

Research Policies

Sharing Published Materials/Responsibilities of HHMI Authors (SC-300)

Purpose and Scope

This policy establishes HHMI's expectations that all HHMI laboratory heads, whether based at host institutions or at HHMI's Janelia Research Campus, will include in their publications sufficient information about their experimental methods and procedures, and make available data, software, and tangible research materials, to enable other scientists to reproduce and extend the results of all publications on which the HHMI laboratory head is an author. As an HHMI laboratory head, you should read this policy in conjunction with HHMI's [Public Access to Publications Policy \(SC-320\)](#), which establishes HHMI's expectations for public access to publications resulting from research in HHMI laboratories, and HHMI's [Guidelines for Scientific Research](#), which provides additional guidance on your responsibilities with respect to publications of your laboratory's research.

Background

Consistent with its mission of moving science forward for the benefit of humanity, HHMI employs creative scientists and provides them with resources to pursue groundbreaking research that expands scientific knowledge and has the potential to improve human health. Publication of HHMI research in a manner that allows others to reproduce and extend the findings in new directions is critical to ensuring that advances made in HHMI labs are effectively utilized by the scientific community. Publications advance science when other researchers can validate (or disprove) published findings and apply published research results to expand scientific knowledge in new ways.

Policy

To support HHMI's mission and the important role of publication in advancing science, HHMI laboratory heads who co-author a publication must take all reasonable steps, including at a minimum those outlined in this policy, to enable other academic and nonprofit research scientists to reproduce the published research results for purposes of both replicating and extending the published research.

As a co-authoring HHMI laboratory head, the minimum steps you must take to allow reproducibility are:

- In the publication, provide sufficient information about the authors' methods, experimental procedures, materials, and data to enable other scientists to perform the experiments described in the publication and to build upon the results for further research;
- Following publication, make data, software, and tangible research materials that are integral to the publication available to other academic and nonprofit scientists for research purposes on reasonable terms unless either:
 - the data, software, or tangible research materials can readily be generated without restriction on use for research purposes by other scientists from information provided in the publication or
 - The data, software, or tangible research materials can be obtained from third parties on reasonable terms. This may be the case, for example, if you are publishing materials you received from a company under a materials transfer agreement (MTA), and other researchers can get them from the company under a similar MTA. For clarification, MTA terms are still considered reasonable even if they preclude use of the materials in research in which for-profit entities have rights.

In general, data, software, and tangible research materials are integral to a publication if they are necessary to support the major claims of the publication or to reproduce and verify the published results. If it is not clear whether data, software, or tangible materials are integral rather than peripheral to your forthcoming research publication, you may request assistance from editors of the publishing journal in making this determination.

As an HHMI laboratory head, you are expected to respond promptly to all reasonable requests for data, software, or tangible research materials integral to a publication you have co-authored, and you should generally accommodate reasonable requests within 30 days. If this timeframe is impractical (e.g., because of limited supplies or the complications of arranging for shipment of animals), you should communicate promptly with the requestor about when you will be able to fulfill the request. If you will not be able to accommodate a request within any timeframe (e.g., because you have used up the materials and cannot reproduce them, as may be the case with tissue samples or polyclonal antibodies), you should let the requestor know and provide information about potential sources of similar material if possible. Additional guidance on the requirements for availability of published data, software, or tangible research materials is below.

Specific Guidance on Data, Software, and Tangible Research Materials

Datasets and Databases

If a dataset or a database is integral to a research publication but too large to be included in the publication itself, the author(s) should make it freely available by other means. Typically this means making it available online at no cost to academic and nonprofit scientists for research use, with no restriction on the research projects or field of research in which it may be used, and in a highly accessible manner. Human subject protections must be respected in any research publication that reports data collected from human subjects.

If a public repository has been agreed upon by the research community for a specific type of dataset (such as GenBank for DNA sequences, the Protein Database for X-ray structure coordinates and structure factors, or the Bio-Magnetic Resonance Bank for NMR data), the author(s) should use that repository to optimize the ability of others to compare, search, merge, and build upon the data.

Software

If the central result of a research publication is a new algorithm, the author(s) should provide a detailed description or the source code.

If a research publication announces new software claimed to be useful, the author(s) should provide an executable file and — ideally — the source code. The author(s) may provide executable files and source code under a license agreement with restrictions comparable to those of an MTA, as long as the executable files or source code are available at no cost to academic and nonprofit scientists for research use and with no restriction on the research projects or field of research in which they may be used.

Charging academic and nonprofit scientists for access to an enhanced version of software with upgrades and user support is permitted.

