Training of researchers in research information methodologies and tools

Report commissioned by the Research Information Network

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0 Executive summary

0.1 Introduction

In April 2007, the AIMTech Research Group at Leeds University Business School and information Management Associates (IMA) were commissioned to investigate the training of postgraduate and postdoctoral researchers in research information methodologies and tools. This work was in response to a growth in UK interest in developing the personal, professional and career management skills of researchers over the past few years.

This report focuses on the training provided for postgraduate and postdoctoral researchers by universities and other HEIs with significant researcher numbers. It attempts to include all the formal training and related e-support offered to researchers to help them when locating, obtaining, evaluating, organising, transforming (e.g. into research reports or conference presentations) and preserving research information.

One key question for this review is whether and how the HEI library efforts are integrated with other forms of institutional researcher training focused on generic and subject-specific skills, whether provided centrally or part of faculty, department or other initiatives aimed at helping researchers to develop their skills and knowledge.

It emerged during the review that the generic skills training of academic staff (other than contract researchers) in research methods had been largely neglected until the current academic year. This clearly had a knock on effect on research information training.

This report outlines the national context for this research, draws conclusions from the research conducted as part of the review and offers recommendations.

0.2 Project conclusions

The main project conclusions covered:

- lack of strategic management in institutions leading to absence of clarity about who should take the lead within universities over researcher training in relation to research information;
- the case for aligning libraries with institutional research strategies and plans and for redeployment of HEI resources in line with the research strategy and agenda to support research and researcher development, however this is organised;
- the difficulties in being more strategic about research information in the absence of a national lead on information literacy, further complicated by a marked disparity between the language used to describe generic skills and information literacy development;
- a lack of any coherent overview at institutional level about who should be or had been trained in aspects of research skills, allied with a piecemeal approach to provision (although examples of well integrated approaches have been identified);
- widespread support for the idea of greater harmonization of researcher training;
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- the need for more coherent resourcing of researcher training and support focused on research information;
- issues about the approach to training adopted by many library staff compared to that of central training units, and the implications of the differing approaches if library staff continue to be involved in researcher training;
- the dearth of collaborative planning and delivery of training;
- the content and emphasis of training provided by library staff, with its focus on information seeking rather than other aspects of information literacy;
- the move towards e-learning and some potential pitfalls in this approach;
- ‘grey areas’ in focussing on postgraduate and postdoctoral researchers;
- the neglect of academic staff in their research role;
- other relatively neglected groups of researchers, such as contract staff, part-time researchers and some of those from overseas.

0.3 Recommendations

- The core recommendation is for a ‘national road map’ conference to determine the strategic direction of further work and to consider how best to implement the other recommendations.

Other recommendations covered:
- Aligning training and support with institutional research strategies and agendas.
- Encouraging collaborative design and delivery of training and e-support for researchers.
- Consultation with appropriate national bodies about generic skills.
- Consideration of the pedagogic and learning support aspects of e-learning.
- Using the UK Grad Programme as a vehicle to enhance awareness of the issues raised in this report.
- Impact evaluation of training and support.
1 Introduction

There has been a growth in UK interest in developing the personal, professional and career management skills of postgraduate and postdoctoral researchers over the past few years. According to the UK Grad Website:

“This has been prompted partially by recent government initiatives such as Sir Gareth Roberts review ‘SET for Success’ and the new QAA Section One of the Code of Practice which covers Research Degree Programmes.”

The Roberts report concluded that “unsatisfactory training in the skills required either in an academic career or in a business research environment means that [contract research staff] are poorly prepared for potential careers”. In parallel with this work, the Research Councils identified a range of generic skills that they considered appropriate for researchers and this formed the basis for a fresh training initiative aimed at postgraduate and postdoctoral researchers. Key players in this new approach that emerged from the Roberts report are the RCUK Research Careers and Diversity Unit and its ‘major vehicle’ the UK Grad Programme. The RCUK Unit addresses specific training shortages in relation to research as well as recruitment and retention issues. The Unit steers blocks of funds to the universities to address transferable skills development of researchers and relies on the UK Grad Programme to encourage appropriate provision at university level.

The UK Grad Programme is seeking to encourage university generic skills training for researchers through its national centre, which supports a database of good practice, as well as through its eight regional hubs (the role of the hubs can be seen by reference to the Website information provided by the East of England Hub – see below). As a result of these efforts, the UK Grad Website claims that “... most [HE] institutions have recognised the changing nature of researcher training and employment.” An important development during the review was that the UK Grad remit was extended to include academic staff of universities in their research role.

Meanwhile, HEI libraries have been looking to extend their undergraduate information literacy provision towards postgraduate and postdoctoral researchers or have been invited to contribute to generic cross-institution skills training programmes. Several of the skills training requirements espoused by the UK Grad Programme overlap with aspects of information literacy skills as promoted by many university libraries. Similarly, the training of research staff in research information methodologies and tools

* The East of England Hub Website states its aim as to “build local networks to support universities and supervisors in the delivery of needs-based quality skills training for young researchers, acting as a centre for the dissemination of good practice, advice, resources and materials."

“Regional Hub activities include

- providing advice and access to materials and networks to local institutions
- linking with other institutions to increase provision, quality and student choice
- hosting regional good practice workshops
- building networks between academia and regional employers
- supporting growing networks of supervisors, tutors and alumni

“The Hubs work to build links between local institutions to promote good practice in generic skills training and support for postgraduate researchers

assess the changing needs of postgraduate researchers and work with institutions to support them to provide the most appropriate training

provide information on courses running for postgraduate researchers in the area

give access to resources, online and through institutions and GRAD courses, providing useful information on personal development and future career options.”

www.grad.ac.uk/cms/ShowPage/Home_page/Regional_Hubs/East_of_England_Hub/About_the_East_of_England_Hub/p!ecdfFXf
substantially overlaps with both agendas (notably, but not exclusively, in relation to the UK Grad focus on “relevant research methodologies and techniques and their appropriate application within my research field”). Accordingly, there would appear to be substantial opportunities for institutional collaboration between HE researcher training providers and academic library staff.

This report focuses on the training provided for postgraduate and postdoctoral researchers by universities and other HEIs with significant researcher numbers. It attempts to include all the formal training and related e-support offered to researchers to help them when locating, obtaining, evaluating, organising, transforming (e.g. into research reports or conference presentations) and preserving research information. The main providers of training and support considered in this review include central or faculty generic research skills training teams (usually instigated as a result of the Roberts initiative), information literacy development staff or subject liaison librarians employed by HEI library services and offering combinations of generic and subject-embedded information skills training, faculty and department staff offering subject-embedded research skills training (usually, but not exclusively, to postgraduate students) and other staff with specialist research information interests, such as ICT staff, providers of institutional repositories and archivists.

A key question for this review is whether HEIs provide sufficient coverage of research information when offering generic skills training to postgraduate and postdoctoral researchers. This gives rise to a further question, whether and how the various forms of researcher training focused on generic and subject-specific skills aimed at helping researchers to develop their skills and knowledge are integrated.

The objectives and scope of this project are given in appendix A, the methodology adopted is described in appendix B and the project research findings are shown in appendix C.
2 Conclusions

2.1 Research information training

Who should take the lead within universities when it comes to researcher training in relation to research information? All but three of the university libraries responding to the survey are active in researcher training and some are providing materials on websites or in VLEs, but this does not mean that they are necessarily best placed to provide the support, since part of this effort has been unilaterally developed as an extension of undergraduate provision. However, judging by the survey results most of the central training teams have tended to call upon their libraries for inputs in relation to information seeking. Some libraries report that they are actively pursuing other areas of information literacy such as systematic evaluation of research reports and management of the information that researchers accumulate in the course of their work. Again, however there is no clear indication that decisions to do so have been made centrally. This is hardly surprising since there is very little sign of strategic central management of all researcher training provision in most of the responding HEIs. In a few cases libraries are receiving Roberts funding to develop training or e-learning support.

On the other hand, HEI libraries have built up substantial experience in information literacy training for undergraduates and virtually all library service managers contacted see a clear role for libraries in relation to research information (albeit focused largely on information seeking). Most (but not all) of the central training teams have similar views.

It should, however, be recognised that there other pockets of research information training activity were identified in a significant minority of the HEIs surveyed. Given the lack of overall strategic direction for research information aspects of researcher training in most HEIs, a sensible approach would be for library service managers to make the case for information literacy work focused on researchers to their institutions and to be prepared to actively support whatever central or faculty-level training provision is offered, whether this work is led by the central training teams, independent trainers, faculty staff, other specialists such as ICT staff or by library staff.

In practice it seems likely that the HEI libraries will continue to be associated with information seeking by those concerned with researcher training and that provision of other aspects of information literacy such as management of research information, critical appraisal of research findings and even report writing, will continue to be negotiated locally. Best practice in all these areas, including information seeking, should entail joint planning and delivery of training and joint design and preparation of e-learning materials by central trainers, academic staff, library staff and other specialist staff as appropriate. However, with a few notable exceptions, this kind of collaboration seems some way off.

