

RCUK POSITION STATEMENT ON ACCESS TO RESEARCH OUTPUTS

1. This position statement sets out the Research Councils' views on the issues surrounding the evolving models for the dissemination of and access to research outputs¹, particularly but not exclusively open-access² models. The statement covers all areas of research, including the social sciences, arts and humanities. Although the research communities covered by this wide spectrum are not homogenous, many issues surrounding the management of research outputs are common to all Research Councils, and this justifies a cross-Research Council approach. The statement is intended as a broad framework, which will serve as the basis for RCUK to draw up more detailed guidance and to determine good practice, in close collaboration with a range of key stakeholders as set out in this document.

Principles

2. Ensuring that the results of research supported by public funds are made accessible and available for consultation by the research community and others is an integral part of the research process. It involves a partnership between all players involved (universities and other employers of researchers, funders, publishers, libraries, as well as researchers themselves). RCUK believes that it also requires the recognition of a set of rights and responsibilities based on four fundamental principles, and it is on these principles that the RCUK position is founded.
3. Research Councils are responsible for supporting and promoting the activities of a research base that is vibrant, productive, and sustainable. In seeking to maximise the impact of their investment in maintaining and improving the research base, and increasing the contribution it makes to the benefit of the UK's society and economy, they must therefore seek to ensure that:
 - a. **Ideas and knowledge derived from publicly-funded research are made available and accessible for public use, interrogation, and scrutiny, as widely, rapidly and effectively as practicable.** New internet-based models for the publication of research outputs and also of the underpinning data are likely to play an increasingly useful role in the widening and speeding of access, which in turn supports the Research Councils' strategies for ensuring that the results of research are exploited more effectively for the benefit of the UK's society and economy. Only in exceptional circumstances should public funding of research not lead to publicly-available outputs³.
 - b. **Effective mechanisms are in place to ensure that published research outputs are subject to rigorous quality assurance, through peer review.** Historically, subscription-based academic journals (printed or electronic) have provided quality assurance of this kind. But there is no reason in principle why other publishing models cannot accommodate similar mechanisms; and so long as they do, they can play an effective role in enhancing the communications of research results both to the research community and to other stakeholders, including the general public.

- c. **The models and mechanisms for publication and access to research results are both efficient and cost-effective in the use of public funds.** This means that Research Councils must constantly seek to achieve a balance between the freedom of researchers to publish their output wherever and however they consider most appropriate for their audience on the one hand, and the need to ensure on the other hand that the means of publication are cost effective; and that there are effective and sustainable financial models, with appropriate funding streams to support them.
 - d. **The outputs from current and future research can be preserved and remain accessible not only for the next few years but for future generations.** Printed material has proved itself durable for several centuries. But there are challenges in seeking to ensure that both published and unpublished resources in digital formats will prove to be similarly durable.
4. In considering the issues stemming from these principles, and from the report of the House of Commons Science and Technology Select Committee, *Scientific Publications: Free for All*⁴, RCUK is setting out, in consultation with others, a joint position statement. RCUK recognises that partnership with other national agencies, including the Funding Councils, the Joint Information Systems Committee (JISC)⁵, the new Research Libraries Network (RLN), and the British Library, will be essential in developing and implementing the RCUK line. It will also be important to liaise closely with Government, which is defining its own policy and several of whose Departments have a direct interest in this broad area⁶. But RCUK also recognises the central role that the Research Councils themselves have to play in both responding to and stimulating new developments in publishing and communicating research results; and in ensuring that both researchers and the users of research benefit from the new models and mechanisms as they develop.
5. It is likely that for the foreseeable future, many different models and mechanisms will co-exist, and the Research Councils will need to remain alert and responsive to what works best for their particular research communities and their users. It may even be that increasing development of the internet will render the traditional “publication” of journal articles less relevant or prevalent as a means of communicating research results, particularly in areas where the international research community is relatively small and well-defined. In some areas, such as particle physics, it is already the norm for well-established researchers to communicate their findings to their fellow-researchers long before they are formally published; and hence formal publication following peer review has become important principally as a means of establishing the integrity and authenticity of the finally-published paper⁷. “Publication” may thus be seen as a series or continuum of distinct activities (peer review, ‘kite marking’, editing, promotion, printing, distribution, placing in repositories, long-term curation...) undertaken according to circumstances by different players, thereby blurring the distinction between the roles of these players. For instance, BioMed Central – an open access publisher – is now offering a repository service to institutions. In what follows in the rest of this statement, however, RCUK assumes that publication of journal articles, albeit in different modes, will remain a significant format for scholarly research communication for some time to come.

Communication, Access, and Availability

6. The provision of journal articles in digital form has already fundamentally altered patterns of access to research publications in many subjects and disciplines, and RCUK applauds the efforts that publishers have put into ensuring that their publications – both current and back-runs – are available in digital form. Like the

Government, RCUK believes that digitisation should facilitate access. Research Councils are aware of the possibilities arising from recent technological developments, especially the interoperability between electronic repositories, cross-repository searching and metadata harvesting. Such developments are helping to push the policy agenda; as public funders, Research Councils have a responsibility to exploit the exciting opportunities which these technologies afford.

