrich* provided a clear focus for the integration and enhancement of the University of Glasgow's repository, Enlighten, with other institutional systems, including our Research System [CRIS] (for funder data) and our Data Vault (for staff records). The *Enrich* project has demonstrated that partnership between the University Library and the Research Office, in conjunction with researchers, administrators and IT Services is critical to ensuring the successful integration of a repository and a CRIS.

*Enrich* is part of a wider JISC funded programme in the UK: "Information Environment 2009-11" which focuses on the management, discovery and use of information resources. It was completed at the end of March 2010.

## **1 Introduction**

The *Enrich* project<sup>1</sup> was a 12 month JISC funded project at the University of Glasgow and is part of the "Information Environment 2009-11" Programme (Inf11)<sup>2</sup>. It was conducted in partnership by the University Library, Research and Enterprise and the IT Services departments – with additional technical support from EPrints Services. This inter-departmental approach was critical to the success of the project and the long term sustainability of the repository as an institutional [not simply Library] service.

At its heart, *Enrich* provided a clear focus for the integration and enhancement of the University of Glasgow's repository, Enlighten<sup>3</sup>, with other institutional systems, including our Research System (for funder data) and our Data Vault (for staff records). This work has lowered the barriers to deposit and increased the range of information held.

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<sup>1</sup> JISC Enrich Project, <http://www.gla.ac.uk/enrich>

<sup>2</sup> JISC Information Environment 2009-11 (Inf11), <http://www.jisc.ac.uk/whatwedo/programmes/inf11.aspx>

<sup>3</sup> Enlighten, <http://eprints.gla.ac.uk>

## **1.1 Key objectives:**

- Establish Enlighten as a comprehensive University-wide repository and central publications database
- Create staff profiles using data from core institutional systems including the publications lists from the repository and project information from the Research System
- Ensure compliance with funders' open access grant and award policies by using the Research System to identify projects nearing completion and providing alerts to remind researchers of their publishing obligations
- Improve publicity for research activity and outputs

## **1.2 Key deliverables**

- Added over 11,000 local user records
- Enabled users to login with their institutional credentials (GUID)
- Created links between the repository and the Research System (RS) to enable funding data from the RS to be easily added to the repository.
- Implemented a comprehensive repository and publications database with over 23,500 records publicly available

## **1.3 Background**

The University of Glasgow has a mature and well established institutional repository service, Enlighten, and has been at the forefront of sustained work with institutional repositories in the United Kingdom since 2001. The development and origins of Enlighten can be found in the JISC funded DAEDALUS project<sup>4</sup> in 2002, as part of the FAIR (Focus on Access to Institutional Resources) Programme<sup>5</sup>. This project ended in August 2005 and the project made the transition to a full service in April 2006.

In June 2008 the University Senate approved a publications policy<sup>6</sup> requiring staff to deposit published and peer-reviewed journal articles, as well as content, into Enlighten. A policy itself is not however a "magic bullet" and it must be supported by a range of advocacy and service development activities which will enable it to become a reality.

The University of Glasgow has made significant investments in the repository on an ongoing basis. This has included key support at Vice-Principal (Research & Enterprise) level as well as additional funding for library staff to work with the repository.

During our work with the repository we identified "technical" and "process" gaps in our repository service which, if addressed, would greatly assist the support and adoption of the University's publications policy. *Enrich* provided us with the opportunity to "mainstream" the repository by:

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<sup>4</sup> JISC funded DAEDALUS Project, <http://www.gla.ac.uk/daedalus>

<sup>5</sup> JISC FAIR Programme, <http://www.jisc.ac.uk/whatwedo/programmes/fair.aspx>

<sup>6</sup> University of Glasgow Publications Policy, <http://www.lib.gla.ac.uk/enlighten/publicationspolicy/>

- Ensuring the repository was as comprehensive as possible through a programme of bulk importing, starting with REF Pilot publications
- Lowering the barriers to full text deposit by implementing login by institutional credentials
- Enabling import tools (like DOI) to reduce keystrokes
- Addressing local publication needs and procedures with a mix of deposit models
- Linking to funder data to demonstrate compliance to funding bodies
- Surfacing publication data from the repository in staff A to Z profile pages

## 1.4 Repository, Research System and Publications Policy

Enlighten is a “hybrid” repository and includes a mix of both full text and solely bibliographic records. At the beginning of the *Enrich* project, April 2009 there were some 4,500 records in the service. By the end of March 2010 that had risen to 23,500.

