

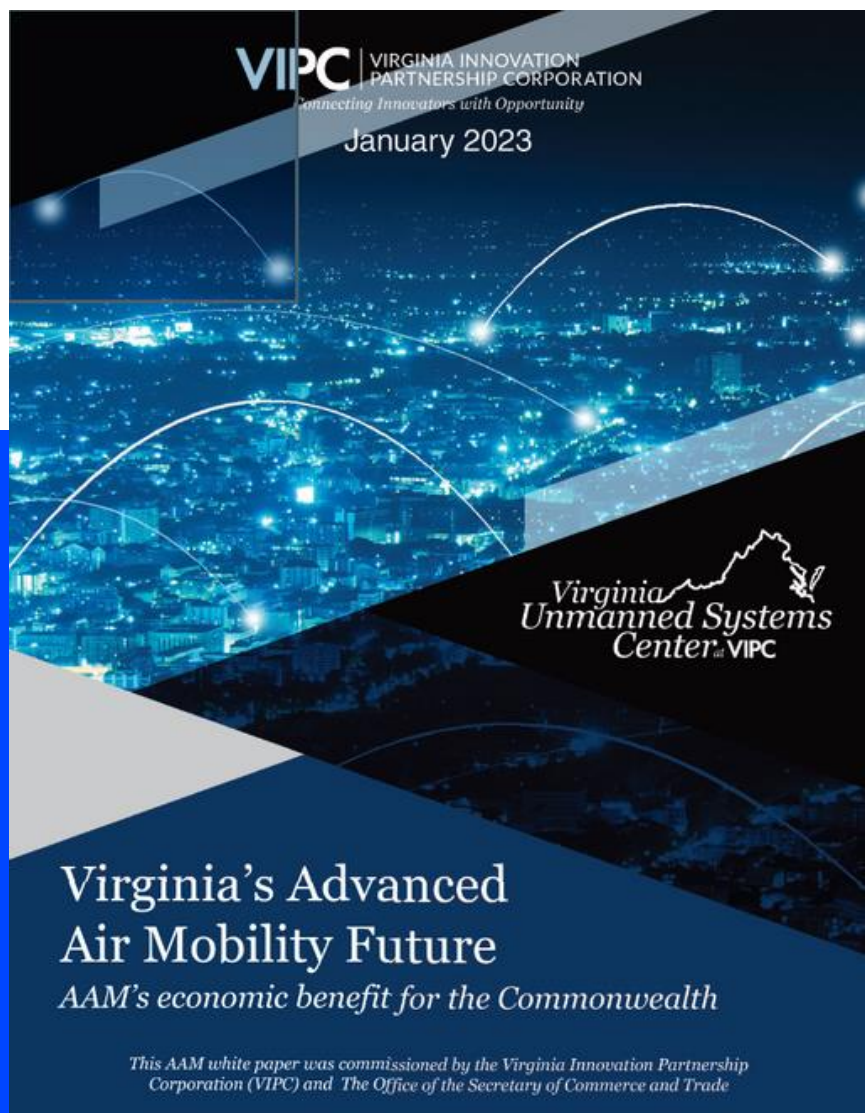
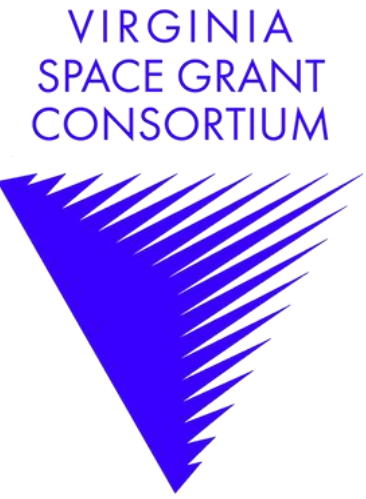
Advanced Air Mobility Workforce Development Panel

