

Science and Janelia

Sharing Published Materials/Responsibilities of HHMI Authors

Purpose and Scope

This policy establishes HHMI's expectations that all HHMI laboratory heads, including investigators and Janelia Research Campus group leaders and fellows, 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](#), which establishes HHMI's expectations for public access to publications resulting from research in HHMI laboratories, and [HHMI's Guidelines for Scientific Research](#), which provide 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 can be used effectively 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 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, and tangible research materials can readily be generated and used without restriction for research purposes by other scientists from information provided in the publication, or
 - The data, software, and tangible research materials can readily be obtained from third parties on reasonable terms. This may be the case, for example, if materials you received from a company under a materials transfer agreement (MTA) are integral to your publication, and the company has agreed to share the materials with all other academic and nonprofit scientists 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.

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 available on reasonable terms by other means. Typically this means making it available online at no or reasonable 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 or minimal 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/or burdensome to reproduce (e.g., an antibody that is highly purified, animals that are in short supply, or a specimen from a particular subject or patient population), 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.

There may be circumstances where your proposed publication describes new information about a mechanism of action and your findings are illustrated both by chemical compounds that are proposed to be or are being developed as clinical candidates, and “tool” compounds from the same

or a similar class of compounds. If the tool compounds are integral to your publication, and the clinical candidates are not, then this policy applies only to the availability of the tool compounds.

Policy Implications

When Working with Third Parties

If data, software or tangible research materials that are integral to a publication are proprietary to, or controlled by, one or more third parties, you should not proceed with the publication without first confirming that the third party 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.

If data, software, or tangible research materials that are integral to your publication are subject to terms under arrangements with third party collaborators or funders that do not allow you to satisfy the requirements of this policy, the [HHMI attorney](#) responsible for your site may need to renegotiate new terms with the third party that allow you to comply with this policy before you proceed with the publication. If the third party will not agree to modify the terms, then you should not proceed with the publication unless you can rewrite it in a way that will comply with this policy.

Publications that you co-author with others outside of your laboratory also must comply with this policy. HHMI expects that if you are planning to co-author a publication with collaborators you will:

- Ensure that all necessary information about the 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 are included in the publication, and
- Ask your collaborators in other laboratories (ordinarily in an email requesting a written response) whether materials under the collaborator's control that are integral to the publication will be made available following publication for other academic and nonprofit scientists to replicate and build on the published research.

If your co-authors cannot or are not willing to make the materials available as this policy requires, then you should work with your co-authors to revise the joint publication so that it does not include any integral materials that will not be available to other researchers following publication. If this is not possible, you should remove your laboratory's contributions from the proposed publication and your name as a co-author, and publish separately if you are able to do so. You should not appear as a co-author on a paper unless you have confirmed that materials integral to the publication will be available following publication in accordance with this policy.

Inbound Material Transfer Agreements

HHMI recognizes that at the time you request tangible research materials from a third party to use in your research you may not know whether the requested materials will become integral to a publication. If the provider requires execution of a written material transfer agreement relating to your use of the material (an “Inbound MTA”), the [HHMI MTA/License Review Attorney](#) who reviews Inbound MTAs for your laboratory normally will flag for you whether the terms may restrict your ability to comply with this policy in the future. It is your choice whether to get materials under an Inbound MTA without negotiating in advance to be able to distribute them or otherwise make them available after publication. If you later determine that the materials are integral to your publication, then you may need to go back to the provider so that HHMI and your host institution can negotiate new terms that allow you to comply with this policy. If the provider won’t agree to modify the Inbound MTA so that you can comply with the policy, then you should not proceed with the publication unless you can write it in a way that will comply with this policy.

Research Collaboration and Sponsored Research Agreements

Your collaborations with company scientists and company sponsored research at host-based sites require a written agreement and HHMI review. In the course of reviewing these arrangements, your [HHMI attorney](#) will negotiate for terms aimed at allowing you to comply with this policy. Similarly, if you collaborate with one or more scientists at an academic or nonprofit research institution and that institution requires a written agreement to document the project, your [HHMI attorney](#) should review the agreement and will incorporate terms to facilitate compliance with this policy. If a collaborator will not agree that data, software, and tangible research materials that will be integral to a publication of project results will be made available following publication in accordance with this policy, then HHMI will not be able to approve the arrangement. If you are collaborating with an academic or nonprofit research institution without an agreement, you are responsible for ensuring that you comply with this policy. (See [When Working with Third Parties](#).)

When Sharing with Third Parties

Agreements with other academic and nonprofit institutions under which materials that are integral to a publication that you co-author should not include any terms that are inconsistent with this policy. Accordingly, any such agreements should not restrict the use of any data, software, and tangible research materials that are integral to the publication to specified projects and should otherwise comply with HHMI policies. The laboratory head may request or require that recipients reimburse costs directly associated with filling a request for data, software or tangible materials, such as costs of reproduction, packaging, and shipping (but not overhead, profit or a pro rata share of the cost of research).

Outbound Material Transfer Agreements

Material transfer agreements governing the transfer of tangible research materials out of your HHMI laboratory (whether at Janelia or a host institution) (“Outbound MTAs”) that are integral to a

publication with respect to which an HHMI laboratory head is a co-author, are expected to be consistent with this policy. Please note that while HHMI encourages making data, software, and tangible research materials available for research use by all scientists, this policy does not address sharing materials with scientists at for-profit companies. [HHMI's Materials Transfer policy](#) provides guidance on Outbound MTAs that your host institution may use for sending published materials from HHMI laboratories, including to companies.

As an HHMI laboratory head, you are expected to respond promptly to all reasonable requests for data, software, and 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 have deposited your published materials with a repository, you can direct requestors to the repository and inform them of when you expect the materials to be available from that source. 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.

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.

Licenses

Licenses of HHMI inventions, whether entered into by HHMI for inventions arising at Janelia or entered into by a host institution for HHMI inventions arising at host-based sites, are expected to permit HHMI inventors to comply with their obligations under this policy. HHMI negotiates licenses for published data, software, and tangible research materials developed at Janelia in a manner that allows Janelia laboratory heads to fulfill their sharing obligations. When a host institution proposes to license to a company on an exclusive basis data, software or tangible research materials that have been published by an HHMI laboratory head at a host-based site, HHMI generally will require the host institution to show how the laboratory head will be able to fulfill his or her obligations under this policy.

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, materiel, 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 the 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.

Contact

Questions about the responsibilities of HHMI authors on sharing published materials may be raised with the [HHMI Senior Scientific Officer](#) or [HHMI attorney](#) responsible for the site, or at Janelia with the Vice President & Executive Director, the Scientific Program Director, or the [HHMI attorney](#) responsible for Janelia.

Managed by: Office of the General Counsel
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Reference: Sharing Publication-Related Data and Materials. National Academy Press (2003).