The University’s Publications policy was approved by Senate in June 2008 and has two key objectives:

- To increase the visibility of research publications produced by staff employed by or associated with the University of Glasgow
- To ensure that research outputs are prepared and curated in a way which helps maximise the value that they have for the university in terms of the external use of bibliometric data e.g. league tables, post-2008 RAE

The Research System Development Project (RSDP) undertaken at Glasgow delivered significant enhancements to the research process. The project ended in March 2008 however we have continued to deliver further enhancements as prioritised by the User Group. The University has had a data rich system for many years. A more user friendly web front end was introduced in May 2006 and in June 2007 we released a further version with a fully integrated costing tool. We believe this to be the first in the UK to have this level of integration and functionality.

The Research System has automated links to the Human Resources, Finance, and Student Records Systems and work is ongoing to make the system available to a wider user community and, with the *Enrich* project, to link to further University of Glasgow systems such as the institutional repository.

## 2 Inter-related Data

The planning and implementation of *Enrich* was focused around three distinct but inter-related sets of data:

- Publications data
- Staff data
- Project/funder data

We worked with each of these datasets to ensure that Enlighten became connected to and integrated with core institutional systems like the Research System and our Data Vault. This work was split between EPrints Services and IT specialists in our IT Services department.

EPrints Services developed a bespoke bulk import script for us for our REF data and implemented an author authority browse view. Our IT Services specialists added user accounts to Enlighten and developed our new funding workflow and links with our Research System.

All of the work was developed in our test repository before being enabled in Enlighten. This work included:

- Implementing our institutional login [Staff data]
- Bulk import of content [Bibliographic data]
- Creating an Author authority listing [Staff data]
- Adding funding data [Project and award data]

The first three pieces of work listed were needed to be done in order to deal with the dependencies between staff and publications so that this data could be linked.

While work was being done to add user records and bulk import of bibliographic data we also focused on the availability and use of funding data from our University Research System into Enlighten.

Improving the ease of access to this data has enabled us to begin to effectively (and accurately) map publications and other research outputs to funders. This funding data will enable us to readily identify these funded outputs and demonstrate compliance with Open Access mandates.

### **3    Implementing our Institutional Login (GUID)**

During the project we added over 11,000 new user records for staff to the repository from our data vault. We had not expected it to be this many records, the University has six thousand employees but in order to be as comprehensive as possible we included Honorary and Associate staff who also have publications.

The user account names are their Glasgow Unique IDentifier (GUID) and we included:

- Forename, surname and honorific
- Staff number
- E-mail address
- Department
- Faculty

These records have enabled us to provide login access to our users using their institutional login (GUID) and provide an authority name for staff which is used in the author browse listing.

## 4 Creating an author authority listing

A key request from academic colleagues over the years has been the option to easily view [and search] their own publication lists. The EPrints 3.x software provides a Browse by Person (People) view which is created from the author names held in the EPrints record. This view includes all the authors of a publication and separately displays all of the variations which a user has published under e.g. Nixon, W., Nixon, William or Nixon William J. While comprehensive this was not ideal for our purposes since we wanted to bring all publications by an author regardless of cited name together.

In discussions with EPrints Services it was decided that a new, Browse by Glasgow Author view would be created. This view would use the author name in the user record rather than the cited name. This new view was dependent on the creation of the new user records.

**Browse by Glasgow Author**

Please select a value to browse from the list below.

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U-V](#)

A...

<ul style="list-style-type: none"> <li>▪ <a href="#">Abbott, Ms Daisy</a> (1)</li> <li>▪ <a href="#">Abrams, Prof Lynn</a> (10)</li> <li>▪ <a href="#">Acedo, Dr Francisco</a> (1)</li> <li>▪ <a href="#">Acha, Prof Enrique</a> (13)</li> <li>▪ <a href="#">Adair, Dr Richard</a> (1)</li> <li>▪ <a href="#">Adam, Dr Andrew</a> (14)</li> <li>▪ <a href="#">Adams, Prof Colin</a> (34)</li> <li>▪ <a href="#">Adams, Prof Peter</a> (2)</li> <li>▪ <a href="#">Adams, Prof Roger</a> (3)</li> <li>▪ <a href="#">Addie, Dr Diane</a> (10)</li> </ul>	<ul style="list-style-type: none"> <li>▪ <a href="#">Aleksanyan, Mr Mark</a> (2)</li> <li>▪ <a href="#">Alexander, Miss Claire</a> (1)</li> <li>▪ <a href="#">Alfani, Dr Guido</a> (14)</li> <li>▪ <a href="#">Ali, Miss Myzoon</a> (6)</li> <li>▪ <a href="#">Allan, Mrs Elaine</a> (1)</li> <li>▪ <a href="#">Allan, Mrs Linda</a> (3)</li> <li>▪ <a href="#">Allan, Ms Linda</a> (1)</li> <li>▪ <a href="#">Allison, Prof Arthur</a> (1)</li> <li>▪ <a href="#">Amtmann, Dr Anna</a> (20)</li> <li>▪ <a href="#">Anderson, Prof Anne</a> (8)</li> </ul>
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Figure 1 - Browse by Glasgow Author

