

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL LIBRARY OF MEDICINE
NATIONAL CENTER FOR BIOTECHNOLOGY INFORMATION
PUBMED CENTRAL NATIONAL ADVISORY COMMITTEE**

Function of the PubMed Central National Advisory Committee

PubMed Central was established to support NIH's mission of disseminating the results of biomedical research widely to the public and to the scientific community. PubMed Central employs electronic publishing technology to archive, index and distribute peer-reviewed journal literature in the life sciences. The PubMed Central National Advisory Committee shall advise the Director, NIH, the Director, NLM, and the Director, NCBI, on the content and operation of the PubMed Central repository. Specifically, the Committee is charged to establish criteria to certify groups submitting materials to the system, monitoring its operation, and ensuring that PubMed Central evolves and remains responsive to the needs of researchers, publishers, librarians and the general public.

Summary of Meeting – June 9, 2015

The meeting of the PubMed Central National Advisory Committee was convened on June 9, 2015, from 9:30 a.m. to 3:00 p.m., in the Lindberg Room of the National Library of Medicine (NLM), Bethesda, Maryland. The meeting was open to the public. Dr. Lorraine Haricombe presided as Chair.

Members Participating

Lorraine Haricombe, Ph.D., University of Texas, Austin (*PMC Advisory Committee Chair*)
Martha Bedard, M.S.L.S., University of New Mexico
Karen Butter, M.L.N., University of California, San Francisco
Adelita Cantu, R.N., Ph.D., University of Texas Health Science Center
Barbara Dewey, M.A., Pennsylvania State University
Bevin Engelward, Sc.D., Massachusetts Institute of Technology
Victor Jongeneel, Ph.D., University of Illinois at Urbana-Champaign
Mark Lively, Ph.D., Wake Forest University Institute of Regenerative Medicine
Victor McCrary, Ph.D., Morgan State University
Randall Morse, Ph.D., Wadsworth Center, Laboratory of Molecular Genetics
Joseph Starratt, M.L.N., Washington State University
Victoria Stodden, Ph.D., University of Illinois, Urbana-Champaign
David J. Lipman, M.D., Director, National Center for Biotechnology Information, NLM,
NIH (*PMC Advisory Committee Executive Secretary*)

Special Guests

Heather Joseph, M.A., Scholarly Publishing and Academic Resources Coalition (SPARC)
Neil Thakur, OD, NIH
Katie Funk, NCBI, NLM
Chris Kelly, NCBI, NLM

NIH Staff Present

Joyce Backus, LO, NLM

Jeff Beck, NCBI, NLM
Devon Bourexis, NCBI, NLM
Janet Coleman, NCBI, NLM
Jane Davenport, NCBI, NLM
Kristina Elliot, LO, NLM
Erin Friel, NCBI, NLM
Mary Herron, LO, NLM
Lisa Hisel, NCBI, NLM
Marilu Hoepfner, NCBI, NLM
Rebecca Hohmann, NCBI, NLM
Betsy Humphreys, OD, NLM
Sergey Krasnov, NCBI, NLM
David Landsman, NCBI, NLM
Chapella Leftwich, NCBI, NLM
Fiona McNabb, NCBI, NLM
Anna McWilliams, NCBI, NLM
Anh Nguyen, NCBI, NLM
Rebecca Orris, NCBI, NLM
Jim Ostell, NCBI, NLM
Kelly Peters, NCBI, NLM
Laura Randall, NCBI, NLM
Jeffrey Reznick, LO, NLM
Edwin Sequeira, NCBI, NLM
Kent Smith, NCBI, NLM
Pierce Smith, NCBI, NLM
Rebecca Stanger, LO, NLM

I. Welcome and Introductions -- David Lipman

Dr. Haricombe called the meeting to order at 9:30 a.m. Dr. Lipman thanked the members for their service on the Committee, and presented plaques to Dr. Haricombe and Ms. Bedard, who were completing their terms on the Committee with this meeting. The Committee members and presenters introduced themselves.

II. Approval of the June 10, 2014 Meeting Minutes and Confirmation of June 2016 Meeting

The Committee voted to approve the minutes of the June 10, 2014 meeting. NCBI will email to confirm the date of the next meeting, tentatively planned for June 7, 2016.

