



Astromerge White Paper 1
Space Jobs USA Manufacturing Workforce Development Alliance

Growing Space Industry Manufacturing Capabilities in Ohio: A Blueprint for the Rust Belt.

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Executive Summary

Ohio, a state with a rich manufacturing history, faces the loss of approximately 38,000 jobs in its manufacturing sector by 2028. This whitepaper outlines a strategic initiative to counter this decline by positioning Ohio at the forefront of the rapidly expanding space industry. Our goal is to develop a comprehensive blueprint for revitalizing manufacturing across the Rust Belt, starting in Ohio, and expanding throughout the region. With its strong industrial base, skilled workforce, and proximity to key aerospace assets, Ohio is uniquely suited to lead this transformation.

The space industry, driven by growing demands for exploration, satellite technology, and advancements toward Moon and Mars missions, presents immense potential for job creation. By integrating Ohio's existing manufacturing capabilities with the fast-growing needs of the space sector, we aim to not only safeguard 25,000 manufacturing jobs but also create an additional 25,000 jobs along the Rust Belt by 2029.

We propose to initiate a Space Jobs USA Manufacturing Alliance in Ohio to achieve this by leveraging three initial core initiatives:

1. **Workforce Development** – Prepare workers for the space and advanced manufacturing sectors by partnering with educational institutions and industry leaders, ensuring Ohio's workforce is equipped for the future.
2. **Career Events** – Job fairs, internship summits, and collaborations with universities will connect employers with top talent, fostering a robust talent pipeline that meets the industry's growing needs.
3. **Employer and Startup Support** – By offering comprehensive support to employers and startups, we will drive innovation and business growth in Ohio's burgeoning space and advanced manufacturing sector. We specifically launch initiatives to encourage non-space manufacturing companies to explore a transition into the space industry.

The space industry, with its high growth trajectory and focus on future exploration missions, offers everything needed to secure the long-term health of Ohio's manufacturing economy. Through this initiative, Ohio can reclaim its status as a manufacturing powerhouse while setting the foundation for the Rust Belt's revival, ensuring economic sustainability and technological leadership in the 21st century and beyond.



Introduction

As Ohio faces the looming loss of approximately 38,000 manufacturing jobs by 2028, a new vision is needed to revitalize the state's industrial base and workforce. The space industry, with its broad array of technology, manufacturing, and educational opportunities, offers an unparalleled avenue for this transformation. Through the strategic efforts of the Space Jobs USA Manufacturing Alliance will initiate initiatives like "From NEO to Space," the state is poised to not only recover lost jobs but create 25,000 new, high-quality jobs by 2029. This whitepaper outlines how Ohio can become a national hub for space industry development, emphasizing the critical role of manufacturing, education, and the technological benefits of space exploration for long-term economic resilience.

The Threat to Ohio's Manufacturing Sector

Ohio's economy has historically been built on its manufacturing capabilities and experience, which includes a strong workforce and a tradition of industrial innovation. However, this strength is increasingly under threat due to factors such as automation, outsourcing, and shifting global market dynamics. By 2028, Ohio is projected to lose 38,000 manufacturing jobs, a potential blow to communities reliant on these industries for economic stability. This job loss could disproportionately affect workers in industries like automotive and steel production, sectors that have been pillars of the state's economy for decades.

However, this decline presents an opportunity. The skills, infrastructure, and innovation that have sustained Ohio's manufacturing sector can be redirected toward the rapidly expanding space industry. The need for specialized components, advanced materials, and technological systems in space exploration aligns closely with Ohio's existing industrial capabilities.

Ohio's Unique Location: A Strategic Hub for Space and Green Technology

Ohio offers a highly advantageous location for manufacturing and the space industry, establishing it as an ideal base for the Space Jobs USA Manufacturing Alliance. As the heart of the Rust Belt, Ohio's geographical and logistical strengths provide unparalleled access to key transportation networks, skilled labor, and industrial infrastructure, all essential for supporting the growth of advanced manufacturing and space-related businesses.



Central Location and Access

Ohio's central position within the United States allows it to serve as a strategic hub for both domestic and international trade. With a location that is within a day's drive of 60% of the U.S. population, Ohio offers efficient access to major markets across the country. This centrality reduces transportation costs for manufacturers and space companies, making it easier to move goods and materials between production facilities and customers.

Transportation Networks: Trains, Planes, and Waterways

Ohio's extensive and diverse transportation infrastructure is another critical asset:

- **Rail Access:** Ohio has one of the most comprehensive rail networks in the country, connecting manufacturers to major ports, cities, and distribution centers across North America. This rail system enables the swift movement of raw materials, components, and finished products, offering flexibility and cost savings for space-related manufacturing operations.
- **Airports:** The state is home to several key international and cargo airports, including Cleveland Hopkins International, John Glenn Columbus International, and Dayton International Airport. These airports provide rapid access to global markets, facilitating the export of products and import of necessary materials, particularly for high-tech industries like aerospace.
- **Waterway Access via the Great Lakes:** Ohio's connection to the Great Lakes provides a critical maritime transportation route. Through the Port of Cleveland and other Great Lakes ports, companies can ship goods to international destinations via the St. Lawrence Seaway. This access ensures that Ohio-based manufacturers can deliver products to Europe, the Middle East, and beyond within a week, offering significant competitive advantages in logistics and global trade.

