Department of Energy
Office of Science
Washington, DC 20585

Office of the Director

February 25, 2011

Dr. Martin J. Greenwald, Chair
Fusion Energy Sciences Advisory Committee
Plasma Science and Fusion Center
Massachusetts Institute of Technology
NW17-107
175 Albany Street
Cambridge, MA 02138

Dear Dr. Greenwald:

The recently passed America COMPETES Reauthorization Act of 2010 highlights the importance of public access to research results, particularly in the forms of scholarly publications and digital data. A copy of the relevant section, Sec. 103, of the COMPETES Act is appended to this charge letter for your information.

As a first step in assessing the policies for researchers funded by the Office of Science, I am requesting your assistance. Please submit to me, no later than July 1, 2011 a report describing current policies and practices for disseminating research results in the fields relevant to the Fusion Energy Sciences program. For the purposes of this report, "dissemination" refers to the circulation of research results outside of the originating institutions or scientific collaborations; "research results" refers to both written research findings (scholarly papers, presentations, reports, etc.) and digital data; and "practices" refers to accepted practices within a scientific discipline. Policies from DOE and other federal and non-federal agencies, including foreign institutions and international scientific collaborations, should be considered within the scope of this report provided that these policies have notable impact on the dissemination of research results in your fields. Examples of relevant government policies include provisions in grants and contracts as well as overarching guidance as set forth in federal regulations and DOE orders[1].

Although your report should be sensitive to the differences between written findings and digital data (and, indeed, differences among each of these), you may find many of the

[1] See, for example, 10 CFR 605.20 (http://law.justia.com/us/cfr/title10/10-4.0.1.3.13.html#10:4.0.1.3.13.0.59.20) and DOE O 241.1B (https://www.directives.doe.gov/directives/current-directives/241.1-BOrder-b/view).

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same considerations useful in describing the existing policies, practices, and procedures:

- ***The criteria for dissemination and who makes this determination.***
- ***How access is provided and controlled.***
  Access could be provided through commercial or not-for-profit publishers or databases including archives, websites, and agency repositories.
- ***Whether access is limited in any way.***
  For both written findings and digital data, the distribution could be limited by, for example, subscription fees, technological barriers, by request only, or limited to the members of a particular research group. Furthermore, access may be exclusive for a limited period of time.
- ***Whether the access comes with any additional functionality.***
  For written material, this could be interoperable, cross-publisher searches or federated search and discovery tools; links to data or other supplementary material used in the research (particularly if this ensures reproducibility of the research result); or multimedia; etc.
  For digital data, this could be the ability to reference the data as entered (or as part of a larger dataset), additional metadata or software interfaces for meaningful data mining by people outside the field, or interoperability with other data sets.
- ***The version of the written material or data provided.***
  For example, for written findings, the Version of Record is usually considered to be the manuscript published and stewarded by the publisher; however, internal university or laboratory drafts may also be disseminated.
  For digital research data, a distinction may be drawn between data sets that are statically preserved and those that are continually updated; whether the data are considered "raw" or "analyzed"; and whether the data that support a particular finding can be referenced, for example, by a persistent identifier.
- ***Whether peer review is a condition of dissemination.***
  For written findings, a distinction could be drawn between external peer review, as usually happens with published articles, and an internal peer review as might happen within a Laboratory, university, or scientific collaboration for draft articles to be submitted for publication or conference proceedings.
  Any comparable review process for digital data should be described in the report.
- ***The institution, DOE user facility, or other body by which the policy is currently upheld.***
  Many Federal agencies, Laboratories, Universities, scientific collaborations, and user facilities have their own policies regarding the dissemination of research results including digital data. There may also be established practices that are not formally enforced by any institution but are broadly followed. For example, research communities may have dissemination practices that are followed, independent of agency/institutional requirements.
- ***Whether, in addition to dissemination, long-term stewardship is accounted for by the existing policy or practice.***
  For digital data, the report could mention whether associated software for accessing data is also available and maintained.

In the case of digital data, these descriptions will likely depend on the type, size, and structure of the data sets under consideration. It would be useful, therefore, to include in your discussions, a brief survey of the kinds of data that are generated, the size of the data sets, and how they are stored.

As part of this report, I welcome the Committee's perspective on which dissemination models, if any, successfully maximize the potential benefit of research results in a way that is sustainable within the research community. I also invite you to include any observations regarding opportunities where public access policies or practices could enhance the discovery potential of Office of Science research results.

Sincerely,

W. F. Brinkman
Director, Office of Science

represented on the Committee, to identify and reduce regulatory, logistical, and fiscal barriers within the Federal government and State governments that inhibit United States manufacturing;

(4) facilitate the transfer of intellectual property and technology based on federally supported university research into commercialization and manufacturing;

(5) identify technological, market, or business challenges that may best be addressed by public-private partnerships, and are likely to attract both participation and primary funding from industry;

(6) encourage the formation of public-private partnerships to respond to those challenges for transition to United States manufacturing; and

Strategic plan. Deadline.

(7) develop, and update every 5 years, a strategic plan to guide Federal programs and activities in support of advanced manufacturing research and development, which shall—

(A) specify and prioritize near-term and long-term research and development objectives, the anticipated time frame for achieving the objectives, and the metrics for use in assessing progress toward the objectives;

(B) specify the role of each Federal agency in carrying out or sponsoring research and development to meet the objectives of the strategic plan;

(C) describe how the Federal agencies and Federally Funded Research and Development Centers supporting advanced manufacturing research and development will foster the transfer of research and development results into new manufacturing technologies and United States based manufacturing of new products and processes for the benefit of society to ensure national, energy, and economic security;

(D) describe how Federal agencies and Federally Funded Research and Development Centers supporting advanced manufacturing research and development will strengthen all levels of manufacturing education and training programs to ensure an adequate, well-trained workforce;

(E) describe how the Federal agencies and Federally Funded Research and Development Centers supporting advanced manufacturing research and development will assist small- and medium-sized manufacturers in developing and implementing new products and processes; and

(F) take into consideration the recommendations of a wide range of stakeholders, including representatives from diverse manufacturing companies, academia, and other relevant organizations and institutions.

