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Author(s)	Bacon-Shone, J; Cheng, E; Ferguson, A; McNaught, C; Palmer, D; Tsoi, AC
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The Open Access Advantage

John Bacon-Shone^d, Edwin Cheng^c, Anthony Ferguson^d, Carmel McNaught^b, David Palmer^d, Ah Chung Tsoi^a

^aHong Kong Baptist University

^bThe Chinese University of Hong Kong

^cThe Hong Kong Polytechnic University

^dThe University of Hong Kong

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In Hong Kong, the University Grants Commission (UGC) recently asked universities to respond to a letter on how best to assess research quality and impact (UGC, 2008), making reference to a UK paper on research assessment that proposes the use of bibliometrics for evaluating research in laboratory-based disciplines, with the possibility of developing suitable bibliometrics for non laboratory-based disciplines in future (Evidence Ltd., 2007; Van Raan et al., 2007)¹. Clearly, this will ensure that universities look carefully at how to maximize the measurable impact of their research. One possibility is to encourage open access publication. In addition, UGC is now reviewing how best to measure and increase Knowledge Transfer (KT) in Hong Kong universities. For any reasonable definition of KT, increasing public access to research done inside universities clearly increases KT and should be encouraged, which suggests another reason to encourage open access publication.

In the US, the National Institutes of Health (NIH) has announced that it will require that all of their full or partially funded investigators submit to PubMed Central an electronic version of their final, peer-reviewed manuscripts no later than 12 months after the official date of publication (SPARC, 2008). Since this mandate took effect on 7 April 2008, it will give public access to the approximately 80,000 NIH articles published every year, substantially increasing the number of high quality papers available through open access. This mandate was a response to the very low submission rates under the previous voluntary policy (LibraryJournal.com, 2008) and has shown more than doubling of the submission rates.

Although the specific policy details vary, the Canadian Institute for Health Research (CIHR) in Canada, the National Institute of Health in Italy, the Wellcome Trust in the UK, all of the Research Councils UK (RCUK)², the Irish Research Council and several individual universities worldwide including Harvard (Guess, 2008) have created policies mandating the deposit of the final publication into an open access online repository, usually within six months of date of publication. Australia's Australian Research Council (ARC) and National Health & Medical Research Council (NHMRC) have a weaker version where they ask their investigators to attempt to do the same, and if not, explain why this cannot be done.

¹ This UK paper is already outdated and the plan is now to use a combination of bibliometrics and expert panels for all disciplines in the UK (see reference).

² HK's RGC began a joint research scheme (JRS) with the RCUK's Economic and Social Research Council (ESRC) in 2007. Because of the ESRC's open access policy, RGC investigators in Hong Kong funded through this JRS presumably will be required to comply and deposit publications in open access repositories.

The Scientific Council of the European Research Council (ERC) announced in January 2008 a similar policy of mandated deposit within six months of publication (ERC, 2007). Both the ERC and the Wellcome Trust are prepared to provide financial support to allow researchers to pay extra fees to journals so that their publications can be placed in open access (such as in institutional repositories (IRs) or self-archiving), even if the journal does not provide open access (Wellcome Trust, 2008). The ERC also requires that data sets used to support the research, such as nucleotide/protein sequences, be deposited.

While the motivation for these moves by research funders is often the principle of maximising public access to and public benefit from research findings, open access has broader advantages. There is now good research showing that it increases citations across disciplines (e.g. MacCallum & Parthasarathy, 2006). Arguably the most methodologically advanced paper on this subject is by Eysenbach (2006), who looked at the *Proceedings of the National Academy of Sciences (PNAS)* and concluded that the Open Access Advantage (OAA) includes three elements, namely (1) increased citation counts, (2) increased access by end users, and (3) increased cross-disciplinary fertilization. All three of these advantages relate directly to the missions and strategies of the UGC institutions. An earlier paper by Hajjem et al. (2005), although less sophisticated methodologically, covers a much wider range of disciplines and concludes that the OAA can be replicated in ten disciplines covering all the RGC panels, with the advantage ranging from 25% to 250%. Another paper by Harnad (2005) claims that for Australia alone, the missed benefit from not going OA is AUD425 million per year (compared to ARC's expenditure of AUD0.55 billion per year and the NHMRC expenditure of AUD0.5 billion per year). There is still some argument as to how much of the OAA benefit is due to earlier publication rather than increased total citations (Moed, 2007; Hajjem & Harnad, 2007; Davis et al., 2008) for disciplines where OA is already common practice, but that does not seem critical to the argument, given that most disciplines still have strong financial barriers limiting access to papers.