2.2 Aligning library services with the research effort

If HEIs are really serious about encouraging and developing research, there appears to be a strong case for aligning libraries behind the research effort, providing that strong evidence can be assembled to demonstrate the impact of library services in supporting research. Instead, the pressure to secure research funding and the assumptions underlying increased electronic information access, are leading to some diminution in the library research support role. This can result in a position where researchers “find it harder to seek information support now, but it becomes less possible to keep up with subject knowledge”.
The strategic library service managers consulted\textsuperscript{3} saw the answer as being to make the case for information as a significant part of research by gathering appropriate impact evidence and using this for advocacy purposes and then seeking to align library support with HEI research strategies and plans. This approach suggests the need for redeployment of HEI resources in line with the research strategy and agenda (resulting in substantial change for institutions with significant numbers of researchers – including enhancement of library resources focused on research). The approach might lead, for example, to library staff being redeployed into research settings rather than in a central library unit. Such a move would require “a step-change in provision and skills enhancement for library staff, who would focus on providing key resources for researchers”. Even if successful, this approach would not necessarily strengthen the direct training role of the HEI libraries, but it would put library service managers in a better position to argue the case for a coherent approach to information literacy support as part of the support for researchers.

There is little sign of change on this scale, although some universities, including at least one of the case studies, were “making the research culture explicit” whilst acknowledging that “this is easier when we only have 450 research students.” Meanwhile, the project workshop participants saw a way forward as to “formulate a university-wide researcher development strategy and apply for funding and staffing ... and to engage with the VC, the PVC Research, appropriate members of the senior management and supervisors”. Others at this workshop saw a need to focus on RAE metrics, noting that “the next version may involve libraries more – not necessarily a good thing”.

The scale of the realignment challenge suggested here should not be underestimated. When participants in the strategic teleconference presented the core problem as “How to get researchers to see research information as highly relevant to research?” it was reported that most academics do not see the Roberts agenda as relating to their research environment in any way. It was further reported that where engagement with academics was successful “the people responsible for the Roberts implementation are working directly with faculties – working alongside academics to develop programmes to deliver generic skills in a disciplinary context”. This comment seems to suggest a way forward for library service managers.

\section*{2.3 Being more strategic}

It is apparent from this study that there is no clearly identifiable national body with explicit responsibility for the information literacy development of postgraduate, postdoctoral or research staff in HEIs. Some generic skills have been articulated by the Research Councils, but important dimensions of research information such as engaging with and understanding the scholarly information network have not. There is also a marked disparity between the language used to describe generic skills by the Research Councils and UK Grad on the one hand and library staff engaged with information literacy development on the other. (The title of this project could be construed as an example of this difference in language, since, as noted earlier, most library respondents preferred to reply within a context of information literacy, where the academic respondents usually seemed happy with ‘research information methodologies and tools’ as a starting point.) Two consequence of the different vocabulary used may be that useful aspects of information literacy may have escaped the attention of those who drafted the Research Councils’ generic skills list and, on the other hand, some information literacy concepts already included that list may be disguised. The lack of a fully shared vocabulary must make it harder for all concerned to recognise whether and where various potential contributions emanating from different potential training providers fit in to the researcher training agenda.
At institutional level, there was usually a lack of any coherent overview of who should be trained or who had been trained in aspects of research skills (although a few HEIs were introducing researcher self-evaluation processes based on the Research Councils’ list.)

Unsurprisingly, most HEIs have adopted a piecemeal approach to information literacy, with some research information training (especially relating to information seeking) being offered by library staff, in more or less accord with the central training programmes that usually address some other research information skills (especially those relating to report writing). It is often unclear whether and where other aspects of research information, such as critical appraisal of research evidence and management of research information are covered, although library staff tend to assume that these areas are addressed in central programmes or in faculty or department-based training.

Several HEIs are making concerted efforts to rationalize training provision for researchers and a few are going further in adopting joint planning and delivery of training and joint design of e-learning support.

The case studies showed examples of both extremes: from a well-integrated approach in which library-based events were fully embedded into the central training programmes (at least when publicising courses), to a university with large numbers of researchers in which provision was uncoordinated and depended heavily on the quality of personal relationships between liaison librarians and key academic staff. As noted earlier, another case study university had considerable potential to develop this work in an integrated way because the central training manager reported to the head of library and learning support services. Elsewhere, one central training manager had benefited greatly from library support when conducting her own PhD and was determined that other researchers should get similar benefits.

There was widespread support for the idea of greater harmonization of researcher training because “It avoids duplication of effort, helps achieve financial sustainability for the training and encourages adherence to common standards.” To illustrate this point, 35% of library respondents thought that there was other training being provided for researchers on aspects of information seeking and use elsewhere in the institution without library staff involvement. Other respondents thought that this might be so.

A key message of this report is that institutions should audit all current training provision for researchers, particularly because the ‘other training’ referred to in the previous paragraph is likely to involve important themes such as research information management and critical appraisal of research findings.

Library staff who are involved in delivery of training do not usually appear to know what is being covered in the area of research information methodologies and tools by trainers elsewhere in the institution (some assume that others are covering the areas that they are not).

How can more harmony be achieved? The project workshop participants felt that there was a need for coherent institution-wide strategies for the whole range of skills development and that this called for a meeting of all interested stakeholders, accompanied by publicity and advocacy. At operational level, trainers needed to:

“... find out the key times when skills were needed and time our sessions accordingly ... This needs close liaison with academic staff and the involvement of students.”

2.4 Resourcing the training engagement by libraries

Generic research information training in HEIs is currently being provided through varying combinations of central or faculty training teams, library staff and others (such as ICT staff or institutional repository staff). In addition, many faculties and
departments are organising their own subject-embedded researcher training which may include aspects of information literacy and frequently involves contributions from library staff. The central and faculty-based generic skills training is usually supported or fully funded) by Roberts money. However, although most of the HEI libraries contacted were engaging more heavily in research information training and support for researchers than hitherto and were planning to develop this work further, it is notable that much of this additional provision is being offered without any addition to funding and resources. A typical response was that “There's no internal exchange funding. The librarians do most of the [information literacy] workshops, but that's because we want to”. This points to both the lack of integration with central university funding mechanisms and lack of overall associated top down strategic direction. It is apparent that many library services are reaching (or, in some cases, have gone beyond) the limits of what they can provide in this way.

Two options suggest themselves if libraries continue to be engaged in this work:

- Redeploying current staff and resources to support research by reducing provision for undergraduate students. This approach is unlikely to succeed unless there is serious ‘senior management buy-in’ by the institution and there is likely to be considerable resistance from the teaching community as well as from undergraduates.
- Securing additional staff and resources to develop more direct support for researchers. Again, the approach will require substantial senior management commitment at institutional level.

Both of these options will make additional demands on library staff and it is unlikely that a major shift in the direction of support to researchers can be achieved without appropriate retraining of those library staff most directly affected.

Despite their growing engagement in this area, and with some significant exceptions, HEI libraries appear to be putting less emphasis on information literacy work for postgraduate and postdoctoral researchers than for undergraduates, although some are planning to change the balance between supporting teaching and supporting research.

Little of the training offered by library staff attracts funding from the Roberts initiative and the national UK Grad organisers see little sign of involvement by libraries in their Programme. More strategic engagement by HE libraries with the UK Grad Programme seems like a sensible target if they are to remain active in this area of work, even if this does not result in substantial extra funding for library-based initiatives through that programme.

Significant amounts of library-based provision (e.g., workshops on particular e-tools) probably do not qualify for Roberts initiative funding, which is intended to foster generic skills training of researchers.

### 2.5 Training delivery issues for libraries

In general, much of the central training provision on offer is based on a constructivist approach to learning, with heavy emphasis placed on learners’ understanding, recognising and building upon their prior knowledge, skills and expertise, as well as on experiential learning. By contrast, most of the library staff training adopts a behavioural approach, characterised by teacher control and consisting of a combination of presentation and demonstration, taking people through heavily structured sequences of small steps and feedback, with progression triggered by success with the current step. This process is likely to be supported by worksheets and computer-based tasks (often in the form of tests).
More specifically, the library contribution to training usually seems to be more focused on telling people about information sources and on specific electronic tools than the remainder of the training organised for researchers, which is usually focused on generic skills and appears to be more experiential in character. Attention to conveying information to researchers during training sessions rather than to constructing learning experiences is also indicated by the fact that only 45% of responding libraries have prescribed formal learning outcomes for their training sessions.

Although the apparent difference in approach may not present difficulties at the current levels of engagement, if it is decided that library staff should do more in the research training arena or should more actively support such provision by other trainers, there are significant training implications for the library staff involved. A constructivist approach to training places demands on the trainers to understand learning principles and to exhibit group facilitation skills. Further, this approach is likely to require remodelling of current library-generated approaches to information literacy.

It should be emphasised that a behavioural approach to teaching may be appropriate, if the aim is to get students to recall and reproduce a series of steps, but not if the aim is to get people to derive meaning and understanding from training and to support them in problem-solving by appropriate use of information.

There were notable exceptions to this pattern, such as the good practice at Glasgow Caledonian University and Kingston University reported in appendix C3.6. It was significant that in the first of these cases, library staff were involved in 'training the trainers' sessions organised by the UK Grad programme team on constructivist lines preceding the introduction of the researcher training programmes.