Proximity to Aerospace and Defense

Ohio's strategic proximity to major aerospace and defense installations significantly enhances its attractiveness for space-related industries. Notably, Wright-Patterson Air Force Base, one of the nation's largest military research and development centers, serves as a key asset for companies engaged in aerospace innovation and technology transfer. Collaborations with these institutions create unique opportunities for space startups and manufacturers to access cutting-edge technologies while contributing to national security initiatives. The presence of such significant military installations fosters an environment of innovation that can propel the state's growth in the space sector.



Unique Advantages in the Space Industry

In addition to its proximity to key aerospace and defense entities, Ohio is well-positioned to become a leading hub for space industry development due to its robust aerospace and aviation sector, fueled by the presence of NASA's Glenn Research Center. These institutions provide vital resources for research and development while fostering collaboration with private industry, facilitating the transfer of knowledge and innovation.

Ohio's extensive logistics infrastructure—including its strategic location in the Midwest and access to major interstate highways and ports—makes it an ideal setting for manufacturing and supply chain management. The state's rich manufacturing history has cultivated a skilled workforce capable of transitioning into roles within the space sector. Many of the precision manufacturing and technical skills that have historically supported Ohio's automotive, steel, and aerospace industries can be directly applied to space-related manufacturing, such as the production of spacecraft components, satellite systems, and propulsion technologies.

By leveraging these existing assets, Ohio has the potential to attract space-related companies and investment, thereby driving job creation and technological advancement. The development of this industry will not only fill the void left by previous manufacturing job losses but will also provide long-term economic stability through innovation-driven growth.

Skilled Workforce and Industrial Heritage

Ohio's long-standing industrial heritage ensures access to a highly skilled and experienced workforce, particularly in manufacturing, engineering, and technical fields. The state's legacy as a leader in automotive, aerospace, and heavy industry means that the workforce is well-positioned to transition into space manufacturing, advanced materials, and green technologies. Additionally, Ohio's vocational schools, universities, and training centers are aligning with industry needs, creating a robust pipeline of talent for the space industry.

In conclusion, Ohio's unique combination of central location, transportation networks, and industrial expertise makes it a prime location for the expansion of the space industry and green technology sectors. These assets, when leveraged strategically, will enable Ohio to lead the Rust Belt's economic revitalization and establish itself as a key player in the global space industry.



The Role of Education in Workforce Development

For Ohio to lead the space industry, a well-educated and highly skilled workforce is essential. Education and workforce development initiatives must prioritize training in STEM (science, technology, engineering, and mathematics) fields, alongside more specialized areas such as aerospace engineering, robotics, and computer programming. This can be achieved through partnerships between state educational institutions, vocational schools, and private industry.

The "From NEO to Space" initiative is designed to meet this need by fostering collaboration between North East Ohio's schools and space-related companies. Through space literacy courses, vocational training, internships, and job fairs, the program will create pathways for Ohio's youth and displaced workers to enter the space industry. Moreover, partnerships with universities will promote research and development, driving innovation while ensuring that students and professionals are equipped with cutting-edge knowledge and practical experience.

The Space Jobs USA Manufacturing Alliance will play a central role in this process, serving as a facilitator for public-private partnerships aimed at workforce development. By integrating educational programs with industry needs, Ohio can ensure that its workforce remains competitive and capable of meeting the demands of a rapidly evolving space sector.

Technological Benefits of the Space Industry

Investing in the space industry has far-reaching implications beyond job creation. Space technology has consistently driven advances in fields as diverse as telecommunications, environmental monitoring, healthcare, and renewable energy. Ohio's economy will benefit from the spillover effects of space innovation, which includes the development of circular systems, advancements in materials science, and improvements in satellite-based technologies that enhance communication and remote sensing capabilities.

For example, satellite data can improve Ohio's agricultural sector by providing farmers with precise information about crop conditions and weather patterns. Moreover, innovations in renewable energy technologies developed for space exploration can be adapted for use on Earth, supporting Ohio's efforts to achieve greater sustainability and reduce its carbon footprint. Through space technology, Ohio has the opportunity to not only diversify its economy but also position itself as a leader in the global push for sustainable development.



Proposing the Space Jobs USA Manufacturing Alliance

The Space Jobs USA Manufacturing Alliance will be structured around three key pillars: **Attract, Inspire, and Support**. Each of these pillars is designed to ensure a robust ecosystem for talent development, company growth, and the overall transition into the space industry, enabling Ohio's companies to become a thriving center for space industry manufacturing and relevant other sectors like green and health tech.

