

**NASA ADVISORY COUNCIL**  
National Aeronautics and Space Administration  
Washington, DC 20546  
Dr. Kenneth M. Ford, Chairman

August 9, 2011

Mr. Charles F. Bolden, Jr.  
Administrator  
National Aeronautics and Space Administration  
Washington, DC 20546

Dear Administrator Bolden:

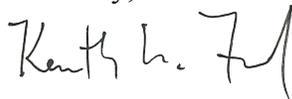
The NASA Advisory Council held a very productive public meeting at NASA Ames Research Center in Mountain View, CA, on August 4-5, 2011. We appreciated very much the outstanding meeting support that the NASA Ames Director, Dr. Simon "Pete" Worden, and his staff provided, as well as the excellent tour that was arranged for us.

As a result of its deliberations, the Council approved four recommendations, two findings, and three observations. They are enclosed for your consideration. If you have any questions or wish to discuss further, please contact me.

As you know, this was my final meeting as Chair of the NASA Advisory Council. I would like to thank you for the opportunity to serve in this leadership capacity over the past three years. It has truly been an honor and a privilege, and I hope that the Council's insights and advice during this period concerning NASA and the U.S. civil space program have been useful. I also wish to express my appreciation for the *NASA Distinguished Public Service Medal* you presented to me during our Council meeting in August 2010 at NASA's Jet Propulsion Laboratory, and the very kind letter you presented to me during our Council meeting last week.

My best regards and warm wishes for continued success in the future.

Sincerely,



Kenneth M. Ford  
Chairman

Enclosures

## NASA Advisory Council Recommendation

### Capturing Decadal Survey Lessons Learned 2011-03-01 (SC-01)

**Name of Committee:** Science Committee

**Chair of Committee:** Dr. Wesley Huntress  
*(Presented by Dr. Byron Tapley, Vice Chair)*

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Recommendation:** Capturing Decadal Survey Lessons Learned

**Recommendation:** NASA should request a formal examination by the National Research Council (NRC) of the lessons learned, from the perspective of the National Academies, from recent NASA-related decadal surveys. Planning for this examination should be initiated after the release of the Heliophysics Decadal Survey in early 2012, and this examination should make recommendations about the next cycle of decadal surveys, which will begin circa 2015.

**Major Reasons for the Recommendation:** Lessons learned, from NASA's perspective, are being captured. But the lessons learned, from the perspective of the National Academies, are also vital to maintaining the importance and continued value of the decadal surveys.

**Consequences of No Action on the Recommendation:** The collection and examination of lessons learned will become more difficult with the passage of time, and the failure to capture these lessons could adversely affect the importance and continued value of future decadal surveys.

## NASA Advisory Council Recommendation

### NASA Press and Outreach Programs 2011-03-02 (SC-02)

**Name of Committee:** Science Committee

**Chair of Committee:** Dr. Wesley Huntress  
*(Presented by Dr. Byron Tapley, Vice Chair)*

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Recommendation:** NASA Press and Outreach Programs

**Recommendation:** NASA's ongoing program of scientific challenges and exciting science missions (those launched in the coming year, in development, and planned over the rest of the decade) will provide outstanding results and new discoveries. The NASA Advisory Council encourages NASA's press and outreach programs to strengthen their focus on science missions and stands ready to help formulate, facilitate, and champion these activities.

**Major Reasons for the Recommendation:** NASA's science programs provide numerous opportunities for carrying the excitement of the U.S. space program to the public throughout the next decade and beyond.

**Consequences of No Action on the Recommendation:** Missed opportunities to inspire the next generation of space explorers and inform the public about the results of NASA's science programs.

## NASA Advisory Council Recommendation

### Planetary Science Subcommittee Analysis Groups 2011-03-03 (SC-03)

**Name of Committee:** Science Committee

**Chair of Committee:** Dr. Wesley Huntress  
*(Presented by Dr. Byron Tapley, Vice Chair)*

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Recommendation:** Planetary Science Subcommittee Analysis Groups

**Recommendation:** NASA should revise the Terms of Reference (TOR) for the Lunar Exploration Analysis Group (LEAG), Mars Exploration Analysis Group (MEPAG), and the Small Bodies Assessment Group (SBAG) to reflect the recommendations contained in the Task Group of the NASA Advisory Council (NAC) Science Committee (TagAG) final report. Specifically:

- 1) Add explicit tasking authority for the Exploration Systems Mission Directorate (ESMD) and relevant Committees of the NAC;
- 2) Add language concerning appointment of the Chair (and in the case of LEAG, Co-Chairs) that has appointment made by the Associate Administrator (AA) for Science after consultation with the AA for Exploration Systems;
- 3) Update language to capture revisions in the topic areas covered by the respective Analysis Groups;
- 4) Acknowledge the uniqueness of LEAG by:
  - a. Establishing a LEAG Co-Chair for Science (appointed by the AA for Science after consultation with AA for Exploration Systems), who would replace the current LEAG Chair as a member of the NAC Science Committee's Planetary Science Subcommittee.
  - b. Establishing a LEAG Co-Chair for Exploration (appointed by AA for Exploration Systems after consultation with AA for Science) who would be added to the membership of the NAC Exploration Committee; and,
  - c. Incorporating language that the LEAG Executive Secretary should be appointed by the AA for Science after consultation with AA for Exploration Systems;

- 5) Refine the wording concerning the role of the Designated Federal Official (SFO)/Executive Secretary to ensure consistency with the Federal Advisory Committee Act (FACA) and NASA Policy, while recognizing the value of a close working relationship between the Executive Secretary and the Chair.