2024 AUVSI-HR AAM Expo

Chris Carter
Director, Virginia Space Grant Consortium



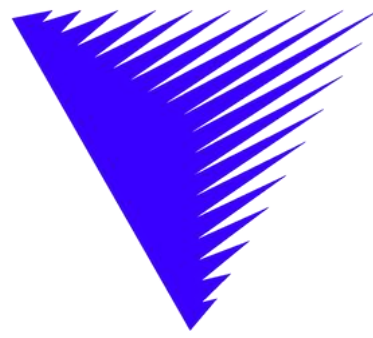
Advanced Air Mobility – Creating Jobs and Growth in Virginia



“
Advanced Air Mobility is an emerging industry that will benefit the citizens of the Commonwealth by creating opportunities for innovation leadership, regional connectivity and job creation.”
Bob Stolle, Former President & CEO,
Virginia Innovative Partnership Corporation

“
Investment in talent pathways for [data analysis, cybersecurity, and modeling & simulation; and aerospace and unmanned systems] may...accelerate growth for the region.
Chmura / Hampton Roads Workforce Council





AAM Industry

Economic Impacts in Virginia

\$16 billion in
new business

10% growth
in aerospace
sector

\$2.8 billion in
tax revenue

17,400 new
full-time jobs
(by 2045)

Education
opportunities
for under-
resourced
areas

AAM – Virginia Cumulative Permanent Jobs

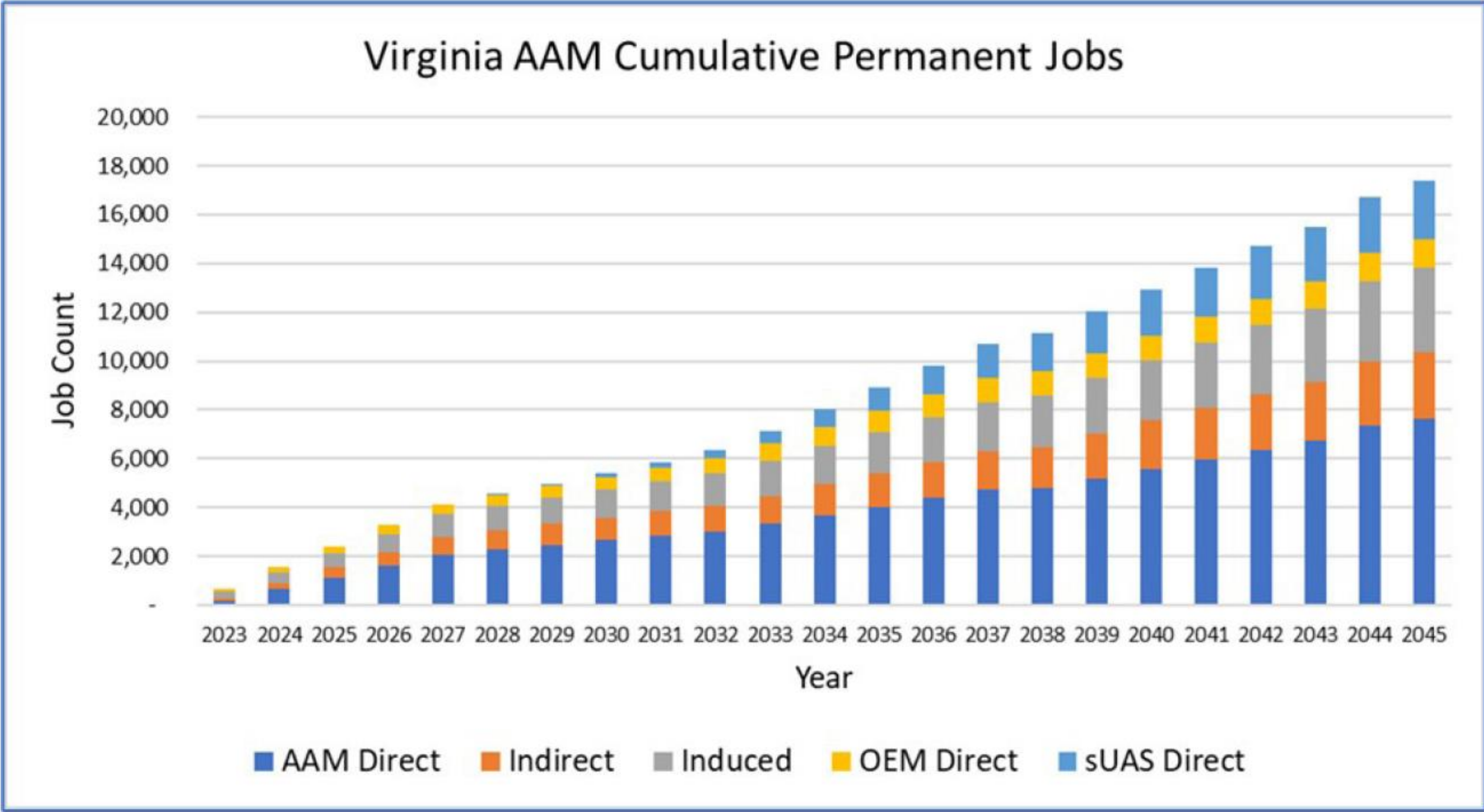
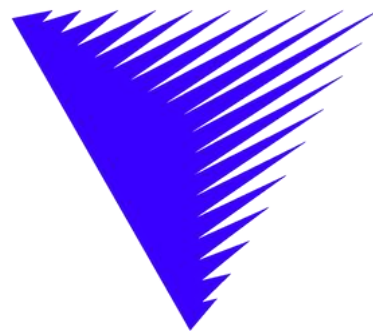


