

Imperial College London

Submission to the RCUK Review on Open Access

September 2014
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Introduction

- 1) This report summarises the progress Imperial College London has made in the implementation of the RCUK policy on Open Access for the period 1st April 2013 – 31st July 2014. It details the expenditure made from the RCUK block grant allocation, and responds to the questions raised in RCUK's call for evidence.
- 2) Imperial College London is committed to disseminating its research as widely as possible and encourages all academic and research staff and students to make their output available through open access (OA). It fully supports the goal to make publicly funded research freely available to the public, and it welcomes continuing support from funding bodies like RCUK.
- 3) The College also acknowledges that the implementation of OA policies creates challenges for institutions, academics and publishers, and requires a significant culture change in scholarly communication. We share RCUK's view that the journey to full open access is one that will take several years to complete.
- 4) Based on analysis of a publication data sample, Imperial College has met the targets set out in the policy. A detailed breakdown of open access publishing activity and compliance is provided below. The report also highlights inefficiencies in the open access publishing process; we would like to work with RCUK and other partners, including publishers, to address these.

Open Access at Imperial College

- 5) Imperial has supported open access publishing for several years. The Library has ten years of experience administering Wellcome Trust funding for open access and Imperial's repository, Spiral, established in 2008, accepts deposits of theses, papers and other research outputs. In April 2012, a dedicated open access publication fund was set up, predating the RCUK OA policy announcement of that year. Subsequent management of the RCUK block grant and the grant provided by BIS for the financial year 2012/2013 initially followed the model established for the two preceding funds (workflows and systems have since been updated).
- 6) Following the Finch Report and the RCUK OA policy announcement in June 2012, a cross-College Open Access Project was set up. Its activities are overseen by a steering group comprising representatives of the academic faculties and the central administration, chaired by the Dean of the Faculty of Natural Sciences. Since September 2013, the project has been formally supported by a full-time project manager.
- 7) During the first year of the RCUK policy, the Open Access Project has focussed efforts on enhancing systems and workflows in order to provide improved and more scalable support to the academic community. The project has delivered a range of improvements, including:
 - a. a streamlined and partly automated APC application process supported by a management system integrated with the College grants database and the staff directory;

- b. an improved APC administration process with significantly reduced payment times;
 - c. increased resources for training, support and communication;
 - d. an updated scholarly communication web presence;
 - e. improvements to the user interface of Spiral;
 - f. changes to Symplectic Elements, Imperial's publication management system, that facilitate article deposit.
- 8) The College is also working with partner organisations, including other HEIs, vendors and Jisc, to improve the overall support for open access.

Data analysis to establish compliance

- 9) Despite the efforts outlined above, it remains difficult to comprehensively report on open access publishing activities. The main issue faced by the College, as well as other research-intensive HEIs, is identifying all eligible outputs arising from RCUK funding. While Imperial has detailed information on the publishing activities of its academic community – it is estimated that over 90% of all publications are recorded in Symplectic Elements – this data is not currently associated with funder information. As Imperial academics publish, on average, over 10,000 articles per year it is not feasible to manually check for funder acknowledgements. The College is about to roll out a solution that will allow academics to associate awards and publications, but until that is in place the exact number of outputs related to RCUK funding remains unknown.
- 10) Similar data collection issues apply to gold and green publishing activities. Publishing workflows (whether 'traditional' or open access) are centred on the author-publisher relationship, and there are no natural touch points with the central administration. The exception is where an academic *chooses* to contact the Library to deposit an article in the institutional repository or to apply for funding to pay for an APC. The College does have accurate data on APC payments from the central funds. However this does not include data on publications paid for from project grants that pre-date the RCUK policy or paid for by another HEI (in the case of multi-author articles).
- 11) The College also has no record of articles deposited in external repositories, and until solutions to disambiguate authors, such as ORCID, are more widely implemented automatic monitoring will remain difficult. The College is actively working towards increasing uptake of ORCID and embedding it within institutional systems.
- 12) Based on the ratio of funding income from RCUK to total research income and the overall number of outputs published, it is estimated that four thousand articles are likely to acknowledge RCUK funding during the reporting period.
- 13) As it is not possible to establish the open access status of this estimated dataset, the College has undertaken analysis based on a sample of articles known to acknowledge RCUK funding: publications reported to ROS and Researchfish. The following method was used to analyse the sample:
- a. The list was cross-referenced with the following data sources:
 - i. deposits in Spiral;
 - ii. APC payments from the RCUK block grant;

- iii. MRC-funded articles with a PMC ID (as these can be assumed to be OA);
 - iv. known open access journals and publishers.
- b. A sample of the remaining outputs was checked manually to identify further OA publications.
- 14) As other HEIs may work with different data and may use different methods to determine compliance, a comparison of compliance rates should be approached with considerable care.