III. Report from the NLM Director's Office – Betsy Humphreys

Ms. Humphreys reported that NLM Director Dr. Donald Lindberg retired at the end of March. In preparation for the selection of the next Director, a Working Group of the Advisory Committee to the Director of NIH (ACD) was formed to help chart the course of NLM. As part of the Working Group's deliberations, NIH issued a request for information seeking input on the strategic vision for NLM from stakeholders and the general public. The Working Group will present its report at the June 11 meeting of the full ACD. The search for a new director will begin following the ACD meeting. The search

committee is headed by NHGRI Director Eric Green, M.D., Ph.D., and NIGMS Director Jon Lorsch, Ph.D.

IV. PMC Update – David Lipman

Dr. Lipman updated the Committee on PMC usage statistics and a backfiles scanning project.

PMC Usage Statistics

Dr. Lipman reported that during peak usage times there are approximately 1.25 million unique users and 2.5 million articles retrieved per day. He presented a slide showing that the number of articles available and the number retrieved have been steadily growing since 2010.

Backfiles II Scanning Project

Dr. Lipman described a new scanning project that was initiated by NLM and the Wellcome Library. The Wellcome Trust is contributing approximately \$1.2 million for the effort, under which 30 journals of historical interest, primarily from the mental health field, will be digitized, resulting in over 750,000 pages to be added to the PMC database. The source documents are all from the NLM collection and the paper copies will be preserved. The first digitized content should be available by the end of 2015.

V. Updating NLM's Standards and Procedures for Accepting Journals into PMC – Chris Kelly

Mr. Kelly described NLM's procedures for determining which journals to accept in PMC. He noted that there has been a significant increase in new publishers and journals, many of which are unknown entities in terms of quality and publishing practices. This increase has been accompanied by a rise in the number of journals applying for acceptance in PMC, from 350 journals in 2012 to 550 in 2014. To address journal quality, a prime concern of the Committee, PMC implemented a procedure last fall whereby expert consultants from outside NLM conduct an independent review of journals seeking inclusion in PMC. The independent review, approved by the PMC Advisory Committee last year, is in addition to the critical review by NLM's Library Operations Division, which assesses whether the journal meets NLM's criteria for its collection, as outlined in the Collection Development Manual.

Mr. Kelly noted that since November 2014, 158 journals were reviewed, of which 60 (38%) were approved and 88 (56%) were rejected. Decisions on 10 applications were deferred, generally to request additional information. Rejected journals may reapply after two years.

VI. NIH Public Access Compliance Actions and Results – Neil Thakur

Mr. Thakur updated the Committee on NIH's recent efforts to improve compliance with the Public Access Policy. He noted that in November 2012, NIH announced that it would delay the processing of progress reports (essentially delay award funds) for non-competing continuation grants with a start date of July 1, 2013 and beyond that had not demonstrated compliance. The policy change resulted in the compliance rate improving from 76% at the time of announcement to 86% as of May 2015. The rate of compliant Research Performance Progress Reports (annual reports) also has improved, from 86% for the 12 months ended April 2014 to 90% for the following year.

Mr. Thakur noted that NLM has leveraged infrastructure to link together grants management, the NIH manuscript submission system, My Bibliography, and SciENCv (Science Experts Network Curriculum Vitae), which allows NIH to track papers and compliance and allows researchers to connect their published papers to progress reports and CVs. The goals of SciENCv include reducing researchers'

burden in applying for federal funds, tracking the impact of federal investments in science and the careers of scientists by providing a user-curated data source, and supporting expert locating services to find reviewers, collaborators, mentors, etc.

VII. Initiatives Related to U.S. and International Public Access Policies – Heather Joseph

Ms. Joseph reported to the Committee on several developments related to public access.

OSTP Public Access Directive

In February 2013, the White House's Office of Science and Technology Policy (OSTP) issued a policy memo directing Federal agencies with more than \$100 million in R&D expenditures to develop plans to make publicly available the published results from federally funded research, as well as data resulting from unclassified federally funded research. Thirteen of the 19 affected agencies have released plans, most of which have indicated that they are either using PMC or retrofitting an existing resource into a PMC-like resource.

All of the agencies that have released plans are adhering to the OSTP's suggested 12 months as the embargo period. The OSTP directive also asked agencies to include a mechanism to ask for a change in the embargo period.

Regarding data policies, the agencies have all indicated that they will require their researchers at the point of funding to establish plans for making the research data accessible and useful.

Activities in Congress

Ms. Joseph noted that Congress is paying close attention to the public access policies as they come out, and that there is interest in having the agencies require that the data underlying federally funded articles be made available to the public immediately upon publication.