Figure 33- Contribution of AAM to full time permanent job creation for Virginia.



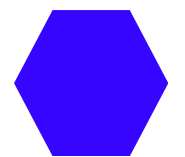
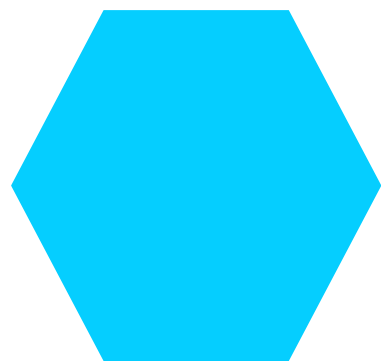
Data Analytics, Cybersecurity, and Modeling & Simulation / Aerospace and Unmanned Systems

Economic Impacts in Hampton Roads

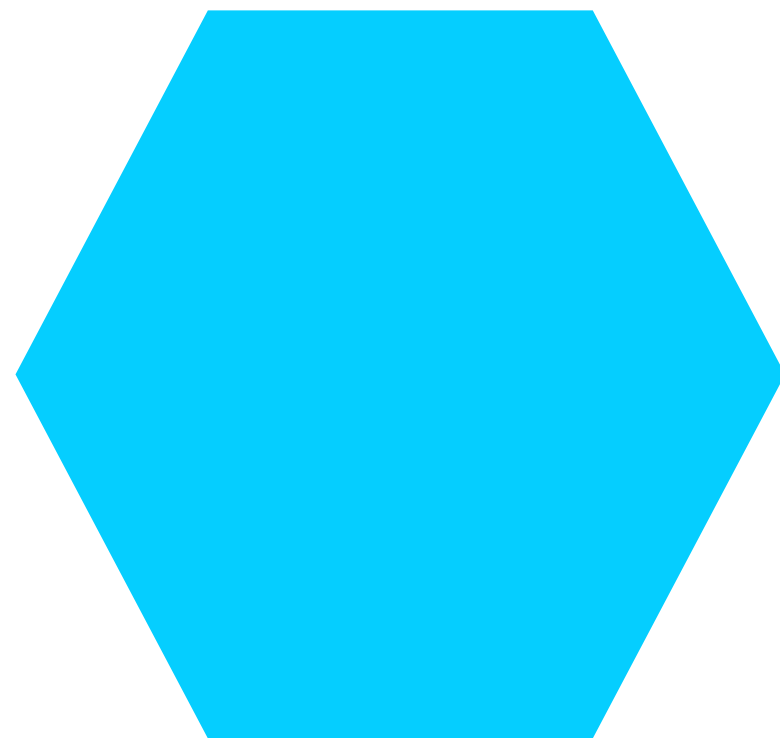
10,400 new data analytics, cybersecurity, and modeling & simulation jobs over the next 10 years

