

**Name:** Dr Bernd Pulverer

**Organisation:** European Molecular Biology Organization

**Proposal title:** Transparent Peer Review for Open Science and Research Assessment

**Summary of proposal:** A scaleable, interoperable mechanism to establish transparent peer review in scientific journals and preprints as a standard optimized for the browsing, interpretation and assessment of research papers and preprints. The proposed tools and standards will allow inclusion of peer review formally in research assessment by funders and research institutions.

**Decision:** Shortlisted - Recommended for Funding

**Comment on decision from Wellcome:** This thorough and well-presented proposal aimed to create a mechanism, that could be adopted by any type of journal, to establish transparent peer review reports for the assessment of journal publications and preprints. The Committee praised the three clearly defined work modules and thought the likelihood of engagement from the community was high. There was particular support for the third module, which proposed to look at how the peer review reports could assist funders in research assessment. While it was noted that the application could have encompassed data sets and monographs, the Committee was enthusiastic about the potential of this project.

**Name:** Ms Emilie Aimé

**Organisation:** British Ecological Society,

**Proposal title:** Open Data in Published Research: Enhanced Curation and Discoverability

**Summary of proposal:** "Open data is high on the scientific community's agenda. Most grant proposals ask for data management plans and many journals require data sharing. However, while most research assessment bodies agree with open data principles, it is challenging for them to routinely give credit for adherence to them. The BES journals, along with most ecology and evolution journals have mandated data archiving for 10 years but, while much of the community recognise the value of open data, many see data archiving as a chore and merely adhere to the exact mandate rather than the wider principles. Data are also not editorially assessed and often do not adhere to disciplinary standards, meaning their quality and presentation are highly variable. These issues are not unique to ecology and, through collaboration with relevant external stakeholders, we have scoped out a project to curate, badge and disseminate open data associated with research articles, in order to: Elicit culture change within the research community, Improve adherence to open data principles, Improve dissemination of published work underpinned by reusable open data, Allow funders and other research assessment bodies to more easily give credit for good data practices"

**Decision:** Shortlisted - Not recommended for funding

**Comment on decision from Wellcome:** This proposal aimed to curate, badge and disseminate open data associated with original research articles published in British Ecological Society journals. The Committee agreed that the British Ecological Society were ideally placed to carry out this work and supportive of the focus on open data. However, the overall innovation of the proposal was questioned, with some of the initiatives already being addressed by other communities. In addition, concerns were raised over the allocation of the budget, with the majority of funds being requested for technical implementation. It was concluded the impact of the proposal would be limited without a greater investment in the dissemination and evaluation components.

**Name:** Dr Thomas Lemberger

**Organisation:** European Molecular Biology Organization

**Proposal title:** Early Evidence Base

**Summary of proposal:** The goal of this project is to rapidly establish a curated and structured online resource that highlights selected experimental results from preprints related to the biology of SARS-CoV-2. This open-access resource will rely on the scientific expertise of the EMBO scientific community to select results posted in preprints and make them accessible at the earliest possible time to inform the research- and public health response to the pandemic. It will also serve as a

blueprint for a general distributed infrastructure that will be released as a portable, open-source suite of tools (the 'Early Evidence Base' platform). This portable platform will allow learned societies and research institutions to quickly set up similar curated resources on topics of urgent global relevance. Early Evidence Base resources will contribute to helping scientists, the media and the public to analyze and use scientific information disseminated in preprints more reliably, which is crucial in fields of major societal importance.

**Decision:** Shortlisted - Not recommended for funding

**Comment on decision from Wellcome:** This compelling proposal aimed to establish a curated and structured online resource that highlights selected experimental results from preprints related to SARS-CoV-2. Although the Committee were supportive of the manner in which this proposal was responding to a current need, concerns were raised over the sustainability of the project. In addition, as the outputs would not be displayed next to the preprints on medRxiv or bioRxiv, there was a risk that the website would be siloed. It was also concluded that the scale of the project was relatively small when taking into account the high volume of preprints being published each week.

**Name:** Ms Kathryn Wilson

**Organisation:** British Pharmacological Society

**Proposal title:** Improving Peer Review in Biomedical Research

**Summary of proposal:** We will deliver a suite of algorithms, presented in one software tool, that will generate machine-generated indicators (signals) of the quality of a submitted manuscript (or a published paper). The indicators produced will assist peer-reviewers in identifying serious errors or omissions. The tool will also generate automated reports to guide peer reviewers and thus enhance the quality of peer- and editorial review. These peer review reports will be human-readable (i.e. will not be just raw data files) and will therefore be very useful to others, for example, funding committees. The reports will draw on a list of defined terms and phrases stored in a database. The tool will be designed so that it learns and will therefore improve over time. BPS and the Nomenclature Committee of the International Union of Pharmacology (IUPHAR) have established and promoted internationally agreed standards for nomenclature of drug targets and of their ligands and correct nomenclature is listed and will be utilised in the IUPHAR/BPS Guide to Pharmacology database hosted by the same lab that will be undertaking this project. Links to other standards databases will also be implemented. This project represents a significant transition for BPS from publisher to curator of content.