7. There is widespread concern, however, that the full potential of the internet for enabling members of the research community as a whole to gain access to journal articles on their desktop is not being exploited; and that researchers in many institutions cannot gain access to the full range – and the full runs – of the journals they need. This is clearly a matter of concern to the Research Councils, and we share the concern expressed by the Select Committee and others that reasonable and practicable measures should be taken to ensure that research outputs should be as widely available as possible. We recognise, of course, that there may be limitations on what can be achieved by the UK alone; but ***RCUK will work with the OST, DTI, JISC, the RLN, and other agencies to ensure that there are as few restrictions as possible on the provision to all researchers and other stakeholders, including the general public, of access to published research outputs.***

Research Data

8. RCUK also notes that one of the benefits of digitisation and publication in digital formats is the ability to provide access to primary research data alongside the traditional article; and it shares the Select Committee's and the Government's view that the data underpinning the published results of publicly-funded research should be made available as widely and rapidly as possible. For a number of years, Research Councils including the AHRB, ESRC and NERC have funded data centres and services which are responsible for preserving, managing and providing access to research data; and these Councils have well-established policies and procedures for preservation and access. CCLRC is currently leading cross-Council consideration of how policy and practice need to be developed with regard to the curation of the data created through the research projects they support. ***Further work is needed to develop a common framework of policies and procedures for determining what sets of data are collected, whether in university or in Council-run repositories or elsewhere; and how and on what terms they are made accessible to the research community and others***

New methods of publication

9. The development of web and associated Internet technologies providing access to a range of distributed information resources has enabled new possibilities for the delivery of research publications. This has also led to a change in expectations as to how and when research publications are accessed. E-print repositories (see paragraphs 10-15 below) and open access journals (see paragraphs 25-27 below) have both developed as part of this change in technology and expectation. Indeed, the economic model for open access journals depends on the web to provide a low-cost delivery mechanism. ***RCUK considers that both e-print repositories and open access journals can help improve access to the results of publicly funded research.***

E-print repositories⁷

10. For the purpose of this document, e-print repositories⁸ are always understood to be open access. RCUK believes that such institutional and subject-based repositories, where researchers deposit copies of the articles they publish (ie post-print), provide an opportunity significantly to enhance access to research publications – as the Government has now acknowledged – in the spirit of the principle set out at paragraph 3(a) of this document. Importantly, there is a small but growing body of evidence demonstrating the increased impact and visibility of material made available in open access through e-print repositories⁹.
11. The development of institutional e-print repositories¹⁰ is being supported by the JISC, and the pilot work carried out under its FAIR programme¹¹, including the SHERPA project and at institutions such as the University of Southampton is tackling key issues such as long-term resource costs, the necessary technical support, and the development of common standards to ensure maximum functionality, interoperability and efficient searching. In particular, the improved ability to achieve interoperability and efficient searching – notably through software technology and protocols¹² that allow for seamless harvesting of metadata from distributed repositories – in itself heightens RCUK's belief that this work should be built on, and that the further development of e-print repositories is worthy of strong encouragement. In this sense, newly available technology is offering prospects for improved access which were not available until relatively recently; it would be wrong for Research Councils to ignore or dismiss such developments.
12. The benefits of repositories depend critically, of course, on the ease of finding them – and hence on their visibility to Web search engines – as well as the ease of accessing the documents they contain. RCUK acknowledges that the task of establishing effective cross-searching and interoperability across large numbers of e-print repositories will be not be inconsiderable, requiring much further work to ensure the implementation of rigorous technical and operational standards. Nonetheless, it seems likely that with the support of the JISC and others, e-print repositories will gain strength and effectiveness, and that in the next few years a substantial network of such repositories will develop. There are currently (January 2005) 26 such repositories in the UK, representing a significant proportion of research-led universities¹³. Among Research Councils, the CCLRC has developed its own institutional repository, which currently holds more than 20,000 records. ***Research Councils will work with the JISC, and with the OST, DTI and other Government Departments, to help in developing a strategy for developing the network of e-print repositories for the deposit of research publications, along with measures to ensure that material held in them is easily found and accessible.***
13. A key challenge is the need to encourage researchers to make their articles available in print and digital form not only through the journals in which they currently publish, but through deposit in e-print repositories. At present, relatively few researchers make their articles accessible in this way, and encouraging more to do so will require a significant cultural change in much of the research community – although evidence from surveys suggests that authors themselves are willing to embrace such change¹⁴. Current experience suggests that an approach based simply on persuasion is costly both in time and other resources, and yields relatively meagre results. RCUK believes that in order for Research Councils to demonstrate their commitment to enhancing access to published research outputs through the medium of e-print repositories, it should take a more active stance, and introduce a requirement that Research Council-funded researchers should deposit their published outputs in appropriate e-print repositories.