If it is accepted as important for library staff to engage with significant institutional training initiatives aimed at researchers (usually organised by the Graduate School or equivalent) it is also important to embrace the values of that training, especially when this training is mandatory for researchers and may be assessed. However, the apparent heavy emphasis on generic skills training encouraged by the UK Grad Programme is at least open to question. There is now strong research evidence to suggest that information literacy skills are best developed within the researcher’s subject context. It is obviously easier and more efficient to intervene at a generic over-arching level but the efficacy of this type of training is yet to be demonstrated.

There is also a limit to how much support can be provided to researchers in developing their skills within a (typically two hour) information seeking and use slot within a larger programme. Several university library teams undertake substantially more intensive training, usually as an integral part of the central training programme and a few are moving towards a blended learning approach, combining aspects of e-learning and face-to-face training.

Subject librarians in most universities provide one-to-one or small group subject-focused support to researchers by appointment or on an ad hoc basis. Such support can provide flexible and highly focussed intervention at the time of need, especially where the total researcher numbers are relatively low. However, this level of support is likely to be impracticable on a larger scale, resulting in sporadic engagement with this user group and difficulties in effective monitoring.

2.6 Collaborative working

Library staff are clearly seen as useful partners in many institutions and respondent comments suggest that their contributions tend to be well received by researchers. Even so, there appears to be little fully-co-ordinated provision of training (i.e., involving joint planning of training, team teaching with academic staff or others and joint assessment of outcomes) even when library staff contribute to programmes
organised by other academic staff. Library staff contributions to joint courses tend to be independently organised and delivered segments of the programme rather than a fully-integrated, team-taught and collaboratively assessed activity (involving library staff, lecturers and others such as IT staff). The planning, management and control of the collaboration also seems to be linked to informal collaborative relationships within the University, often based on individual personalities. The role of the Subject Librarian in creating strong collaborative links proved key in a number of academic institutions, however, these links seem to have been made with individual academics rather than with Schools or departments. This was particularly noticeable in institutions where the formal mechanisms for co-ordination and providing resources for training were weak (or in some cases non-existent).

2.7 Content and emphasis of library staff provision

Much of the current library-generated training provision is focused on information-seeking, but signs of engagement with research information management and with systematic assessment of research findings are appearing in some institutions. The participants at the project workshop felt that such a shift is very important. One group commented that “We do already pick up these issues but not systematically or consistently”. In relation to management of research information another group claimed that “The library has the key role in teaching these skills” and suggested that this could best be achieved through “visible team teaching with researcher specialists in this area”. Although there are precedents (notably in health libraries) for library staff to get involved in these areas of training, the main concern for institutions should be to ensure that effective training is provided in these and other areas where there is researcher demand, with appropriate library staff support.

In relation to other topics explored during the national survey, metadata developments are generally seen as in the specialist domain of library work, although once they understood what the concept encompassed, several of the researchers in the focus groups saw it as a potentially important area for them. Whether library staff were covering the open access agenda or institutional repositories systematically tended to depend upon the state of institutional progress in setting up repositories.

Two other themes within the broad area of information literacy in which a few HEI libraries are engaging are developments in scholarly communication (from e-journals to Web 2.0) and seeking and exploiting visual forms of information. More generally, the issue, as raised in one case study, was how to deliver training for ‘creative practice’ PhDs, for whom the creative process was the subject of the research. (In that university, it was hoped that the recent appointment of an archivist would be part of the answer, by providing systematic introductions to the available special collections.)

2.8 Exploitation of e-learning possibilities

There is a readily-discernible trend towards greater use of VLEs and Websites to support researchers, partly driven by library staff experience in developing information literacy e-support for undergraduates and partly by difficulties in identifying and communicating with researchers. It is important that this type of development is informed by sound pedagogic principles and takes into account the recent research on support for learning. Various comments made in the case studies and in the project workshop suggest some potential pitfalls in constructing e-learning programmes:

- Development of e-learning materials is expensive and time-consuming. There may be scope to share programmes developed in other institutions, but these will inevitably reflect local priorities, cultures and practices and may have to be substantially adapted.
- ‘Real tasks with real consequences’ are required to engage users with e-learning materials but it is difficult to design tasks that will be relevant to the full range of researchers targeted.
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- It is important to achieve the right level of communication for different types of researchers (postgraduate, postdoctoral and research staff) especially if materials are being adapted from earlier undergraduate versions.
- The emphasis should be on researchers’ views of useful guidance and support rather than library staff perceptions (the issue becomes more acute if there is insufficient mediation of choice of content and approach by researchers and research supervisors).
- There is a need to constantly update and review e-learning materials (since minor adjustments cannot be made in the same way that face-to-face engagement allows).
- Only a minority of users will find an ‘e-learning-only’ approach effective, because such programmes are optional and may not appeal to the preferred learning styles of particular researchers.

2.9 What is a researcher?

Although the focus of this work was on postgraduate and postdoctoral researchers, three significant ‘grey areas’ emerged:

- Library staff offered a variety of open training events where it was felt that researchers could potentially benefit alongside undergraduates, but it was difficult to monitor researcher take up for such events and equally difficult to promote these events specifically to researchers.
- The distinction between contributing to taught Masters’ teaching sessions and providing (other) training sessions for postgraduates was sometimes hazy.
- There was a tendency in a few institutions to regard the targeting of researchers as a marketing issue – drawing attention to content already provided for undergraduates. What works for undergraduates may be unsuitable in content as well level of presentation for postgraduate and postdoctoral researchers.

2.10 Some relatively neglected target groups

Various comments were made at each stage of the project about groups of researchers who presented particular problems or who were seen as being disadvantaged. Some of these problems may be organisation or even faculty-specific but others are likely to present challenges if and when the needs of researchers are more systematically addressed:

- Crucially, teaching staff are widely seen by most directors of research (or equivalents) interviewed as relatively neglected. In research-active universities, new lecturers are often assumed to have all the skills and knowledge that they need. Further, if staff attempt to address their own training needs they have to be confident enough not to worry that this may be seen as a sign of their inadequacy. Some staff who sought to join in training that was designed for research students were accused of creating unfortunate precedents, possibly because the trainers involved were reluctant to have staff as participants.

This issue is not confined to research information and since the autumn of 2007, the contract of UK Grad has been extended to include this group. (It may be worth noting that the PILOT programme at Imperial College was specifically designed to meet the needs of this group – see appendix C.3.6.)

- Postdoctoral and other project research workers are problematic because they are scattered throughout institutions, and are more transient as a result of the increase in very short-term contracts.
- Part-time researchers are difficult to locate, contact and engage (a few university libraries offer evening training sessions to help overcome this).
Some postgraduate and postdoctoral students from overseas present particular problems, not only because of “lack of English and poor computer skills, but also because of different cultural attitudes towards plagiarism”.
3 **Recommendations**

The main recommendations focus on the potential roles of national organisations in ensuring a strategic direction to future information skills development work for researchers. This strategic guidance should include the provision of opportunities for practitioners (both library staff and other academic trainers) in HEIs to come together to share good practice and explore institutional-level strategies for enhanced intervention in this area.

The UK Grad organisers have suggested various ways in which issues raised in this report can be considered, using its national and regional structure and its publications. To be effective in bringing about this change, a considered strategy view should be formed by the UK HE Library community and others concerned about research information. Similarly, national endorsement would be invaluable in ensuring that the recommendations set out below are implemented in appropriate ways. It is envisaged that if a clearer strategic direction can be achieved at institutional level it will then be possible to address the institutional issues outlined in the conclusions, using methods that are also indicated there.

In making these recommendations, the central concern is to try to enhance the research information training received by postgraduate and postdoctoral researchers, including academic staff in their research role. We do not wish to prejudge any debate about who should take responsibility for research information training and its delivery but it is important to recognise that many managers of HEI library services have substantial experience of managing the delivery of information literacy training and e-support. Many library service managers are also actively engaged in repositioning their services to support institutional research targets and, although it does not necessarily follow that their staff should play a greater part in researcher training their views on how best to support both researchers and the HEI research effort will be important in finding ways forward.

Accordingly we recommend that:

**Overarching action**

3.1 **National ‘road map’ conference**

- a national strategic conference be proposed by RIN, in consultation with RCUK, the Society for Research into Higher Education, the Higher Education Academy, the research councils, CURL, SCONUL (through its Information Literacy Group) and others, to consider the issues raised in this report and, particularly, whether and how the recommendations set out below should be implemented.

**Strategic actions**

3.2 **Aligning training and support with institutional research strategies and agendas**

- consideration be given to mounting a national activity to explore the scope for more closely aligning institutional training efforts and library services with institutional research strategies and agendas. Elements of such an activity would include examination of good practice, clarifying what such alignment should involve, considering likely consequences and deciding whether and how to move forward.
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3.3 Encouraging collaborative design and delivery of training and e-support for researchers
- two or more workshops should be mounted to enable HEI trainers, academic staff, library staff and others to explore the scope for more collaborative training provision. These events should focus on joint planning, delivery and assessment as well as how to make full use of central researcher training programmes in institutions. These workshops could also explore the generic versus subject-based issue and the types of effective library staff involvement discussed above. They would further provide an opportunity to pool good practice and could pave the way for wider access to Roberts Initiative funding within Institutions.