10,200 new aerospace and unmanned systems jobs in the next 10 years

Jobs with better-than-average wages will support wage gains in the region



Investments Needed



Expand statewide STEM programs

Expand pathways to AAM and training opportunities

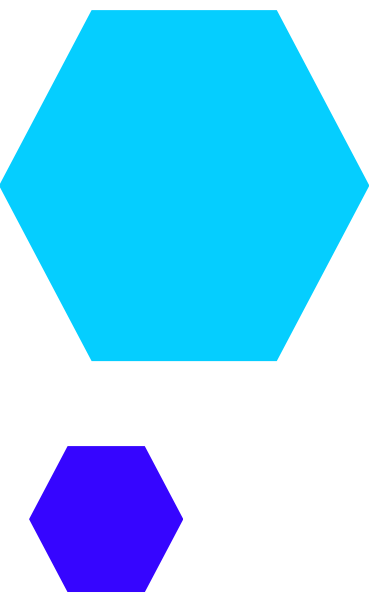
Expand internships and work-based learning experiences

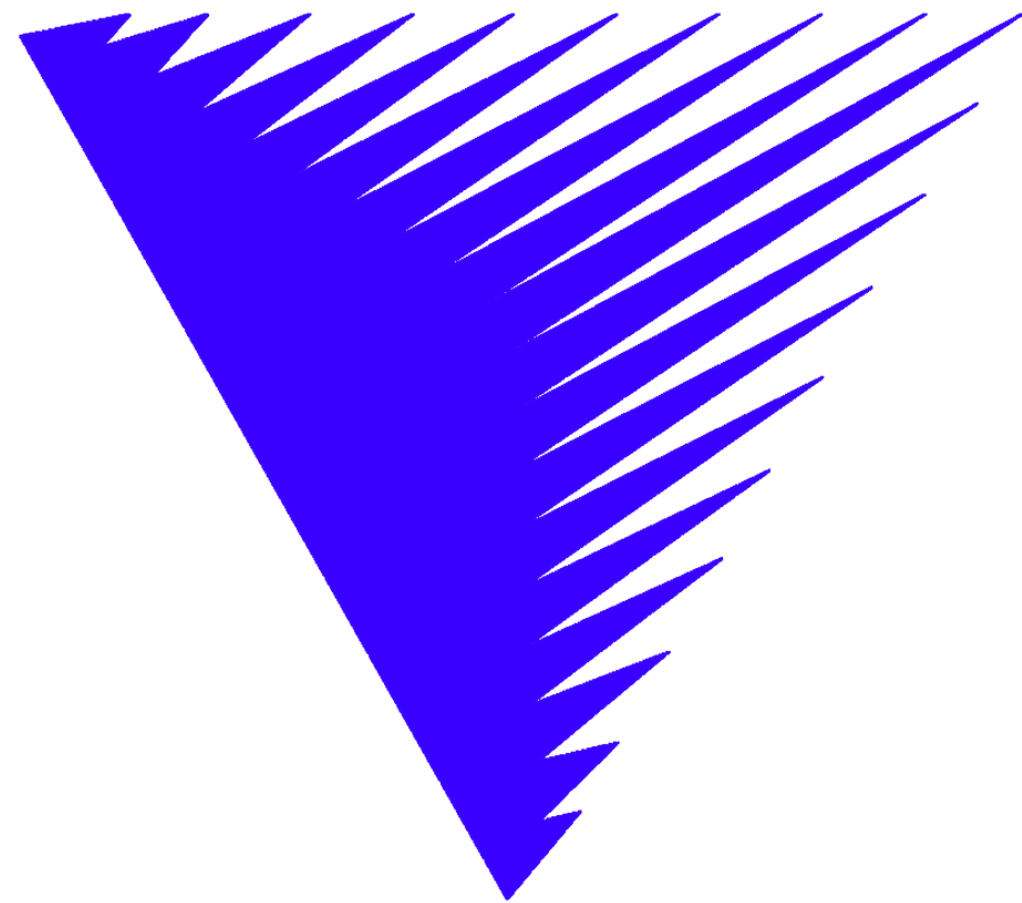
Ensure alignment and cooperation among workforce development and industry