14. The location of the appropriate repository may depend on a variety of circumstances; and it is important in this context to stress that open access can be provided irrespective of where an article is logically or physically located. Wherever e-print repositories are located, however – and whether they are run by universities, subject associations or other bodies – they must secure appropriate levels of support with measures to ensure their sustainability. Ensuring high visibility for the repository and the articles within it may point in favour of different kinds of repositories in different circumstances, as will authors' ease of deposit and their readiness to undertake the small amount of work involved. In this latter respect, institutional e-print repositories may be particularly attractive, because of their proximity to authors (the majority of whom are based in universities and colleges), and the assistance and support that local repository managers may offer to authors. RCUK therefore sets out the following position:

- a) *Research Councils will work with JISC and others to promote awareness of the existence and role of institutional and subject-based e-print repositories.*
- b) *Where research is funded by the Research Councils and undertaken by researchers with access to an open access e-print repository (institutional or subject-based), Councils will make it a condition for all grants awarded from 1 October 2005 that a copy of all resultant published journal articles or conference proceedings (but not necessarily the underlying data) should be deposited in and/or accessible through that repository, subject to copyright or licensing arrangements (see paragraphs 16-17 below). Such repositories should be OAI-PMH compliant (see footnote 13). Deposit should take place at the earliest opportunity, wherever possible at or around the time of publication¹⁵, in accordance with copyright and licensing arrangements.* Such deposit requires relatively little effort and, for each published paper, should not take more than 15-20 minutes of an author's or repository manager's time. There is no reason why this should be seen as an infringement of researchers' freedom¹⁶. On the contrary, RCUK believes that the wider dissemination and accessibility that this position affords serves the interest of researchers both as creators and as users of published research outputs, and maybe even of publishers¹⁷. Furthermore, a requirement of this kind by Research Councils actively supports the universities and colleges which employ the researchers and which have themselves contributed to the investment in their research. It also sends a strong signal to all stakeholders that Research Councils have a serious commitment to the principle and practice of enhancing access to the results of research. *RCUK will work closely with the research community, the publishing industry and other stakeholders to elaborate and disseminate practical guidance for authors in relation to this requirement.*
- c) To comply with the above requirement, RCUK believes that it would in general be preferable for published material to be deposited in an institutional e-print repository, where such exists¹⁸. This would support the institutions that have made the effort of investing in the necessary resources. However, where research communities are served by subject-based e-print repositories¹⁹, authors may opt to deposit their material there, in preference to institutional repositories. In the biomedical field for example, there is an initiative to establish a European site for PubMed Central, and it will be important for the MRC and BBSRC to develop their policies in the light of such developments and in consultation with other agencies such as the NIH and the Wellcome Trust (see paragraph 15 below). As outlined above, Research Councils are aware that, for access and retrieval purposes, the physical location of the deposited material is immaterial. *For authors required to deposit their published material, the Research Councils will initially leave the choice of whether to do so in an institutional or subject-based*

*e-print repository; but individual Councils will review their policies in the light of developments in their specific fields of responsibility*²⁰.

- d) This position statement carries no obligation to set up a repository where none exists at present; and the requirement to deposit will therefore not apply to authors who do not have reasonable access either to an institutional or to a subject-based e-print repository. However, it is reasonable to anticipate that, over the next few years, all or virtually all UK institutions with a significant research activity, along with a number of subject associations, will have set up e-print repositories. RCUK hopes that the position set out above will encourage institutions to establish repositories where they have not done so already. Relevant Research Councils may likewise consider setting up e-print repositories for the output of research carried out by their own institutes, where they have not done so already. ***No later than the end of 2008, RCUK will take stock of the development, visibility and use of subject-based and institutional e-print repositories to date and, on that basis, will review its position on the requirement to deposit.*** In order to monitor the consequences of this position, it will be crucially important for RCUK to maintain a dialogue with the key stakeholders, notably the library and information community, universities and, not least, publishers.
- e) Similarly, there will be no formal obligation to deposit articles arising from grants awarded before. However, ***for such current grants, the Research Councils will encourage their funded researchers to deposit their published material in open access e-print repositories which are available to them.***
15. Publication of research results is a truly international activity, and RCUK is aware that the above proposals and requirements relating to repositories are geared essentially to the UK research environment. We are mindful of the need to ensure that any RCUK position does not weaken the international position of UK researchers or institutions. Nevertheless, it should be noted that the measures outlined above will put RCUK in line with the thinking of major funders of research both in the UK and overseas. In the UK, the Wellcome Trust will be requiring its grantees will be required to deposit an electronic version of their peer reviewed research articles in the proposed European version of PubMed Central no later than six months after the date of publication²¹. In the US, the National Institutes for Health (NIH) are actively promoting the development of open access. Following a lengthy consultation, they announced their policy in February 2005: “NIH-funded investigators are requested to submit to the NIH National Library of Medicine's PubMed Central an electronic version of the author's final manuscript upon acceptance for publication, resulting from research supported, in whole or in part, with direct costs from NIH”²². In Europe, major funders including the Deutsche Forschungsgemeinschaft and Max-Planck Society in Germany and the CNRS and INSERM in France, for instance, have indicated their commitment to open access through their endorsement of the Berlin Declaration²³, with its commitment to encouraging its signatories’ researchers/grant recipients to publish their work according to the principles of the open access paradigm. It should also be noted, for instance, that all Dutch universities and about 85 per cent of German universities have set up institutional repositories²⁴.

