

National Aeronautics and
Space Administration
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Washington, DC 20546-0001



Reply to Attn of: Science Mission Directorate/Planetary Science Division

NASA RESPONSE TO THE 2023 NEXSS ASSESSMENT

NASA's Nexus for Exoplanet System Science (NExSS) Research Coordination Network (RCN) was designed to foster interdisciplinary collaboration in the study of exoplanets and their habitability. Specifically, it was established to help organize participating research teams from both academic institutions and NASA centers, and to acquire new knowledge about exoplanets and exoplanetary systems on the conviction that these research areas needed scientists collaborating from a range of disciplines to address the basic questions in this fast-growing field.

The NExSS RCN is set up as a nested leadership model, with 3-5 Co-Leads, who are selected by NASA leadership, serving as the central motivator for the group. The next step outside of the Co-Leads are the Steering Committee, where membership is composed of representatives from NASA-funded research awards that are relevant to the NExSS topic. Members of the Steering Committee are tasked with joining a Working Group, which are responsible for the activities that NExSS undertakes. These activities are open to the members of NExSS, but also open to affiliate members - individuals who are not part of a NASA-funded research team but have chosen to be a more direct part of the RCN - as well as the broader exoplanet community.

2023 NExSS Assessment

In January 2023, NASA's Planetary Science Division (PSD) and Astrophysics Division (APD) embarked on a joint assessment of NExSS in order to assess the overall success of this specific RCN with regards to the progress on its stated goals, and to gather lessons learned from the first six years of operation of NExSS along with the challenges the NExSS RCN has faced. This information can assist NASA in increasing the effectiveness of not only this RCN, but the four other Astrobiology RCNs as well.

The members of the NExSS Assessment Team were selected by the Assessment Co-Chairs, and the NASA HQ Division representatives for PSD and APD confirmed appropriate expertise coverage; the members were recruited from a broad range of expertise and institutions, with the intent to represent the diversity of research fields relevant to this RCN. The two Co-Chairs were also supported by an Executive Secretary, who was appointed by the NASA HQ representatives.

Panelists met virtually and spent the first half of their working time reviewing the readily available data provided by NExSS, in addition to written survey questions and discussions with the NExSS Co-Leads, leads of the Working Groups, and the NExSS community as a whole - particularly the early career participants in NExSS and alumni members of NExSS teams. The second half of their working time was spent working on the review summary. Together the Co-Chairs and Executive Secretary oversaw the process and provided summary findings to NASA.

Overview of Review Results

Overall, the NExSS Assessment Team found that NExSS has been very successful in fostering new connections and is valuable for early career scientists. However, some additional support from NASA Headquarters in encouraging appropriate representation across scientific disciplines for the NExSS Steering Committee membership, defining leadership structure and selection process, and transitioning the leadership to a different support model are important to continue achieving successful outcomes that have been seen so far. Additionally, the NExSS Assessment Team found that the mission statement for the RCN was not well-defined and could be improved in order to communicate the value of RCN work and membership to the broader community.

The NExSS Assessment Team's Final Report will be posted with this letter.

NASA Actions

The Planetary Science Division and Astrophysics Division agree with the findings on pages 7, 8, 12, and the second and third findings of page 9 of the report. In response to the other findings, PSD and APD are planning a number of actions as a result of the findings, described below.

For most actions that SMD RCN leadership are responsible for, NASA will seek to implement the following actions within the next calendar year.

1. In response to the first finding on page 9 and the finding on page 10: NASA SMD NExSS leadership believes that the balance of membership in NExSS is appropriate to meet its goals, and due to the nature of the Steering Committee membership selection (based on the independent NASA proposal review process) is not a balance that can be actively adjusted; however, we will review the research programs across SMD with scope that may have relevance to NExSS in order to ensure that cross-disciplinary research with specific NExSS relevance is encouraged.
2. In response to the first finding on page 11: NASA SMD NExSS leadership will work to clarify a more transparent process by which NExSS Co-Leads are selected (e.g., who is eligible, how the Steering Committee may be involved, and how the diversity of the community will be reflected) and will report on this process (at PAC and APAC).
3. In response to the third finding on page 11: NASA SMD NExSS leadership will work to consider ways to provide transparent and appropriate support for the leadership of NExSS and the work they do to run the RCN, will report on these plans for support (at PAC and APAC), and implement them.
4. Additionally, NASA SMD NExSS leadership will work to streamline the process by which selected proposals with specific NExSS relevance, regardless of their SMD relevance, are recommended to the NExSS team to become Steering Committee members in the research programs across SMD with scope that may have relevance to NExSS. SMD NExSS leadership plan to have this process in place within the next 6 months.

SMD RCN leadership would also be responsible for the following action. NASA's expectation is that these changes will be implemented in the next two calendar years.

5. In response to the fourth and fifth findings on page 11: NASA SMD NExSS leadership will direct the NExSS Co-Leads to initiate a review of the NExSS goals and their value to the goals of the Astrobiology Program and NASA. This review shall identify goals that need to be changed, incorporate prioritization, and be responsive to the NExSS mission statement, to improve communication of the structure and progress of this RCN.

Note that for all of the above actions, NASA SMD RCN leadership will be taking similar actions with regard to programs, processes, and support relevant to the other RCNs. As to point 5, NASA SMD RCN leadership will also ask the other RCNs, with the exception of the new LIFE RCN, to undertake a similar review. The LIFE RCN will be asked to conduct such a review at an appropriate time in the future.

The following action will be the responsibility of the NExSS leadership, and NASA will direct them to undertake this as soon as possible.

6. In response to the second finding on page 11: NASA will direct NExSS leadership to review and update their website to have up-to-date membership information.

NASA would like to thank the NExSS Assessment Team for their work during this review process. We are excited about the future science directions that NExSS and the RCNs will help us to move into in the future.

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