

Dr. Karen St. Germain
Director, Earth Science Division
Science Mission Directorate
NASA Headquarters
300 E St SW, Washington, DC 20546

August 19, 2024

Subject: Recommendations for Enhancing NASA's Applied Sciences Program

Dear Dr. St. Germain,

The Applied Sciences Advisory Committee (ASAC) convened on April 17, 2024, to evaluate NASA's Applied Sciences Program (ASP) 's strategic direction and recent accomplishments. We are pleased to present our findings and recommendations to enhance the program's impact and alignment with NASA's overarching goals.

1. Developing a Comprehensive Strategy for GeoAI

Finding: There is significant potential for applying GeoAI (Geospatial Artificial Intelligence) in NASA's Earth science initiatives.

Recommendation: ASP should rapidly and urgently create a strategy for incorporating GeoAI into its programs. This strategy should include identifying key areas where GeoAI can add value, developing relevant partnerships, and investing in necessary infrastructure and training. Additionally, rapidly creating capacity-building materials and workshops on GeoAI for staff and stakeholders will facilitate its integration.

2. Scaling Successful Programs

Finding: Effective scaling of programs such as HAQAST, SERVIR, HARVEST, and OpenET is critical for maximizing their impact.

Recommendation: ASP should collect lessons learned from existing successful programs and create templates to guide the scaling process. Formalizing these practices will help replicate success across different regions and applications. Additionally, ASP should develop a strategic plan for horizontal and vertical scaling, addressing each type's unique challenges and opportunities. (Give specific examples like the integration of the new mission data PACE, SWOT ICESat-2, NISAR)

More generally, the 'Earth Science to Action' portion of the overall Earth Science Action Strategy, where the learnings of the "pyramid" elements about user needs feed into the next generation of missions and programs, could be better articulated and strengthened. Especially in an era where NASA accomplishes its mission through the private sector, international, and other types of partnerships, this pathway of bringing user needs into the design of missions is important to explicitly build and highlight.

3. Enhancing Private Sector Collaboration

Finding: Strengthening relationships and building trust between NASA Applied Science researchers and private sector partners can unlock new opportunities for collaboration and innovation.

Recommendation: ASP should engage in regular dialogue with private sector stakeholders to understand their needs and concerns as well as to jointly identify opportunities for new products and services of value to society. Developing clear guidelines for partnerships, including trust-building measures and transparent communication strategies, will foster stronger collaborations. Additionally, ASP could consider assigning specific roles or resources to improve private sector engagement, such as appointing a private sector ambassador within ASP to serve as a dedicated point of contact for private sector engagement.

4. Supporting Data Discoverability, Accessibility, and Utility for End Users

Finding: The analysis and data developed by NASA scientists are invaluable, but ensuring their accessibility and usability is crucial for empowering end users with the tools they need.

Recommendation: ASP should prioritize making NASA's scientific analysis and data more accessible and user-friendly. Continued investment in data infrastructure, along with the development of training programs, will enable end users to better leverage these resources, maximizing the practical application and impact of NASA's data.

5. Encouraging Joint Committee Meetings

Finding: Joint meetings between ASAC and the Earth Science Advisory Committee (ESAC) could enhance the integration of shared themes and goals.

Recommendation: ASP should facilitate joint meetings between ASAC and ESAC to discuss overlapping interests and collaborative opportunities. This approach will foster a more cohesive strategy and ensure that both committees are aligned to support NASA's mission.

Conclusion

The ASAC remains deeply impressed with the Applied Sciences Program's leadership and achievements. The program's ongoing efforts to foster collaboration, enhance program agility, and integrate advanced technologies are commendable. We are particularly supportive of the direction that Applied Sciences and Earth Action are taking in implementing the Earth Science to Action (ES2A) strategy, which is crucial for translating NASA's Earth science data into actionable information that benefits society. We look forward to continuing our advisory role and supporting NASA's mission to leverage Earth science for societal benefit.

Please contact me if you have any questions or need further clarification on our recommendations.

Sincerely yours,



David Saah

Chair, Applied Science Advisory Committee

Professor of Environmental Science at the University of San Francisco
Principal of Spatial Informatics Group

Cc. Lisa Dilling - Environmental Defense Fund
Ed Kearns – First Street Foundation
Albert Anoubon Momo – Trimble Inc.
Rhiannan Price - DevGlobal Partners
Daniel Sarewitz - Arizona State University
Ian Schuler – Development Seed
David S. Wilkie - Wildlife Conservation Society
Danielle Wood – Massachusetts Institute of Technology
Thomas Wagner, NASA HQ
Julie Robinson, NASA HQ
Emily Sylak-Glassman, NASA HQ
Christine McMahonbognar, NASA HQ