NEWS RELEASE

24 March 2015

Biomedical researchers look to post-publication peer review to build grant funding case

Pacific Northwest scientist among first to publish preliminary methodology online to gain peer feedback ahead of NIH R01 grant application

Jason McDermott, a Senior Research Scientist in computational biology and bioinformatics at Pacific Northwest National Laboratory in Richland, WA, USA, has become one of the first people to publish online his preliminary research methodology and data to gain peer reviews that he hopes will strengthen his R01 grant application to the National Institutes of Health (NIH).

While the concept of online and transparent peer-reviewing of research is increasingly being adopted, it is unusual for preliminary research to enter the public domain in such a way. It represents a further innovation in the way that scientific research is becoming more open and it is a leap forward in respect of the length of time taken for new thinking to be shared among a wide audience.

The challenge faced by McDermott, who like many researchers has tried multiple times to secure NIH funding, is stark. The NIH budget peaked in 2010 at $31.2 billion, falling to $30.15 billion for fiscal year 2014. While the organisation once funded a third of the research proposals it received, for the past decade it has only funded one in six. NIH Director Francis Collins said recently that, due to inflation, the NIH budget has lost 25% of its purchasing power over the last decade.*

McDermott’s proposal (http://f1000research.com/articles/4-60/v1) describes novel computational methods to predict multi-drug resistance transporters (MDRs), the proteins responsible for moving antibiotics out of the cell. Many different bacteria can now exhibit multi-drug resistance and oppose the action of certain antibiotics rendering them ineffective. McDermott’s approach aims to help predict and
identify functional patterns from groups of unaligned protein sequence of MDRs in bacteria. Work in this field is intended to contribute to potential new drug development to combat antimicrobial resistance. He commented:

“The format of R01 applications, where you have to cram a great deal of information into a very small form, is such that the publishing and peer-reviewing of preliminary results is sure to up-weight your chances of success. Having published through F1000Research, I’m now being reviewed, and will use reviewers’ feedback to improve my submission. In my grant I can use the citation to reference preliminary data that will most likely be peer-reviewed, updated, and revised by the time the grant reviewers see it.

“I’ve been intrigued by this emerging publishing model and wanted to try it anyway, as an alternative to the usual journals. But this now also allowed me to reference the online version very soon after I uploaded it, and include it as a bona fide citation for my grant.”

Rebecca Lawrence, Managing Director of F1000Research said: “The traditional anonymous pre-publication peer-review process can cause long delays before new results become visible. F1000Research uses an author-led process, publishing all scientific research within a few days. Open, invited peer review is conducted after publication, focusing on scientific soundness rather than novelty or impact.

“As Jason McDermott is illustrating, the boundaries of this revolutionary way of publishing research can be pushed further, enabling preliminary results to also become available for review. While this will improve the quality of grant applications, it also ensures that the very latest thinking immediately enters the public domain.”

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Notes to editors
*USA Today, 23 April 14, NIH director: Budget cuts put U.S. science at risk (quoting NIH director Francis Collins).