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Fall 2022

Thursday, December 15, 2022

Questions can be sent in through:
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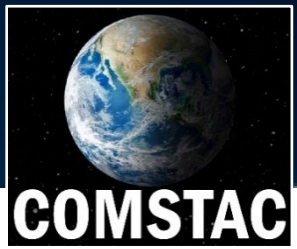
**Federal Aviation
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This meeting is being held pursuant to a notice published in the Federal Register on November 30, 2022. The agenda for the meeting was announced in that notice, with details as set out in the agenda posted on the COMSTAC website. I am the Designated Federal Officer responsible for compliance with the Federal Advisory Committee Act, under which the meeting is conducted. It is my responsibility to see to it that the agenda is adhered to and that accurate minutes are kept. I also have the responsibility to adjourn the meeting should I find it necessary to do so in the public interest. Only Commercial Space Transportation Advisory Committee (COMSTAC) members may participate in any discussions and vote on matters put to a vote by the Chair. There are some updates to the agenda which have been posted. I have approved those changes at the request of the Chair.



Agenda



- 12:30pm **Welcome by DFO**
- 12:31 Welcome by Secretary of Transportation, Honorable Pete Buttigieg
- 12:35 Welcome and comments by Acting Administrator Nolen
- 12:40 Welcome and comments by AST-1, Kelvin Coleman
- 1:00 Chair and Vice Chair lead COMSTAC in discussion of how FAA can partner with industry to increase diversity and participation in STEM education to support the growing commercial space industry
- 1:30 Chair and Vice Chair provide comments on human spaceflight and discuss the importance of COMSTAC's role in providing recommendations to AST
- 1:40 Establish working groups
- 1:45 Public Comment
- 1:55 Chair and Vice Chair closing comments
- 2:00 **DFO closing comments and adjournment**





How can FAA Partner with Industry to Increase Diversity and Participation in STEM to Support the Growing Commercial Space Industry



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- How can the FAA partner with industry to increase and encourage greater diversity and participation in STEM education supporting the growing need in the commercial space workforce?
- The US space program must maintain assured access to space for the Nation, promote economic development and remain innovative. A talented workforce remains a critical component of our nation's goals.
- The space workforce is rapidly growing, with 151,797 jobs in the core space sector in 2021; the launch sector alone has increased this number by 18% over the past five-years.
- With the shift toward commercialization of the launch sector, and to regional space hubs and spaceports, leadership from FAA AST will be helpful in identifying workforce gaps and potential government/ industry/ academic partnerships.





SPACE WORKFORCE 2030

EXECUTIVE LEADERSHIP PLEDGE

PLEDGE TO ADVANCE DEI IN THE SPACE INDUSTRY

A pledge to collectively take action to achieve the following results by 2030:

- *Significantly increase the number of women and employees from underrepresented groups in our collective technical workforce.*
- *Significantly increase the number of women and employees from underrepresented groups who hold senior leadership positions in our collective technical workforce.*
- *Work with universities to increase the percentages of women and students from underrepresented groups receiving aerospace engineering degrees, to levels commensurate with overall engineering programs.*
- *Sponsor K-12 programs that collectively reach over 5,000,000 underrepresented students annually.*



More information
at swf2030.org

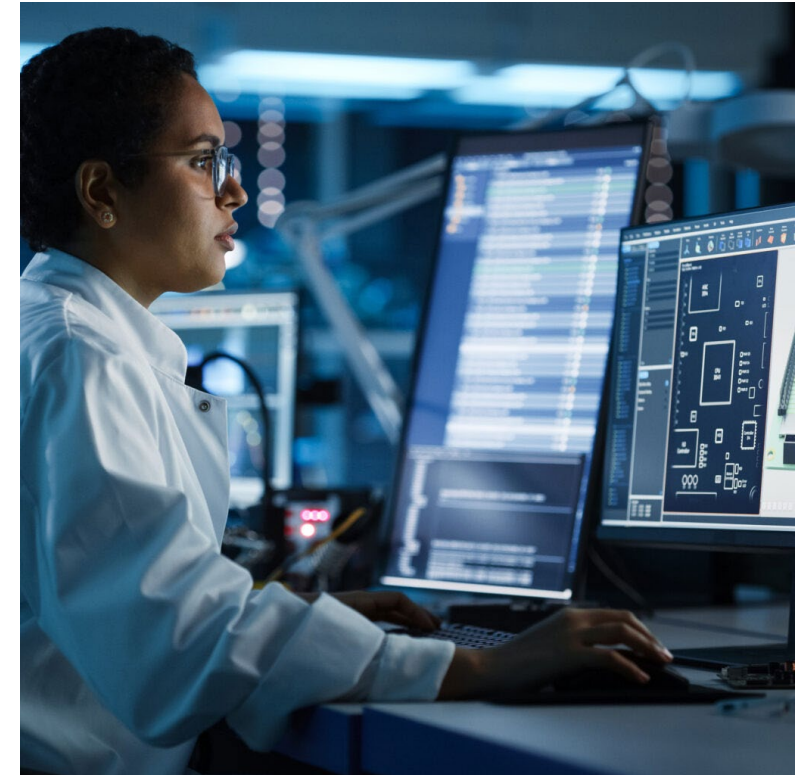
WHY SPACE AND WHY NOW?