This new view displays the full names of staff and their honorific e.g. Dr, Prof etc taken from the user record. During the project we upgraded to EPrints 3.1.3 which provides the much improved A to Z browseable list rather than having all of the authors listed on a single page.

A new GUID field was added to the Authors multi-value field and this field enables depositors to link publications to staff records by adding their unique Glasgow Identifier (GUID) in the author field.

This approach has the advantage of enabling us to decouple the name used by an author in the citation of the paper from the name which they are identified by in the University's central systems. All publications, for instance by a member of staff with both a maiden and married name are now grouped by the name they are known by in these systems.

## Contact details

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Information Systems  
Library

### Selected publications

Jump to: [Article](#)

Number of items: 5.

#### Article

Greig, M. and Nixon, W.J. (2007) *On the road to Enlightenment: establishing an institutional repository service for the University of Glasgow*. OCLC Systems and Services, 23 (3). pp. 297-309. ISSN 1065-075X

Ashworth, S. and Mackie, M. and Nixon, W.J. (2004) *The DAEDALUS project, developing institutional repositories at Glasgow University: the story so far*. Library Review, 53 (5). pp. 259-264. ISSN 0024-2535

Gregory, D. and Nixon, W.J. (2003) *The Instruction Commons: an information literacy initiative at Iowa State University*. Library Review, 52 (9). pp. 422-432. ISSN 0024-2535

Joint, N. and Kidd, T. and Nixon, W.J. and Roberts, M. (1999) *Furthering E-Journal Access: More Perspectives from Scotland*. Serials, 12 (2). pp. 171-179.

Joint, N. and Kidd, T. and Nixon, W.J. and Roberts, M. (1997) *Implementing E-journal Access: Two Perspectives from Scotland*. Serials, 10 (2). pp. 229-235.

This list was generated by [Enlighten](#) on **Tue Apr 13 17:07:32 2010 BST**.  
[Search again...](#)

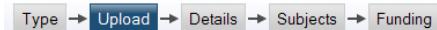
Figure 2 - Staff Publications Profile

## 5 Adding funding data

The EPrints software, by default already provides fields for project and for funder but we found that these fields did not support the rich set of funding data which we wanted to add to our records from the Research System. This data included:

- Project code number
- Award number
- Principal investigators [and associated project staff]
- Funder
- Funder Code
- Lead Department

We created new a multi-value Funder field which includes all of this data and added it to a new Funding workflow option for depositors. This has enabled project and funder data to be linked to publications.



*Figure 3 - Funding option in workflow*

Creating this new section provided a higher profile for funder data but enabled staff who did not have funding data to complete could easily move past it.

## 5.1 Multi-value funder field and funder autocomplete

The new funder field does **not** directly search the Research System, instead the data is autocompleted from a locally held which maps to the new multi-value field. This data is exported from the Research System on a regular basis and copied to Enlighten.

When staff type the project code, name etc they are offered a range of matching projects, which, when selected autocomplete with the data from the Research System. We do **not** expect staff to complete any of this information manually.

Project Code	Award No	Project Name	Principal Investigator
			nixon
Project Code: 40769 Award No: 1 "SHERPA DP (partner)"			
Investigators: William Nixon, Library			
Funded by: Consortium of University Research Libraries, Funder Code: CURL			
Project Code: 53737 Award No: 1 "Enquire (Enrich and Research Outputs and Impact)"			
Investigators: Valerie McCutcheon William Nixon, Research and Enterprise			
Funded by: Joint Information Systems Committee, Funder Code: JISC			

*Figure 4 - Multi-value funder field*

## 5.2 Dealing with funders and awards

At the University of Glasgow a project can have multiple awards of funding attached to it, for instance funding may come from Wellcome and from the Scottish Government, each tranche of funding is identified as a separate award so that we can more precisely tie a publication to a project and its distinct award.