**Major Reasons for the Recommendation:** These recommended changes would update the three relevant Planetary Science Subcommittee Analysis Groups so that they can more directly provide analysis not only to the Science Mission Directorate (SMD), but also to the Exploration Systems Mission Directorate (ESMD) for integration of science into its exploration mission objectives.

**Consequences of No Action on the Recommendation:** ESMD is left without a clear and direct mechanism for tasking the three relevant Planetary Science Subcommittee Analysis Groups that cover targets of interest to ESMD, namely, LEAG (Moon), MEPAG (Mars), and SBAG (asteroids).

## NASA Advisory Council Recommendation

### Broadening the Employment Base for NASA Centers 2011-03-04 (C-01)

**Name of Committee:** NASA Advisory Council

**Chair of Committee:** Dr. Kenneth Ford (*Council Chair*)

**Date of Council Public Deliberation:** August 5, 2011

**Short Title of Recommendation:** Broadening the Employment Base for NASA Centers

**Recommendation:** The Council recommends that NASA Centers further broaden recruitment for new engineers and scientists beyond their local colleges and universities to increase the diversity and quality of the workforce.

**Major Reasons for the Recommendation:** Data supplied to the NASA Advisory Council show that hiring of scientists and engineers at NASA Centers is heavily biased toward local colleges and universities, perhaps because of the practice of hiring largely through the Cooperative Education (Co-op) program at the Centers. While this is a natural and even laudable practice, the lack of an equal effort to recruit across the nation can deprive the Centers of the best engineers and scientists emerging from the country's most highly rated institutions.

**Consequences of No Action on the Recommendation:** NASA will not enjoy the benefits of a geographically diverse workforce and may miss opportunities to hire the most talented and creative scientists and engineers. This could mean missed opportunities in future development and innovations.

## **NASA Advisory Council Finding**

### **International Space Station as a Mars Analog Update**

**Name of Committee:** Space Operations Committee

**Chair of Committee:** Col. Eileen Collins

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Finding:** International Space Station as a Mars Analog Update

**Finding:** The Council is pleased with the initiative that the International Space Station (ISS) Program has taken with the Mars Analog project. We feel that the project requires a sense of urgency. We request a briefing on the prioritization of the Mars Analog objectives and NASA's plan to provide metrics.

## NASA Advisory Council Finding

### Progress of the Commercial Crew Program

**Name of Committee:** Commercial Space Committee

**Chair of Committee:** Mr. Brett Alexander

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Finding:** Progress of the Commercial Crew Program

**Finding:** The Council appreciates NASA's efforts to develop an acquisition strategy for the Commercial Crew Program that addresses industry concerns with traditional Federal Acquisition Regulations (FAR) – based contracting approaches. The Council is concerned, however, that the proposed Commercial Crew Program may not be able to achieve its stated goal of developing one or more commercially viable crew transportation systems in a timely manner. Funding for the Commercial Crew Program as authorized by the Congress does not appear to be sufficient to meet the timetable laid out by NASA, making the business case more difficult for commercial companies to achieve.

**NASA Advisory Council Observation**  
**International Collaboration in Aeronautics**

**Name of Committee:** Aeronautics Committee

**Chair of Committee:** Ms. Marion Blakey

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Observation:** International Collaboration in Aeronautics

**Observation:** The Council encourages the Aeronautics Research Mission Directorate (ARMD) efforts to establish deeper collaborations with the international community. The U.S. needs to understand what is happening in the rest of the world, including capabilities of emerging economies – proactive intelligence. Need to understand competitive issues but work together strategically and in those areas of mutual benefit (e.g., air traffic management inter-operability, understanding high ice-water content weather phenomenon).

**NASA Advisory Council Observation**  
**Research in Verification and Validation**

**Name of Committee:** Aeronautics Committee

**Chair of Committee:** Ms. Marion Blakey

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Observation:** Research in Verification and Validation

**Observation:** Research in verification and validation is a critical national need and this is an important area of work for NASA. The work needs to be clearly connected with applications – e.g., how will a new approach help with certification? This is a very challenging problem and it is important to show incremental progress along with ideas for more comprehensive solutions.

## **NASA Advisory Council Observation**

### **Capturing the Results of Systems Analyses and Trade Studies**

**Name of Committee:** Aeronautics Committee

**Chair of Committee:** Ms. Marion Blakey

**Date of Council Public Deliberation:** August 4, 2011

**Short Title of Observation:** Capturing the Results of Systems Analyses and Trade Studies

**Observation:** It is important to capture the results of systems analyses and trade studies/sensitivity analysis. This can be used to help defend and prioritize the Aeronautics Research Mission Directorate (ARMD) research and to build advocacy. Dissemination of results internally and externally can be done in several ways, including conventional publication with knowledgeable summaries and accessible databases with more detailed information. NASA's aeronautics program is pursuing these approaches.