International

The European Commission public access policy that went into effect last year has a similar structure to NIH's policy for published manuscripts, except it allows only a six-month embargo for biomedical and health information and 12 months for social sciences and humanities. The EC is now focusing on data sharing policies and, under Horizon 2020, is funding a series of pilots in different disciplines to examine the types of elements that should be required in data management plans, where the locus of deposit should be, desired timeframe, etc.

On behalf of the Global Research Council, which is comprised of the heads of science and engineering funding agencies from around the world, the Research Councils UK (RCUK) and the British Library hosted a workshop in April on open access. Ms. Joseph noted that the meeting advocated policies whereby the funding agencies would provide funding for publication in OA journals.

VIII. Supporting Public Access Programs for Other Agencies – Katie Funk

Ms. Funk reported on the Government agencies PMC will be working with to support their plans for public access programs to fulfill the OSTP directive.

PMC has agreements with the Centers for Disease Control and Prevention (CDC) and the Veterans Administration, both of which have a number of papers already in PMC (3,900 papers for CDC and

2,000 for VA) because of research that was co-funded by NIH and thus fell under NIH's Public Access Policy. CDC is rolling out its public access program center by center, while VA began the policy in February for all grantees.

PMC is also working with additional HHS agencies as well as others. The National Institute for Standards & Technology (NIST) is beginning a pilot project this month, and three HHS agencies (the Food and Drug Administration, the Agency for Healthcare Research and Quality, and the Asst. Secretary for Preparedness & Response), as well as the National Aeronautics & Space Administration, are planning for their public access projects to begin this fall.

Ms. Funk described some of the changes and updates that have been implemented at PMC, PubMed, and the NIH Manuscript Submission system to help support funding agencies to administer their policies, authors to comply with funders' policies, and the public to find and access research. For instance, there will be agency-branded portals, or storefronts, into PMC that make it easy for users to search for articles in PMC by the agency of interest.

IX. Digital Scholarly Objects – Victoria Stodden

Dr. Stodden discussed the contrast between empirical reproducibility and computational reproducibility, and how to introduce the same level of transparency for data-driven computational science. She described some of the statistical issues related to reproducibility, such as chasing significance, overuse and misuse of p-values, sensitivity analysis, poor reporting/tracking practices, treatment of outliers, poor statistical methods (nonrandom sampling, inappropriate tests or models), model robustness to parameter changes and data perturbations, investigator bias toward previous findings, and conflicts of interest. She also noted the new policies that the journal *Science* enacted in 2014 relating to statistical reproducibility.

Dr. Stodden reported results from a study she did examining the data and code sharing policies in 2011 and 2012 of 170 journals with ISI classifications "Statistics & Probability," "Mathematical & Computational Biology," and "Multidisciplinary Sciences." Among the findings was that the high impact journals generally are requiring more from authors in terms of sharing.

The percentage of journals requiring data sharing as a condition of publication increased from 10.6% in 2011 to 11.2% in 2012. Journals in the category of "required but may not affect editorial decisions" increased from 1.7% in 2011 to 5.9% in 2012. The percentage that made no mention of policy decreased from 67.1% of journals in 2011 to 62.4% in 2012. The remaining percentages include journals that encouraged/addressed data sharing or implied it.

Results for code sharing policies did not show as much improvement from 2011 to 2012 as data sharing policies, with 3.5% of journals requiring code sharing as a condition of approval in both 2011 and 2012 and 82.9% and 78.8, respectively, making no mention of a policy.

X. Updates from Committee Members

Committee members informed the group about other activities that might be of interest to the PMC Committee, including:

- Pennsylvania State University has passed a resolution on open access. It is not a policy and is not mandatory, but encourages university faculty to: deposit their scholarly work in an appropriate repository; support the principle of open access to research results; review publishing contracts carefully to understand author and publisher rights and recognize that opportunities may exist to negotiate more favorable rights; and consider serving as peer reviewers and editors for reputable open-access journals that make their content freely available online.
- A Committee member raised the issue of how to capture student undergraduate work that is being indirectly funded by NIH through a program to increase underrepresented minorities in research. The students are producing papers that are often of high quality but not published. Committee member suggestions included using the *Journal of Undergraduate Research* and approaching open-access journals.

IX. Adjournment

The meeting adjourned at approximately 3:00 p.m.

Lorraine Haricombe, Ph.D. Date
Chair, PubMed Central National Advisory
Committee

David J. Lipman, M.D. Date
Director, National Center for Biotechnology
Information, NLM