3.4 Consultation about generic skills
- consultation should be sought with RCUK and UK Grad to strengthen the research information literacy element of the list of generic skills originated by the Research Councils and currently used to focus ‘Roberts training’.

Operational actions

3.5 E-learning support
- appropriate national consideration should take place on the pedagogic and learning support aspects of e-training, with particular reference to the constructivist approach to teaching, in the context of the growing interest in e-learning support for researchers.

3.6 Using the UK Grad Programme as a vehicle to enhance awareness of the issues raised in this report
- the suggestions made by UK Grad for using their network and publications to communicate with institutional training providers and others should be actively considered. In particular, we recommend that:
  - People interested in training of researchers in research information methodologies and tools (including, but not confined to HE library staff) be encouraged to use UK Grad database of [good] practice to share their experience and ideas
  - A short paper based on the outcome from recommendation 3.1 above be submitted to all eight of the UK Grad Regional Hubs
  - A version of that paper (highlighting impact evaluation decisions) be presented to the UK Grad Rugby Team at their next appropriate meeting
  - A workshop session should be requested from the organisers at the UK Grad Conference to be held in September 2008
  - Use be made (to communicate developments arising from implementation of recommendation 3.1 above) of the UK Grad Overview (aimed at research supervisors), Grad Britain (for postgraduates), any future publication for research staff, and the newsletters of the Regional Hubs.

3.7 Impact evaluation
- in view of the widespread interest in impact evaluation in relation to research information training and support, appropriate self-evaluation training be commissioned for HE staff.

David Streatfield
David Allen
April 2008
Appendix A: Objectives and scope

The project proposal set out a two part programme to meet a very wide range of objectives specified in the call for tenders document. These objectives were summarised in the project proposal as to:

A   Gather information on:
    A1  The range of current and recent … UK programmes, initiatives, policies and
guidance … and the role of the organisations responsible.
    A2  The level of investment and resourcing in the UK for these programmes and
initiatives.
    A3  Within these programmes and initiatives, the nature, extent, spread … and take-
up of training in research information methodologies and tools.
    A4  The role and responsibility of the organisations ...
    A5  Any other survey or review, in the UK and internationally, that has provided
evidence on researcher training in research information methodologies and
tools.

B   Identify and assess evidence on:
    B1  Current good practice on researcher training in research information
methodology and tools in the UK and internationally ...
    B2  The demand for such training from researchers.
    B3  The perception that researchers, their employers and funders have of such
training, and their view of its relative importance within the overall framework
of training and career development.
    B4  The impact, usefulness and effectiveness of such training, and the extent to
which it addresses the ambition on training opportunities set out in the Roberts
Report.

C   To consider and present conclusions relating to:
    C1  The value and impact of researcher training in research information
methodology and tools in the UK.
    C2  The extent to which the needs of the research community are being met by
current UK activity in this area.
    C3  The effectiveness of the various organisations and initiatives in identifying such
need and delivering relevant training.
    C4  The appropriateness and scope for extending or developing UK programmes,
initiatives, policies and guidance relating to such training ...
Appendix B  Project methodology

B1  Website and literature search

A literature search was initially conducted using the following keywords: ‘research training’, ‘researcher training’, information methodology, postgraduate training and postdoctoral training. These searches yielded very few relevant results, which are shown on the RIN website. To supplement these searches the keywords were expanded to include ‘information literacy’ which provided further relevant hits – results again shown on the RIN website. The databases used for searches included academic research databases, such as is used in ISI Web of Knowledge, as well as the popular Google Scholar and Google searches.

The searches provided few results focused solely on postgraduate and postdoctoral training, with much of the research covering the broader area of student training, often focused on undergraduate training when referring to university-based education. There are a few examples of groups conducting investigations into issues such as information literacy in higher education. The most prominent of these include: SCONUL’s work on information skills in higher education and information literacy and academic libraries; Manchester Metropolitan University’s Joint Information Systems Committee project that includes a focus on the information skills set of staff in higher education. Again the focus in such projects on postgraduate and postdoctoral training is limited.

[A summary of the Website and literature search results is available on the RIN website.]

[The Website and literature search was intended to address objectives A1, A2, and contribute to A3, A5 and B1]

Basic information about the Roberts Initiative funding was provided at the outset by the RCUK Research Careers and Diversity Unit. [Objective A2].

B2  Survey of HE Libraries

A brief e-mail questionnaire was sent in April 2007 to all UK universities and other selected HE libraries (deemed likely to support substantial numbers of postgraduate or postdoctoral researchers), asking whether they were organising or supporting relevant training of research staff or were planning to do so in the next academic year.

The initial response (by completing the e-questionnaire signposted from the email) was weak, so a follow-up e-mail was dispatched in early May, concentrating on identifying potential respondents. Telephone interviews were then set up with these nominees to collect the data for the survey. Although this approach was much more time-consuming (the additional costs were absorbed by the project team) it resulted in a substantially better response rate. Direct contact was then made with participants at the LILAC Conference from HEIs where no response had yet been received and this provided further volunteers for interview. Finally, all other university libraries which had not responded were contacted by telephone, but with limited effect.

One benefit of the transfer to an interview approach is that it was possible to get a more rounded picture of current and planned training provision, including the balance of content covered and the general approach to the training, during the course of these interviews.

73 responses were received from universities and a further 17 from other HEIs deemed likely to support sufficient postgraduate or postdoctoral researchers to make library-based training support likely. [The survey was intended to address objectives A1, A3, B1, B2 and C2]
B3 Key informant interviews
Eight telephone interviews were conducted with key informants managing HE libraries. A parallel set of interviews was arranged with another key informant in the same HEI (usually the Head of Postgraduate School or equivalent) in order to find out how and how well research training is being provided and where training on research information methodologies and tools fits into the picture.

[Together these interviews were intended to address objectives A3, A4, B1, B2 and C2]

A series of telephone interviews were sought with representatives of national organisations with roles in securing and developing training for postgraduate and postdoctoral researchers. The two most important of these interviews, with UK Grad and the RCUK Research Careers and Diversity Unit, were completed and interviews were also conducted with spokespeople from the National Postgraduate Committee and UK HERD (with further useful information about the roles of other organisations obtained from Websites and publications) but the response from other organisations was disappointing.

[Addressing objectives A1, A3, A4, C1, C2, C3]

B4 Case studies
Eight case studies were conducted in a range of universities in England and Scotland (Glasgow Caledonian, Hertfordshire, Imperial, Manchester, Newcastle, Oxford, Reading and Surrey) between October 2007 and January 2008 to explore some of the complexities in managing and providing training and e-support and the overlap between library-based and other institutional training provision. These entailed visits to the institutions, interviews with key respondents (usually including the Head of Research Training or equivalent) and sometimes, observation of training sessions.

[Addressing objectives A3, A4, B1, B2, B3, C1]

B5 Formative workshop
A formative workshop was organised in November 2007 and was attended by 33 LIS participants from 27 HEIs in England, Scotland and Wales. Two case studies, as well as headline findings from the research to date were presented, and participants identified good practice and gave structured feedback in response to issues arising from the research.

[Addressing objectives B1, B4, C3, C4]

B6 Structured focus groups
Three structured focus groups for researchers were held in December 2007 and January 2008 to collect views on the relative importance of this area of training and of current provision. Participants were asked to prioritise aspects of research information, to assess their own ability in these areas, both now and at the commencement of their research careers, as well as to evaluate the training they had received. These focus groups served to model one form of mediated self-assessment to demonstrate that needs analysis can be undertaken in this arena.

[Addressing objectives B2, B3, B4, C1, C2]
B7 Strategic teleconference

A strategic teleconference was held between representatives of the SCONUL* Information Literacy Group, the Director of the UK Grad Programme and members of the project team to discuss strategic issues arising from the research and suggested responses.

[Addressing objectives B4, C1, C2, c4]

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* Society of College, National and University Libraries
Appendix C: Project findings

In the interests of clarity, the main findings drawn using all eight of the methods adumbrated in the previous section, but concentrating heavily on the surveys and case studies, are presented below under broad headings.

A summary of the case studies is included on the RIN website along with relevant findings from the literature search.

C.1 National funding of researcher education and training

In looking at the bigger picture of financial support for the training of postgraduate and postdoctoral researchers it is important to distinguish between funding of research (which includes funding of postgraduate degree programmes and is likely to indirectly fund ‘on the job’ training at postdoctoral level) and specific funding for researcher training. Public funds for research in British universities and colleges comes from two main sources, the three UK Funding Councils (HEFCE, HEFCW and SHEFC*) and the seven UK Research Councils. (The Research Councils, through RCUK, report that they support about 25% of the 56,000 PhD students supported in UK universities). Institutions also draw upon a number of public, charitable and commercial sources to fund research degree programmes and research projects.

In England, HEFCE operates a support stream for research degree programmes as a single element within quality-related funding, and pays from it a standard contribution to the costs of supervising home and EU research students. This arrangement is simpler and more transparent than previous arrangements, and puts support for research degree programmes on a consistent footing with the rest of funding for research.