Evidence in response to the call

- 15) With these caveats, Imperial College London reports the following in response to the RCUK request:
- a. Estimated number of peer-reviewed papers arising from RCUK funding: ~4,000
 - b. Sample of peer-reviewed papers used for analysis: 1,326
 - c. Number of papers compliant with the policy through the gold route: 709
 - d. Number of papers compliant with the policy through the green route: 31
 - e. Number of papers of unknown or non-compliant status: 586
- 16) Based on the data sample, Imperial College has met the target set out in the policy. While this is not a guarantee that the target would have been met for the estimated overall number, the College has made more articles available through the gold route than the target set in the [RCUK block grant allocation](#) (694).
- 17) Financial accountability: Imperial College has received £1,150,458 for the year 2013-2014. £299,492.12 has been spent on open access publications, the remaining balance will roll over to the year 2014-15.

Award Year	Award Value	Total Spend	Balance remaining
13/14	£1,150,458.00	£299,492.12	£850,965.88
14/15	£1,353,480.00	0	£1,353,480.00
Total	£2,503,938.00	£299,492.12	£2,204,445.88

It should be noted that the number of gold articles in paragraph 15 includes articles paid for through project budgets and the BIS grant received for 2012-13.

- 18) As the College manages the RCUK fund diligently, there have been no difficulties in ensuring that funding is used for its intended purpose. During the reporting period money was exclusively spent on open access publications.
- 19) The average APC paid during the reporting period was £1,837.
- 20) 128 APCs were paid to hybrid journals (to the sum of £252,683.02), compared to 35 APCs (£46,809.10) for open access journals. Hybrid journals account for 79% of the APC payments and about 85% of spend. The average hybrid APC is £1,974 or about 50% more than APCs to OA journals (£1,337).
- 21) It is College policy not to pay colour charges. Payment of page charges has been supported since April 2014; up to end of July 2014, page charges for three articles have been paid, to the overall sum of £1,728.53.

- 22) Outputs deposited in Spiral are available under the CC BY-NC-ND license.
- 23) In managing the RCUK block grant, the Library has taken care to ensure that agreements with publishers include the CC-BY licence. However, even where CC-BY licenses have been agreed, publishers do not always make the article available under the correct licence. Academics have reported cases where articles have still been published with copyright fully retained by the publisher. When this happens, the College has, and will, work with authors and publishers to rectify the situation.
- 24) From the applications to the RCUK fund, there is little evidence that the RCUK policy requirements for 'gold' open access, in particular CC-BY, cause significant problems for Imperial scholars. A very small number of requests for APC payments have been rejected because a journal is not compliant. In the case of two Elsevier journals the author had already agreed to the CC BY-NC-ND licence, and in a different example of non-compliance, currently neither Optics Letters (published by OSA), nor Proceedings of the National Academy of Sciences offer open access under a Creative Commons licence.
- 25) Therefore it would appear that for the STEM journals in which most Imperial scholars publish, compliance with the policy (gold or green route) may not be a widespread issue. This does not mean that there are no problems: academics publishing in non-compliant journals may not apply to the fund in the first place and there are high profile exceptions such as Blood (published by the American Society of Haematology). It should also be noted that the uptake of open access by authors and support from journals varies across disciplines and specific fields of study, even in the sciences. The situation is more difficult for authors in the Imperial College Business School where a larger number of non-compliant journals exist, and generally with US-based publications, especially those run by scholarly societies. Until that situation changes, the policy should therefore allow exceptions where the most appropriate journals do not yet support open access.
- 26) The majority of papers published by Imperial researchers have multiple authors. Where authors come from several institutions, the APC is paid in full if the corresponding author is currently based at Imperial, even if the research award is held by another institution. The College aims to be flexible to avoid authors not having access to funds to publish their research, but there is a risk that some authors may fail to acquire funds when they move between institutions.
- 27) In the case of outputs from projects with multiple funders, the College charges APCs to the funders in proportion of the contribution to the publication, where other funders make publication costs available. Where other funders do not provide publication costs (for example, Cancer Research UK), the cost is fully charged to the RCUK fund. Some funders, such as the British Heart Foundation, pay a share of the cost but this may be lower than their contribution to the actual research.

