

Institution: University of Sheffield
Unit of Assessment: 36 - Communication, Cultural and Media Studies, Library & Inf. Management
<p>a. Context</p> <p>The Unit's three major research groups (Computational Informatics, Library and Information Management, and Journalism) engage in a wide range of research with far reaching impacts, including: computational procedures used in the discovery of new drugs and agrochemicals; the design, implementation and evaluation of information systems in a variety of organisational contexts; policy and practice within academic libraries; the development of new pedagogies within the curriculum; and shaping national and international programmes on the safety of journalists and the development of digital newspaper resources.</p> <p>The diversity of the research is mirrored by that of the types of beneficiary including: the global pharmaceutical and agrochemical industries; systems developers in museums and cultural heritage organisations; healthcare patients, providers and charities; academic, public and specialist libraries; national accrediting and professional bodies; and national and international agencies.</p>
<p>b. Approach to impact</p> <p>Much of the Unit's research is based in practice and staff have always had strong relationships with the professions through:</p> <ul style="list-style-type: none"> • Holding leading positions in key professional bodies (e.g., the Chartered Institute of Librarianship and Information Professionals (CILIP), and the National Council for the Training of Journalists). • Recruitment of staff who have held successful careers as practitioners (e.g., Corrall, Pinfield, Webber). • Organisation of meetings on behalf of professional bodies aimed at practitioners and NGOs (e.g., in Chemoinformatics; Research Data Management; and Impunity and the Rule of Law) • Teaching programmes that have strong professional links through visiting speakers and collaborative student projects. • Production of outputs that address both academic and professional audiences. <p>These activities have led to long term engagement through: collaborative, practice-led research; engaging with beneficiaries through consultancy work; and informing practice and policy.</p> <p>(i) Collaborative practice-led research. Much of the chemoinformatics research has been funded by pharmaceutical and software companies (e.g., AstraZeneca (AZ), Cambridge Crystallographic Data Centre (CCDC), Eli Lilly and GlaxoSmithKline (GSK)) and has resulted in software used in-house (e.g., software for suggesting synthetic routes to novel compounds developed through two CASE studentships (2005-08 and 2011-14) is being used at Eli Lilly); and in the development of commercial software (e.g., GALAHAD, GASP and GOLD in the virtual screening case study). These relationships are typically extended in nature: a Knowledge Transfer Partnership (KTP) with Lhasa Limited (2011-13) on knowledge discovery for toxicity was preceded by a fully funded PhD studentship (2009-11); and work on molecular alignment begun as a CASE studentship with CCDC (2002-05), was followed by direct funding from CCDC and AZ (2007-09) and contributed to software currently undergoing beta testing at several major pharmaceutical companies. The impact of the chemoinformatics research is maximised by researchers working on-site, e.g., the researcher on an EPSRC/GSK-funded project (Gillet and Willett 2006-10) spent 75% of his time at GSK enabling effective knowledge transfer between the partners.</p> <p>The Unit's collaborative research in information systems design, implementation and evaluation has had significant impact on a wide range of users and organisations and has been funded both directly by the beneficiaries and through EU funding schemes. For example, Nunes engaged in funded research with PricewaterhouseCoopers and <i>The Times</i> (2003-2006) that led to <i>The Times Good University Guide</i>, the first web-based ranking system for UK universities and now available as the <i>Complete University Guide</i> (http://www.thecompleteuniversityguide.co.uk); and with Liverpool City Council and Janvs Design to produce a Personal Digital Assistant tour of St. George's Hall, Liverpool. Unit involvement in seven EU funded projects in the REF2014 period has involved both not-for-profit organisations (e.g., Ordnance Survey, OCLC Inc. [a USA-based worldwide library cooperative] and Tate Online) and SMEs (including CAS Software AG, Language Technology Centre, LeserAuskunft GmbH, QMS Maritime and Syria Informatica). For example, the knowledge management framework developed by Vasconcelos in the OrganiK project (2008-10) and described in the information systems case study is now being exploited commercially in</p>

