

Responses to FY 2013 PGRP COV Report Recommendations

The Directorate for Biological Sciences (BIO) and the Plant Genome Research Program (PGRP) wish to express their deep appreciation for the work of the PGRP Committee of Visitors (COV) and the resulting report. Its recommendations will be considered carefully in moving forward with scientific and operations planning for PGRP.

INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Quality and effectiveness of merit review process

Recommendations: (i) The PGRP should try to use on-site review panels or hybrid panels rather than exclusively virtual panels, wherever possible. (ii) A plan for carefully monitoring the use of virtual panels should be developed to ensure that the existing high quality of PGRP reviews is not compromised. (iii) We also suggest that because of their long-term research impact, that either in-person or hybrid panels are utilized for the review of post-doctoral research fellowship proposals.

All proposals received by PGRP are considered of equal importance and the use of virtual panels in no way reflects a lower quality approach to review. In common with the other IOS programs, PGRP has been monitoring the impacts of using virtual panels in place of hybrid and in-person panels. The panelists also receive the NSF-wide survey on virtual panels so that they can provide feedback on these issues. To date, there is no evidence of a lower quality of review but hybrid or in-person panels are likely to be used preferentially in the future to promote networking among the reviewers and to broaden participation of the reviewer pool.

Recommendations: Clarification of what constitutes acceptable Broader Impacts, to both review panels and applicants. (ii) We further suggest that NSF might consider an institute-wide reassessment of the definitions and public descriptions of the kinds of activities that constitute high-value Broader Impacts.

The merit review criteria are discussed prior to the start of all panel meetings, including acceptable broader impact activities. The importance of strong broader impacts is also included in outreach activities throughout the year. In January 2013, NSF provided revised guidance regarding the merit review criteria and these are available at http://www.nsf.gov/bfa/dias/policy/merit_review/. As part of its commitment to broader impacts, NSF also provides additional information about broadening participation at <http://www.nsf.gov/od/broadeningparticipation/bp.jsp> and these considerations are

brought to the attention of applicants and reviewers. PGRP will continue these practices and ensure that the guidance to reviewers and panelists is clear.

***Recommendation:* The PGRP should provide additional guidelines on what represents a quality review. In particular, examples of past representative reviews redacted for identifying content could be included in the advance package to provide an indication of the quality of review that is expected. The examples should include 'good', 'adequate', and 'poor' reviews.**

PGRP appreciates the recommendation and the thinking behind it. Unfortunately, the likelihood of a reader being able to identify a proposal and/or PIs from a redacted review would be unacceptably high and would compromise confidentiality. Alternatively, PGRP could develop additional guidance of the kinds of comments that PIs find helpful or unhelpful.

***Recommendation:* The COV suggests that all panel summary forms include solicitation-specific sections that, for example, prompt the panel to comment specifically on the transformative nature of the proposal if that is a major factor for funding decisions. Further, we recommend that, for the BREAD proposals, a section on the relevance to smallholder farmers is included. This information is present in the Review Analysis and it is clear from these notes that the panel considered these criteria in their evaluation of the proposals. This information, in particular, for proposals that are declined, is crucial for PIs in planning new submissions.**

The PGRP agrees that these two recommendations for panel summaries would ensure that the guidance given to the panel at the start of the meeting would lead to specific and useful comments in the panel summaries, and these recommendations will be implemented in future review meetings.

***Recommendation:* Make use of the PO Comment to clarify funding decisions in more applications that is the current practice. The POs should ensure that the combination of the Panel Summary and PO Comment cover all the key information in the internal Review Analysis used to justify the funding decision.**

The PGRP agrees that this recommendation would improve the transparency of the review process and ensures that PIs have access to as much information as possible about the outcomes of the review and the rationale behind the funding recommendation. This recommendation will be implemented in future reviews.