While it is possible to argue with some elements of the methodology of the earlier papers, there is no question that the OAA does exist. It is also clear that the present policies of journals combined with the new policies of funding agencies will usually allow self-archiving of the author's publication in one form or another. Many journals, such as Cambridge Journals³, allow posting of the article to online repositories after publication⁴. Most other journals that do not allow this will allow a pre-print, or a post-print (after peer review) to be self-archived. Other journals will allow one of these actions if an extra fee is paid. Funding agencies such as the ERC and the Wellcome Trust have agreed to pay these fees.

³Cambridge Journals, For Authors. <http://journals.cambridge.org/action/forAuthors?page=copyright>
“The [author has the] right to post the definitive version of the contribution as published at Cambridge Journals Online (in PDF or HTML form) on their personal or departmental web page, no sooner than upon its appearance at Cambridge Journals Online, subject to file availability and provided the posting includes a prominent statement of the full bibliographical details, a copyright notice in the name of the copyright holder (Cambridge University Press or the sponsoring Society, as appropriate), and a link to the online edition of the journal at Cambridge Journals Online”.

⁴ See the Appendix for a list of publishers known to allow self-archiving of the published paper

This paper focuses primarily on journal publications, but for some disciplines, books provide the primary means of dissemination and the OA process for books is much less well developed. One example of what might happen is Open Access Publishing in European Networks (OAPEN, 2008), which consists of six European university presses, which are all scholarly publishers predominantly active in Humanities and Social Sciences (HSS) and book publishing. Jointly the members have digital publishing programmes, conduct experiments with OA, make use of digital repositories, publish in different European languages, have a worldwide distribution network (including the USA), and cooperate closely with university libraries. Their proposed OA model aims to create an OA-publishing platform in combination with an online library, that can be used by academic publishers and research funding institutes, based on their respective needs, which has the potential to greatly increase access and visibility of academic humanities and social sciences books. Clearly, it will be wise to track developments in this area, but for books and book chapters that do not have a royalty agreement, it is already worthwhile to try and seek the right of publishing some version of the materials in open access.

The key question is how to encourage Hong Kong authors to use OA. All HK universities have now established an open access IR. For example, HKU Library is contacting HKU authors one by one to ask permission for inclusion of their articles. How can we create a system whereby Hong Kong authors will pro-actively self-archive into an IR? Funding agencies, such as those listed above, have mandated that authors deposit into an OA repository. In a policy similar to the one by the Wellcome Trust, the University of Nottingham has set up a Central Open Access Fund to support staff across the university in achieving OA (BioMed Central, n.d.). Recently (on 12 February 2008), Harvard University's College of Arts and Sciences announced a decision to place their academic papers online in open access, unless the author opts out. Harvard's School of Law followed with a similar decision on 1 May 2008. The University of Oregon Faculty Senate adopted a resolution recommending that faculty include an "author's addendum" in negotiation with publishers, that they might keep their rights to self-archive their articles on their own web pages and the university's IR. Clearly Hong Kong could consider these options together with an associated policy of encouragement and administrative support and a suitable impact evaluation process.