In relation to postgraduate research students, HEFCE have calculated the value of the support stream by reference to the variety of other sources and evidence of the costs and average length of research degree programmes. This evidence was set out in a study by JM Consulting (but the complexity of the calculations involved was illustrated by further analysis of the same evidence, by the Higher Education Policy Institute). The total value of the support stream was approximately £188 million in 2006-07. Allocations within this total are made by reference to numbers of eligible research students reported to HEFCE in the 2005 Research Activity Survey and are cost-weighted according to subject area. The picture is further complicated by specific initiatives from various players. For example, the ESRC has made additional funding available to the ‘top 30 universities’ in the current year to develop researcher skills in relation to enterprise and entrepreneurship.

C.2 Investment and resources for researcher training

The main direct funding intervention in postgraduate and postdoctoral researcher training (and, since September 2007, academic staff in their research role) at universities is through the programme inspired by the Roberts Committee, currently amounting to £20 Million a year and distributed by RCUK. Funds are allocated directly to universities and the link to current researcher numbers ensures that there is wide disparity in funding between institutions (ranging from £400,000 to £7,000 in the current year amongst the respondent universities). Some universities choose to add more or less substantial funding for researcher training as part of a strategy to enhance

* Northern Ireland is served by the Department for Employment and Learning (DELNI), which is responsible for distributing public money for higher education.
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their research standing. (One of the key interview respondents showed considerable ingenuity in teaming up with local ‘Roberts-rich’ universities for joint training development. This could have presented an opportunity for the library service to invoke parallel relations with the library services in those institutions.)

Funding is usually made available within each university for programmes of training through a competitive bidding process. Perhaps unsurprisingly, only nine of the responding university libraries were currently receiving any funding that emanated from the Roberts Committee initiative. Where library services were recipients of funding, the money was deployed to support current work on digital and information literacies, e-portfolios for skills development, library staff training and, in at least one case, the employment of a member of library staff to concentrate on researcher support. The sums of money cited ranged from £500 to attend a course, up to £20,000 to develop an information skills training programme, including a person to “contribute to the development of on-line resources and indirectly contribute to doing some of the day-to-day activities of Academic Liaison Librarians.” (This survey finding mirrors that of the survey recently conducted by the CURL Research Support Task Force amongst its members, which identified eight libraries in receipt of Roberts funding, including four posts supported from that source.)

In one of the case study universities, the Research Training and Development Coordinator was positioned within the Library building and reported to the Director of Library and Learning Support Services. This new arrangement offers enormous potential for a co-ordinated approach to research information training.

‘Support in kind’ is offered to universities primarily through the UK Grad Programme, but it emerged during this study that few of the university libraries were actively engaged through the UK Grad regional hubs or through its Database of Practice. In one of the case studies, none of the informants knew about the role of UK Grad or how the university was linked to the Regional Hub. It transpired that a member of the Human Resources team at this university attended the meetings but was not at a sufficiently senior level to engage in any research training strategy debate.

A further source of potential support was mentioned in two of the focus groups for researchers but not in any of the interviews with library representatives. The ESRC National Centre for Research Methods operates as a network of research groups, each conducting research and training in an area of social science research methods. It consists of a hub (based at the University of Southampton School of Social Sciences and functioning since 2004) and six nodes. This Centre is part of the ESRC strategy to improve standards of research methods across the UK social sciences community.

C.3 HEI researcher training and take-up

What is understood by research information methodologies and tools? Training organisers responsible for postgraduate or postdoctoral provision tended to emphasise the generic skills in line with the UK Grad lead (“Accessing and interpreting information; searching and systematic appraisal.”) The library service respondents tended to emphasise and concentrate on a different subset of abilities, encompassed in the concept of information literacy, but with most of the emphasis on information seeking, rather than, for example, systematic evaluation of research reports or management by researchers of the research information that they accumulate.

There was also recognition amongst interview respondents that research information may mean different things for researchers in the sciences, social sciences and arts and humanities. For some scientists, research information may be conceived as limited to research data on the one hand and scientific papers on the other. By contrast, one of the case study university libraries had major special collections which include archives.
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and other materials highly relevant for research in the arts and humanities. Unsurprisingly, in this institution archivists were closely associated with research training programmes and their subject knowledge was seen as significant in developing the programmes and in gaining the confidence of staff and researchers.

There was little apparent recognition by central researcher training providers in HEIs, or by library staff engaged in information literacy training focussed on postgraduate and postdoctoral researchers, that the Roberts agenda could or should engage with generic or subject-embedded information literacy training. As a result, library services tended to concentrate their training on information-seeking through specific electronic tools and requests from central training teams for library staff help was often limited to general library induction sessions offered within a bigger orientation event.

The remainder of this section summarises the key results of the national survey of HEI libraries and the follow-up case studies in eight universities. 73 survey replies were received from UK universities and 17 other HEIs also responded (these were approached as being likely to be supporting sufficient postgraduate or postdoctoral researchers to make the issues in this report relevant to them).

C.3.1 Training provided by library staff

All but three of the 73 university libraries responding currently offered training for postgraduate and postdoctoral researchers and one of these three (a pre-1992 university) was planning to do so in the next academic year. In addition to the two ‘new’ universities who were not yet active, six of the seventeen other HEIs responding did not offer training (usually because their postgraduate numbers did not warrant this). Almost 70% of the 81 positive respondents (universities and other HEIs) planned to increase their provision in the next financial year.

The volume of activity varied substantially as the following figure shows:

*Training sessions are here defined as formal inputs to groups of researchers provided as a free-standing event or as part of a larger event.*

A few university libraries offered very substantial research information training programmes, sometimes with more than a hundred sessions offered annually. Seventeen respondents could not estimate the number of sessions provided, usually because of cancellation or re-running of sessions and because some of these were
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arranged at short notice and provided by one of a number of liaison librarians for ‘their’ faculties or departments without central co-ordination.

There is some variation in current provision between types of university, with 70% of ‘old’ institutions and 30% of the ‘post 1992’ universities offering 11 or more sessions a year, very much reflecting the difference in proportion of postgraduate and postdoctoral researchers in these institutions. The average duration of these sessions varied between one and four hours with the mode (24 responses) reported as two hours. (This summary excludes two universities which offered a six hour session and two events each of two days respectively; as well as a number of institutions where the respondent could not make a sensible average estimate of duration because sessions varied widely in length.)

This is, of course, by no means the whole picture. The provision described above, for the most part, consists of training provided as part of the generic research skills programmes organised by Graduate Schools or equivalents at university-wide level. In addition, many HE library staff (especially subject specialists) engage with faculties or departments, offering contributions to their researcher training at Masters or PhD levels and most offer one-to-one training by appointment or on a drop-in base to researchers, focused in their research areas, through subject librarians.

Some HEI libraries see the way forward for supporting the development of researcher skills very much in terms of VLE provision or blended learning. 26 respondents are already substantially involved in providing on-line guidance, tutorials and other forms of support such as videoclips to aid researchers and others are planning to do so. There is little evidence so far about the effectiveness or otherwise of this approach.

The 44 interviews conducted to complete the questionnaires, as well as the strategic interviews with librarians, enabled us to add to this picture. Four broad approaches to HE Library provision for postgraduate and postdoctoral researchers were identified from the responses. These broad approaches (two of which are sub-divided) are listed below.

Category 1.1: Cross-institution and departmental workshop interventions – 15 responses
Category 1.2: Faculty/School and departmental workshop interventions – 16 responses
Category 2: Institution-wide e-provision – 3 responses
Category 3.1: Library-based provision – 6 responses
Category 3.2: Limited library-based provision – 6 responses
Category 4: Variant provision in smaller institutions/institutions with few researchers – 3 responses.

A more detailed description of all six variants is offered as Appendix D.

There are, of course, further variations on forms of provision, particularly in larger institutions. One of the case study universities had a library manager, designated as a User Education Co-ordinator, who organised a substantial central programme of library-based training to complement generic academic provision organised by a research staff forum. However, they also had a range of training organised by a Subject Librarian, supported by Subject Consultants, including an ‘information fair’ for graduate researchers and a similar event for research supervisors and postdoctoral researchers, again complementing a departmental programme organised by the Director of Graduate Studies. This Department also actively promoted the central programme of training to its researchers.

A key determinant of the broad approach to training adopted appeared to be the organisational structure (itself reflecting the organisational culture) in the institution.
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For example, another of the case study universities had recently undergone major reorganisation, including restructuring of Departments into Schools (a process which had not yet settled down) and the standing down of a number of previous committees, including the library committee. Not surprisingly, there was no overall strategy for information skills training and no recognition at the university level of how the Library could contribute to research and information skills training. Central training was organised by a Graduate Education Team; Library involvement was down to the initiative of individual Academic Liaison Librarians and Subject Specialists.

By contrast, a further case study university had a university-wide information skills strategy in place and was systematically extending its e-learning provision (originally developed for undergraduates) by adapting and adding to the materials for its researchers. A member of the Library staff had designated responsibility for supporting researchers across the university.

Three university libraries reported that they were moving towards a blended learning approach, combining the main elements of A1 and B above. It appears likely that more institutions, particularly those with high researcher numbers, will take up this model of provision since it combines a means of introducing groups of researchers to research information issues in a structured way with the means of managing the process being provided by the e-learning component. This approach also offers a combination of self-paced and social learning which has already proved popular when used with undergraduates.

