



Testimony of

Bob Mitchell

President, Bay Area Houston Economic Partnership

before the

**U.S. Senate Committee on Commerce, Science, and Transportation
Subcommittee on Space, Science, and Competitiveness**

Introduction

Chairman Cruz, Ranking Member Nelson, distinguished members of the committee:

Thank you for the opportunity to be here today and to testify on the important topic of the International Space Station.

I serve as the president of the Bay Area Houston Economic Partnership, a member-driven, 501(c)(6) nonprofit economic development organization located just outside the gates of the Johnson Space Center in Bay Area Houston. We have over 268 members, which include a diverse mix of businesses in aerospace, medical, life sciences, petrochemicals, and maritime. We also are proud to work on initiatives that contribute to the economic growth of the 13 cities and two counties in the area around the Johnson Space Center. Although aerospace companies make up a fraction of our membership, the entire business community understands and values the contributions of NASA and the space community in making all of our lives better.

The International Space Station (ISS) is a critical element of the work performed in Houston at the NASA Johnson Space Center and the backbone to maintaining a number of key elements of our success in human spaceflight: the astronaut corps, mission control, countless technical resources, and world-class researchers. The Johnson Space Center offers an unparalleled national capability that has been built over decades of experience. The loss of or weakening of its capabilities would have dramatic implications to our outcomes in deep space exploration.

I would like to note our strong appreciation for this committee's careful review of any discussion about transitions on the ISS, which must be done carefully and thoughtfully as a matter of national policy objectives and priorities rather than as a response to short term political or budget pressures. As was noted in the hearing with NASA last month, going about this transition too quickly could result in the loss of these key capabilities and lead to critical gaps in U.S. capabilities in space, allowing international competitors to seize such moments to usurp American leadership.

The ISS has achieved remarkable goals in science, diplomacy and commercial space market advances, but its work is far from complete. It remains as vital a resource today as it has since crews first started manning it in November of 2000. There are multitudes of productive initiatives left that can only be explored on the station.

Economic Impact

The technology generated out of ISS research continues to improve the quality of human life. NASA literally publishes a book on all of the spinoffs each year. New innovations boost our economy and create jobs in our communities.

The ROI on the ISS can be calculated in many ways. It is difficult to quantify the exact dollar value of many of these returns, but the overall impact is undeniable. The International Space Station – by its design and enactment – has established the foundation for sustained generation of technology that improves life on earth. Each year, spinoffs like new drugs, materials, and scientific technology become licensed and begin generating new revenue streams for companies large and small.

Beyond the ability to show an ROI, ISS positions us to tackle the challenge of deep space by buying down cost and risk now to give missions to the Moon and Mars a head start. The station is a critical, inexpensive test bed for exploration hardware that needs to work perfectly on its first live mission. It allows us to test, tweak, and perfect life support systems, radiation abatement methods, and other advanced materials. These breakthroughs will eventually make it from the launch pad into our homes and businesses across America.

Through engagement with the Russian space agency and 13 other ISS partners, the U.S. has led an era of peaceful collaboration and exploration that has provided stability in space leading to the current level of space commercialization. This commitment to ISS - uninterrupted for the last 25 years - has provided more than just a destination in space. The ISS has cultivated:

- A cultural learning lab for diplomacy, education, and inspiration
- A learning lab for technology applications – testing performance machines, materials, and humans in space
- A science lab for comparing terrestrial knowledge in a new frontier of weightlessness
- A lab for exploring both our earth and outer space in preparation for the next exploration endeavors

I think it is important to take a detailed look at the overall ISS budget, which is often cited at \$3B per year. What is misleading about that estimate is that the Commercial Crew and Cargo programs are funded out of those funds along with overhead costs at the centers housing the programs and other expenses. The real ISS budget is a fraction of that total cost, ranging from \$1B - \$1.5B/year. Saving this much each year will have a minimal impact on our overall exploration efforts in terms of a funds transfer. Commercial alternatives would likely cost significantly more than sustaining the ISS, essentially creating an entirely new development program, while providing a fraction of the existing capabilities.

Leadership

History will look back at the ISS as the first time the world joined together, under American leadership, to build an outpost in space. The ISS partner relationships have fostered an invaluable boost to diplomacy and global peace and a powerful tool to leverage resources for necessary basic research. It remains the most visible symbol of NASA and our human spaceflight program, and it is a unique asset that should be used to its full extent by the U.S. and its partners.

However, as we succeed, others look to follow. As you have probably seen, just last week China invited other nations to partner with them on their space station. They realize, as we do, the power of these partnerships and the leadership and the technology that can be gained from them. As we question our commitment to the future of ISS, the Chinese space program is actively seeking to leverage this moment in time to provide an alternative path and platform for our traditional international partners in space. This has very serious implications for our national security, trade and technology partnerships, and leadership if this is not managed carefully.

If the U.S. government terminates its support of the ISS in 2025, and we step away from ISS before an equivalent long-term engagement is created, there will be a disruption in the space program and the emerging commercial space industry. Not very long ago, NASA's Constellation Program was cancelled at the same time as the retirement of the Space Shuttle Program, which had a profoundly negative impact on America's leadership position in space. I sincerely hope that we all learned a valuable lesson from this and trust that you will not allow history to repeat itself! My position is that the U.S. government should commit to the ISS for as long as it is safely feasible to do so.

Conclusion

Although counter-intuitive, the mere discussion of the end of life to the ISS dries up the commercial investments that may one day provide a viable revenue alternative. Scientists begin to worry about investing time and resources if the endgame is uncertain bringing significant challenges to future experiments, and international partners look in other directions for leadership to advance their aspirations in space.

At the end of the day, the ISS program is the culmination of all of the reasons we are so passionate about the entire space program – it represents America's future in global leadership, education, innovation, healthcare, and our quality of life.

Thank you for the invitation to speak on this topic, and I look forward to your questions.