Space is a high-paying, high-growth industry:

- Morgan Stanley estimates that the global space industry could generate revenue of more than \$1 trillion or more in 2040, up from \$350 billion in 2020.
- Average U.S. private-sector space salary in 2021 was **\$125,214**. This is more than double average annual salary for all U.S. private-sector jobs and **27.3% more** than the average salary for STEM occupations.
- **151,797 individuals** working in U.S. private sector space companies in 2021 – a **18.6% increase** compared to 2016.

The current state of diversity in the space industry is abysmal:

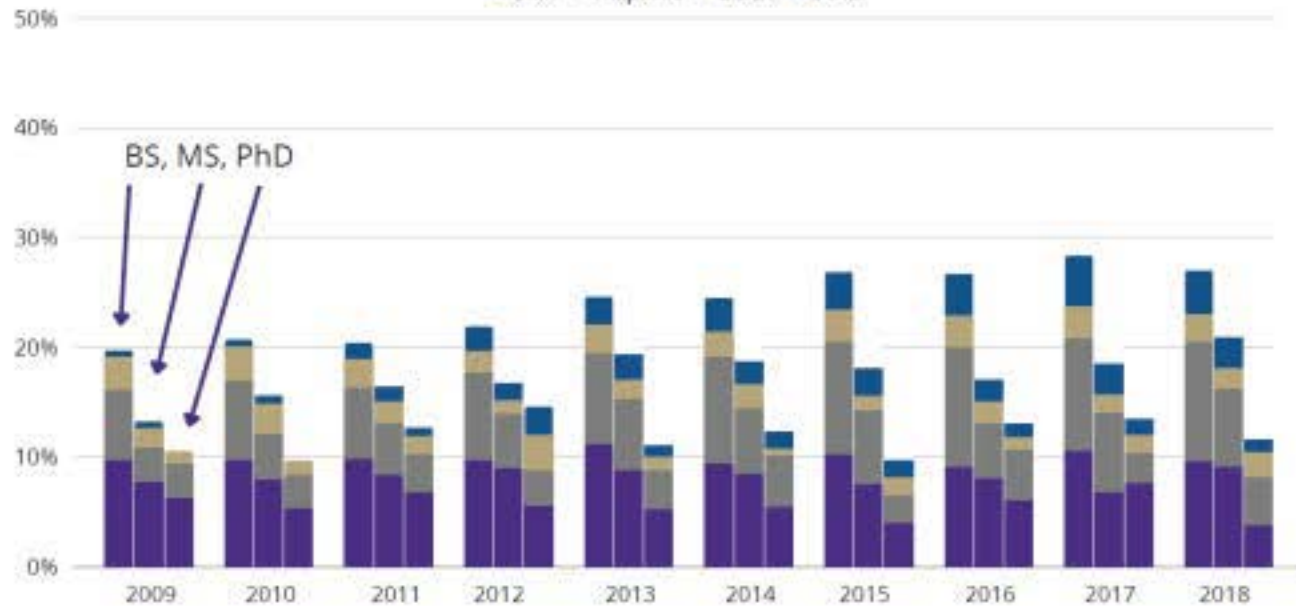
- Just 57 of the 534 people who have gone to space as a part of the U.S. space program have been women.
- There have been only 14 African-American astronauts.
- Just 28% of aerospace and defense industry executives are female.
- Only 9% of aerospace and defense industry executives are Black or Hispanic.



THE UNIVERSITY PIPELINE IS STRUGGLING

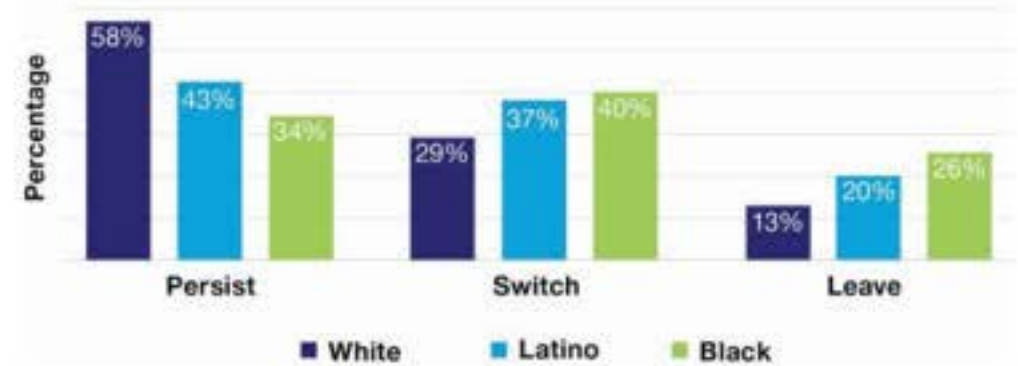
URM students by race/ethnicity in aerospace programs