**Decision:** Shortlisted – Not recommended for funding

**Comment on decision from Wellcome:** This was an interesting proposal which aimed to improve the peer review process, through the generation of machine generated indicators, which outline the quality of submitted manuscripts. However, the potential impact was limited by the relatively narrow domain focus. Members were unclear what the wider implications of the project would be. The Committee also expressed concerns over the feasibility of the proposal, given the limited developer time requested within the application.

**Name:** Mrs Tasha Mellins-Cohen

**Organisation:** Microbiology Society

**Proposal title:** Beyond the journal: a Microbiology Society open research platform

**Summary of proposal:** "This project aims to convert one of our journals, Access Microbiology, into an Open Research Platform (ORP), offering greater peer review transparency and fast-tracking the communication of valuable research, maximising potential for impact and influence.

At submission, articles will be made available on microbiologyresearch.org with a DOI, with clear links to open data, methods, and code, and accompanied by the reports from the machine learning review tools (e.g. Statcheck). Peer review will be transparent, and a version history maintained from preprint to Version of Record.

Many societies are seeking new ways to serve their communities but are reluctant to adopt the pre-existing F1000 ORP software. This may be because they wish to maintain a single portal for access to all the work they publish; they are reluctant to enter into a publishing agreement with a commercial player; or they are concerned that the concept may not be embraced by their communities. Through this project, we hope to prove that an ORP can be provided using software in common use by publishers of all types, and that self-publishing societies can set up such a platform independently. We also hope to provide a financial model that proves ORPs can be financially self-sustaining."

**Decision:** Shortlisted - Recommended for funding

**Comment on decision from Wellcome:** This was a good application from a strong team, which aimed to create an open research platform as a proof of concept, demonstrating that self-publishing societies can set up platforms independently. The proposal was innovative with clear potential for wide-reaching impact. It was highly feasible and if successful would be a good catalyst for change.

**Name:** Dr Erika Shugart

**Organisation:** American Society for Cell Biology

**Proposal title:** Tools to Highlight Impact and Aid Curation of Scholarly Outputs

**Summary of proposal:** The proliferation of scholarly content and implementation of transparent peer review are creating challenges for readers and evaluators to assess research significance and review outcomes, and for journals to curate field-specific content. We propose controlled experiments in which we test the utility of badges and impact statements to signal the significance of articles published by the American Society for Cell Biology (ASCB) in its research journal, *Molecular Biology of the Cell* (MBoC). We will devise badges that alert readers to article attributes such as new concept, broadly relevant, technical advance, teaching resource, etc. We will also experiment with new peer review processes, including a streamlined process designed to concisely identify points of significance and key issues, and one in which authors, reviewers, and editors work together to craft concise impact statements for display on articles. The effects of these innovations will be assessed relative to traditional practices by comparing article-level metrics including article views, downloads, and Altmetrics attention scores and by surveys. We will then use these innovations and the expertise of ASCB members, including early career scientists, to curate preprints and articles in other venues with the goal of providing standard, portable tools for use by other publishers.

**Decision:** Shortlisted – Recommended for funding

**Comment on decision from Wellcome:** This was a good application which aimed to experiment with new ways to improve the peer review process and develop article-level badges and impact statements. The Committee commended the experimental approach they proposed and were particularly interested in Aim 2, which aimed to evaluate the effectiveness of badges and impact statements on preprints and papers. However, members were concerned that the applicants were aiming to do too much, within the proposed timeframe and budget. In light of these concerns, Wellcome/HHMI chose only to fund Aim 2.

**Name:** Mrs Jennifer Regala

**Organisation:** American Society of Plant Biologists

**Proposal title:** Plant Commons: A Community-Driven Continuous Peer Review Site

**Summary of proposal:** "Plant Commons: A Proposal for a Community-Driven Continuous Peer Review Site to Reward and Recognize Open, Reproducible Plant Science  
Introduction and Background - In the changing landscape of scientific publication, the American Society of Plant Biologists (ASPB) proposes Plant Commons, a community-driven continuous peer review site intended to train reviewers; reward and recognize open, reproducible plant science; and help readers identify new work. Although we believe that traditional peer-reviewed journals remain

an important part of scientific research, we recognize our responsibility as a learned society to push towards open and continuous review of research.

Our project will achieve three objectives:

- 1) Enhance the skills of early career researchers (ECRs) to identify important and innovative research.
- 2) Allow the plant sciences community to review research continuously before, during, and after publication.
- 3) Help readers identify particularly relevant and significant research by providing a body of evaluations that draws on community expertise and opinion to signal the studies' merits."

**Decision:** Not shortlisted

**Comment on decision from Wellcome:** This was an interesting proposal which aimed to create peer review guides and train early career researchers in how to carry out peer review. However, the impact of the proposal was felt to be limited, especially in terms of the estimated number of engaged users and posted reviews. The Committee also expressed concerns over the sustainability of the project, noting that once the grant ended the intent was to seek further grant funding (or corporate sponsorships) to sustain any platform development needs, training and travel costs, advisory board honoraria, and user incentives.