Copyright and licensing

16. Full implementation of requirements of the kind set out above depends, of course, upon authors’ having the right to make their published articles available through e-print repositories. A large majority of publishers²⁵ now permit deposit in such repositories with very little, if any, effect on journal sales – but with varying levels of restriction. This raises the issue of copyright and/or licensing arrangements.

17. The current practice whereby researchers typically transfer copyright in their articles to publishers, or assign to them exclusive licensing rights, has come under increasing scrutiny²⁶. It is important that there are effective mechanisms to ensure that published outputs are protected from plagiarism and other infringements of authors' moral rights. But it is not clear that the current arrangements are the only or the best means of providing such protection. Nor is it clear that they provide the most appropriate balance between the rights and responsibilities of authors, their employing institutions, funders and other stakeholders – including the general public – particularly in a context where Research Councils are funding research for the public good. The Government has commended the JISC for the international recognition it has received for its work in documenting authors' agreements and authorisation for deposit in institutional repositories²⁷, and for its embarking on a project to develop and disseminate best practice in this area. ***RCUK will engage with JISC, the publishing industry and other relevant partners to investigate and develop effective copyright and licensing practice (for instance, through the promotion of model licences), taking account of the need to allow for deposit in e-print repositories as rapidly and with as few restrictions as possible, as outlined in paragraph 14. Beyond this, however, we support those who have argued for a review of IP rights and obligations in the electronic world, seeking to refresh such notions as fair use in a way that accommodates technological changes, and recognises the public value as well as commercial rights in research resources and outputs.***

Quality Assurance

18. Rigorous peer review is the best available means of ensuring the quality of published research results – it is an intrinsic part of the broad scientific process. RCUK believes that there is no reason in principle why emerging dissemination and access models, notably open-access, either in journals or in e-print repositories, should adversely affect either the key processes or the quality of peer review. Rigorous, high-quality peer review has served academic journals well for a very long time; RCUK believes that this can and must remain the guarantor of quality whatever the medium and must be the norm as new dissemination and access models develop²⁸. All those who have an interest in the performance of the individuals and groups of researchers who constitute the UK's research base must be assured of this. Thus while RCUK recognises that in order to promote the dissemination of research results and knowledge transfer to audiences beyond the research community, publication in a variety of journals that do not employ peer review may be appropriate and indeed necessary, we believe that dissemination in this way should always be employed as an adjunct to publication in peer-reviewed journals. ***It is essential that publication of research findings and results should be subject to rigorous scrutiny through effective mechanisms of peer review.***
19. Maintaining and improving both the international standing of the UK research base, and public confidence in the work that it produces, are critically dependent on quality and standards of peer review. The careers of researchers are dependent (for appointments, promotions, formal reviews of research programmes and so on) on assessments of quality. Data about where researchers publish and how frequently their publications are cited are key pieces of evidence in making such assessments. Peer reviewers and interview panels, as well as other researchers, must have confidence in the peer-reviewed quality of publications, whatever the medium of publication.
20. E-print repositories that carry published material must very clearly indicate which material has been peer reviewed and where it has been published. There must be an absolutely clear distinction, for users of such repositories, between articles that have

not yet been peer-reviewed (pre-prints) and those that have (post-prints) – and also between different pre-print versions. ***RCUK will work with the managers of e-print repositories to develop a common and recognisable standard to ensure that the distinction between pre-prints and post-prints is clear to all users and also to maintain document integrity and authenticity.*** We note the suggestion that this could be a ‘kite mark’, and the possibility that Learned Societies might develop an important role in the attribution of such ‘kite marks’.

21. It is noteworthy that one further feature of institutional e-print repositories is the opportunity that these could afford for institutions routinely to extract data about the publication record of the researchers they employ, thus facilitating assessment exercises, either internal to the institution or external, as in the case of the RAE. Again, this is dependent on the existence of an indication about which material has been peer reviewed.
22. RCUK does not believe that the Research Councils should themselves take on the role of publishers in arranging for the peer review of publications arising from the research they have funded; this is to guard against any possible conflict of interest.

Cost-effectiveness

23. The costs of dissemination and access are an integral part of the costs of research itself, however they are met. Research Councils, alongside other funders of research, have an interest in ensuring that the mechanisms of communication, and the financial models that support them, are as efficient and effective as possible. In the traditional subscription journal model of publication (print or electronic), the direct cost is borne by subscribers (ie libraries, institutional and individual subscribers). In open-access models, the incidence of costs will shift.