Selection of reviewers

Recommendation: The COV acknowledges the great efforts the program goes to obtain reviews. One suggestion is to write an editorial for a journal/society newsletter on the “apathy of reviewers”. The decreasing participation in the review process is in contrast to the increasing number of applications. A second suggestion is to remind stakeholders in the review process that identifying qualified reviewers is critical to maintain the quality of the awards process.

PGRP appreciates the thinking behind this recommendation and will consider additional approaches like this, such as including statements in the PI congratulatory letter sent out by the Program Director to new awardees, in sessions at the Awardee Meeting, and during outreach visits.

Management of program under review

Recommendations: (i) A clearer summary of PGRP accomplishments distilling major milestones achieved in the portfolio and highlight research results and major accomplishments would be helpful. The self-study serves as a good starting point for such a report. Coupled with research highlights this would be highly informative to the scientific community, as well as the general public and other stakeholders. (ii) A satellite workshop at PAG could be used to solicit feedback in leveraging existing data resources to enable research and analysis, and to make it clear that the impetus for supporting such efforts much be a community-driven activity.

Because PGRP accomplishes many of its goals as part of the broader National Plant Genome Initiative (NPGI), the major milestones and accomplishments are currently reported through the [NPGI Five-Year Plan reports](#). That being said, IOS agrees and has recently brought in a AAAS Fellow who will focus, in part, on getting the word out about the impacts of IOS funding. Her efforts will include PGRP. With regard to a workshop, the Interagency Working Group on Plant Genomes (IWGPG), which is responsible for coordinating the NPGI, holds an annual workshop at the Plant and Animal Genome (PAG) Conference. The January 2014 workshop will focus on the rollout of the new Five Year Plan for 2014-2018, which includes data and resources.

Recommendation: Expand the range of proposals considered to include proposals of future agronomic value even if they are studies of non-crop species.

Over its 15-year history, PGRP has supported proposals of future agronomic value involving non-crop species where there is a clear connection with the goals of the NPGI. Thus, PGRP has funded studies of progenitor species, wild relatives of important crops, as well as non-crop species with pathways or processes of potential economic value. This practice will continue.

Portfolio

Recommendation: We recommend that the PGRP take a leadership role to ensure that the incomplete state of genomic resources is not an impediment. To this end we suggest a survey of the community requesting input on where roadblocks now exist.

Since PGRP develops genomic resources in partnership with the other NPGI agencies, including DOE and USDA, this topic is best addressed through the IWGPG and will be considered during the coming year.

Recommendation: Continue to encourage collaborative projects that include a variety of types of institutions. Support for the maintenance and support of broadly useful software applications will also remove what is often a barrier to independent research being carried out in smaller research laboratories.

PGRP appreciates the importance of ensuring broad participation of all types of institutions in its projects and will continue to fund projects that remove barriers to participation.

Recommendation: The value of new investigators as Co-PIs on collaborative applications should be considered in the assessment of these criteria *[does the program portfolio have an appropriate balance of awards to new investigators]*.

PGRP agrees with the assessment that there is value in having new investigators participating in PGRP projects. Generally, beginning investigators are underrepresented as project PIs. However, this is reasonable given that it takes time to build meaningful collaborations. Their representation is higher when co-PIs are considered and in the future, this information will be provided in transparent form to the COV. In addition, the Program will continue to mentor new investigators about the ways in which they can become involved in PGRP projects.

Recommendation: We appreciate the efforts of PGRP in including full representation of all groups and continue to encourage these efforts to increase the number of proposals that include women and underrepresented minorities.

PGRP agrees with the COV regarding the importance of continuing these activities. In addition, IOS is working with scientific societies to develop more effective approaches to recruiting and retaining underrepresented minority scientists into IOS and PGRP research.

Recommendation: The PGRP should stress innovation and accomplishments in these new cross-disciplinary fields *[systems biology and synthetic biology]*. Press releases and highlights should take a leading role in discussion of external and

internal priorities related to these emerging disciplines with other programs and divisions.

PGRP does stress innovation and accomplishments as it moves into new cross-disciplinary research areas and will continue to emphasize these in press releases and highlights as well as in discussions with other programs and divisions.

