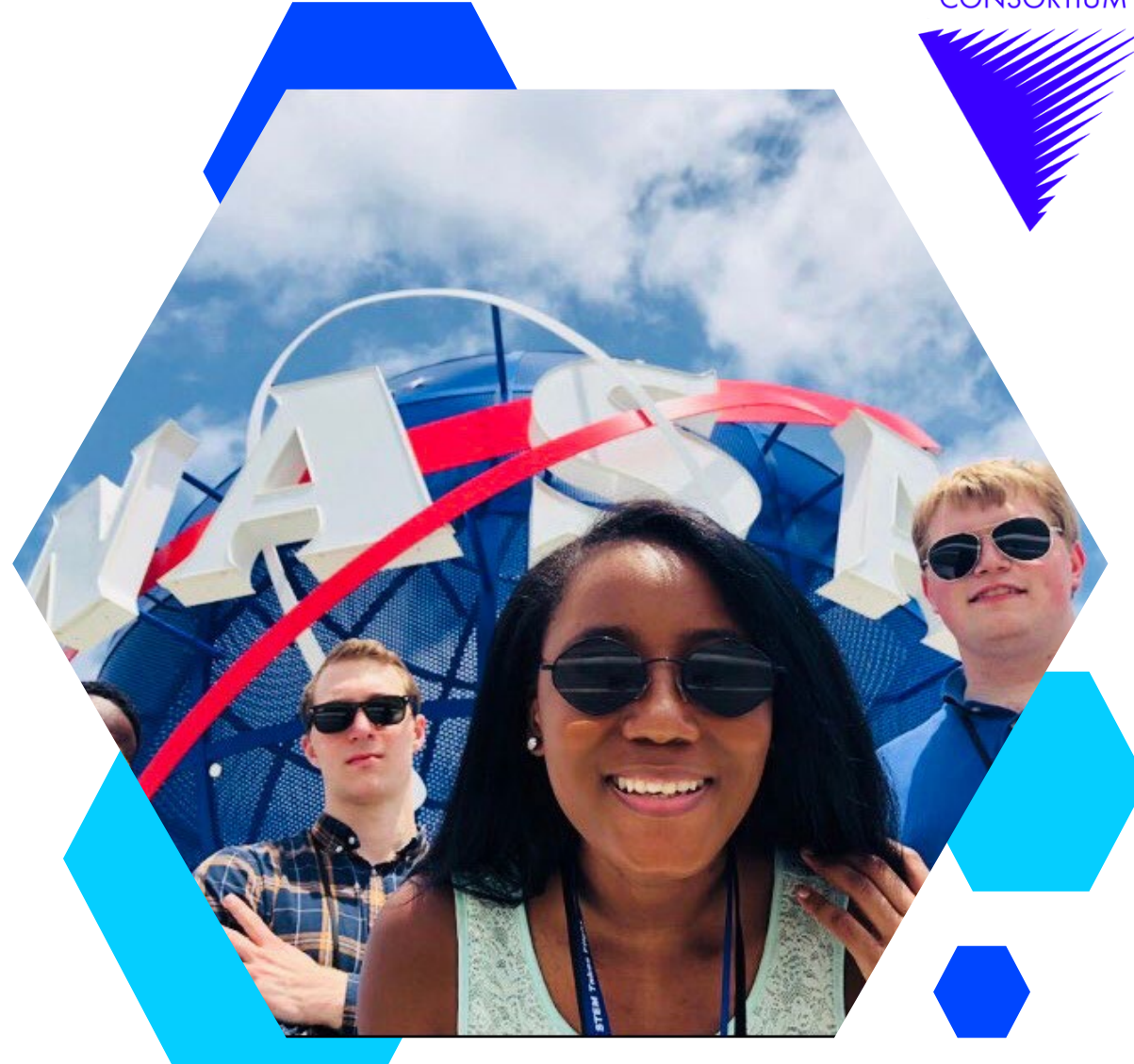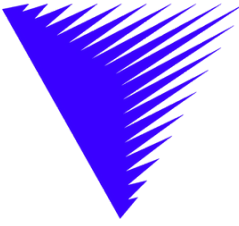# VIRGINIA SPACE GRANT CONSORTIUM

