



SPACE WORKFORCE 2030

YEAR ONE

TRACKING OUR PROGRESS TO
INSPIRE, PREPARE AND EMPLOY

APRIL 2023



BEYOND A PLEDGE

One year ago, Space Workforce 2030 (SWF2030) set out on a bold path, laying the groundwork to achieve an unprecedented mission that will redefine our industry's future. This shared vision requires extraordinary collaboration and commitment from all our partners, working together to build a stronger, more vibrant and inclusive workforce essential to the future success of our industry.

We recognize this cannot be achieved overnight, and it cannot be achieved alone. But we choose this challenge, much like President John F. Kennedy did when he proclaimed the mission to the Moon. We've committed ourselves to create meaningful impact in this decade because it is a challenge we are unwilling to postpone and one we intend to win.

Today, our consortium of leading space companies continues to grow and, as we pursue the exciting opportunities that await in space, we're working together toward an inclusive workforce that will have a lasting benefit for all.



Above: Joann Morgan was the first woman engineer at the Kennedy Space Center and the only woman in the control room during the Apollo 11 liftoff. This famous photo reminds us of the progress made since, and also of the work that still lies ahead in making the space industry a more diverse and inclusive place.

ADVANCING DIVERSITY, EQUITY AND INCLUSION IN THE SPACE INDUSTRY

Space Workforce 2030 is a collective effort that demonstrates the power of collaboration within our industry. The leaders who have signed the pledge have committed themselves and their organizations to achieving our stated goals:

- 1** Significantly increase the number of women and employees from underrepresented groups in our collective technical workforce.
- 2** Significantly increase the number of women and employees from underrepresented groups who hold senior leadership positions in our collective technical workforce.
- 3** 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.
- 4** Sponsor K-12 programs that collectively reach over 5 million underrepresented students annually.



Executives of leading space industry companies signed the “Space Workforce 2030” pledge at the 37th Space Symposium in 2022.

To ensure accountability and continued progress, SWF2030 member companies have agreed to:

- Aggregate technical workforce and senior technical leadership data to report publicly each year.
- Highlight group-level achievements to promote shared success.
- Exchange best practices for diversity recruitment, science, technology, engineering and mathematics (STEM) education outreach and representation at leadership levels.
- Seek like-minded leaders and organizations to join this effort.

BUILDING A DIVERSE AND THRIVING WORKFORCE

Space industry leaders unite for unprecedented effort.

Announced at last year's 37th Space Symposium, SWF2030 was established as a first-of-its-kind collaborative endeavor. Three "Centers of Excellence" (COEs) were formed in direct alignment with the National Space Council's space workforce initiatives and serve as working groups across the participating companies to drive progress on these goals.

- **INSPIRE:** Partners with K-12 STEM programs to reach 5 million underrepresented students annually.
- **PREPARE:** Provides and supports internships/fellowships to support transitioning undergraduate/graduate students into professionals in the space industry.
- **EMPLOY:** Develops and shares best practices that increase the number of women and people of color in the collective technical workforce and senior technical leadership.

Our approach focuses on seeking excitement (through awareness), scale (at large numbers) and impact (sustainable to future employment).



As chair of the National Space Council, U.S. Vice President Kamala Harris announced commitments to inspire, prepare and employ the next generation of the space workforce and our National Space Interns program.