Specific proposal

As the majority of research in Hong Kong is funded by the RGC/UGC, their policies are critical. We would like to propose the following specific actions for the RGC/UGC's consideration:

- a) State clearly that all researchers funded by an RGC grant should aim to publish their results in the highest quality journals or books so as to maximize the influence and impact of the research outcome and that to achieve this when publishing research findings:
 - i. Researchers should look for suitable OA journals so that, where there is a choice between non OA and OA journals that are equally influential and high impact, the choice should be to publish the results in an OA journal.
 - ii. When a comparable OA journal does not exist, they should send the journal the Hong Kong author's addendum (University of Hong Kong,

- 2008), which adds the right of placing some version (preprint or postprint) of the paper in their university's institutional repository (IR). If necessary, seek funds from the RGC to pay open access charges up to an agreed limit; perhaps US\$3,000, which is the fee agreed with the Wellcome Trust for most Elsevier journals (Elsevier, 2007).
- iii. For books and book chapters that are published without a royalty agreement, send the publisher the Hong Kong author's addendum to seek the right of placing some version in their university's IR.
 - iv. Deposit all published papers in their IR, unless the journal refuses in writing. If the published version is refused, deposit the preprint or postprint, as allowed in number ii above.
 - v. Must provide evidence to the RGC in their progress report that the above steps have been undertaken.
- b) For existing RGC grant holders, set aside some money to cover the publication of papers in OA according to (a) (ii) above, where necessary.
 - c) Add a notional element, to a set maximum limit, to all new successful RGC grant applications (similar to the existing conference component of the grant) to cover open access charges.
 - d) Write to the other major research funders in Hong Kong (e.g., Food and Health Bureau, Commission for Innovation and Technology, Croucher Foundation) to encourage similar strategies.

In the meantime, we also hope that universities in Hong Kong will play their role in encouraging researchers to place all output, not just that funded by RGC, in their local IRs, and also help pay open access charges where appropriate to maximize the output placed in the IR.

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Appendix

1. Partial list of publishers who allow the published version to be self-archived on the author's web page or the IR of the author's institution

A S M International
Academia Sinica, Institute of Statistical Science
Acoustical Society of America
American Academy of Pediatrics
American Association of Australian Literary Studies
American Association of Veterinary Laboratory Diagnosticians
American Astronomical Society
American Institute of Biological Sciences
American Institute of Physics
American Mathematical Society
American Physical Society
American Phytopathological Society
American Society for Cell Biology
American Society for Clinical Investigation
American Society of Animal Science
American Society of Tropical Medicine and Hygiene Anistoriton
Anton Melik Geographical Institute
Arkat USA, Inc
Asociacion Cuadernos de Economia
Asociacion de Economia Aplicada
Australasian Society for Computers in Learning in Tertiary Education (ascilite)
Australian Physiotherapy Association
B M J Publishing Group
Beech Tree Publishing
Berkeley Electronic Press
Biodiversity Science
BioMed Central Ltd
Biophysical Society
Butterworths Asia (HK)
Cambridge University Press
Carnegie Bosch Institute
Center for Economic Research and Graduate Education, Charles University (CERGE)
Channel View Publications
Company of Biologists Ltd
Council for the Development of Social Science Research in Africa
Department of French and Italian, Vanderbilt University
Department of Geology, Universitatis Babes-Bolyai
Duke University Press
E D P Sciences
Economics Institute, Academy of Sciences of the Czech Republic (EI)
Electrochemical Society, Inc
European Communities Studies Association - Austria
Evolutionary Ecology Ltd
Florida Entomological Society
Heldref Publications
Hindawi Publishing Corp
Hong Kong College of Family Physicians
Hong Kong Medical Association
I E E E
I E E E, Computer Society
I E E E, Computer Society, Learning Technology Task Force
I E E E, Education Society
Institute Nazionale de Consumo
Institute of Biology

Institute of Mathematical Statistics
Inter Research
International and American Associations for Dental Research
International Union of Pure and Applied Chemistry
Ivyspring International Publisher
Journal of Maps
Kassel University Press GmbH
Lawrence Erlbaum Associates, Inc
Macau Ricci Institute
Massachusetts Medical Society
Materials Research Society
MediMedia Pacific Ltd
Medknow Publications Pvt Ltd
Multilingual Matters Ltd
Mycological Society of America
N R C Research Press
National Research Council of Canada
Omicron Delta Epsilon
Raptor Research Foundation, Inc
Resilience Alliance Publications
Rockefeller University Press
Royal Meteorological Society
S P I E - International Society for Optical Engineering
Society for Industrial and Applied Mathematics
Society for Neuroscience
State University of NY at Buffalo, Department of Library and Information Studies
Symposium Journals
Thomson Press Hong Kong Ltd
Universitätsverlag Göttingen (Goettingen University Press)
University of California at Berkeley, Department of Mathematics
University of Chicago Press
University of Hawaii Press
Vathek Publishing
Verlag Eugen Ulmer GmbH
Washington, DC: US Patent and Trademark Office