Aerospace and Aviation Caucus

January 22, 2026

Chris Carter, Director
cxcarter@odu.edu

Consortium Members

Virginia Space Grant Consortium

Old Dominion University
Hampton University
William and Mary
University of Virginia
Virginia Tech
NASA Langley Research Center
NASA Wallops Flight Facility
Virginia Innovation Partnership Corporation
State Council of Higher Education Virginia
Science Museum of Virginia

Virginia Air and Space Science Center

Virginia Department of Education
Virginia Aerospace Business Association
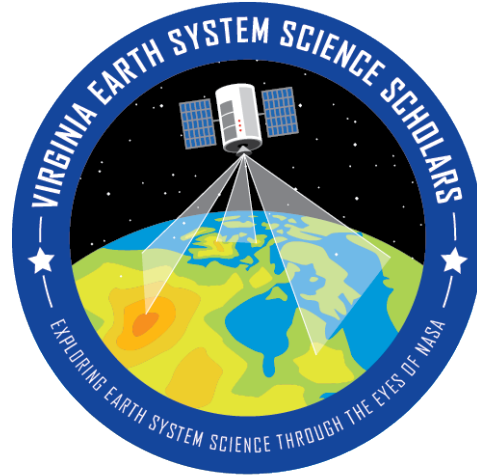
Virginia Department of Aviation

Virginia Community College System

MathScience Innovation Center

Partnering with NASA, Industry, and Institutions to Provide STEM Education, Promote STEM Research, and Prepare a Diverse STEM Workforce

Sample VSGC Programs

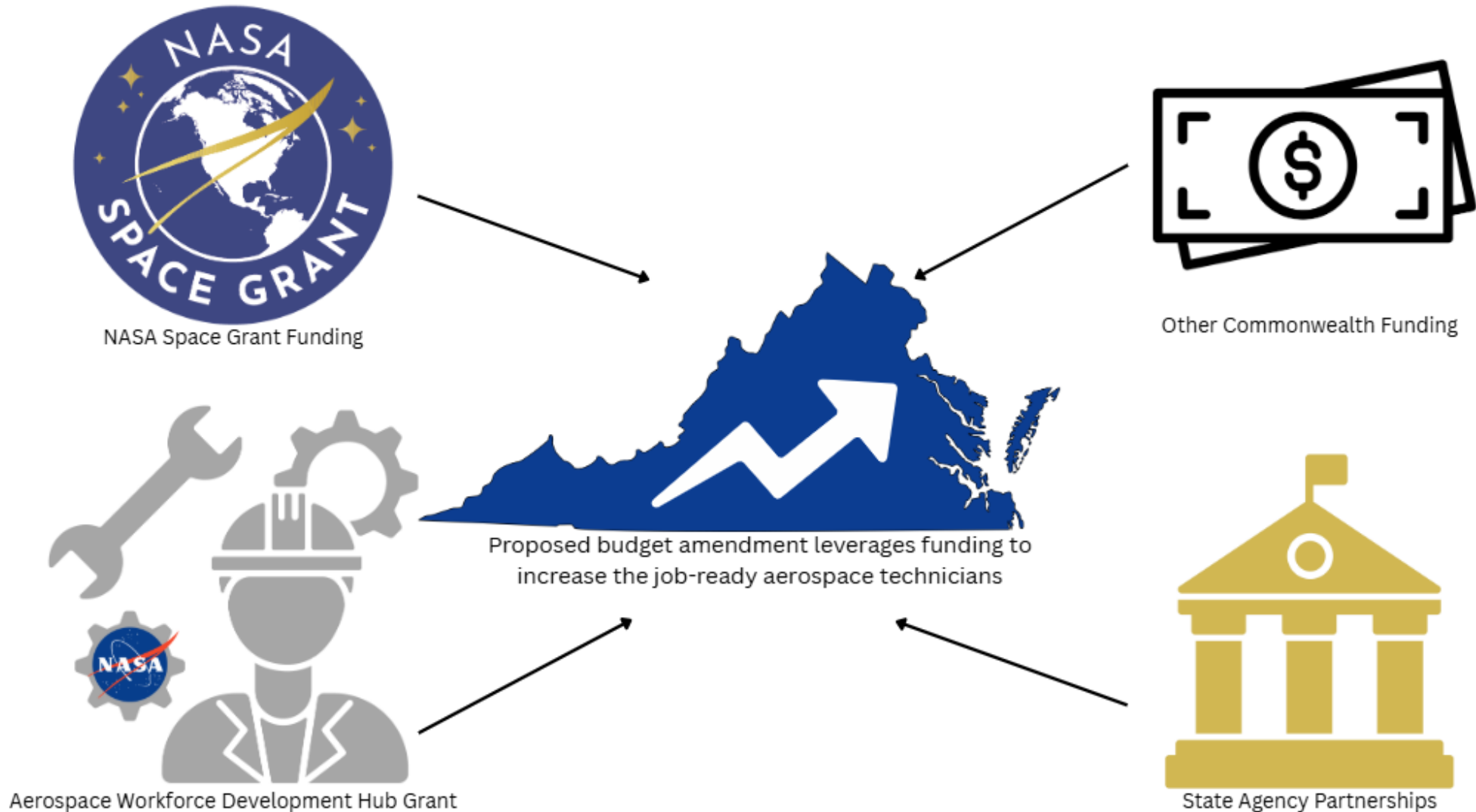# Aerospace Skilled Technical Workforce Development – Leveraging Investments