C.3.2 Training uptake

An effort was made to estimate the proportion of postgraduate and postdoctoral researchers receiving training in research information but it was not possible to do more than confirm that substantial numbers of researchers “slip through the net”. Obtaining an estimate was difficult because of:

- Overlapping participation: researchers were usually encouraged to attend a series of events (and a few reported that they attended an event on a specific topic more than once).
- The range of sessions organised by different members of library teams.
- Variable rates of attendance (with sign-up levels being higher than actual attendance).
- Some events being open to, but not confined to researchers.
- Different views on what constituted ‘research information methodologies and tools’.
- Uncertainty about what training was being offered in this arena by the central training unit or other university providers.
- The extent to which research information was included within subject-based taught courses for postgraduates.

All of these complications were compounded by the operational context in which, although the majority of library-based respondents could estimate average attendance levels, few had full and up-to-date lists of current and new postgraduate or postdoctoral researchers, and only a minority kept precise attendance records centrally (especially in institutions with high numbers of researchers). Inevitably, the result of all this was that most respondents did not know how many researchers had graced their events (as distinct from total attendances) or the proportion of the total researcher community that this represented.

C.3.3 Training content of library sessions

Respondents were asked about the content of all their formal training provision and the following picture emerged:
Q5. In events which library staff provide or contribute to, what are the main topics covered?

- Developments in metadata: Usually covered extensively
- Licensing and copyright issues: Variable coverage
- Open access to research reports: Usually some coverage
- Using electronic repositories: No coverage/coverage not known
- How researchers can retain and preserve research information: No coverage/coverage not known
- How researchers can manage information generated through their research: No coverage/coverage not known
- Citing websites: Usually covered extensively
- Bibliographical citation: Variable coverage
- Evaluating research information: Usually some coverage
- Finding research material in the Library: Usually some coverage
- Obtaining research papers and data: Usually some coverage
- Using appropriate search engines: No coverage/coverage not known
- Using subject-based portals or gateways: No coverage/coverage not known
- Using specific subject databases: No coverage/coverage not known
- Doing literature searches: No coverage/coverage not known
- Finding research evidence: No coverage/coverage not known
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Only a few additional topics were reported, of which avoiding plagiarism was most frequently mentioned (by 7 respondents).

This table shows that, in general, libraries concentrate their training interventions on information seeking, citing sources and introducing researchers to the library services on offer rather than on evaluating the information obtained, management of information by the researchers, or issues underpinning researcher use of information, such as copyright and open access. The interviews conducted to complete the questionnaires, as well as the strategic interviews with librarians, provided an opportunity to explore these responses more fully. They made it clear that much of the training provided in relation to information seeking, citation and evaluating research information is focused on specific electronic tools such as EndNote or RefWorks and that many respondents do not yet address the more generic skills in these areas with researchers (except by seeking to generalise good searching behaviour when introducing particular tools). However, several respondents recognised a need to engage more closely with critical appraisal of research evidence and management of research information and are “thinking about what to do with the information when you get it – management of personally-held information.” This shift is part of a larger recognition that “How researchers use information has changed a lot; we haven’t caught up.”

The replies about using electronic repositories were complicated by the fact that several HEI libraries are about to get involved in creating repositories, so it is likely that this part of the picture will soon change.

C.3.4 Other training provided

The library service provision usually complements a range of centrally-provided offerings (organised by Heads of Graduate Schools or equivalents) ranging from packages on research information and workshops on constructing theses to writing for wider audiences, and from conference survival guides to time management aspects of information handling. Patterns of provision vary: one graduate training unit started out with a series of two hour sessions concentrated on first year researchers, then moved to a set of events spread over two years and is now planning to offer a succession of three-to four-day training blocks aimed at each cohort.

More specifically subject-based training is frequently organised by schools, departments or faculties, but again there is nothing approaching uniformity of provision across the universities. Faculties may also offer generic researcher training. Where this training happens, the pattern of delivery is likely to vary substantially between faculties: for example, in one university postgraduate training is offered by all faculties, but with Art and Design opting for an event over two weekends, Social Sciences running weekly in-house sessions and Science preferring one day sessions sporadically throughout the year. Relatively low level practical operational issues of this kind may affect the ability of library staff to get involved and may limit how they are involved. In at least one case study the maximum training numbers and hence the type of interaction that resulted was defined by the size of room and number of IT terminals available.

Twenty-seven library respondents reported that they knew of activity aimed at postgraduate and postdoctoral researchers going on elsewhere in the institution, which did not involve library staff but which addressed aspects of information seeking and use. Some of this activity centred on the development of institutional repositories; other training was organised independently by departments or schools. Several other respondents speculated that such activity might be happening without their knowledge.

C.3.5 Training of library staff to support this provision

The strategic teleconference identified a shift in the roles of liaison or subject librarians in some institutions over recent years from a primarily custodial role, through a subject-
expert stance to a learning support role. Given that many academic libraries are relatively new to postgraduate and postdoctoral training provision and that any shift in current training offerings towards management of research information and critical evaluation of research reports (as mooted by several respondents) is likely to place additional demands upon staff, there is clearly significant scope for organising training support for the staff involved.

There was widespread recognition of the need for a stronger and more coherent focus on staff training to support researcher training efforts. The participants at the project workshop recognised the need for greater understanding by library staff of learning and of inter-personal skills, and enhanced transferable IT skills. It was felt that library teams did not sufficiently understand research and that, in turn, academic staff did not understand “e-journals and scholarly communication”, suggesting areas of mutual exploration. More generally, a group of project workshop participants asked “Do our training the trainers courses really equip us to teach using constructivist approaches?” and all the participants accepted the view that “all staff training focussed on research information should include impact evaluation.”

One of case study respondent reported that “Some of the Liaison Librarians would like to make more extensive use of the system to provide more intensive content but lack the training and confidence to do so.”

However, teleconference participants also reported “a sense that enhancing of staff skills runs counter to the recent tendency towards de-skilling of staff”. A case study respondent saw staff training as “Important but difficult” because of the problem of withdrawing front-line staff from busy service points and other tasks to participate in training. She had instead concentrated on persuading subject librarians to ‘adopt a database’, which entailed learning about the database in their own time and producing guidelines for use by researchers.

C.3.6 Current good practice

Various opportunities were taken to identify good practice in relation to research information training and support as well as good overall training provision for researchers. Key informants were asked to identify any practice that had impressed them. The case studies concentrated mainly on universities which were identified with good practice and the participants at the project workshop were asked to describe any good practice in their own institution or elsewhere. The summary below represents practice that was reported as good by respondents from at least three institutions (and sometimes by several). Since this section would be useless without specific identification of institutions, and hopefully the institutions concerned will not object to being positively identified in this way, the usual effort to ensure institutional anonymity in this report has been suspended here.

Good practice can take many forms:

- **Electronic guidance**
  - The University of York Skills Forge is an interactive Website designed to help research staff to develop their professional skills and approach to research. The focus is on planning and reflection, and there is a self-assessment process linked to the Research Councils’ Joint Skills Statement.
  - Newcastle University RESIN (research information at Newcastle) library Website, redesigned to make finding information much easier, and to allow Campus users to personalise, using ‘MyLibrary’.
  - The Consortium of Irish University and Research Libraries Gateways to Information, offering support for researchers – places to go and profiles of support services for researchers.
Interactive introductions to information resources - The Oxford University History Faculty offers introductions at two levels:

- an Information Fair, which is seen as a substitute ‘gateway to information resources’ replacing less successful introductory sessions for Masters and Doctoral students. The first event offered 17 stalls and was attended by 70 students (of a total of 180, 50 of whom were new that year). Stalls were staffed by library and IT staff, tutors and graduate students (whose stall was judged the most successful) and 15 minute inputs on various research information topics;
- coffee mornings for supervisors and postdoctoral researchers, run on similar lines.
- Both events are backed by an extensive programme of WISER (workshops in information skills and electronic resources) events.

Using sound training principles

- Kingston University invites researchers to construct mind maps of their research, ensuring that information seeking sessions start from what the researchers bring to the training.
- Glasgow Caledonian University witness sessions, based on an interview between a librarian and an experienced researcher on how to do a literature review. This approach provides scope for the participants to empathise with the researcher and to ask her questions. The idea arose out of a UK Grad ‘training the trainers’ event attended by academic staff and library staff and based on a constructivist approach to learning.

Focussing on supervisor training – The University of Northampton offers research degree supervisor training centrally through its Knowledge Exchange, which is described as a development hub providing a one-stop shop for research and knowledge transfer services.

On-line tutorials for Postgraduates - The University of Manchester Speed PhD – part of a “bespoke research training programme for postgraduates” known as SAGE, developed by the School of Arts, Histories and Cultures. The Speed PhD was described by an enthusiast as “The whole PhD experience in two days! It was like being on fast-forwarding DVD”.

On-line tutorials for Postdoctoral staff – Imperial College, London – PILOT (Post doc information literacy online tutorial) funded by a grant from the Staff Development Unit (Roberts money) and developed from the undergraduate OLIVIA programme, but with a focus on individual learning (rather than group learning) and a shift of emphasis to research topics (and additional content).