Attract: Talent and Companies

The first pillar focuses on attracting both highly skilled talent and space-related companies to Ohio and the broader Rust Belt region. This includes:

- **Talent Attraction Programs:** Creating initiatives to draw talent from across the U.S. and beyond, highlighting the opportunity to work in a growing space industry. This will involve partnering with universities, space-related educational programs, and vocational schools to encourage students to pursue careers in space technology, advanced manufacturing, and engineering.
- **Company Incentives:** Offering incentives for space-related businesses to establish operations in Ohio and the Rust Belt and to transition into the space industry. This includes tax breaks, infrastructure support, and access to a well-trained workforce. By leveraging Ohio's strategic location and industrial heritage, the Alliance aims to position the region as a leading destination for space industry investments.

Inspire: Fostering Interest in the Space Industry

The second pillar focuses on **inspiring** individuals and businesses to see the space industry as a viable and exciting path forward.

- **Public Outreach and Engagement:** Hosting job fairs, public events, and career talks designed to showcase the potential of the space industry. These initiatives aim to make space careers more accessible and appealing to people from all backgrounds.
- **Educational Campaigns:** Partnering with schools and universities to introduce space literacy courses and programs, fostering curiosity and knowledge about space technology and exploration from a young age. These campaigns will highlight the vast opportunities in areas such as satellite design, propulsion systems, and green technologies that align with space industry needs.



Support: Building Career and Business Success

The third pillar focuses on **supporting** individuals and companies in their transition to the space industry, ensuring long-term success for all stakeholders.

- **Career Support for Individuals:** Offering career training and development programs that guide job seekers toward high-demand roles in the space industry. This includes providing mentorship, internships, and specialized training programs in collaboration with local educational institutions and space companies.
- **Business Transition Assistance:** Helping non-space companies in the Rust Belt transition into the space sector by offering consulting services, technological support, and business development programs. These programs will help traditional manufacturing firms adopt new technologies, diversify their offerings, and integrate into the space industry supply chain.
- **Startup Support:** Providing comprehensive assistance to entrepreneurs and startups looking to enter the space industry. This includes access to funding, incubation programs, mentorship, and networking opportunities, enabling new businesses to grow and thrive in this dynamic sector.

By focusing on these three pillars—**Attract, Inspire, Support**—the Space Jobs USA Manufacturing Alliance will lay the foundation for a thriving, sustainable space industry, capable of creating thousands of new jobs and revitalizing the Rust Belt region.



Future Outlook: Growing the Space Jobs USA Manufacturing Alliance

The Space Jobs USA Manufacturing Alliance has the potential to become a nationwide leader in space industry development, beginning with Ohio as a foundation for success. By building on the state's existing manufacturing capabilities and establishing it as a center for space technology and advanced manufacturing, the Alliance can set a blueprint for revitalizing the Rust Belt through job creation and sustainable industrial growth.

The goal of the Alliance is to save 25,000 existing manufacturing jobs in Ohio and generate an additional 25,000 high-paying space industry jobs along the Rust Belt by 2030. To achieve this, the Alliance will implement the following strategies:

- **Workforce Development:** Forge strong partnerships with vocational schools, universities, and training centers to build a robust talent pipeline tailored to the needs of the space sector. Programs will emphasize space engineering, advanced manufacturing, and renewable energy, equipping workers with skills for high-demand space industry roles.
- **Attracting Investment:** Develop competitive incentives to attract space-related companies, capitalizing on Ohio's strategic location, industrial infrastructure, and skilled workforce. These incentives will be crucial in establishing Ohio as a leading destination for space industry operations, while serving as a model for other states in the Rust Belt.
- **Supporting Research and Development (R&D):** Collaborate with key organizations such as NASA, Wright-Patterson Air Force Base, and Ohio's universities to advance cutting-edge technologies, including satellite systems, propulsion technologies, and advanced materials. A focus on R&D will drive innovation and cement Ohio's role as a hub for space technology breakthroughs.
- **Public Engagement and Advocacy:** Launch public engagement campaigns to raise awareness of space industry opportunities, hosting events, job fairs, and outreach initiatives that encourage Ohio residents to explore space technology careers. These efforts will build community support for the Alliance's mission and inspire future generations to enter the field.

This plan, if successfully executed in Ohio, can serve as a scalable model for other states in the Rust Belt, providing a roadmap to economic revitalization through the development of high-growth industries such as space technology and green tech. By building an ecosystem that fosters innovation, investment, and job creation, the Space Jobs USA Manufacturing Alliance can drive sustainable, long-term growth across the entire region.



Conclusion

Ohio is at a critical juncture. With the decline of traditional manufacturing jobs, the state faces economic challenges, but also an opportunity for transformation. By leveraging its manufacturing heritage, educational institutions, and strategic position in the aerospace and space sectors, Ohio can establish itself as a leader in the space industry. Through the efforts of the Ohio Space Jobs Alliance and initiatives like "From NEO to Space," Ohio has the potential to save 25,000 manufacturing jobs by 2030, renewing its economy while positioning itself at the forefront of sustainable innovation. The strategies implemented in Ohio will be used as a blueprint for other states, especially along the Rust Belt of the USA.

References

<https://ohiolmi.com/>



Editorial Notes

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