“

The state needs to continue to invest in the tech talent pipeline, which is key to attracting tech businesses.”

Delegate Shelly Simonds, Member, VA House of Delegates,
Ninety-Fourth District, Newport News





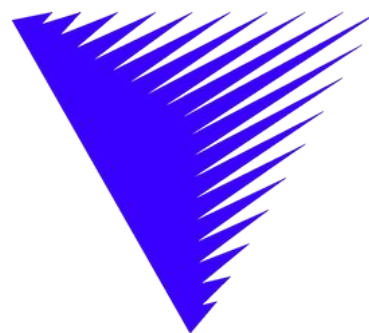
VIRGINIA SPACE GRANT CONSORTIUM

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

Consortium Members

- NASA Langley Research Center
- NASA Wallops Flight Facility
- Old Dominion University
- Hampton University
- William and Mary
- University of Virginia
- Virginia Tech
- 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



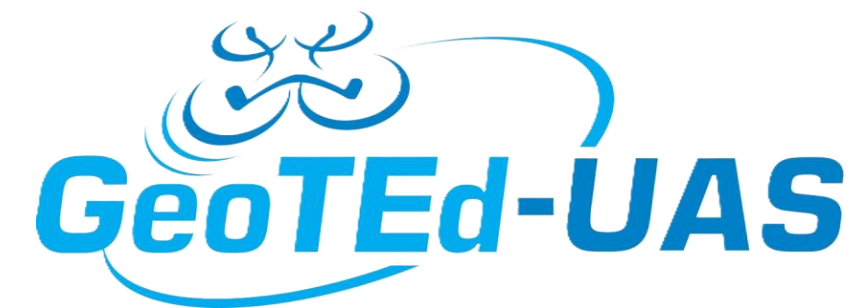


Uncrewed Aircraft Systems Workforce Development

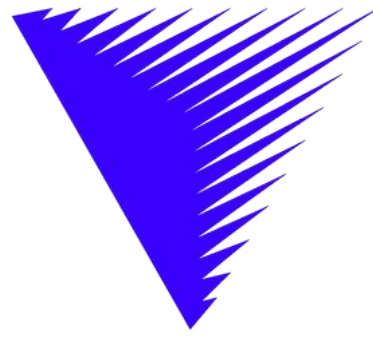
- Partnership with Virginia Community College System and Several Community Colleges

- Mission: Build community college and educator capacity to educate and train the small UAS operations technician (sUAS-OT, or drone) workforce

- Components and Deliverables:
 - New UAS and GIS Courses
 - Faculty Professional Development
 - Student Outreach
 - Service-Learning Projects



