

Creative Commons (<http://creativecommons.org>) applauds the White House directive supporting universal access to publicly funded research articles and data. It is a productive step toward speeding up scientific discoveries, promoting information sharing, and increasing the return on investment of public monies.

The Administration is “committed to ensuring that... the direct results of federally funded scientific research are made available to and useful for the public, industry, and the scientific community.” Creative Commons (CC) would like to help agencies fulfill this aspirational plan.

CC has created free copyright licenses and public domain dedication that serve as the legal plumbing enabling innovative sharing of creative works and data by authors, publishers, data providers, and countless others on terms that are more open than “all rights reserved.” CC’s legal tools along with forward-thinking data sharing plans ensure science is more collaborative and participatory. And by making data, the raw material of science, available to everyone freely, increasingly scarce resources can be directed toward scientific analysis and discovery instead of duplicative data collection activities.

As agencies build their individual public access plans in the coming months, we recommend that they take as progressive an approach as possible with respect to data. This would mean:

- Requiring that any data that support published research conducted using federal monies are marked clearly as being in the public domain and immediately deposited in a scientific data repository;
- Requiring that organizations and researchers that use federal monies to collect or aggregate data without any specific research project in mind also make their data available freely in the public domain;
- In cases where making the data available in the public domain is not suitable or applicable, data may be marked with a liberal license such as CC BY, which allows full use and copying of data with no more obligation than giving credit to the data creator.

We believe that CC licenses and public domain legal tools can help federal agencies meet the requirements set out by the White House directive. The goal of the White House directive is broad reuse of publicly funded research. The Administration has taken the important first step by removing price barriers to this research data. Federal agencies can take the next logical step by removing permission barriers as well.

By requiring that researchers make their research data available immediately as open access, federal agencies will be clarifying reuse rights so that downstream users know the legal rights and responsibilities in reusing those data. This is an important and useful public service.

But why is communicating reuse rights important? As Creative Commons board member Michael Carroll writes, “Granting readers full reuse rights unleashes the full range of human creativity for translating, combining, analyzing, adapting, and preserving the scientific record” (N Engl J Med 2013; 368:789-791). When permission is granted via a public domain dedication or via standard public licenses, researchers can more easily understand what they can do with the datasets. A public domain dedication or a very liberal attribution-only license ensures disparate

datasets can be mixed and combined without running afoul of creators' permissions. This is vital in today's global scientific research environment, where massive amounts of data--from potentially thousands of sources--are produced, analyzed, and reused in new experiments. The communication of clear, unambiguous rights to data break down barriers to reuse. And of course, data creators still receive the credit they deserve because the norms of science have always dictated proper acknowledgment and attribution along with citation.

Scientific data repositories such as Dryad, figshare, and DataONE allows researchers to upload and make their data available under a CC0 Public Domain Dedication (<http://creativecommons.org/publicdomain/zero/1.0/>). CC encourages federal agencies to fulfill the letter and spirit of the White House public access directive by crafting their agency policy to require immediate deposit of data to such repositories. By marking data clearly, other researchers will know exactly what they can do with the data. CC is standing by to help.