Policy management effort

- 28) Ensuring compliance with the policy requires significant effort at the Library, especially for Gold OA. For every APC application received, the fund manager checks that the journal is compliant, using Sherpa/FACT. However, as it is not clear whether recording the response from FACT will satisfy RCUK requirements, applications are manually double-checked with the journal website to ensure compliance; this makes the whole process less efficient.

- 29) Publishers add to this by offering authors a ‘choice’ of non-compliant licences; in the case of Elsevier even under pre-payment deals specifically aimed at RCUK-funded researchers. This means that the fund manager also has to confirm that the licence offered to the author is compliant. This often requires contacting both journal and author as licensing information is not necessarily provided on invoices. Payment can be slowed down further by journals failing to use the correct invoice address, which results in the cancellation and re-issuing of invoices.
- 30) Complying with open access requirements also increases the workload of authors. The average time to collect information and to apply for an APC payment appears to be about 30 minutes. With some journals it can take academics hours to confirm the costs; authors complain about 'a lot of time chasing up payments, paperwork, [and] requesting the wrong licence'. These and other issues like fluctuating journal policies appear to relate to hybrid journals in particular. One author reports:
- ‘With fully open access journals there is basically nothing to do (as long as it meets CC-BY)...[however] with hybrid journals it is more cumbersome – for example, IEEE requires you to directly email the editorial office for confirmation of CC-BY, etc.’
- 31) Following feedback from the academic community, the College has made changes to APC administrative processes to significantly reduce payment times (from the standard 30 day payment to 1-2 weeks) and to minimise the overall involvement of academics in this part of the procedure. Despite these efforts, APC payments are still difficult to process as publishers usually issue only individual invoices per article and will also only publish articles after the payment has been received (we have also experienced significant delays between sending payment and the subsequent publisher acknowledgement of payment). If monthly invoicing to the Library, ideally with an itemised bill including the licence, was more widely available the process would be less cumbersome for all parties involved. We have raised this issue with publishers and will continue to do so.
- 32) Open access publishers offer a better service in relation to payment and publishing workflows. Steps are being taken to use more streamlined invoicing procedures where offered by OA publishers.
- 33) With regards to facilitating deposits the main effort for library staff is dedicated to checking journal policies and permissions – this takes about three times as long the actual deposit. Even so the management of deposits overall only takes about a third of the effort for APC applications.
- 34) It is estimated that on average it takes 3-4 hours to complete one APC application. While the actual time to process an application is much shorter, this estimate includes the effort of the author; the time spent by the fund management team on responding to queries, providing support; and the time to process the invoices by the finance team. If the College were to achieve 100% open access through the gold route, this would add up to around 35,000 hours of staff time (although it is expected that operating at a larger scale the process could be made more efficient, following recent workflow and systems improvements).

Major Points

- 35) Compared to open access publications, hybrid journals not only cost more – even leaving aside the issue of “double-dipping” – but also tend to increase administrative overhead and do not seem to offer the same quality of service. In addition, hybrid journals tend to present more issues related to licencing. As there is little sign of hybrid journals “flipping” to open access, the College is concerned that the RCUK policy effectively forces universities to spend

significant amounts of public money – about 85% of the APCs spend paid from the College RCUK-fund – on an offering that may not appear to be good value. The College would like to encourage RCUK to work with the Wellcome Trust, RLUK and others to address this.

- 36) Journals offering non-compliant licences confuse authors and create overheads for fund managers who need to check that the correct licence was chosen. It is not clear why some journals discourage authors from selecting CC-BY by charging more than for other Creative Commons options (an example would be CHEST, the journal of the American College of Chest Physicians, where CC-BY costs an additional \$2,000).
- 37) The current payment process in which “legacy” publishers issue individual invoices to authors is slow and inefficient. Publishers are encouraged to offer monthly, itemised invoicing that includes relevant information such as the licence.
- 38) Some publishers offer pre-payment schemes, but these are not always good value for money, can allow publishing under non-compliant licences, and have the potential of reducing the transparency of APC costs. We are also concerned that publisher offers for retrospective OA may represent poor value for taxpayer money.
- 39) Unclear and unfixed journal open access policies are causing unnecessary confusion and make services such as Sherpa/FACT less useful, because information can rapidly become out of date.
- 40) Checking details of open access policies on publisher websites is time-consuming. RCUK is invited to give clear guidance as to whether institutions can rely on OA compliance information given at Sherpa/FACT or are required to continue to make manual checks of all journals for which APC applications are received.
- 41) Differences in funder policies make it harder for academics to understand how to comply and increases the workload for support services, especially where more than one funder is involved. RCUK is encouraged to harmonise policy requirements with other funders, in particular with the Policy for open access in the post-2014 Research Excellence Framework.
- 42) Implementing open access comes at a considerable cost. If the average APC does not reduce significantly, 100% Gold OA would be considerably more expensive than subscription payments. According to [estimates by the Publishers Association](#), 100% Gold OA would cost the UK £245m annually, £82m more than the subscription budget. This does not even take into account staff time to manage and support the process. Preliminary College data suggests that the current administrative overhead for Gold OA may be three times as high as that for Green.
- 43) Assuming the estimate of the overall number of articles acknowledging RCUK-funding for Y1 of the policy is correct, the RCUK-funding would not have been sufficient to meet the target set in the policy (45% OA, 75% of which should be delivered through the Gold route). The College would have required £2.48m (1,350 articles, £1,837 per APC), over twice the amount provided. RCUK may wish to consider the overall sustainability of OA funding when planning for years 3-5 of the policy.