(c) REPORT.—Not later than 1 year after the date of enactment of this Act, the Director shall transmit the strategic plan developed under subsection (b)(7) to the Senate Committee on Commerce, Science, and Transportation, and the House of Representatives Committee on Science and Technology, and shall transmit subsequent updates to those committees as appropriate.

42 USC 6623.

SEC. 103. INTERAGENCY PUBLIC ACCESS COMMITTEE.

(a) ESTABLISHMENT.—The Director shall establish a working group under the National Science and Technology Council with

the responsibility to coordinate Federal science agency research and policies related to the dissemination and long-term stewardship of the results of unclassified research, including digital data and peer-reviewed scholarly publications, supported wholly, or in part, by funding from the Federal science agencies.

(b) RESPONSIBILITIES.—The working group shall—

(1) identify the specific objectives and public interests that need to be addressed by any policies coordinated under (a);

(2) take into account inherent variability among Federal science agencies and scientific disciplines in the nature of research, types of data, and dissemination models;

(3) coordinate the development or designation of standards for research data, the structure of full text and metadata, navigation tools, and other applications to maximize interoperability across Federal science agencies, across science and engineering disciplines, and between research data and scholarly publications, taking into account existing consensus standards, including international standards;

(4) coordinate Federal science agency programs and activities that support research and education on tools and systems required to ensure preservation and stewardship of all forms of digital research data, including scholarly publications;

(5) work with international science and technology counterparts to maximize interoperability between United States based unclassified research databases and international databases and repositories;

(6) solicit input and recommendations from, and collaborate with, non-Federal stakeholders, including the public, universities, nonprofit and for-profit publishers, libraries, federally funded and non federally funded research scientists, and other organizations and institutions with a stake in long term preservation and access to the results of federally funded research;

(7) establish priorities for coordinating the development of any Federal science agency policies related to public access to the results of federally funded research to maximize the benefits of such policies with respect to their potential economic or other impact on the science and engineering enterprise and the stakeholders thereof;

(8) take into consideration the distinction between scholarly publications and digital data;

(9) take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make; and

(10) examine Federal agency practices and procedures for providing research reports to the agencies charged with locating and preserving unclassified research.

(c) PATENT OR COPYRIGHT LAW.—Nothing in this section shall be construed to undermine any right under the provisions of title 17 or 35, United States Code.

(d) APPLICATION WITH EXISTING LAW.—Nothing defined in section (b) shall be construed to affect existing law with respect to Federal science agencies' policies related to public access.

(e) REPORT TO CONGRESS.—Not later than 1 year after the date of enactment of this Act, the Director shall transmit a report to Congress describing—

(1) the specific objectives and public interest identified under (b)(1);

(2) any priorities established under subsection (b)(7);

(3) the impact the policies described under (a) have had on the science and engineering enterprise and the stakeholders, including the financial impact on research budgets;

(4) the status of any Federal science agency policies related to public access to the results of federally funded research; and

(5) how any policies developed or being developed by Federal science agencies, as described in subsection (a), incorporate input from the non-Federal stakeholders described in subsection (b)(6).

(f) FEDERAL SCIENCE AGENCY DEFINED.—For the purposes of this section, the term "Federal science agency" means any Federal agency with an annual extramural research expenditure of over $100,000,000.

42 USC 6624.

SEC. 104. FEDERAL SCIENTIFIC COLLECTIONS.

(a) MANAGEMENT OF SCIENTIFIC COLLECTIONS.—The Office of Science and Technology Policy shall develop policies for the management and use of Federal scientific collections to improve the quality, organization, access, including online access, and long-term preservation of such collections for the benefit of the scientific enterprise. In developing those policies the Office of Science and Technology Policy shall consult, as appropriate, with—

Consultation.

(1) Federal agencies with such collections; and

(2) representatives of other organizations, institutions, and other entities not a part of the Federal Government that have a stake in the preservation, maintenance, and accessibility of such collections, including State and local government agencies, institutions of higher education, museums, and other entities engaged in the acquisition, holding, management, or use of scientific collections.

Web site.

(b) CLEARINGHOUSE.—The Office of Science and Technology Policy, in consultation with relevant Federal agencies, shall ensure the development of an online clearinghouse for information on the contents of and access to Federal scientific collections.

(c) DISPOSAL OF COLLECTIONS.—The policies developed under subsection (a) shall—

(1) require that, before disposing of a scientific collection, a Federal agency shall—

(A) conduct a review of the research value of the collection; and

Consultation.

(B) consult with researchers who have used the collection, and other potentially interested parties, concerning—

(i) the collection's value for research purposes; and

(ii) possible additional educational uses for the collection; and

(2) include procedures for Federal agencies to transfer scientific collections they no longer need to researchers at institutions or other entities qualified to manage the collections.

(d) COST PROJECTIONS.—The Office of Science and Technology Policy, in consultation with relevant Federal agencies, shall develop a common set of methodologies to be used by Federal agencies for the assessment and projection of costs associated with the management and preservation of their scientific collections.