2. Partial list of publishers who allow the postprint version (after refereeing) to be self-archived on the author's web page or the IR of the author's institution

Aboriginal and Torres Strait Islander Studies Unit
Academic Press
Academic Publishers
AEAweb
AlphaMed Press, Inc
American Anthropological Association
American Association for the Advancement of Science
American Association of Physics Teachers
American College of Sports Medicine
American Dairy Science Association
American Diabetes Association
American Economic Association
American Geophysical Union
American Library Association
American Meteorological Society
American Psychological Association
American Society for Biochemistry and Molecular Biology, Inc
American Society for Microbiology
American Society of Civil Engineers
American Society of Hematology

American Vacuum Society
Anadolu University
Annals of Genealogical Research
Annual Reviews
Arnold Publishers
Ashgate Publishing Ltd
Association for Computing Machinery
Association for Computing Machinery, Inc
Association for Information Systems
Association for the Advancement of Computing in Education
Association of Applied Biologists
Association of Learned and Professional Society Publishers (ALPSP)
Association pour le développement de la recherche en économie et en statistique (ADRES)
Australian Academic Press
Australian Academic Press Pty Ltd
Australian Computer Society Inc
Australian Library and Information Association
Australian Mathematical Society
Australian Psychological Society
Bailliere Tindall
Behaviourists for Social Responsibility
Berg Publishers
Berghahn Journals
Blackwell Munksgaard
Blackwell Publishing Asia
Blackwell Publishing Japan
Blackwell Publishing Ltd
Blackwell Publishing, Inc
Blackwell Science Ltd, Oxford
Blackwell Verlag GmbH
Brill Academic Publishers
British Psychological Society
C S I R O, Publishing
CAB International
CAB International Publishing
Calicut Medical College
Carnets de Geologie
Cell Press
Center for International Economics, Sejong Institution, Sejong University
Churchill Livingstone
Consultants Bureau
Copernicus GmbH
CSIRO Publishing
Ecological Society of America
Econometric Society
Edinburgh University Press
Elsevier
Elsevier (Singapore) Pte Ltd
Elsevier (Singapore) Pte Ltd, Hong Kong Branch
Elsevier BV
Elsevier France, Editions Scientifiques et Medicales
Elsevier Inc
Elsevier Ireland Ltd
Elsevier Ltd
Elsevier Ltd, Trends Journals
Elsevier Masson
Elsevier SA
Elsevier Science
Emerald
Emerald Group Publishing Limited

Emerald Group Publishing Ltd
Endocrine Society
English Folk Dance and Song Society
Entomological Society of America
European Geosciences Union (EGU)
European Optical Society
Excerpta Medica, Inc
Future Drugs
Gallaudet University Press
Geological Society Publishing House
Georg Thieme Verlag
Haworth Information Press
Haworth Press, Inc
Heron Publishing
Herpetologists League
Hogrefe & Huber
Humana Press, Inc
I O S Press
Inderscience Publishers
Indiana University Mathematics Journal
Indiana University Press
Informa Healthcare
Information Research
INFORMS (Institute for Operations Research and Management Sciences)
Institute of Physics Publishing
Institution of Chemical Engineers
Institution of Engineering and Technology
International Human Frontier Science Program Organization
International Linear Algebra Society
International Medart, Society of Integrated Sciences
International Press
International Society of Bassists
Internet Journal of Chemistry
Internet Medical Publishing
Interperiodica
John Libbey Eurotext
John Wiley & Sons
John Wiley & Sons Ltd
John Wiley & Sons, Inc
Johns Hopkins University Press
Kluwer
Kluwer Academic / Plenum Publishers
Kluwer Academic Publishers
Kohlhammer
Laser Institute of America
Laurenti Verlag
Libertas Academica
Library Publishing Media
M A I K Nauka - Interperiodica
Maney Publishing
Marcel Dekker (now owned by Taylor & Francis)
Marcel Dekker Inc
Marine Technology Society
Mary Ann Liebert, Inc Publishers
Massachusetts Institute of Technology Press
Michigan Law Review
Modern Humanities Research Association
Mosby, Inc
Multi-Science Publishing
National Academy of Sciences

