**OPENING STATEMENT OF**
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**COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION**

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Chairman Nelson, Ranking Member Vitter, and members of the committee,

Thank you for the invitation to this hearing. On behalf of USRA and our 102 member universities we appreciate the opportunity to be here today. USRA was formed by the National Academy of Sciences in 1969 and has the mission of advancing space-related science and technology.

A strong space program is essential for our country and university research is an indispensable part of that success. Universities develop new knowledge crucial for our understanding of space. They are a source of innovation needed to address both the cost of space activities and

approaches for new challenges. They also prepare the people who are our future.

I will focus on five items for the committee to consider:

**First, NASA and the Vision for Space Exploration should be reauthorized in a balanced manner that ensures a strong and healthy space science program.**

The renewed U.S. focus on both human and robotic exploration beyond low-Earth orbit frees NASA to carry out great new achievements – to explore and eventually settle the solar system. It is important that this program be authorized recognizing that science and exploration are linked. Science is essential and recent scaling back of scientific plans should be reversed so the complete vision for our progress in space can be achieved.

**Second: the importance of universities to our space program should be made a stronger part of all NASA programs.**

The position America has in science and technology today could not have been achieved without robust university research. The environment of academic freedom in universities generates knowledge unlike any other. This is especially important in space, where we need new innovation to address high costs and to find solutions to new problems. Universities are also the only source of a new highly trained space workforce we require.

University research should be embedded throughout NASA's activities, in science, technology for exploration and operations.

**Third: Make workforce development of tomorrow's scientific and engineering leaders a part of NASA's mission**

The America Competes Act addresses an impending crisis, namely that America can loose its technological advantage in the world and if that happens, may never get it back. This will have a profound impact on every aspect of our future. Responsibility for the preparation of the aerospace workforce should be a part of NASA's reauthorization. This is a crisis in our country, and space must be a part of the solution.

**Fourth: Assure adequate emphasis is placed on university-led missions that provide hands-on training for students.**

Opportunities for students to be involved in hands on space training have declined precipitously and it is extremely important to reverse this.

To be leaders in space we must have the best trained people. In particular, the ability for a Ph.D. student to conceptualize an experiment, design and build the hardware, launch it into space, collect data and analyze it is essential. Without these experiences our universities can not produce the best scientists and engineers in the world. For every experimental opportunity that results in a well trained Ph.D., there are several masters' research opportunities and dozens of opportunities for undergraduates to be involved in space experiments.

A recent National Academies study shows that our current aerospace workforce – the best aerospace workforce in the world – that is now facing retirement – benefited from 7 times the number of these research opportunities when they were on campus 30 and 40 years ago than are available today.

USRA member institutions passed a resolution at our annual meeting last month urging that these opportunities be increased and recommending that NASA be required to

spend at least one percent of its overall budget on university led hands-on programs. From our estimates, we believe this is a doubling of present activity and it is desperately needed.

We also want to express support for the potential of emerging commercial suborbital vehicles being developed to contribute in this area. NASA has expressed an intent to establish a Suborbital Scientist Participant Pilot Program, and we encourage it to pursue this.

**Fifth: Reimburse NASA for the Cost of Returning to Flight.**

NASA has spent more than $2 billion implementing space shuttle safety improvements to help restore flight operations after the Columbia accident. The funding for those improvements came at the expense of aeronautics, science, and exploration programs and its restoration is urgently needed.

**In Conclusion** NASA must be reauthorized with stronger university involvement and science than it has had in recent years. By including universities in all aspects of the space program we will develop properly trained people for the future and produce innovations required for success.
Thank you for this opportunity to speak and I look forward to answering any questions you have.