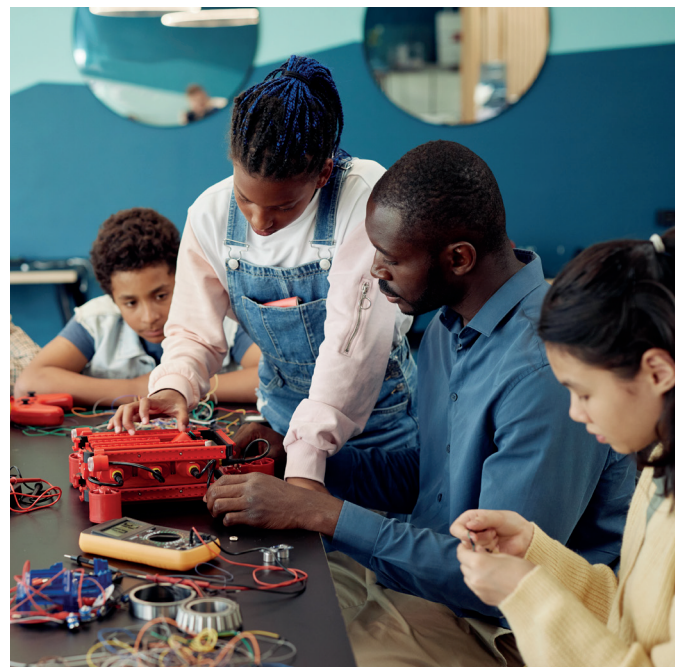
By creating pathways to increase participation and engagement of the brightest minds in underrepresented communities, we can unlock new possibilities for innovations and opportunities that will enhance the nation's ability to achieve future breakthroughs for space.

INSPIRE: SPARKING EXCITEMENT FOR SPACE

K-12 STEM outreach encourages kids to reach for the stars.

The **INSPIRE** COE is reaching children as young as the age of 5 with stories about the possibilities that a space career offers and working to do so in large numbers over time. Our goal is to use STEM outreach efforts to reach more than **5 million students** in kindergarten through 12th grade every year, and by 2030, to do so not as an aggregate of separate companies, but under a united "Space Workforce 2030" effort. Our initiatives include:

- **Provide STEM Resources:** Creating an online library of learning materials and partnering with national organizations to educate and engage children in communities underrepresented in the space industry.
- **Engage with Our Communities:** Hosting events with partners, such as the Girl Scouts in 2023, for STEM-oriented learning and networking experiences to young women and people of color.
- **Leverage Social Media:** Amplifying opportunities to connect with students and their caregivers.



PREPARE: BRIDGING PATHWAYS TO THE FUTURE

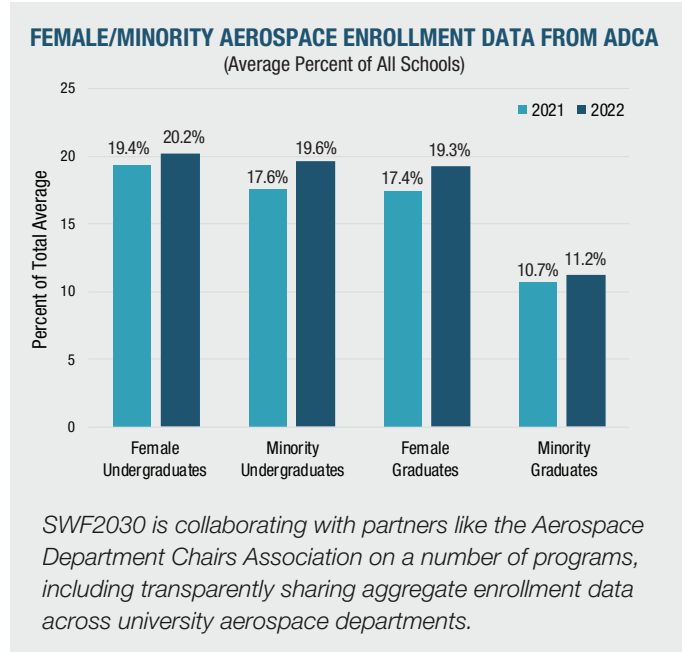
National Space Intern Program expands pipeline for diverse talent.

As part of SWF2030's commitment to expand and diversify opportunities for talent to join our exciting industry, our member companies have pledged to significantly increase the number of diverse interns they hire.

To support this commitment, the **PREPARE** COE established the **National Space Intern Program**, with a goal of hiring **at least 3,000 diverse interns** through the program by summer 2030.

The program provides students exposure and opportunities to connect with mentors, network and share their experiences as cohorts, and allows them to join a candidate pool for our participating companies' internship programs.

In our inaugural year, **994 qualifying diverse students** (as of April 2023) have applied for a 2023 National Space Internship.



EMPLOY: WORKING TOGETHER TO WORK BETTER

Space industry collaborates to strengthen inclusivity and diversity.