Appendix – Block Grant Spend by Publisher and Journal

Publisher	Total Spending	Number of Articles
Wiley	£46,346.09	22
Elsevier	£39,858.30	23
Nature Publishing Group	£37,268.00	11
American Geophysical Union	£28,418.35	12
Public Library of Science	£13,572.45	11
Springer	£12,664.58	6
Oxford University Press	£11,925.00	6
Institute of Physics Publishing	£11,427.50	7
American Chemical Society	£9,874.78	7
American Physical Society	£8,776.08	5
BioMed Central	£8,494.50	6
The Royal Society	£6,720.00	4
Royal Society of Chemistry	£6,460.00	6
Taylor and Francis	£6,381.22	3
BMJ Publishing Group	£4,680.00	2
American Institute of Physics	£4,653.98	3
American Society for Microbiology	£4,183.66	4
MDPI	£3,662.09	3
Cell Press	£3,648.22	1
American College of Chest Physicians	£3,624.81	2
American Society for Biochemistry and Molecular Biology	£3,439.55	2
Copernicus	£2,748.20	2
Lippincott, Williams & Wilkins	£2,718.49	1
The London Mathematical Society	£2,310.00	1
Cambridge University Press	£2,034.00	1
The Society for Neuroscience	£1,928.58	1
Copernicus GmbH (Copernicus Publications)	£1,809.03	2
Portland Press	£1,800.00	1
Dove Medical Press	£1,416.00	1
JoVE	£1,304.12	1
Bioscientifica	£1,200.00	1
Imperial College Press	£1,111.52	1
IEEE	£1,070.66	1
Frontiers	£780.93	1
Institution of Engineering and Technology (IET)	£694.66	1
American Meteorological Society	£486.77	1
Grand Total	£299,492.12	163

Journal	Total Spending	Number of Articles
Nature Communications	£30,240.00	8
Geochemistry, Geophysics, Geosystems	£12,626.67	5
Angewandte Chemie International Edition	£10,654.65	4
Journal of Geophysical Research: Space Physics	£10,190.34	4
Physical Review Letters	£7,549.96	4
PLoS One	£5,894.06	6
Plasma Physics and Controlled Fusion	£5,780.00	3
Geophysical Research Letters	£5,601.34	3
Acta Biomaterialia	£4,510.19	2
Renewable Energy	£4,363.25	2
Conservation Biology	£4,332.86	2
Lancet Global Health	£3,794.40	1
Current Biology	£3,648.22	1
Chest	£3,624.81	2
Journal of Biological Chemistry	£3,439.55	2
Oncogene	£3,360.00	1
Journal of Infectious Diseases	£3,165.00	1
Journal of Virology	£3,096.89	3
PLoS Computational Biology	£3,066.09	2
PLoS Genetics	£2,964.05	2
AIDS	£2,718.49	1
Molecular Therapy- Nucleic Acids	£2,600.00	1
Nucleic Acids Research	£2,556.00	2
Geoscientific Model Development	£2,510.39	2
Chemistry - A European Journal	£2,484.16	1
Applied Energy	£2,424.16	1
Journal of Antimicrobial Chemotherapy	£2,400.00	1
International Journal of Adhesion & Adhesives	£2,385.31	1
Molecular Microbiology	£2,373.59	1
Sexually Transmitted Infections	£2,340.00	1
Thorax	£2,340.00	1
Proceedings of the London Mathematical Society	£2,310.00	1
Acta Mechanica	£2,292.87	1