Tangible Research Materials

If organisms, cell lines, plasmids, or similar materials are integral to a publication, the author(s) may make the materials available through a repository or by sending them out directly to requestors. Please note that:

- HHMI strongly encourages laboratory heads to deposit published materials of this nature with established nonprofit repositories for distribution to the research community. Examples of such repositories include Addgene (plasmids); the Bloomington Drosophila Stock Center (fly lines); the Developmental Studies

Hybridoma Bank (antibodies); The Jackson Laboratory or the Mutant Mouse Regional Resource Centers (mouse lines); and the Yeast Resource Center (yeast strains).

- If there is no available repository and the laboratory head receives a burdensome number of requests for the materials, the laboratory head may work with the appropriate institutional technology transfer office to arrange for a license to a company or other third party distributor to provide the materials to others on reasonable terms and at reasonable cost.
- If published materials are scarce and burdensome to reproduce (e.g., an antibody that is highly purified, or animals that are in short supply), the laboratory head may supply starter materials (e.g., the antigen used to raise the antibody, or embryonic stem (ES) cells for the animals) or a detailed protocol or suggestions for alternative sources if any are available. Author(s) may also ask prior recipients of published organisms to assist in making animals available to requesters.

If chemical compounds, prototypes of research equipment, or similar materials are integral to a publication, the author(s) may make the materials available by sending them out directly to requestors or by providing sufficient information in the publication to enable other academic and nonprofit researchers to obtain or make them. For chemical compounds, this may be done by including sequence, structure, characterization and synthesis information in the publication. For prototypes of research equipment, this may be done by publication or posting of specifications that may be used by others to construct their own prototypes, or by licensing the technology to one or more companies that will make the equipment available to the academic community on reasonable terms.

In all cases, if materials that will be integral to a publication are proprietary to one or more third parties, the laboratory head should not proceed with the publication without first confirming that the owner of the materials either will:

- Make the materials available, or allow the laboratory head to make the materials available, to requesting academic and nonprofit scientists for research purposes following publication, on reasonable terms, or
- Allow the publication to include sufficient information to enable the materials to be made, and agree not to assert proprietary rights against academic and nonprofit scientists who use published information to make the materials and use them for research purposes.

Terms for Providing Published Materials

HHMI's [Materials Transfer Policy \(SC-330\)](#) provides guidance on materials transfer agreements (MTAs) that may be used for sending published materials from HHMI laboratories to academic and company scientists. As explained in more detail in Policy SC-330, HHMI does not require published materials to be made available to scientists at companies on the same terms that such materials are made available to scientists at nonprofit organizations.

Please note that although it is appropriate and often useful to discuss the possibility of a research collaboration with a requestor, it is inappropriate to insist on collaboration, co-authorship, or prior review of manuscripts as a condition for sending published materials to any requesting scientist.

Dual Use Research of Concern

Special requirements may apply in the case of research that qualifies as “dual use research of concern.” In general, this is a narrow category of research that can reasonably be anticipated to provide knowledge, information, products or technology which can be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment,

material, or national security. In very rare cases a laboratory head may have reason to suspect either (1) before publication, that information in the proposed publication constitutes “dual-use research of concern,” or (2) after publication, that a requestor might use a material for bioterrorism or other unethical purposes. In these cases, the laboratory head may have a responsibility not to publish or share the material. Prior to publishing any “dual use research of concern,” host-based laboratory heads should consult with appropriate host institution personnel and the HHMI Senior Scientific Officer for their site, and Janelia laboratory heads should consult with the Vice President and Executive Director, Janelia Research Campus or a Janelia Scientific Program Director.

HHMI Laboratory Head Reviews

An HHMI laboratory head whose appointment is up for review cannot include in his or her collection of significant papers any publication that does not satisfy the requirements of this policy. HHMI may at its option exclude a publication from consideration in the review process if HHMI reasonably believes that the publication is not in compliance with the policy. HHMI will not do so before first discussing with the laboratory head why the publication does not satisfy the policy requirements. If after discussion HHMI decides to exclude a publication from consideration, HHMI, in its discretion, may provide the laboratory head with an opportunity to submit a different publication that does satisfy the policy requirements.

Complaints about Noncompliance

If any HHMI or non-HHMI researcher believes that a publication which includes an HHMI laboratory head as an author does not comply with this policy, either because published results are not reproducible from the information included in the publication or because data, software, or tangible research materials that are integral to the publication are not available as required by this policy, the researcher should contact the editor of the journal that published the paper. If the journal is unable to resolve the matter, the researcher may contact the office of the appropriate HHMI vice president. For publications from laboratories at HHMI's host-based sites, this is the Vice President and Chief Scientific Officer; for publications from HHMI's Janelia Research Campus, this is the Vice President and Executive Director, Janelia Research Campus. In these cases, HHMI will assess the reasonableness of the researcher's concerns, and, in its discretion and as it considers appropriate, will take steps to address the situation.

Effective Date

This policy is effective September 1, 2015, for publications first submitted to a journal on or after January 1, 2016.

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