Industry Driven UAS Education and Workforce Development



DACUM Chart/Occupation Analysis

Small Uncrewed Aircraft Systems (sUAS) Technician

DACUM Panelists

David Barton
Director of Innovation & Remote Sensing
Timmons Group

Matt Coldsnow
Head, UAS Operations Office
NASA Langley Research Center

Daniel Cross
Conservation Management Institute
Virginia Polytechnic Institute

Scott Harris
Director, UAS Flight Training
Droneup

Raymond Newby
Senior UAS Specialist
C2 Environmental, Inc

Keith Paquin
UAS Section Manager
Virginia Department of Transportation

Tom Stiles
Owner
SkyShots Photography LLC

Andrew Walters
Assistant Chief, Technical Services & Special Operations
York County (VA) Department of Fire and Life Safety

Amber Wilson
Program Director, School of Aeronautics
Liberty University

Produced By



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Advance Technology Education

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POC: Chris Carter (cxcarte@odu.edu)
PI: GeoTEd-UAS
Director, Virginia Space Grant Consortium

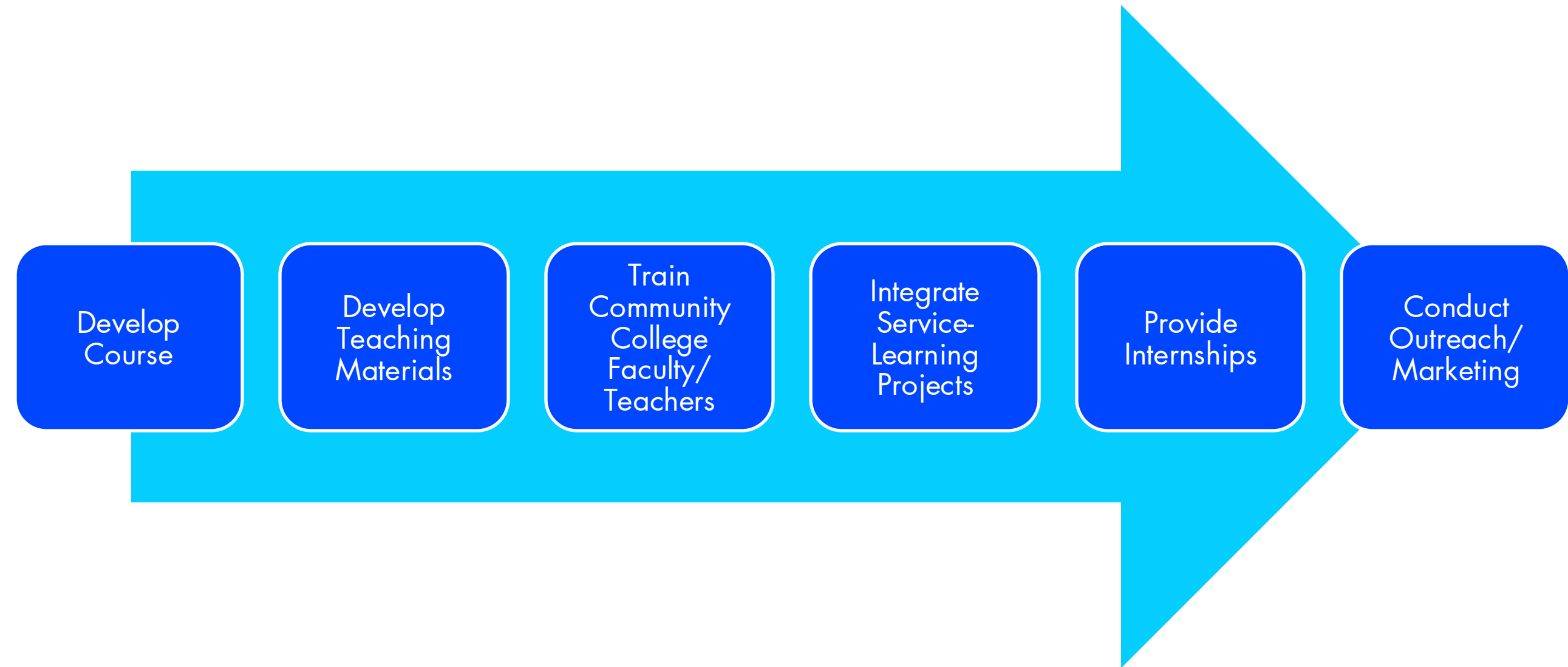
This material is based upon work supported by the National Science Foundation under DUE 2000715.