E-print repositories

24. Open access through the development and use of e-print repositories provides clear benefits, as outlined above, but will also impose some costs²⁹ on institutions and on the funding bodies that provide the necessary co-ordination and support for networking, interoperability, upgrading and for preservation (see below); preservation costs, in particular, are likely to be significant. The JISC has noted that the funding available to it “is not sufficient to allow all institutions to establish and maintain repositories, where appropriate, or to establish a coherent network of institutional repositories, as recommended in the House of Commons Science and Technology Committee report: *Scientific Publications: Free for all?* Significant additional funding will be required from government for a sustainable initiative on a larger scale”³⁰. However, it is arguable that e-print repository management is part of the changing function and responsibilities of institutions employing researchers and of the library and information services that they provide³¹.

Open access journals

25. A second significant set of shifts in costs is likely to arise if there is any widespread adoption of an “author-pays” publication model, where researchers rather than subscribers meet the costs of publication. “Author-pays” is a misleading term in this context, however, since researchers will in fact expect to see the costs of publication met by the funder of their research. The shifts will be complex, since research is funded from a number of different sources, including not only the Research Councils, but charities, Government Departments, business, international funders such as the EU, and universities themselves, using the block grant provided to them by the Funding Councils, as well as other sources of funding.

26. Initially, the size of these shifts, and their impact, is likely to be relatively small, particularly when set alongside the move towards charging Full Economic Costs (FEC) for research projects. Nevertheless, there remains much uncertainty about the long-term, and thus about the financial implications for universities, the Research Councils, the Funding Councils and other research funders of open-access and other new publication models. It is claimed that the evidence produced so far suggests that the author-pays model could be viable³², but this is far from certain. In addition, if some of the higher estimates of the charges to be levied by open access journals were to prove accurate, the costs to research-led universities and research institutes could, in the long run, prove to be significant. However, at the current stage of development and in the light of Dual Support reform, RCUK is not persuaded of the need to set up a Research Council fund to which researchers could apply to meet any author charges³³.
27. In the absence of any study of the likely long-term impacts of a move to author-pays journals, it is not clear either what the costs will be, nor of how they will be distributed across the Research Councils. The principle outlined at 3(c) above is relevant here: researchers are free to publish wherever they see fit, subject to cost-effectiveness being demonstrated. The uncertainty about costs should therefore not be a barrier to meeting such author charges, and RCUK recognises that open access journals can help improve access to the results of publicly funded research. Therefore, *the Research Councils will ensure that applicants for grant funding are allowed, subject to justification of cost-effectiveness, to include in the costing of their projects the predicted costs of any publication in author-pays journals*. Author charges will be one of the elements of the FEC, 80 per cent of which will be met by the Research Councils following the implementation of FEC from September 2005. RCUK will take stock of the financial outcome of this stance no later than the end of 2008, in parallel with the consideration of the impact of the position on e-print repositories (see paragraph 14(d)).

VAT

28. A more specific cost issue is that purchases of electronic publications attract VAT at the standard rate of 17.5 per cent, whereas printed publications are zero rated. RCUK strongly supported the Science and Technology Committee's recommendation that DTI, DfES and DCMS should make a strong case to HM Customs and Excise for a change in the existing VAT regime; that Customs and Excise should make representations to the European Commission; and that in the meantime libraries should be exempted from the VAT currently payable on digital publications. RCUK is disappointed at the Government's conclusion that such relief is not possible, since we believe that the current position represents an unreasonable tax on the dissemination of publicly-funded research. Indeed, it makes for an unfair distortion of the research publications market, and seriously undermines the Government's stated intention to ensure a level playing field in that market. Any continuing failure to address these issues, moreover, will present a very powerful argument in favour of proactive measures to promote "author-pays" models to provide access to research publications free to users.

Long-term preservation

29. Publications in printed form have survived and been archived for centuries. The challenge for new models of dissemination and access is to ensure that digital media remain as durable as printed material, and that the costs of long-term archiving are manageable. In addition, these challenges extend to the preservation of the data underpinning what is published, and to linkages between the publication and the data.

30. In this context, RCUK recognises the distinction between (a) making published material quickly and easily available, free of charge to users at the point of use (which is the main purpose of open access repositories), and (b) long-term preservation and curation, which need not necessarily be in such repositories. It is important to make the distinction between these overlapping but separate purposes. Equally important is the distinction and relationship between research publications and their underlying data. A resilient and technologically robust framework for the long-term storage and management of digital resources – both publications and data – will require the development of a highly specialised and well-co-ordinated service. E-print repositories may have an important contribution to make to such a service, for instance through helping to set standards for the formatting of data and metadata. Providing effective access to such resources over the long term will pose even greater challenges, and RCUK will monitor the development and implementation of the notion of “Trusted Digital Repository” as a means of setting out clearly-defined standards for the long term maintenance of digital resources³⁴. However, it should not be presumed that every e-print repository through which published material is made available in the short or medium term should also take upon itself the responsibility for long-term preservation.
31. The British Library, and also the five other Legal Deposit Libraries in the British Isles, clearly have a critical role to play in the preservation of digital publications. The Research Councils need to engage in a dialogue with the British Library, the RLN, JISC and publishers, about issues of long-term preservation and access including:
- the selection of what digital resources should be preserved, where and how;
 - the relationship between the British Library and the growing network of institutional and subject-based e-print repositories;
 - the role and scope of the British Library’s own e-print repository;
 - the migration of publications and data from one medium to the other;
 - the development and implementation of metadata and technical standards;
 - ensuring both effective access and interoperability; and
 - as a framework for the above points, considering the impact of the Legal Deposit Act 2003, which allows for an extension of the long-established legal deposit framework to non-print material.