OTHER TOPICS

1. Program areas in need of improvement or gaps (if any) within program areas

***Recommendation:* The PGRP should continue their efforts to seek collaborative interactions and joint funding for these expanding synergistic activities [computational biology, systems and synthetic biology, and other emerging fields] with other NSF programs and other funding agencies.**

PGRP agrees with this recommendation and will continue its efforts in these areas.

***Recommendations:* Perhaps an undergraduate scholarship directed specifically towards underrepresented minorities could be initiated. Small undergraduate research awards allowing PIs to offer summer research experience to minorities could be put in place (similar to the Howard Hughes existing program). In addition, sabbatical grants could provide an opportunity for faculty to enhance their research, education, and/or other capabilities by funding sabbatical leaves or support for “mini-sabbaticals” for faculty and researchers desiring short-term training to learn new techniques. Sabbatical grants to support faculty at minority-serving institutions to train at and collaborate with research intensive universities would have many benefits in the long term.**

PGRP participates in NSF-wide programs such as Research Experience for Undergraduates (REU) and Research Opportunity Awards (ROA) to broaden participation and to provide research training for students and faculty. In addition, PGRP has recently instituted the Mid-Career Awards in Plant Genome research (MCA-PGR), an opportunity that allows any investigator post-tenure and pre-retirement to undertake activities, including sabbatical leave, to build expertise in new research areas and build associated curriculum back at the home institution. This opportunity would serve the goals recommended by the COV and PGRP will increase its efforts to get the word out about MCA-PGR in this context.

***Recommendations:* With respect to EAGER proposals. PGRP staff is encouraged to consult external experts (e.g. directly by telephone: to aid in areas where detailed expertise within the NSF staff is limited.**

While EAGER proposals are typically reviewed in-house, there is also the option to secure additional input where expertise is lacking. In the rare occasions where this is necessary, PGRP ensures that the input is documented in the jacket.

2. Program's performance in meeting program-specific goals and objectives

Recommendation: POs should make it uniformly clear and explicit to panel reviews that the required research products go beyond publications.

PGRP does provide this information in the briefing at the start of each panel meeting but this will be emphasized in the future.

3. Agency-wide issues that should be addressed by NSF to help improve the program's performance

Recommendations: (i) Data Management Plans and Progress Reports need to be standardized to make it easier to track performance of funded investigators in delivering data to the public as proposed in their Data Management Plans. Plans for providing public access to the data generated in a proposed project and outlined in the Data Management reports should also be assessed as part of the grant review process.....

(ii) One or more workshops should be organized (perhaps at an annual Plant and Animal Genome Conference) to assess the state of field with respect to data archiving, interoperability, and other core technologies, and to what degree these needs of the PGRP can be addressed as part of the NSF Big Data Initiative.

This will be undertaken as part of the NSF-wide response to the [OSTP Memorandum](#) on Increasing Public Access to the Outcomes of Federally Funded Research issued on February 22, 2013. NSF submitted its plan to OSTP for approval on August 22, 2013. Once approved, the plan will be posted on the NSF web page. Implementation is anticipated to commence in FY 2014 and could include opportunities of the type outlined in (ii).

4. Other issues

The COV considers the management of *in silico* resources of critical importance..... A PGRP directive should be to encourage data standards and uniformity to facilitate integration of genomic resources across funded projects. A PGRP web page is needed that has the links to the program outputs. A simple start is to list the URLs for major resources.... This should be readily accessible from the main PGRP page.

PGRP agrees with the COV on the importance of effective management of *in silico* resources. While it does not initiate top-down guidance on data standards, PGRP does work with funded projects and the databases that support them on encouraging implementation of community standards as they emerge. This is also something that is to be addressed as part of #3. To promote easy access to PGRP funded resources, the Program currently includes links to resources in the abstracts of all funded projects so that they are readily findable in that context. A list of all PGRP awards with links to these abstracts is available [here](#).