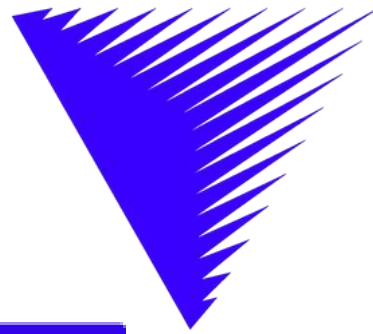
Produced & Facilitated by Rodney Jackson, Co-PI
National Geospatial Technology Center of Excellence

Co-Facilitator: Cherie Aukland, GeoTEd-UAS
Co-Facilitator: David Webb, GeoTEd-UAS

Date: May, 2024



Outcomes



Seven New UAS-focused Courses Established in VCCS Catalog

Professional Development: More than 125 educators obtained FAA Part 107 Remote Pilot Certificate and Received Hands-on Training

10 community colleges offering courses; More than 1,500 students completed UAS courses since fall of 2017

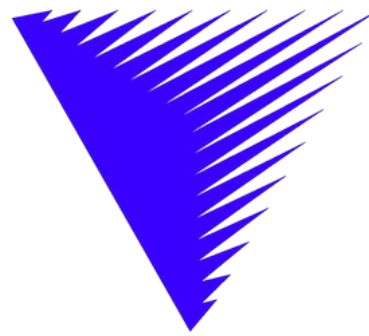
At least 15 High Schools Offering UAS Course

Classroom ready instructional materials developed

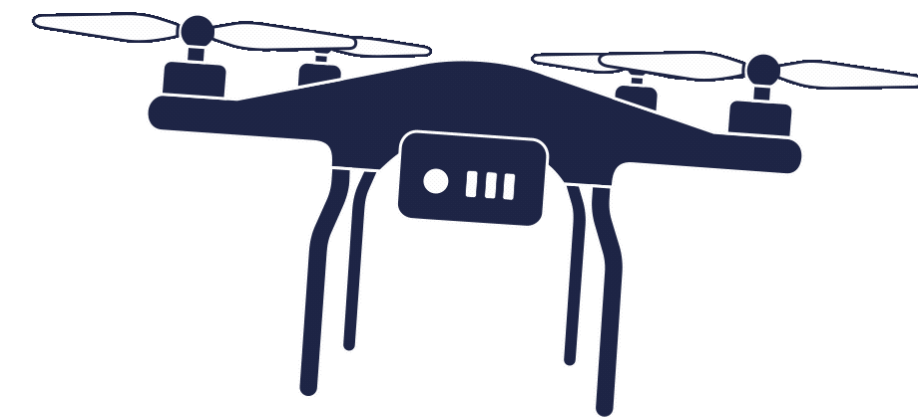


Commonwealth STEM Industry Internship Program

VIRGINIA
SPACE GRANT
CONSORTIUM



- Students apply once to reach more than 200 companies across Virginia
- Subsidies available to companies to offset cost of aerospace/aviation/drone internships
 - Up to \$5,000 (50% of placement)
- More than 70 UAS-related interns placed
 - Companies:



- **Electra.aero**
- **Vertical Flight Society**
- **Advanced Aircraft Company**
- **Casper Drones**
- **DroneUp**
- **Flying Ship Technologies**
- **Dynamic Aviation**

- **Longbow Group**
- **ODU Institute for Coastal Adaptation and Resilience (ICAR/ODU)**
- **Sentinel Robotic Solutions**
- **Universal Solutions International Inc**
- **SimIS**
- **Allocortech**