The available data on representation of women and people of color makes clear that there is significant room for improvement in our industry in the areas of recruitment, retention, advancement and an overall culture of engagement. We must acknowledge the pain points and then develop and implement best practices to ensure representation of women and people of color at leadership levels.

The **EMPLOY** COE group:

- **Gathers Insight:** Identified more than 38 best practices across the consortium for these critical areas.
- **Shares Ideas:** Discussed best practices for feedback from SWF2030 companies to strengthen implementation.
- **Creates Action:** Collectively finalized the top four best practices (page 8-9).

By sharing ideas and data across our industry, we can leverage this collaboration to better inform and prioritize how we create impact, working together and leveraging opportunities to foster an environment that welcomes diversity and engenders a sense of belonging and inclusion for all.



SWF2030: JANUARY 2023 DATA COLLECTION RESULTS

SWF2030 is committed to increasing the number of women and employees from underrepresented groups in the space industry. To measure our impact, we gathered data from across all our member companies to provide an aggregated view of how we are doing as tracked by the percentages of women and people of color (PoC) in the total populations of our collective technical workforce, senior technical leadership positions, interns and intern conversions.

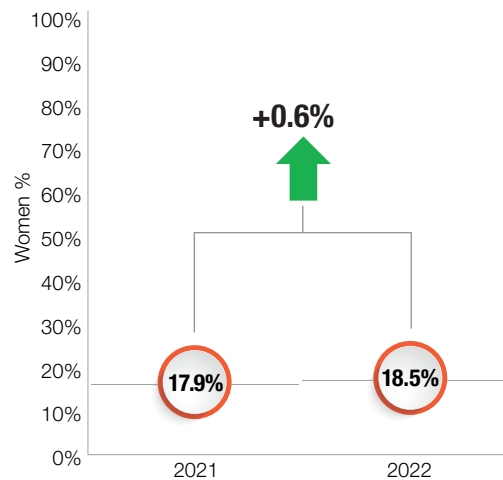
The results of the data collection for our consortium's first year, which tracks from 2021 to 2022, shows meaningful improvements across the majority of categories; however, it also conveys some of the challenges we faced—primarily for women in our industry. While there was no statistical change for women in senior technical leadership roles and a decrease in the percentage of women in our intern pipeline, we did see a notable uptick in the percentage of PoC in senior leadership technical roles and women interns converted to hires.

This data illuminates the successes and challenges we share in this endeavor as an industry. We will continue to hold ourselves accountable by transparently sharing our progress.