NASA Space Grant Funding

Other Commonwealth Funding

Proposed budget amendment leverages funding to increase the job-ready aerospace technicians

Aerospace Workforce Development Hub Grant

State Agency Partnerships

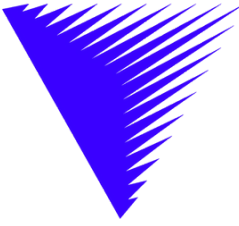# Pressing Issues in America's Aerospace and Defense Workforce

A continuously growing engineering and skilled technical workforce is needed to support the expanding aerospace economy and the nation's renewed focus on human space exploration.

Demand for STEM professionals and skilled technical workers is rapidly increasing, while the labor pool is shrinking due to:

- Aging workforce
- Educational barriers to entry (cost of a four-year degree)
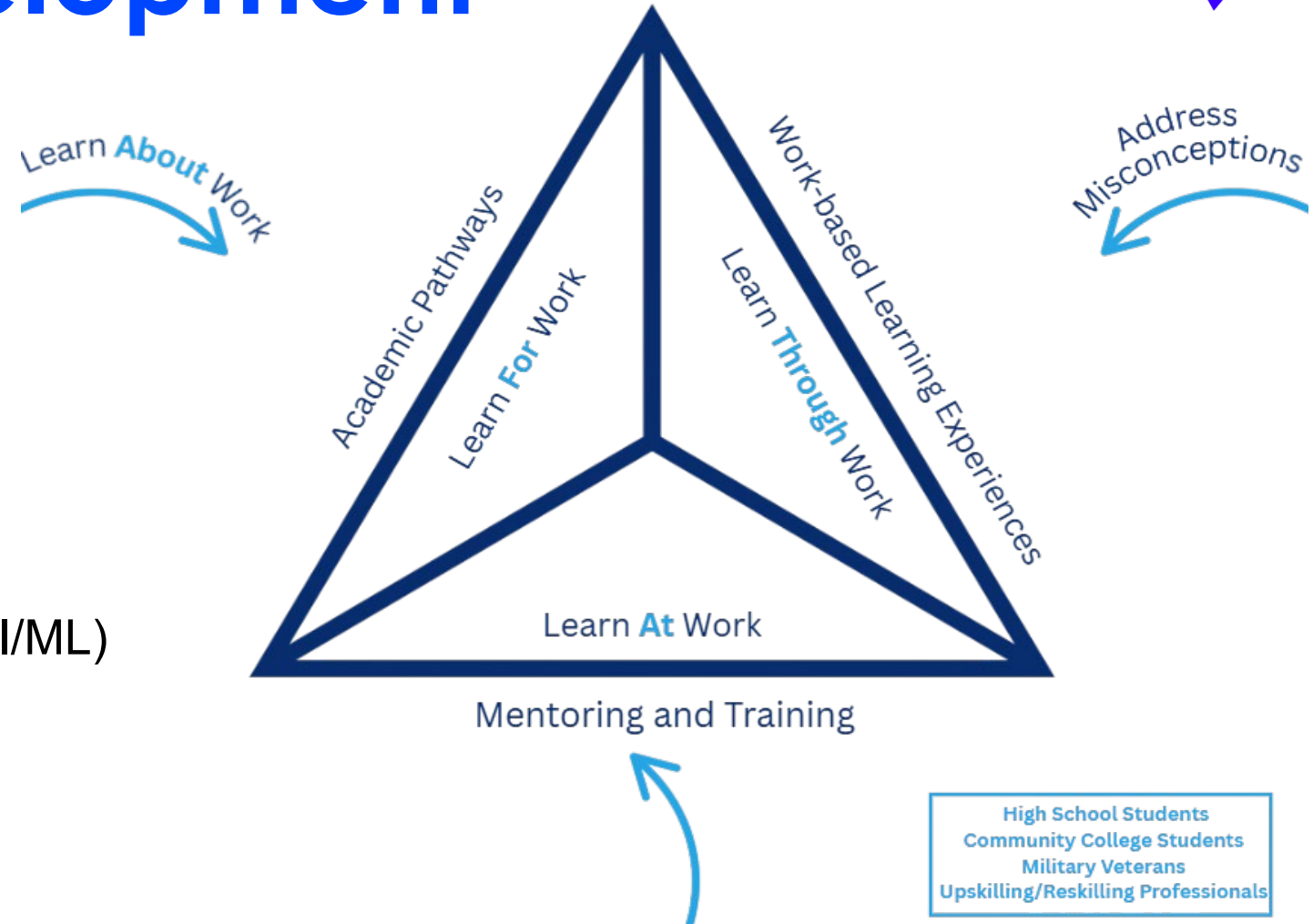- Lack of awareness of career pathways

Aerospace Skilled Technical Workforce Development

Targeted Sectors of the Hub:

- Commercial Space
- Advanced Air Mobility and Drones
- Advanced/Precision Manufacturing
- Aircraft Maintenance
- Airport Operations
- Cybersecurity

Artificial intelligence / Machine Learning (AI/ML)
Competencies Across All Sectors

Learn **About** Work

Address Misconceptions

Academic Pathways

Learn **For** Work

Work-based Learning Experiences

Learn **Through** Work

Learn **At** Work

Mentoring and Training

**High School Students
Community College Students
Military Veterans
Upskilling/Reskilling Professionals**

Virginia Aerospace Workforce Development Hub: Partners

High School CTE Partners
Virginia Department of Education
Aerospace Academy on the Eastern Shore
Denbigh Aviation Academy
New Horizons Regional Education Centers

Community College Partners
Virginia Community College System
Blue Ridge Community College
Brightpoint Community College
Danville Community College
Eastern Shore Community College
Laurel Ridge Community College
Tidewater Community College
Virginia Peninsula Community College

All Stakeholders:
Commonwealth of Virginia – Office of the Governor
- Secretaries of Education, Labor, Transportation