Journal	Total Spending	Number of Articles
Acta Materialia	£2,246.96	1
FEMS Microbiology Letters	£2,240.75	1
Molecular Nutrition and Food Research	£2,240.75	1
Traffic	£2,197.66	1
Advanced Functional Materials	£2,197.66	1
Journal of Physical Chemistry C	£2,190.46	1
Journal of Scientific Computing	£2,182.54	1
Journal of Biomechanics	£2,168.46	1
Journal of Fourier Analysis and Applications	£2,149.77	1
Journal of Sol-gel Science and Technology	£2,148.20	1
European Journal of Neuroscience	£2,148.08	1
International Journal for Numerical Methods in Biomedical Engineering	£2,146.18	1
Diversity and Distributions	£2,146.18	1
Molecular Physics	£2,145.60	1
International Journal for Numerical Methods in Fluids	£2,131.96	1
Biological Invasions	£2,129.66	1
International Journal of Remote Sensing	£2,123.33	1
Numerical Heat Transfer, Part B: Fundamentals	£2,112.29	1
Global Change Biology	£2,105.39	1
Behavioral Ecology	£2,100.00	1
ChemPhysChem	£2,070.12	1
Journal of Physics: Condensed Matter	£2,040.00	1
Chemical Communications	£2,040.00	2
Journal of Physics B: Atomic, Molecular and Optical Physics	£2,040.00	1
European Journal of Applied Mathematics	£2,034.00	1
Brain Stimulation	£1,994.32	1
Journal of Neuroscience	£1,928.58	1
Polymer	£1,922.55	1
BMC Medicine	£1,878.00	1
European Urology	£1,822.61	1
Biochemical Society Transactions	£1,800.00	1
Space Science Reviews	£1,761.54	1

Journal	Total Spending	Number of Articles
Nucleic Acid Research	£1,704.00	1
Journal of Chemical Physics	£1,695.49	1
Journal of the Royal Society - Interface	£1,680.00	1
Proceedings of the Royal Society B: Biological Sciences	£1,680.00	1
Proceedings of the Royal Society A	£1,680.00	1
Proceedings of the Royal Society A: Mathematical, physical and engineering sciences	£1,680.00	1
BMC Biology	£1,676.70	1
PLoS Pathogens	£1,648.25	1
Physics of Fluids	£1,630.22	1
Journal of Animal Ecology	£1,630.15	1
New Journal of Physics	£1,567.50	2
Cell Division	£1,518.00	1
Combustion and Flame	£1,449.52	1
Organometallics	£1,439.54	1
Macromolecules	£1,430.78	1
Earth and Planetary Science Letters	£1,422.95	1
Journal of Medicinal Chemistry	£1,421.30	1
Clinical and Experimental Gastroenterology	£1,416.00	1
Journal of Allergy and Clinical Immunology	£1,400.47	1
International Journal of Molecular Sciences	£1,362.95	1
Journal of Materials Chemistry A	£1,360.00	1
Journal of Applied Ecology	£1,332.70	1
Applied Physics Letters	£1,328.27	1
Ocean Science	£1,316.60	1
World Development	£1,313.36	1
Journal of Visualized Experiments	£1,304.12	1
International Journal of Molecular Sciences	£1,300.73	1
Plant Methods	£1,263.80	1
Physical Review A	£1,226.12	1
Journal of Endocrinology	£1,200.00	1
ACS Synthetic Biology	£1,169.66	1
BMC Systems Biology	£1,132.00	1

Journal	Total Spending	Number of Articles
Journal of Molecular Spectroscopy	£1,128.50	1
Inorganic Chemistry	£1,111.52	1
Journal of bioinformatics and computational biology	£1,111.52	1
Journal of Organic Chemistry	£1,111.52	1
Nonlinear Analysis: Real World Applications	£1,102.25	1
Neuroimage: Clinical	£1,101.89	1
Journal of Bacteriology	£1,086.77	1
IEEE Transactions on Biomedical Circuits and Systems	£1,070.66	1
Scientific Reports	£1,068.00	1
Ecology and Evolution	£1,036.00	1
Parasites and Vectors	£1,026.00	1
Journal of Mathematical Analysis and Applications	£1,021.91	1
Journal of Materials Chemistry C	£1,020.00	1
Dalton Transactions	£1,020.00	1
Materials Horizons	£1,020.00	1
Entropy	£998.41	1
Journal of Neuroscience Methods	£988.02	1
Evolution	£877.25	1
Frontiers in Neuroscience	£780.93	1
Intermetallics	£746.28	1
Hydrology and Earth System Sciences (HESS)	£730.24	1
Electronics Letters	£694.66	1
Bulletin des Sciences Mathématiques	£550.94	1
Journal of Hydrometeorology	£486.77	1
Grand Total	£299,492.12	163