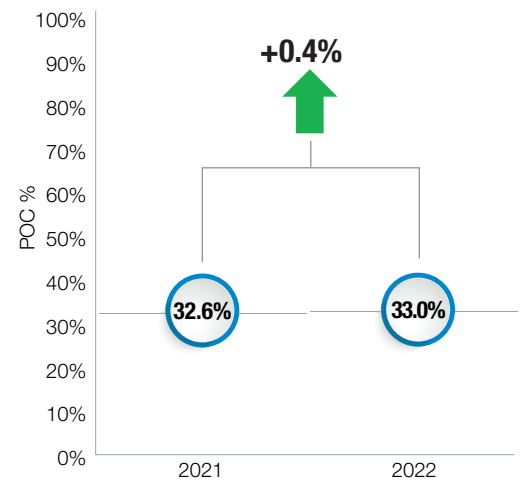
TECHNICAL STAFF



Women %



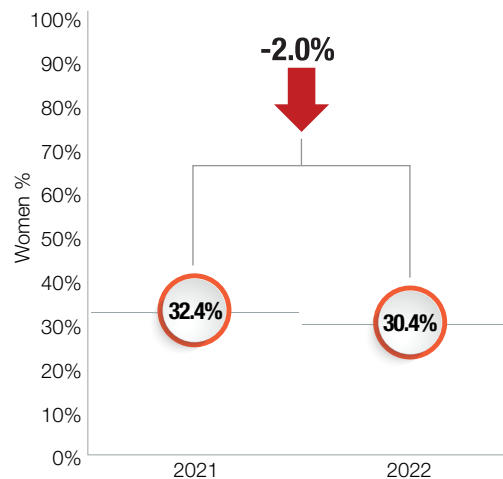
PoC %



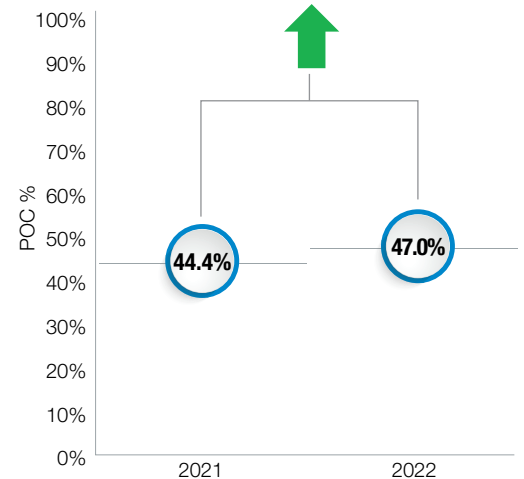
INTERNS



Women %



PoC %



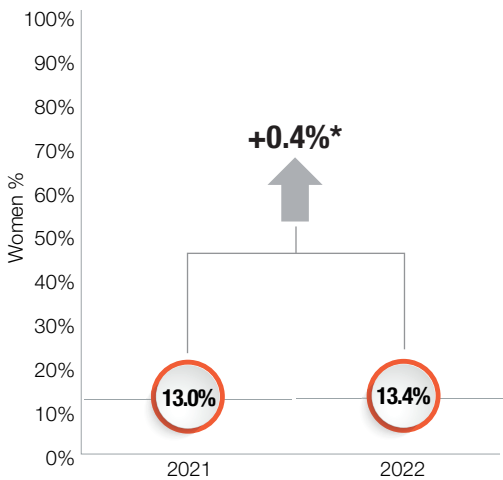


K-12 STEM STUDENT OUTREACH IN 2022

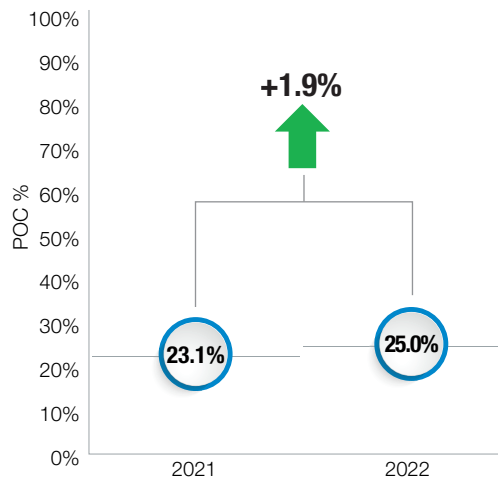
5+ MILLION

SENIOR TECHNICAL LEADERSHIP

Women %



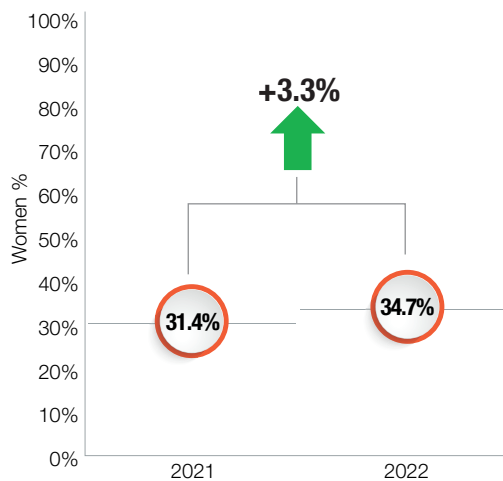
PoC %



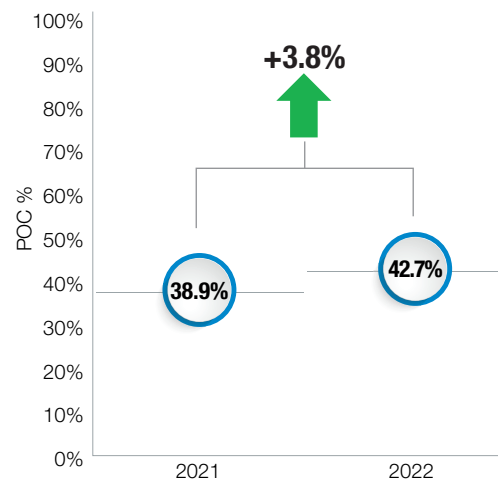
*Difference not statistically significant.