products developed by start-up companies arising from the partner SMEs (Intempra and Gnows).
(ii) Engaging with beneficiaries through consultancy work. In 2008, **Corrall** (Sheffield until 2012) undertook consultancy to develop an institutional information literacy strategy at Universidade Nova de Lisboa, Portugal, which resulted in changes to policy and practices in information literacy and the inclusion of a module on Information Literacy in their newly established Doctoral School. **Willett** has provided the European Medicines Agency (responsible for drug licensing and registration activities throughout the EU) with data that is used during the EU-wide regulatory process for new orphan drugs, and the Agency is currently funding one of its staff to carry out PhD research with Willett aimed at further improving the rigour of the process. Statistical work by **Bath** with MacMillan Cancer Support on the Midhurst Real Choice project has resulted in pilot evaluations of this model of consultant-led community palliative care in six UK sites.

(iii) Informing practice and policy. The results of a study led by **Bath** on the use of NHS Direct by older people were incorporated in an Equality and Impact assessment of NHS Direct (http://www.nhsdirect.nhs.uk/about/whatisnhsdirect/~media/Files/AboutUsPDFs/Public_Sector_Equality_Duty-PSED-Publication_of_Information_NHSDirect.ashx). **Cox**, **Corrall** and **Sen** worked with the University of Sheffield's Librarian to establish academic library roles in Research Data Management (RDM), which led to the JISC-funded RDMRose project with partners in academic libraries in Sheffield, Leeds and York. The project resulted in an open educational resource (<http://rdmrose.group.shef.ac.uk/>) of learning materials for supporting RDM that is being exploited (>6K visitors and >41K file-downloads) by libraries across the HE sector (e.g., the University of the West of England and the University of Amsterdam).

Research on information literacy by **Webber** and **Corrall** has resulted in changes to policy and practice amongst information practitioners, nationally and internationally. Both were members of the CILIP expert group that produced the United Kingdom's widely cited 'plain English' definition of information literacy (<http://www.cilip.org.uk/cilip/advocacy-awards-and-projects/advocacy-and-campaigns/information-literacy>); and Webber's work has informed the Welsh and the Scottish Information Literacy Frameworks. She has also delivered workshops overseas that have resulted in changes to information literacy practises within university curricula (e.g., at La Trobe University, Australia and Ryerson University, Canada). Her influential blog on Information Literacy has attracted >670K page-views (by September 2013) (<http://information-literacy.blogspot.co.uk/>): **Corrall** and **Sen** have delivered workshops on strategic planning and information literacy to 52 staff from five Norwegian universities on implementing strategic approaches to information literacy within their institutions (e.g., at the University of Bergen).

Hanna's expertise as a commentator on law and the media has been crucial to his co-authorship of *McNae's Media Law for Journalists*, the definitive guide to the subject and widely used in newsrooms across the UK. Work by CFOM under **Harrison** resulted in the 'London Statement' signed by the BBC, CNN, Al Jazeera, Globo, La Stampa and over 30 other news organisations to express their concerns about the rising persecution of journalists worldwide (http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/news/london_statement_safety_journalists_final.pdf).

Support for impact

The Unit supports a range of activities that foster impact:

- There is a budget for conference attendance aimed at developing collaborations, e.g., following attendance at a CILIP annual conference, **Sen** conducted a critical evaluation of Cumbria Libraries' strategic direction and orientation after a period of change and service review. The results are now informing the development of the service.
- Study leave (one semester every four years) enables academic staff to explore collaborative opportunities, e.g., **Gillet** spent study leave working at GSK and gained insights into real-world problems with several subsequent collaborative projects.
- Where appropriate, a proportion of research income is returned to research groups to stimulate further collaborations, and funding is available to support conferences that provide opportunities for collaborations, e.g., the Sixth Sheffield Joint Chemoinformatics Conference organised by **Holliday** and **Willett** where most of the speakers were from industry.

