

Academic group says it's time for researches to begin sharing source code

April 16 2012, by Bob Yirka

(Phys.org) -- A diverse group of academic research scientists from across the U.S. have written a policy paper which has been published in the journal *Science*, suggesting that the time has come for all science journals to begin requiring computer source code be made available as a condition of publication. Currently, they say, only three of the top twenty journals do so.

The group argues that because [computer programs](#) are now an integral part of research in almost every scientific field, it has become critical that [researchers](#) provide the source code for custom written applications in order for work to be peer reviewed or duplicated by other researchers attempting to verify results.

Not providing source code, they say, is now akin to withholding parts of the procedural process, which results in a “black box” approach to science, which is of course, not tolerated in virtually every other area of research in which results are published. It’s difficult to imagine any other realm of scientific research getting such a pass and the fact that code is not published in an open source forum detracts from the credibility of any study upon which it is based. Articles based on computer simulations, for example, such as many of those written about astrophysics or environmental predictions, tend to become meaningless when they are offered without also offering the source code of the simulations on which they are based.

The team acknowledges that many researchers are clearly reticent to

reveal code that they feel is amateurish due to computer programming not being their profession and that some code may have commercial value, but suggest that such reasons should no longer be considered sufficient for withholding such code. They suggest that forcing researchers to reveal their code would likely result in cleaner more portable code and that open-source licensing could be made available for proprietary code.

They also point out that many researchers use public funds to conduct their research and suggest that entities that provide such funds should require that [source code](#) created as part of any research effort be made public, as is the case with other resource materials.

The group also points out that the use of [computer](#) code, both off the shelf and custom written will likely become ever more present in research endeavors, and thus as time passes, it becomes ever more crucial that such code is made available when results are published, otherwise, the very nature of peer review and reproducibility will cease to have meaning in the scientific context.

More information: Shining Light into Black Boxes, *Science* 13 April 2012: Vol. 336 no. 6078 pp. 159-160 [DOI: 10.1126/science.1218263](https://doi.org/10.1126/science.1218263)

Abstract

The publication and open exchange of knowledge and material form the backbone of scientific progress and reproducibility and are obligatory for publicly funded research. Despite increasing reliance on computing in every domain of scientific endeavor, the computer source code critical to understanding and evaluating computer programs is commonly withheld, effectively rendering these programs “black boxes” in the research work flow. Exempting from basic publication and disclosure standards such a ubiquitous category of research tool carries substantial negative consequences. Eliminating this disparity will require concerted

policy action by funding agencies and journal publishers, as well as changes in the way research institutions receiving public funds manage their intellectual property (IP).

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