INTERN CONVERSIONS

Women %



PoC %



SHAPING ACTIONS FROM INSIGHTS

Forward progress requires forward thinking and the ability to challenge how we've historically operated, as an industry and as individual organizations. Together, we believe enabling the sharing of ideas and best practices is conducive to creating profound impact for the future of space and the next generations of talented leaders.

SWF2030 identified best practices from our member companies, including Aerojet Rocketdyne, Ball Aerospace, Blue Origin, HawkEye 360, Jet Propulsion Laboratory, Lockheed Martin Space, Northrop Grumman, Maxar, RedWire, Rocket Lab, Stellar, The Aerospace Corporation, United Launch Alliance and Virgin Galactic. As a collective, we've selected four best practices to highlight.

BEST PRACTICE: RETENTION

Business and Employee Resource Groups Strengthen Inclusion and Belonging BLUE ORIGIN

Creating an inclusive environment for the space industry's workforce means employees feel they are supported and valued for their contributions. For Blue Origin, providing these groups with strong structural support enables them to better serve their membership and the broader community. Business and employee resource groups are powerful contributors to:

- Strengthening the sense of psychological safety and belonging for underrepresented employees at every company.
- Achieving professional development, recruiting, retention and outreach goals of the organization.
- Facilitating leadership engagement at all levels supports a thriving workforce.



Collectively, the SWF2030 companies can leverage opportunities that promote collaboration across their resource group programs to share best practices and ideas that benefit employees.

BEST PRACTICE: REPRESENTATION

Black Leaders in Aerospace Scholarship and Training Program (BLAST) VIRGIN GALACTIC

Recognizing the disparity of Black representation in the aerospace industry, Virgin Galactic and its outreach arm, Galactic Unite, formed the BLAST program to train and inspire the next generation of Black leaders in aerospace. The BLAST program is designed to support Black scholars through the academic pipeline to successful early-career placement opportunities.

- Support students pursuing degrees in aerospace engineering, mathematics, computer science, Earth sciences and other STEM-based majors.

- Award each selected student a \$5,000 scholarship per award (renewable for up to three years, for a total of \$15,000).
- Provide mentoring, vocational skills, certified leadership training, summer paid internships at Virgin Galactic or a program partner company, and job opportunities upon graduation.

Since its launch in February 2021, the program has funded 16 scholars, with 10 currently enrolled.

BEST PRACTICE: RECRUITMENT

Inclusion of Racially Underrepresented Talent THE AEROSPACE CORPORATION

To expand the number of diverse candidates engaged in its hiring process, The Aerospace Corporation intentionally eliminates structural obstacles and unconscious biases that impede progress in its recruitment strategy.

These efforts include:

- Establishing a strong pipeline of diverse qualified talent.
- Requiring recruiters and hiring managers to leverage a diverse candidate pool as a starting point.
- Providing hiring managers with training and resources to better understand and overcome bias factors, including mitigating biased language in job postings.



- Conducting regular reviews on metrics such as the external diverse talent pipeline, diverse external candidates interviewed and diverse external candidates hired.

BEST PRACTICE: K-12 STEM OUTREACH

Enhance STEM Education for All Students SWF2030 EMPLOY COE

Supporting students' development of key STEM competencies is fundamental to our future. The SWF2030 EMPLOY team is working to provide universal access to high-quality STEM activities and programs for all K-12 students through hands-on learning with real-world applications and community engagement, and equipping educators with the knowledge and materials they need to support STEM education to help future mathematicians, engineers and scientists prepare for global competitiveness.

STEM education resources support:

- Providing learning enrichment and giving students the chance to develop positive social connections with their peers.
- Helping educators implement quality STEM curriculum in their classrooms, including opportunities for professional growth.
- Inspiring and sharing passion for STEM disciplines in the next generation of scientists and engineers.