Asian Hispanic Black Other



Source: National Science Foundation

STEM Major Metrics



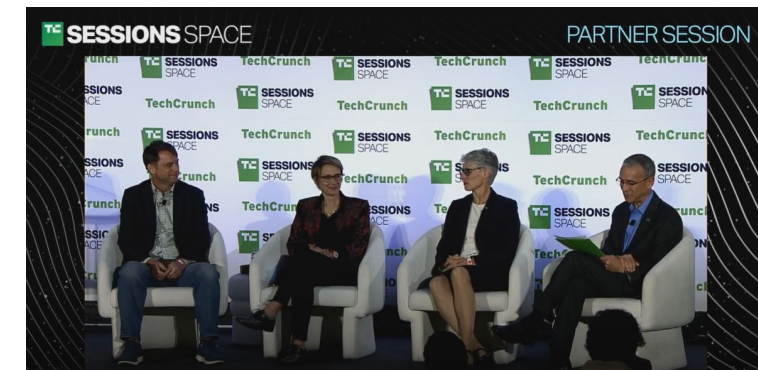
WHERE TO FROM HERE?

Achievements

- Worked with the White House Office of Science and Technology Policy to develop a SWF2030 internship program that will rollout this academic year (announced by VP Harris at Sept. National Space Council mtg)
- Facilitating the stand up of a university partnership program that will support the academic pipeline of talent industry needs
- Launched social media accounts and swf2030.org
- Convened all SWF2030 signatories for a working level meeting in late October
- Held Panel at TC Sessions: Space in early Dec to increase visibility for the pledge in the start-up community

Looking Ahead

- Presenting at AIAA's SciTech Forum in January
- Holding a meeting of all SWF2030 CEOs and leaders in mid-March
- Presenting our first annual report and Year 1 numbers at Space Symposium in late April



JOIN US!

Our Commitment

- Hold ourselves accountable through annual reporting of aggregated workforce data
- Highlight achievements annually at Space Symposium to promote shared success
- Meet regularly to strengthen DEI, recruitment and STEM outreach efforts
- **Seek like-minded organizations to join this effort**
 - Scan the QR code to the right to learn more about joining the existing group if you are a member of the space industry
 - We are at varying stages of developing:
 - Associate memberships for related organizations
 - University partnerships
 - Intern programs and partnerships



ED Bolton, Senior Advisor – ebolton8@aol.com

Alison Bauerlein, Principal Director – alison.bauerlein@aero.org

White House / Industry Skilled Technical Workforce Initiative



- **Identify** existing successful programs
 - Florida Space Coast
 - Gulf Coast
 - Los Angeles / Long Beach / South Bay
- Analyze **scalability** of identified programs
- **Share** findings across regions and industry
- **Next Step** – Regional stakeholder meetings in early 2023



STEM Working Group Recommendations

COMSTAC

To encourage greater diversity and participation in STEM education, the COMSTAC working group developed several recommendations for the FAA to consider.

- Work closely with National Space Council and its member agencies to:
 - Ensure harmonization between DOT STEM workforce efforts and the White House-led Space Industry Skilled Workforce Coalition.
 - Promote cultural change through policy, incentives, and taxation structure to engage the industry pipeline within the US workforce.
 - Develop recommendations for DEI best practices in the workplace.
 - Create space workforce messaging portal and newsletter to notify of opportunities.
 - Enforce a federal reporting system for incidents of workplace harassment and discrimination at any organization receiving federal funding.
 - Facilitate participation from historically excluded communities at space conferences and workshops.



- Work with Industry to:
 - Establish a mechanism for industry inputs into the DOT-related tasks of Interagency Roadmap to Support Space-Related STEM Education and Workforce.
 - Establish executive-level workforce development officers to build strong local and regional STEM workforce pipelines, including developing regional postsecondary STEM internship programs.
 - Utilize spaceports as regional education hubs to support programs and promote space industry activities for students early in their education.
 - Disseminate and implement DEI workplace recommendations

- Work with Universities and Student Organizations to:
 - Highlight space industry jobs available and identify academic and extracurricular points of engagement within FAA AST
 - Extend the Centers of Excellence model to not only promote areas of research interest to FAA AST, but to also directly support the space industry's workforce pipeline, similar to the U.S. Space Force University Partnership. This pipeline should emphasize the employment of historically excluded communities in commercial space transportation.



Human Spaceflight Safety Framework Report to Congress Discussion



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Establishing Working Groups

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Ted Mercer
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Public Comments

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Closing Comments (COMSTAC Chair and Vice-Chair)

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