The Unit draws on extensive institutional facilities for impact. In particular, the Research and Innovation Service supports the research process from idea development through to peer review of funding applications and negotiation of IP agreements. Support for knowledge exchange activities comes via the Faculty Gateway, the Research Exchange for the Social Sciences (e.g., the Lhasa

Limited KTP project received funding through the University's EPSRC Knowledge Transfer Account) and pump-priming funding and events aimed at fostering collaborative research (e.g., **Peng**'s participation in the University's Crucible Program aimed at early career researchers led to a collaboration with the Sheffield Cancer Research Centre to investigate the unmet sexual needs of cancer survivors, work that was presented at The Festival of the Mind, a city-wide event showcasing academic research to the public).

c. Strategy and plans

The applied nature of the Unit's research and its close association with the professions mean that knowledge exchange and impact have long been integral to its activities, with support for these activities at both the faculty and institutional levels. The Unit has now developed further formal mechanisms to ensure that impact is fully embedded in all proposals and to ensure its research develops strategically in directions that will ensure future impact. These include:

- Creation of a dedicated Research Support post to provide more efficient and effective advice on the research process, including embedding impact into proposals and identifying knowledge transfer opportunities.
- Development of indicators for measuring impact and ensuring that all impact-related activities are recorded, to enable more tailored information on opportunities to be identified.
- Peer-review of grant applications to ensure that impact is fully embedded in proposals.
- Encouragement of staff to make further use of the University's consultancy allowance (30 days paid per annum) to develop relationships with external organisations (see **Engaging with beneficiaries...** above).
- Inclusion of senior executives from the information professions (e.g., NHS Direct, The National Archives and *Wall Street Journal*) in the Unit's Advisory Board, to ensure that its research is appropriately user-driven.
- Tailoring of the study leave scheme to impact-related activities including preparation of research proposals in which impact is explicit and undertaking collaborative research (e.g., in 2014, **Peng** will be a visiting researcher at GSMA, a global giant in mobile services, to develop smart city metrics on waste gas reduction).

The Unit's future strategy for research includes both adapting established research areas to take advantage of new opportunities for impact and building strength in new areas that are likely to lead to high impact. Thus, **Vasconcelos** and **Martins** are continuing to develop research on knowledge management practices that enable organisations to be resilient, with this work being developed through an academic exchange with Portugal supported by the Unit's Distinguished Scholar scheme; chemoinformatics research from drug discovery is being adapted by **Gillet** and **Willett** to identify new uses for bio-waste materials in work with Unilever, Croda and British Sugar; and **Cox**, **Sen** and **Pinfield** are extending the impact of their White Rose RDM work in a new collaboration with the Research Libraries UK consortium of academic libraries. The Unit has made recent appointments in social media research and open data, which are areas with great potential for impact (e.g., **Vis** has recently successfully connected disparate communities interested in growing food, and **Pinfield** is a recognised authority on institutional repositories and open access publication). A further appointment is to be made in the closely related areas of big data and data science, where the Unit is currently developing teaching and research programmes in consultation with organisations including IBM, Peak Indicators and Intranet Focus.

d. Relationship to case studies

The virtual screening and information systems case studies exemplify the Unit's nurturing of long-standing relationships with key industrial partners that can subsequently result in collaborative, practice-led research with demonstrable downstream impact. Thus the computer programs GALAHAD, GASP and GOLD are the results of funded collaborations with research partners (CCDC, GSK and Tripos) that commenced in the mid-Nineties; and the enhancements project to WorldCat.org, OCLC's online catalogue, in the information systems case study resulted from collaborations with OCLC that commenced during a 2006-08 EU-FP6 research, and continued with first an AHRC Collaborative Doctoral Award and then OCLC staff spending four months in Sheffield funded by an EU Marie-Curie project. The protection of journalism case study exemplifies the Unit's work on informing practice and policy, with work by the Centre for Freedom of the Media providing substantial input to UNESCO's efforts to implement the *UN Plan of Action on the Safety of Journalists and the Issue of Impunity*, which provides an international framework for a safe and enabling environment for the exercise of the right of free expression.