The EMPLOY COE also looks to partner with teachers to sponsor lesson plans and provide professional learning sessions that can enhance the effectiveness of STEM programs for the future. Making STEM education and engagement opportunities more accessible to underrepresented communities is fundamental to creating a more inclusive space workforce for generations to come.



WHERE WE'VE BEEN

SWF2030 continues to engage with the broader space community for opportunities to partner with government, industry and academia to create lasting impact for our future workforce.



SEPTEMBER 2022

U.S. Vice President Kamala Harris on Space Workforce: At the second convening of the National Space Council, Harris unveiled space-related STEM initiatives to inspire, prepare and employ the next generation of the space workforce, highlighting SWF2030 and our National Space Intern Program.

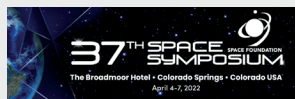


TechCrunch Sessions: Space 2022 Panel: Leaders from SWF2030 companies discussed priorities and vision to audience of commercial start-ups, venture capital, government partners and more.

Launch of National Space Intern Program: As part of SWF2030, the companies also pledged to significantly increase the number of diverse interns with a goal of hiring at least 3,000 interns by summer 2030.



Howard University Conference: SWF2030 joined Howard University's Higher Education Diversity Media Conference, engaging with news organizations as well as academia and industry.



SWF2030 Announced at 37th Space Symposium: Initially signed by 24 CEOs, the consortium has since grown to over 30 space industry organizations.

SEP
2022

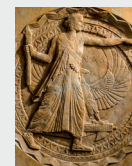
OCT
2022

AUG
2022

DEC
2022

APR
2022

First SWF2030 Working Team Meeting: Working team meeting with the 30 companies included guest speakers, recap of first six months of accomplishments, and breakout of the Centers of Excellence to continue to drive progress.



National Academy of Sciences: SWF2030 presented at the Government-University-Industry Research Roundtable, which convened leaders from across sectors to share and scale successes.



60th Robert H. Goddard Memorial Symposium:

Space leaders discussed SWF2030 and beyond during a panel as part of the broader theme of challenges and opportunities for space.



Panel During SXSW 2023:

SWF2030 hosted a discussion at the South by Southwest conference on the progress being made for diversity, equity and inclusion across the space industry.

Space Grant Consortium: SWF2030 presented at the Spring 2023 National Council of Space Grant Directors' Meeting. The National Space Grant College and Fellowship Program is comprised of 52 Space Grant Consortia.

Office of Science and Technology Policy (OSTP): SWF2030 supported discussions on inspiring, preparing and employing the future of the nation's space workforce.

Second SWF2030 Working Team Meeting: Working team convenes on progress, industry data and best practices.

JAN 2023

Meeting with Aerospace Department Chairs Association: ADCA and an initial 10 university aerospace departments from across the country plan to sign their own higher-education pledge to gather diversity data and focus on a few of the most impactful programs.

FEB 2023

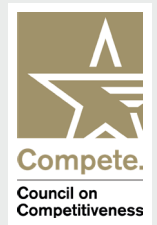
FEB 2023

MAR 2023

MAR 2023

MAR 2023

APR 2023



Council on Competitiveness: SWF2030 discusses developing, supporting and expanding the modern innovation workforce during National Commission Phase 2 Launch Summit at University of California, Davis.



SWF2030 Annual Report at 38th Space Symposium:

SWF2030 will share aggregate data and best practices for its first year. Leaders will also be engaged in keynotes, panel discussions and other sessions.

IN THE NEWS



Major Space Companies Pledge to Boost Diversity and Publicly Share Hard Numbers



Opinion: A Pledge to Create a More Diverse Space Industry



Space Industry CEOs Pledge to Create More Inclusive Workforce



JPL Commits to First-Ever Space Industry Diversity Pledge



SPACE FOUNDATION

Leaders to Sign First-Ever Space Industry Pledge on Diversity at 37th Space Symposium



Top Aerospace Executives Pledge to Accelerate Equity, Inclusion Efforts at Space Symposium



24 Space Industry Executives Sign Diversity Workforce Pledge



Space Leaders Pledge to Boost Diversity and Share Progress



Industry Leaders Sign Workforce Diversity Pledge



Recruiting the Next Generation of 'Space' Workers



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