

## National Science Foundation

### Directorate for Mathematical and Physical Sciences

Response to the Committee of Visitors Report Division of Astronomical Sciences  
(FY 2019-2022)

The Directorate for Mathematical and Physical Sciences (MPS) and the Division of Astronomical Sciences (AST) thank the Committee of Visitors (COV) for their time, effort, and careful assessment of the review processes and portfolio management in AST during fiscal years 2019-2022. We are extremely pleased by the vote of confidence expressed in the COV report for the Division staff and the work of the Division. We also appreciate the COV's recommendations and suggestions that will help the Division serve the community even better.

Most of the committee's time was spent exploring the available documentation and databases, talking with AST staff, and deliberating their response to the "core questions" posed to every NSF COV. They concluded that AST "program officers and leadership are doing a fantastic job at advancing our understanding of the Universe with NSF funding". AST has already begun the process of addressing their recommendations, and these efforts will continue throughout the period leading up to the next COV in 4 years. AST is analyzing the recommendations in multiple ways. All staff involved in the individual investigator programs meet bi-weekly to discuss and share best practices, and we have instituted an annual series of half day "mini retreats" that focus on community recommendations. We have also re-established annual retreats that focus on the division and community-wide impact of changes to our policies and practices. The COV recommendations, and our response, will be presented at the NSF "Town Hall" at the next American Astronomical Society meeting in June 2024. Finally, we will publish annual updates to this response on the MPS COV website.

Going beyond the core questions, the FY2023 AST COV prioritized five issues "for which changes in NSF AST strategy or practices could benefit the astronomy community, the STEM ecosystem in general, and the nation". These five top issues are:

1. Clarifying the meaning of "Broader Impacts" for both proposers and reviewers, with a broad range of examples.
2. Strategizing directly with PIs about how co-funding with other NSF divisions and directorates (including the new Directorate for Technology, Innovation, and Partnerships, or TIP) and/or with other agencies and foundations might help them fund their research.

3. Making more sophisticated use of automated literature analysis tools to identify the most relevant reviewers while also reducing unnecessary conflicts of interest.
4. Making use of astronomy's lead in data sharing and open-source code development in (commercial) technology development (potentially via TIP).
5. Emphasizing and restructuring communication with the public.

We note that these issues address merit review more broadly across NSF, and some of these issues have been raised by COVs in other Divisions and Directorates within NSF. Clarification of the Broader Societal Impact criterion, for example, is an almost-universal concern of COVs. Active evaluations have begun at all levels of NSF, and AST will play an active role. We appreciate the strong statements by the COV that illustrate the leading role AST could play across NSF in data and analytics, data archiving, and open science in general. Most of these recommendations boil down to making significant improvements in communicating the role astronomy plays across the scientific disciplines and in promoting a scientifically literate society.

We greatly appreciate the time and thoughtful effort put into this exercise by the entire Committee of Visitors. We enjoyed all our interactions, and we were impressed by their dedication to NSF's mission to "promote the progress of science". With this initial response, we would like to reassure the scientific community that we will continue to evaluate all the comments and recommendations in the COV report for incorporation into our planning and programming in the years to come.