Marketing of training for researchers – Leeds University Library has produced a “bloody brilliant” introductory booklet and “names its courses to attract people – ‘Intelligent Searching Agents’ instead of ‘Internet Searching’”.

Administration – Cardiff University Library activity is well-integrated into the Graduate Centre and Human Resources training programmes. Lists of new research students are gleaned from the central records each term and sent to the Subject Librarians.

Some of the good practice examples above are library service-generated (such as RESIN, the Kingston mind maps, the Speed PhD and PILOT), one emanates from
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elsewhere in the institution (the Skills Forge), but interestingly several emerged through collaboration between academic, library staff and others (e.g. the Information Fair and the witness sessions).

Participants at the project workshop also offered some general ‘principles of good practice’:

- Clear objectives and very clear advertising.
- Market to the target audiences: raise academic awareness of what libraries can do.
- Feature library events in the central staff development programme.
- Shift from information seeking to other dimensions of research information.
- One-to-one ongoing support is important (but can it be afforded?).
- Researchers rely on peer to peer networks.
- Talk to academics because they are the gatekeepers to researchers.
- Get academic staff working alongside library staff.
- Arrange consecutive workshops, with the participants doing work in between.

There is an available means of sharing these and other examples of good library practice and, in doing so, to raise the profile of library-based research information training with central training providers within universities. The UK GRAD Programme Database of Practice is responding to increasing requests from the sector to develop a mechanism to share [good] practice, but the Database is little used by library staff (currently only three of the many postings mention libraries). This database has been developed as a tool to allow institutions and individuals to describe their practice in all areas related to skills and career development for researchers. They are using the word ‘practice’ in as broad an interpretation as possible, e.g., training courses, coaching, survey/feedback mechanisms, support for supervisors, reports, related research, etc.9

Once users register as an 'owner' they are welcome to post their practice on the database. They can post as many examples of practice as they wish, choose when to release this for general viewing and update their practice as it evolves. Registered 'users' and 'owners' can search and view practice.

C.3.7 Strategies for library training

Only 20 universities (including 14 ‘old’ institutions) had a relevant information literacy strategy document to guide the work and only 10 had a strategy document covering information service provision to postgraduate and postdoctoral students. However, some respondents noted that strategy documents were not greatly used in their organisation and others reported references to the library research support role in the university teaching and learning strategy (with two universities having a specific information literacy target for work with researchers).

The documentation collected from university respondents on information literacy strategies encompassing postgraduate and postdoctoral students, as well as strategies for providing them with information services, suggest that there is growing consistency in the local interpretation of these policies.

It would be inappropriate to read too much into these replies, but they do suggest that a coherent and comprehensive approach to supporting the training and development of researchers is some way off in many institutions, a view supported by several comments from respondents. According to the UK Grad national organisers “The linkage to Roberts is not happening. There needs to be seamless provision for researchers; library and academic staff should be talking – there is a need for a strategy.”
C.4 Where is the strategic development?

The Research Councils clearly play an important role in setting standards and identifying best practice in research training and have agreed a set of skills that they expect to be developed during a doctorate. These skills are important in driving the UK Grad research training programme.

A version of this set of skills showing 36 competencies can be found on the UK Grad website at http://www.grad.ac.uk/cms/ShowPage/Home_page/Resources/Just_for_Postgrads/Managing_yourself/Eval

The range of skills is comprehensive, but includes several areas which would fall within many definitions of information literacy used by HEI librarians (as well as most interpretations of ‘research information methodologies and tools’, although it is apparent from interviews that these terms are not synonymous); specifically, three of the research skills and techniques listed, three research management competencies and three of the others reflect elements of information literacy in HE as adumbrated in various models and frameworks.

Implementation of the postgraduate and postdoctoral training is being actively encouraged by the Quality Assurance Agency for Higher Education (QAA) inspections based on the framework provided by their Code of Practice. The Code sets out what researchers can expect of institutions through a series of precepts, notably:

18 Institutions will provide research students with appropriate opportunities for personal and professional development.

19 Each student’s development needs will be identified and agreed jointly by the student and appropriate academic staff, initially during the student’s induction period; they will be regularly reviewed during the research programme and amended as appropriate.

20 Institutions will provide opportunities for research students to maintain a record of personal progress, which includes reference to the development of research and other skills.”

The roles of the RCUK Research Careers and Diversity Unit and of the UK Grad Programme have already been described above.

One of the principle outcomes from a Roberts Policy Forum in Rugby in January 2005 was a suggestion to set up a working party (under the aegis of UK Grad) to find ways in which the sector can evaluate the effectiveness of skills development in research degree programmes. The resulting UK Grad Rugby Team of trainers and others focuses on the evaluation of the effectiveness of skills development in research degree programmes and amongst early career researchers.

Other key players in relation to HEI library training and support are, of course CURL and SCONUL, as well as the RIN itself. SCONUL has taken a leading role in looking at the impact of library interventions, including its Value and Impact Measurement Programme (VAMP). The CURL Research Support Task Force recently produced a Report on [its] survey of skills training for researchers and, with the RIN, has recently published an influential report (as testified by interview respondents) on Researchers use of academic libraries and their services.

In some universities, efforts are being made to integrate library provision more coherently into university strategies by securing library presence (and in at least three cases an information literacy target) within the university teaching and learning strategy, by trying to set information literacy within the basic skills agenda or by other means such as “getting into the research pools in Scotland.” However, in an
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independent study based on a survey of institutional Websites, Corrall\textsuperscript{15} found only two university library information literacy strategies where “... connections were made between information literacy skills and the RCUK statement.”

A few universities do not currently employ anyone with an overall researcher development role, making it more difficult for library staff to contribute in a coherent and systematic way.

A growing minority of institutions, including three case study universities, are integrating their library-based offerings within the central research training programme. One respondent described how all new postgraduates have to follow a research training programme for each year: the modules are all aimed at a particular year of research (e.g., teaching is covered in year 3). Elsewhere, the library offerings are part of the student personal learning and study hub; in another university they offer a one-day mandatory literature searching and reference management course (repeated nine times a year); this is team-taught and evaluated by the Research Training Committee using a combination of qualitative and quantitative measures.

A small but noteworthy group of HEIs reported joint provision of training, ranging from joint planning of sessions to team teaching and joint assessment. One university, for example, offers a series of on-line tutorials developed from earlier undergraduate provision. Their generic module for researchers is being jointly constructed by librarians and academic staff, and so far covers:

- systematic searching – using controlled language
- citing and referencing
- identifying sources
- thinking critically
- essay and report writing

Although collaboration between librarians, IT specialists (and, in some universities, archives service staff) and other trainers of researchers is seen as desirable in many HEIs, substantial work may be needed to achieve common understanding of roles and respective contributions (as well as about training strategies). It may be necessary to challenge entrenched views such as that held by one programme organiser who asserted that:

“It is difficult to contribute if you are not an active researcher. You need to be able to show how you would apply (for example RefWorks) in your own research. It’s about understanding the ramifications of research.”

Overall, there appear to be sterling efforts to bridge a policy development gap within most of the HEIs surveyed. However, any shortcomings in ‘joined up thinking’ are not simply a concern for libraries and their institutions. UK Grad reports that concern about working in silos, each apparently oblivious of what other people are seeking to provide, extends well beyond libraries to encompass staff development units, academic practice, careers services, faculty or discipline-based providers and IT services, as well as libraries. They report that several institutions have been making efforts over the past three or four years to secure strategic approaches and that some have set up cross-boundary committees, including libraries to address these issues.

C.5 The value and impact of the training

The survey showed a near total absence of evaluation of the training that is provided by library staff beyond participants being asked to complete post-event ‘reactionnaires’. Only three libraries reported that they administer pre- and post-intervention questionnaires in an attempt to identify changes brought about through their training
and one library (which was part of the LIRG/SCONUL Impact initiative) has undertaken systematic observation of researchers as part of their evaluation process.

The project workshop group that looked at impact evaluation similarly concluded that “Ensuring the effectiveness of training provided by libraries is very important, but we don’t do it.” They (and the other participants) recognised a need for ‘longitudinal hard evaluation’ to ensure that training is relevant. These comments were part of a growing recognition that "a shift is needed from event evaluation to what seems to help researchers to develop skills that they need and to find ways for the Library to contribute to the research process."

Where efforts were made to be original in evaluation terms, the results might best be described as variations on a theme. In one case study university, an experimental ‘audience participation’ method of assessment, using the kind of audience voting technology used in some television programmes, had been used and found at least partially effective. In the School of Medicine, the student evaluations were published in a programme review, which was available to supervisors, sponsors and employers, but this still does not go far beyond event evaluation.

The strategic teleconference participants saw a need for "more subtle and embedded impacts and use of the results in marketing – demonstrating impact to raise library visibility with the Research Councils”.

Again, inadequate evaluation is not solely an issue for libraries: despite the current work of the UK Grad Rugby Team (which itself recognises that there is a long way to go in evaluation work), monitoring of effectiveness at the university trainer level still appears to rely heavily on reactionnaires, annual graduate surveys and extracting comments from annual faculty reports. One research training manager was planning to conduct ‘pre- and post-Roberts’ case studies, but recognises that “it is hard to convince quantitative people about impact through case studies”.