These are issues which extend beyond the realm of open-access publication, and RCUK is aware of the work already underway to develop the British Library’s role as the national archive for digital as well as printed publications. We are also aware of the potential role of the new Research Libraries Network (RLN) – in which the Research Councils are partners – in leading some of this work. ***The Research Councils will consider with the British Library and its partners, including the JISC and the RLN, the potential for them to extend their roles in preserving and making accessible research publications and related data in digital formats.***

Learned Societies

32. The Research Councils, like the Select Committee, are aware of the concerns expressed by some Learned Societies. Some societies generate significant income through publishing revenue, and this is fed back into UK research, for example through grants, sponsored meetings of researchers, fellowships and bursaries. Open-access publication could present a threat towards an important income stream for such organisations, although the true extent of this threat is difficult to quantify. Some

societies with major publishing ventures have found that the provision of open access has had little effect on their income, and Learned Societies in general may well find that they can successfully adapt to new publishing scenarios and develop new roles. RCUK's requirement to deposit in e-print repositories (paragraph 14b) will operate in accordance with copyright and licensing agreements which Learned Societies themselves are party to, and we hope that this provides some reassurance to those Societies who feel vulnerable to the development of repositories. RCUK views the Learned Societies as key members of the research community whose work we support. *The Research Councils will discuss with the Learned Societies ways in which they can adapt to and exploit new models of publication.*

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ENDNOTES AND REFERENCES

¹ The research outputs on which this position statement focuses and to which it principally applies are the articles published in academic journals or conference proceedings and the data that supports the results and conclusions presented in such articles. We recognise that there are many other forms of outputs, such as grey literature, technical reports, monographs, performances and broadcasts, and that like journal articles these are increasingly available in digital form. The business models and intellectual property regimes that apply to outputs of these various kinds, however, are often significantly different from those applying to journal articles. The principles and considerations set out in this statement should therefore be read as applying to publications in the form of journal articles only, along with conference proceedings. It should also be noted that “journal articles” should be taken in this document to encompass conference proceedings.

² The Budapest Open Access Initiative (December 2001) provides a useful and concise definition of open access. Open access literature is characterised by “free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself.” See <http://www.soros.org/openaccess/index.shtml>. An expanded definition is contained in the Berlin Declaration – see endnote 21.

³ Some caution in relation to access may be required in sensitive areas such as defence-related research and work allowing the identification of individuals. In addition, as recognised by the Science and Technology Committee in its Report, some material may be commercially exploitable and thus publishing may preclude or affect adversely patenting or claim of IPR.

⁴ Science and Technology Committee Tenth Report of Session 2003-04: *Scientific Publications: Free for All?* (HC399-1, July 2004) – see <http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/399.pdf>. It should be noted that the Committee explicitly excluded from its considerations journals and other publications in the social sciences, and in the arts and humanities (report, paragraph 6).

⁵ The JISC works with further and higher education by providing strategic guidance, advice and opportunities to use ICT to support teaching, learning, research and administration.

⁶ The Government Departments with a close interest are the Department of Trade and Industry, in relation to both the Office of Science and Technology and the Digital Content and Publishing unit; the Department for Education and Skills, which has responsibility for the Funding Councils; and the Department for Culture, Media and Sport, which has responsibility for the British Library. The Government’s current stance on issues relating to dissemination of and access to research outputs is incorporated in its response to the Science and Technology Committee’s report; see appendix 1 of <http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/1200/1200.pdf>

⁷ The JISC-commissioned report *Delivery, Management and Access Model for E-prints and Open Access Journals within Further and Higher Education* (July 2004) draws a distinction between e-print archives, which it defines as being used for the deposit solely of material published in journals; and e-print repositories, defined a collection of material that contains a range of grey literature and other data, as well as published material (see paragraph 3.2 of the report, at http://www.jisc.ac.uk/uploaded_documents/ACF1E88.pdf). In the light of RCUK’s view on the depositing of research data alongside published material, we feel that the use of the term ‘repository’ is more appropriate for the purpose of the RCUK position.

⁸ The JISC defines an e-print as “a digital duplicate of an academic research paper that is made available on line as a way of improving access to the paper. E-Prints are divided into preprints (papers that are circulated before they have been formally approved for publication), and post-prints (papers that have been approved for publication)”.