Aerospace Village
Amentum
Analytical Mechanics Associates
Aurora Flight Sciences
Boeing
Civil Air Patrol
Commonwealth Center for Advanced Manufacturing
Commonwealth Center for Advanced Logistics Systems
Commonwealth Cyber Initiative – Coastal Virginia
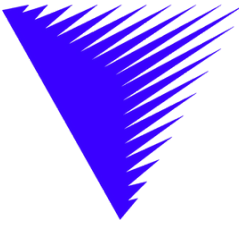CTE Workforce
eAviation Academy
ECPI
Firefly

NASA STEM

Virginia Aerospace Workforce Development Hub: Partners

Meld Manufacturing
NASA Langley Research Center
NASA Wallops Flight Facility
Northrop Grumman
ODU Center for Educational Innovation
ODU Center for Workforce Development Research
ODU College of Engineering and Technology
ODU Global Continuing Education
ODU Center for Educational Partnerships
Peregrine Solutions
Perrarus
Planetary Shelter
Psionic
Rocket Lab
Science Systems and Applications, Inc.
SpaceTEC Partners, Inc.
Tidal Flight
VersAbility

Virginia AeroSpace Business Association
Virginia Institute for Spaceflight and Autonomy
Virginia Aviation Business Association
Virginia Economic Development Partnership
Virginia Innovation Partnership Corporation
Virginia Space Flight Academy
Virginia Spaceport Authority
Virginia Tech
Virginia Works
Wallops Contractors Association, McCallie
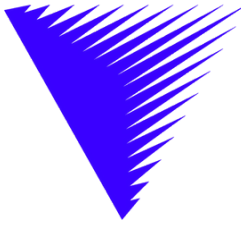Associates, Inc.
Xelevate

NASA STEM

Aerospace Skilled Technical Workforce Development

Key Gaps Being Addressed:

✓ Breaking down silos among stakeholders

✓ Lack of clear technician career ladders

✓ Misconceptions about technician careers

✓ Fragmented credentials across institutions

✓ Increase technician-specific apprenticeships

✓ Lack of articulation from HS to work

✓ Employer uncertainty about skill readiness

Goals and Outcomes:

- Increased technician skill readiness
- Improved alignment to industry needs
- Increased participation from diverse populations
- Sustained pipeline of ready technicians
- Reduced employer vacancy duration
- Replicable statewide workforce models
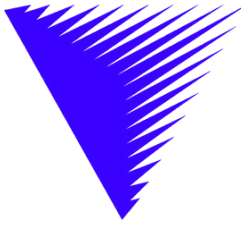- Skills-based credentialing

Aerospace Skilled Technical Workforce Development - Hub

Convene an Aerospace Technician Workforce Development 'Community of Practice'

Targeted Job Title Groupings:

- Aircraft Maintenance Technician / Airframe and Powerplant (A&P) Mechanic
- Avionics Technician
- Composites Technician
- Aerospace / Launch Technician
- Engineering Technician
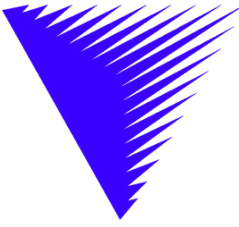- UAS Flight Operator / Operator-Technician

Aerospace Skilled Technical Workforce Development - Hub

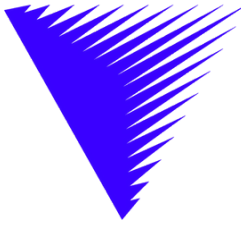Sample Anticipated Targeted Job Titles (identified by employers):
- Mechanical Technician
- Electrical Technician
- Airport Operations Specialist/Technician
- Line Service Technician
- Ground Support Equipment (GSE) Technician
- Machinists/Welders
- Guidance, Navigation and Controls
- Vehicle Integration Technician
- Refueling Technician
- Quality Control Technician

Aerospace Skilled Technical Workforce Development

Common Requested Credentials and Certifications:

- Electrostatic Discharge (ESD) Awareness
- Cable Crimp & Harness
- Soldering
- Confined Space
- Powered Industrial Truck Operator Training
- OSHA-10 (Safety)
- NC3 Multimeter Certification
- FAA Remote Pilot Part 107
- Certified Welder Inspector
- Certified Additive Manufacturing Technician (CAMT) from the Society of Manufacturing Engineers (SME)
- Software/Coding

- A&P Certification
- Crane Operator
- Rigger
- High Pressure
- Reading and interpreting detailed schematics, drawings and technical instructions
- Diagnosing system faults
- Supporting system upgrades and modifications
- Basic cybersecurity hygiene for avionics/ground systems
- Composite Technician Certification
- Non-Destructive Testing Certs
- FCC Communication

Aerospace Skilled Technical Workforce Development

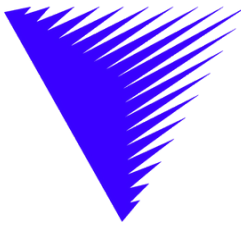Workforce Needs Analysis / DACUM (Developing a Curriculum):

Online Survey of Employers (Close to Final)

Employer Interviews and Visits

Review of Job Ads

Review of Desired Credentials and Competencies

Aerospace Workforce Needs Report

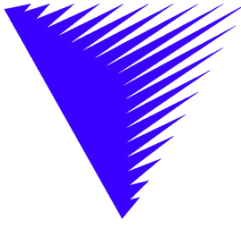# Aerospace Skilled Technical Workforce Development

Academic Pathways:

High school CTE → work-based learning → community college → internship → pre- and apprenticeship → employment

VDOE: 3E Readiness Framework: Enrollment, Employment, and Enlistment

Integrating **industry certifications + competency-based assessments + micro-credentials/digital badging + dual-enrollment**

Student Competitions and Challenges (Drones, Small SATs, Robotics, Ballooning, Rockets)

Aerospace Skilled Technical Workforce Development

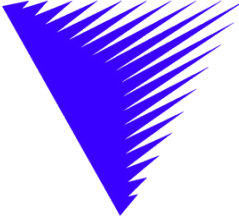Work-Based Learning, Internships and Educator Externships:

High Quality WBL Experiences
CSIIP Program Expands Internships to High School Students
STEM Takes Flight at NASA for Community College Students
School-based Enterprise (Service-Learning)

Summer Educator Externships with Industry
Training and Mentoring of Industry Mentors (VTOP and SCHEV Resources)

Aerospace Skilled Technical Workforce Development
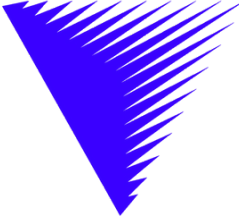
Student Support Services and Mentoring:

Transportation Support

Scholarships

Peer, Near Meer, and Industry Mentoring

Career Counseling for Students and Families

Transitioning Support to the Next Step

Aerospace Skilled Technical Workforce Development

Registered Apprentice Programs (Aerospace):

Additive Manufacturing Technician RAPIDS: 2097

Avionics Technician RAPIDS: 0464

Robotics Technician RAPIDS: 3002

Commercial Drone Pilot RAPIDS: 0167

Commercial Drone Software Developer RAPIDS: 2072

Composite Fitter Mechanic RAPIDS: 1118

Cybersecurity Technician (Many)

Quality Assurance Technician (Many)

Source and Partner: Virginia Works

Follow Us Contact Us

[Facebook] @VASpaceGrantConsortium

[Instagram] @vaspacegrant

[LinkedIn] @Virginia-Space-Grant-Consortium

[YouTube] @VirginiaSpaceGrantConsortium

[Phone] 757-766-5210

[Email] vsgc@odu.edu

[Web] vsgc.odu.edu

[Location] 600 Butler Farm Road
Suite 2222
Hampton, VA 23666

Chris Carter, Director

cxcarter@odu.edu