The RCUK Research Careers and Diversity Unit emphasises that there is a need to address the impact of researcher-development focused initiatives in economic, social and cultural terms and is starting to conduct longitudinal tracking of their own PhD students over a ten year period.

Viewed from a different perspective, a report on enhanced stipends to help retain postdoctoral staff, was provided last year by the CSLPE report which concluded that:

“If the policy of selective targeting is to be considered and accepted by the research community it needs to stand on a sound and explicit evidence-base and be amenable to effective evaluation. This is not the case at the present time. Although measures are in place to ensure wider financial accountability for the funding that HEIs obtain, Research Councils are currently unable to track the impact of their funding on human resources capacity.”

### C.6 Meeting the needs of the research community

#### C.6.1 The researcher demand for training

Is there a significant researcher demand for generic skills training or help in using electronic tools? The evidence is inconclusive so far: some library service respondents reported heavy take up of open events and positive feedback about their sessions; others had varied or disappointing uptake or reported that “no huge demand has been expressed”. These comments were offered in a context within which, as recorded at 4.3.2 above, most library service respondents did not know how many researchers had
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graced their events (as distinct from total attendances) or the proportion of the total researcher community that this represented.

The picture is further complicated by variable engagement by liaison librarians (or equivalents) in subject-embedded taught programmes as well as one to one sessions with subject librarians which form a major element of provision in many institutions.

One significant question here is whether the researcher view of the situation should be preferred to the providers’ view. It was apparent from the recent RIN and CURL report that many researchers think that they know about internet searching; few of the library respondents in the project survey appeared to share this view. Similarly, it is apparent that lecturers appointed to research-active universities are assumed to have all the skills and knowledge that they need.

Many of the university respondents (both academic and library representatives) identified teaching staff in their research role as a neglected group from the perspective of research skills training.

C.6.2 Needs assessment

There appears to be little specific needs assessment work being conducted in relation to research information methodologies and tools. This may be partly because of the practical problem (reported by several respondents) of identifying and communicating with researchers (unless they are in identifiable teams). In one university, the solution has entailed a member of staff visiting the administrative centre each term and extracting information about postgraduate and postdoctoral researchers; in another, this information is regularly circulated by the Graduate School.

Estimates varied about the numbers of researchers who participate at all in training offered by library staff beyond any mandatory programme for all new researchers (one ‘research university’ felt that their substantial range of mandatory offerings met most requirements, but their programme was exceptionally strong; at the other extreme a respondent commented “One session in a generic programme doesn’t meet the needs”). Particular difficulties were perceived with connecting to part-time and solo researchers and, in terms of the types of support provided, engaging with graduate students from abroad, who are likely to have had substantially different prior experience of research information methods and using information tools. One respondent said

“There is a huge range of abilities, even wider than with undergraduates, from no knowledge of research methodologies and never clicked a mouse to expert researchers. A difficult range for teaching.”

Another major issue was the perception (by several respondents) that some research supervisors do not recognise the need for the types of training on offer to ‘their’ postgraduate students. A view was advanced of older supervisors as a ‘lost generation’ who were being overtaken by advances in research information fuelled by ICT developments, and who are not fully aware of the implications of some of these changes, so that they are not well placed to guide the next generation of researchers towards appropriate help.

Perhaps as a result of this guidance gap, a significant number of researchers appear to receive no training in research information methodologies and tools, provoking the obvious questions – do they need such training and, if so, do they perceive this need?

Some respondents recognised a need to do more for postgraduate and postdoctoral researchers (“research staff have always been lumped in with academic and administrative staff training”), acknowledging an over-emphasis on supporting learning rather than research) and, in some cases, planning a review of their provision. This focus on coherent training, especially for new researchers, usually appears to have been
stimulated by local Roberts initiatives rather than specific needs identification. Respondents were agreed that there would be substantial resource implications for most libraries if concerted efforts were made to extend provision significantly (“This work could take up all the library staff time available”).

Three structured focus groups were conducted in different universities in the course of the project. By this means, the project team was able to show that the current areas of relative weakness in information-related skills and knowledge diagnosed by the newer researchers involved (those with an average of two years’ involvement each in postgraduate and/or postdoctoral research) was broadly similar to those of the most experienced group (average postgraduate and/or postdoctoral research experience of 12 years). Predictably, the newer researchers identified their weaker areas as ‘how to write research reports and journal articles’ and ‘how to prepare and submit conference papers’. Both groups of researchers reported themselves relatively weak in use of electronic repositories in their work, in licensing and copyright issues, in developments in metadata and in use of wikis and blogs in their research, if they regarded these as relevant to their research, which not all did. (Interestingly, although metadata and wikis, blogs etc. did not appear amongst the ten most important topics identified by all the workshop participants from a list of twenty, licensing and copyright issues was ranked sixth and electronic repositories ranked eighth, suggesting two possible areas for further training.) Much more work of this kind, combined with fuller researcher assessments of the relative importance of each of these and other research information skills and competences would be required to constitute a proper needs assessment in relation to research information knowledge and skills. Although these three events were an insufficient to basis to build a case for information literacy work the approach chosen demonstrates that it is possible to engage with researchers in exploring their training needs and how these can be met. The process adopted to explore these issues in the structured focus groups is outlined on the RIN website as one possible approach to needs assessment in this area.

C.6.3 Self-assessment of training needs

It was generally agreed that “Surveys of users are of limited value and are unlikely to report specific training needs”. Unsurprisingly, the current hazy approach to needs identification reported during this study tends to translate into training that addresses what providers hope will be useful. A potential exception is in the (so far few, but growing in number) universities that are

“rolling out an e-portfolio to all students, including postgraduates, involving development of competencies and self-assessment of progress against objective criteria. This will reflect UK Grad competencies and the SQA Credit Framework in Scotland”.

If such efforts are successful, they should provide a user-driven basis for more targeted training provision which might accompany the mediated focus group approach outlined in the previous section.

Meanwhile, there is reported to be a growing move towards providing self-paced e-training and other forms of e-support for researchers.

C.6.4 Neglected groups

According to the UK Grad organisers, there are particular issues in providing training support for part-time, distance and mature researchers, as well as for international students, who are most likely to attend training sessions but for whom they are least likely to be effective, unless they directly address their specific cultural and skills development needs. Meanwhile, the RCUK Research Careers and development Unit has identified statistical and analytical skills, bioinformatics and informatics in medicine as areas of research weakness and have followed the Government lead by
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focussing on business and enterprise skills (there were no obvious signs of HEI libraries following this lead).
Appendix D: Four models of HE Library training and support for postgraduate and postdoctoral researchers

1.1 Cross-institution and departmental workshop interventions

1. Substantial contribution to generic courses on ‘research methods’ or ‘introduction to research’ programmes\(^1\): these programmes are usually organised by the Graduate Centre or Learning and Teaching Unit (or equivalent) and may be ‘mandatory’. Library staff typically contribute sessions on information seeking and use.

2. Sign-up or drop-in workshops on aspects of information seeking and use and/or using specific electronic tools (usually open to all, with voluntary attendance) often offered as part of a centrally-organised programme of events for researchers.

3. One to one and small group provision negotiated and provided by subject librarians.

4. A growing element of e-guidance and e-support for the provision, which may be accessed and used independently.

1.2 Faculty/school and departmental workshop interventions

As A.1, but contributing strategically to the generic courses on ‘research methods’ (etc.) organised at the school or large faculty level; again the main provision may be mandatory.

2 Institution-wide e-provision

1. Institution-wide Website or VCLE-based e-provision for researchers: self-paced e-lessons covering key areas of information seeking and use
   – may be generic (e.g., University of Hertfordshire) or broadly subject-specific (e.g., Imperial)
   – usually modifying and extending provision that was originally designed for undergraduates.

2. Sign-up or drop-in workshops on specific aspects of information seeking and use or on using particular electronic tools (e.g., EndNote; RefWorks).

\(^1\) or Research Supervisor development programmes, etc.
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3.1 Library-based provision

1. Some or a substantial amount of training offered through information seeking and use workshops organised by the library. Possibly provide some contribution to generic ‘introduction to research’ programmes organised by Graduate Centre or Learning and Teaching Unit (or equivalent) – usually an introduction to the library and its services. (May instead be a short introduction to information seeking.)

2. Tailored contributions on aspects of information seeking and use or on using specific information tools delivered by subject librarians within most departments and faculties.

3. One to one support provided by subject librarians (usually by appointment).

4. Usually some Website materials aimed at researchers on specific information seeking and use topics.

3.2 Limited library-based provision

1. Introductory presentations on the library service, offered as library induction or as part of a general introduction to research organised by Graduate Centre/ Learning and Teaching Unit (or equivalent).

2. One to one sessions (by appointment or ad hoc).

3. Occasional taught sessions on aspects of information seeking in various courses, by invitation.

4. May go alongside substantial amounts of library support for undergraduates in relation to information seeking and use.

4 Variant provision in smaller institutions/institutions with few researchers

1. Sessions offered on specific aspects of information-seeking and use, arranged and delivered to meet needs identified by supervisors, researchers or library staff.

2. Other sessions may be organised for undergraduates but open to graduates.
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