⁹ See for example:

- Harnad, S. & Brody, T. (2004) *Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals*, D-Lib Magazine 10 (6) (<http://www.dlib.org/dlib/june04/harnad/06harnad.html>), which suggests a dramatic citation advantage for those authors who, in given subscription journals, deposit their material in e-print repositories

- Kurtz, M.J. (2004) *Restrictive access policies cut readership of electronic research journals articles by a factor of two* (paper presented at National Policies on Open Access Provision, for University Research Output: an International meeting, 19 February 2004, New College, University of Southampton) <http://opcit.eprints.org/feb19oa/kurtz.pdf>

- Lawrence, S (2001) *Online or invisible?*, Nature 411, 6837, p521, which proposes that articles freely available online are more highly cited www.neci.nec.com/~lawrence/papers/online-nature01/

¹⁰ In relation to institutional repositories, the Select Committee recommends that the SHERPA project established by JISC should be funded to enable it to support the development and maintenance of repositories; that SHERPA or a similar body should be funded to coordinate the implementation of a network of institutional repositories, including technical standards to ensure maximum functionality and interoperability; that the DTI, OST, DfES, and DCMS should work together to create a strategy for the implementation of institutional repositories; and that the Research Councils should require as a condition of grant that researchers should deposit copies of all their articles in their institution's repository within one month of publication.

¹¹ See http://www.jisc.ac.uk/index.cfm?name=programme_fair for information about the FAIR programme.

¹² In particular, the Open Archives Initiative Protocol for MetaData Harvesting (OAI-PMH), which allows a third party service provider to gather content information (ie to harvest metadata) from a large number of repositories, once these have been registered as OAI-PMH compliant. OAI-PMH is thus a recognised standard for ensuring interoperability between repositories.

¹³ According to information provided by SHERPA, the 26 universities currently (January 2005) running repositories and taking deposits are: Bath; Birkbeck College; Birmingham; the British Library; Bristol; Cambridge; Cranfield; Durham; Edinburgh; Glasgow; Imperial College; King's College London; Leeds; London School of Economics; Newcastle; Nottingham; the Open University; Oxford; Portsmouth; Royal Holloway; School of Oriental and African Studies; Sheffield; St Andrews; Southampton; University College London; and York. All but six of these (Bath, Cranfield, Open University, Portsmouth, St Andrews and Southampton) are part of the SHERPA project. All these repositories are OAI-PMH compliant. On the basis of figures provided by the Higher Education Statistics Agency (see <http://www.hesa.ac.uk/acuk/maninfo/2002-03/ost0203.htm>), SHERPA has calculated that these institutions (excluding the British Library) represent over 62 per cent of RCUK grant funding.

¹⁴ Although cultural change is required, there is evidence to suggest that in principle, researchers may be happy to embrace change. A survey commissioned by the Association of Learned and Professional Society Publishers (*Authors and Electronic Publishing*, 2002), which elicited responses from about 3000 researchers, indicated that almost two thirds of authors feel that electronic archiving of published material is important (paragraph 3.2.2 of the survey report); tellingly, the same survey indicated that almost 60 per cent of authors believe that it is important for publishers to allow for a published version of their material to be made freely available online (paragraph 3.2.3). The currently low tendency for authors to deposit their material in repositories may be accounted for largely by lack of familiarity with the opportunities provided by such repositories. This is borne by one of the findings of another author survey, this time commissioned by the JISC (*JISC/OSI Journal Authors Survey*), which states that about three quarters of authors are not familiar with e-print repositories (paragraph 4.8.2).

¹⁵ The expressed preference for deposit at or around the time of publication reflects the principle that "ideas and knowledge derived from publicly-funded research are made available and accessible for public use, interrogation, and scrutiny, as rapidly as practicable" (see paragraph 3a). It also reflects the practice of most publishers to allow such immediate deposit under their copyright or licensing agreements – the policy of publishers in relation to deposit is set out in the ROMEO database (see <http://www.sherpa.ac.uk/romeo.php>).

¹⁶ Another finding of the above cited JISC/OSI Journal Authors Survey is that at least 69 per cent of authors (83 per cent in the case of those who publish in open access journals) would willingly deposit their published material in an e-print repository if required to do so by their employer or funding body (paragraph 4.8.2). Only 3 per cent would not be prepared to do so.

¹⁷ There is an interesting example from the perspective on particular publisher: when the American Society for Cell Biology allowed completely free access to the content of its subscription journal, *Molecular Biology of the Cell* (almost 13,000 subscribers), with a lag of just two months following publication, it noted a 14 per cent increase in submissions and a 16 per cent increase in subscriptions in the year following implementation of this policy. This view towards open access may not be typical among publishers of subscription journals, but it suggests that some publishers' fears about deposit in e-print repositories may turn out to be unfounded.

¹⁸ See endnote 13.