In the majority of cases projects have a single funder but in order to ensure our mapping was as accurate (and future proofed) as possible we felt it was important to include this.

## 5.3 Research browse views

New research browse views were added to Enlighten. These provide us with browse views by funder name and code and provide us with options for reports for bodies such as the Wellcome Trust in the UK.

### Browse by Research Funder Name

Please select a value to browse from the list below.

- [Biotechnology and Biological Sciences Research Council](#) (2)
- [Diabetes UK](#) (1)
- [Engineering & Physical Sciences Research Council](#) (10)
- [GlaxoSmithKline](#) (1)
- [Medical Research Council](#) (44)
- [Wellcome Trust](#) (2)

*Figure 5 - Browse by Research Funder Name*

We also created a Research Project Code view which can enable links from the Research System, with the project code to be made to the associated publications.

Since not all of our Research Projects will have an associated browse view we updated the 404 page in Apache to show “No Data” rather than “page not found”.

Funder’s names for publications are now listed in individual repository records.

**Funder's Name:** Medical Research Council

*Figure 6 - Funder's Name in an Enlighten record*

Additional information including the project and lead investigator could also be made available in the EPrints record.

## 5.4 Workflow changes and challenges

There are two key challenges for the funder data. The first is for the depositor, particularly if they are a proxy depositor to be able to identify the appropriate funding. We anticipate that here, the publications authors will need to be provided with guidance.

The second challenge is for repository staff where funder data has been added. Since the data feed is only for funding which has been marked as “publicity yes” it is necessary for repository staff to check that the funder data added is publicly available before the publication is moved into the live archive.

They can do this by checking the Project/Award number. If the data matches the autocompletion options then there is no problem, but if the data does not match the details are passed to Research & Enterprise and the author contacted.

Research & Enterprise have taken the lead in developing and writing the policy for this funding data and the repository.

## 6 Key Lessons Learned

The work of the *Enrich* project has enabled us to deliver a mature and sustainable repository which is clearly integrated with institutional authentication systems and funder data. And one, which in its own right can deliver data out to populate staff profiles or provide links to associated publications from the Research System.

*Enrich* has provided a clear focus for the integration of the repository with other key institutional systems, including the Research System to enable the University to fulfill its Publications Policy.

We have increased the rate of content deposited through back-filling but more importantly by demonstrating the value [and reuse opportunities] to academic colleagues and departments in adding their research to the repository.

We believe that we can also be seen as an institutional exemplar for the benefits of integration between research systems and a repository, particularly in the areas of:

- People (Relationships)
- Processes
- Policies

## 6.1 People (Relationships), Processes and Policies

Strong relationships between repository managers and staff at all levels are vital in supporting the deposit of content. We have extended this work beyond traditional advocacy activities to create active and ongoing partnerships with academic departments and staff working with the repositories.

We have run a variety of workshops, met with Heads of Department and addressed departmental meetings. We have worked to address the local content and process needs of departments.

Technical and administrative have been refined to join-up the existing elements of the research lifecycle to facilitate the ease of deposit. These include the option to add funder data, our institutional login system and a wide range of import and data capture options. The University Library continues to provide support for copyright clearance and to maintain clear and sustainable workflows for the deposit of material into the repository.

With *Enrich* we have also continued to refine our existing policies for deposit and the use of funder data. We have worked closely and in partnership with our Research and Enterprise department in this work.

## 7 Conclusions

The *Enrich* project has demonstrated that partnership between the University Library and the Research Office, in conjunction with researchers, administrators and IT Services is critical to ensuring the successful integration of a repository and a CRIS.

It also shows that this integration is not just about technology but about the shared vision and work of stakeholders across the institution. Unless the needs of the key stakeholders (including academic staff as well as administrators) are addressed and they are provided with services which support their existing work and research reporting needs then the repository will remain an orphaned and disconnected service.

This work will continue beyond the lifetime of the project as we continue to develop reports for funders and explore the application of the CERIF XML Data Exchange Format, in particular with the work of the JISC funded Readiness for REF Project<sup>7</sup>.

## **8 Contact Details**

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<sup>7</sup> Readiness for REF Project , <http://r4r.cerch.kcl.ac.uk/>