Nature Publishing Group
Nordic Ecological Society
Oceanography Society
Optical Society of America
Oxford University Press
Palgrave Macmillan Ltd
Pergamon
Physica-Verlag GmbH und Co
Portland Press Ltd
Professional Engineering Publishing Ltd
Psychology Press
Public Library of Science
Rodopi
Routledge
Royal College of General Practitioners
Royal College of Psychiatrists
Royal Society
Royal Society of Chemistry
Royal Society of Medicine
Royal Statistical Society
SAGE Publications (UK and US)
Sage Publications India Pvt Ltd
Sage Publications Ltd
Sage Publications, Inc
School of Management, University of Bath
Scientific Journals International (SJI)
Scientific World
Sheffield Academic Press
Société Géologique de France
Society for Endocrinology
Society for Experimental Mechanics
Society for General Microbiology
Society for In-Vitro Biology
Society of Dyers and Colourists
Society of Industrial and Applied Mathematics
Society of Systematic Biologists
Springer Hong-Kong Ltd
Springer Japan
Springer New York LLC
Springer Publishing Company
Springer-Verlag
Springer-Verlag Dordrecht
Springer-Verlag Heidelberg
Springer-Verlag London Ltd
Springer-Verlag Wien
Taylor & Francis (CRC Press)
Taylor & Francis (Psychology Press)
Taylor & Francis (Routledge)
Taylor & Francis Inc
Taylor & Francis Ltd
The Company of Biologists Ltd
The Endocrine Society
The Johns Hopkins University Press
The Lancet Publishing Group
The Medicine Publishing Company
Thomas Telford Ltd
Thomson Legal & Regulatory
Trans Tech Publications Ltd
United Kingdom Serials Group (UKSG)
University of California Press

University of Illinois Press
University of Ottawa Law & Technology Journal (UOLTJ)
V S P
Vittorio Klostermann
WB Saunders Co
WB Saunders Co Ltd
Whurr Publishers Ltd
Wiley - V C H Verlag GmbH & Co KGaA
Wiley-VCH Verlag Berlin
World Scientific Publishing Co Pte Ltd
Yale Law School
香港青年協會

3. Partial list of publishers who offer a fee-based open access option for publication.

AlphaMed Press, US\$2,000 per article
American Chemical Society, US\$3,000 per article
American Institute of Physics, "Author Select Fee", US\$1,500 ~ \$1,800
American Physical Society, "Free to Read", US\$975, \$1,300 per article, letter, respectively
American Society for Biochemistry & Molecular Biology, "Author Choice Option", \$1,500 members, \$2,000 non members
Arnold Publishers, "Sage Open", US\$3,000 per article
Association of Learned and Professional Society Publishers, "ALPSP", US\$2,500 members, \$3,000 non-members
Biophysical Society, "Biophysical Journals Open Access", US\$1,000 per article plus page & colour charges
Blackwell Publishing, "Online Open fee", US\$2,600
BMJ, \$2,200 or \$3,145 depending on journal
Elsevier, "Sponsorship Option", US\$3,000 per article
Oxford Journals, "Oxford Open", \$1,500 for an institution that subscribes, or, \$2,800 for a non-subscribing one.
Portland Press, "Opt2Pay", US\$3,000 per article, \$3,500 without institution subscription
Professional Engineering Publishing, "Engineering Open Choice", £1,700 per article
Royal College of Psychiatrists, US\$4,500 per article
Royal Society, "Exis Open Choice", £150 ~ 225 per article plus page charges
Sage Publications, "Sage Open", US\$3,000 per article
Springer, "Open Choice", US\$3,000 per article