¹⁹ RCUK recognises the importance of such subject-based repositories in areas such as physics, environmental science and the social sciences.

²⁰ Such policies might include, for instance, a requirement for MRC-funded researchers to deposit their published material in PubMed Central.

²¹ See <http://www.wellcome.ac.uk/node3302.html>

²² The NIH policy may be viewed at <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html>

²³ The Berlin Declaration can be viewed at <http://www.zim.mpg.de/openaccess-berlin/berlindeclaration.html>; an up-to-date list of signatories, the number of which has expanded since the declaration was announced in November 2003, is at <http://www.zim.mpg.de/openaccess-berlin/signatories.html>

²⁴ More specifically, 85 per cent of German universities have servers to host electronic dissertations; (information provided by SPARC Europe and Professor Elmar Mittler, Head of the Library at Goettingen University).

²⁵ The Select Committee report quoted Professor Stevan Harnad's contention that 83 per cent of journals (from a list of 88 publishers) are 'green', in that they allow authors to self-archive after publication – see <http://www.dlib.org/dlib/june04/harnad/06harnad.html>; however, this 83 per cent includes a 30 per cent figure for journals that will allow the deposit only of pre-prints (i.e. not post-prints). A more realistic figure may be 62 per cent; based on information collected by SHERPA under the ROMEO project, 66 out of 107 listed publishers are categorised as either 'green' (publishers allowing the deposit of both pre-prints and post-prints) or 'blue' (publishers allowing the deposit of post-prints only) – see <http://www.sherpa.ac.uk/romeo.php>

²⁶ Authors themselves may not be happy about the situation: a further study commissioned by the Association of Learned and Professional Society Publishers, in 1998, suggested that over 60 per cent of authors believe that copyright should be retained by them. The same survey indicated that few of them (22 per cent) know for certain that copyright policies are not being flouted by authors – which suggests a vast amount of uncertainty about the effectiveness of publishers' copyright.

²⁷ The ROMEO database referred to above is an invaluable source of reference for documenting publishers' copyright policies. ROMEO has also produced a detailed analysis of selected journals copyright agreements (October 2003), highlighting the varying nature and implications of such agreements – see <http://www.lboro.ac.uk/departments/ls/disresearch/romeo/>

²⁸ RCUK recognises also that peer review mechanisms already vary considerably. Evidence suggests that the different rates of rejection of articles submitted to different journals are indeed a key element in the variations in the levels of costs that the journals incur: overall peer review costs in the highest-ranking journals, with the highest rates of rejection, are greater than those in journals with lower rejection rates. High rates of rejection have until recently been underpinned by the constraints on the number of articles that can be accommodated within a traditional printed volume; and some have expressed concern that the very low marginal costs of adding additional articles in digital journals may reduce this pressure, with an attendant reduction in quality. The Select Committee also noted that there is a risk, in an author-pays publishing model, that lower-quality journals may seek to reduce their quality threshold in order to generate profit.

²⁹ The JISC-commissioned report *Delivery, Management and Access Model for E-prints and Open Access Journals within Further and Higher Education* (July 2004) includes examples of costs associated with the setting up and running of institutional e-print repositories; see section 6.2 at http://www.jisc.ac.uk/uploaded_documents/ACF1E88.pdf

³⁰ See the JISC response to the Select Committee report, appendix 6 at <http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/1200/1200.pdf>

³¹ An example of the evolving function of libraries is provided by UCL, where there has been a shift in staffing resources from inter-library loans to the management of UCL's e-print repository. This shift has taken place at the library's behest, reflecting the reality of a long-term fall in demand for inter-library loans, coupled with the emergence of e-print repository management as a developing library service.

³² See in particular the Wellcome Trust's study on 'Costs and models in scientific and research publishing' (April 2004), which argued that, on the basis of evidence so far, evidence that an author-pays model offers a viable alternative to subscription journals, http://www.wellcome.ac.uk/doc_WTD003185.html. Among the Research Councils, NERC has carried out an exercise that suggests that if all research supported by it were to be published in open access journals, author charges would amount to no more than a small percentage of its overall

budget; since initially only a small proportion of publications would be in open access journals, initial costs would be very small.

³³ The Select Committee had recommended that in the interim, while author-pays models develop alongside traditional subscriber-pays models, the Research Councils should each establish a fund to which their funded researchers could apply should they wish to publish in author-pays journals; and that the OST should take account of this increase in costs. The Committee also noted that the proportionate increase in costs will vary significantly across the different Research Councils, and that this should be taken account of in the allocation of funds to the Councils.

³⁴ A “Trusted Digital Repository” is one whose mission is to provide reliable, long-term access to managed digital resources to its designated community, now and in the future. Much of the work in this area stems from the recommendations in a report, *Trusted Digital Repositories – attributes and responsibilities*, published in 2002 by the Research Libraries Group (RLG) – see <http://www.rlg.org/longterm/repositories.pdf>. The RLG is an international partnership of 150 research libraries and archives, including the British Library and most of the major universities in the UK.