National Aeronautics and Space Administration

Office of the Administrator
Washington, DC 20546-0001

November 12, 2012

Dr. Steven W. Squyres
Chairman
NASA Advisory Council
Washington, DC 20546

Dear Dr. Squyres:

Enclosed is NASA's response to a recommendation from the NASA Advisory Council meeting held July 25-27, 2012, at NASA's Goddard Space Flight Center. Please do not hesitate to contact me if the Council would like further background on the response. I appreciate the Council's thoughtful consideration leading to the recommendations and welcome its continued findings, recommendations, and advice concerning the U.S. civil space program.

I look forward to working closely with you and members of the Council in the future.

Sincerely,

Charles F. Bolden, Jr.
Administrator

Enclosure:
2012-02-01 (TIC-01) Space Basic Research (Engineering Science) Program

NASA Advisory Council Recommendation

Space Basic Research (Engineering Science) Program
2012-02-01 (TIC-01)

Recommendation:
The Council recommends that NASA establish a space basic research (engineering science) program relevant to its long-term needs and goals.

- The Council suggests that the Chief Technologist collaborate with the Chief Scientist and the Chief Engineer to establish formal guidance and to consolidate, and seek future funding for, space basic research in engineering science. The Council further suggests that NASA begin by managing the Agency's space basic research portfolio as a pilot activity that is funded separately from the Space Technology Program, similar to how the Office of Chief Technologist coordinates the Agency's technology portfolio.

Major Reasons for the Recommendation:
The Council recognizes that the distinction has been established between basic research and technology. NASA's technology programs now have advocacy and, in the form of the Strategic Space Technology Investment Plan (SSTIP), strategic guidance. However, basic research (or engineering science) that may lead to the development of technology and engineering tools is no longer explicitly part of NASA's technology enterprise, which focuses on *applying* the disciplines of engineering science to synthesize a *device, process or subsystem* to enable a specific capability.

Consequences of No Action on the Recommendation:
Erosion of NASA's research and technology capabilities.

NASA Response:
NASA concurs with this recommendation. The Office of the Chief Technologist (OCT), in collaboration with the Office of the Chief Scientist (OCS) and the Office of the Chief Engineer (OCE), authored a draft white paper to frame the issue and to lay the groundwork for a discussion with the Executive Council on Foundational Investments in Engineering Science. The OCE is leading efforts to develop options for funding and governance for basic research in engineering science, and those efforts will include direct involvement of OCT and OCS. Whether or not additional funds could be made available, coordination of ongoing activities and evolution is valuable. To provide this guidance and to establish the benefits of these investments, the NASA Engineering and Safety Center Technical Fellows are fully engaged in this activity and have started the process of building investment road maps, much like OCT has developed for their technology investments. These roadmaps are identifying and prioritizing areas where early work, within existing funding, might achieve early successes. The team plans to use the Strategic Space Technology Investment Plan as a guide for deciding how to prioritize early investments and to adjust the investment plan as required to fit the portfolio for engineering science investments.

Enclosure