UAS Outreach

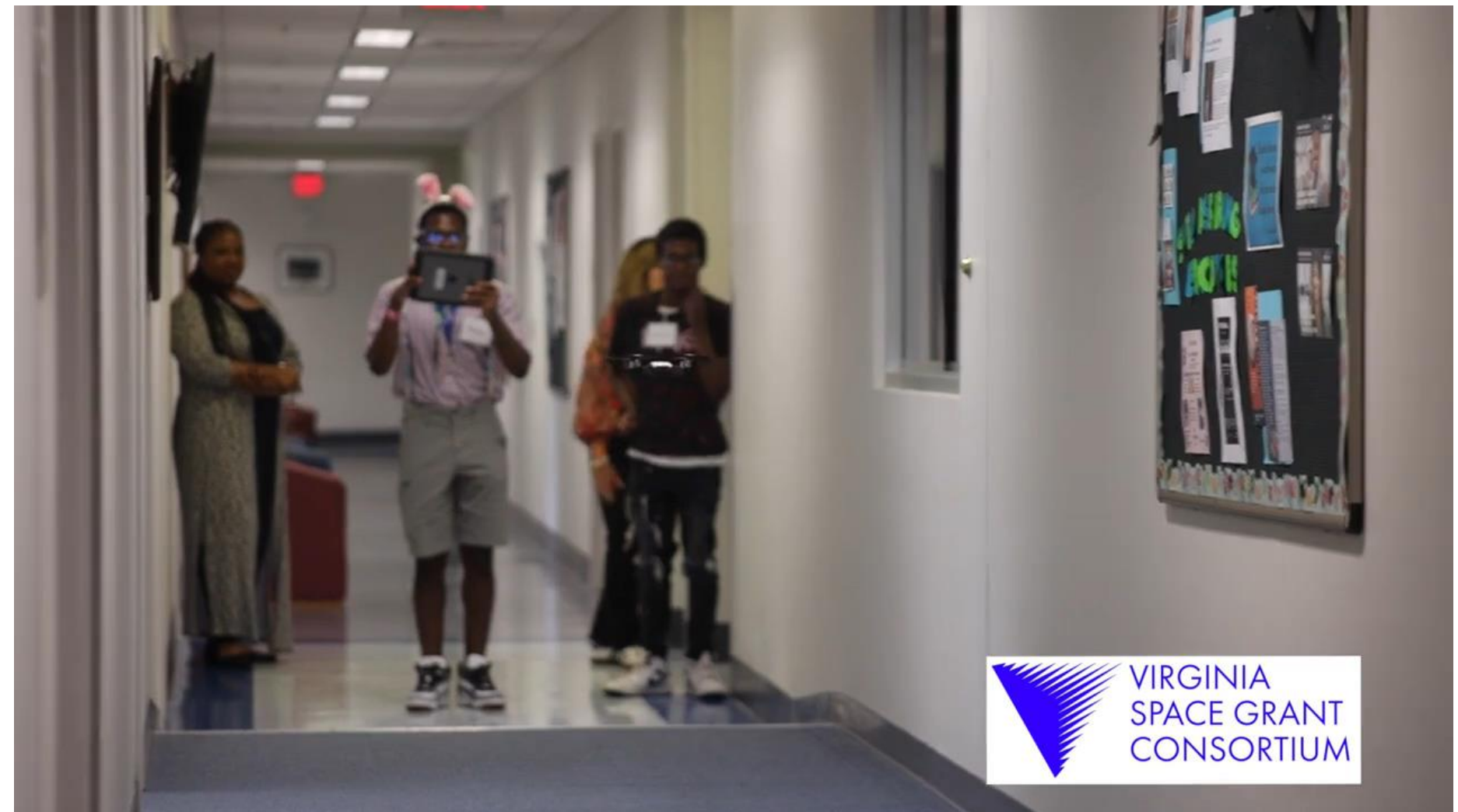
Virginia Department for Aging and
Rehabilitative Services Drone Camps

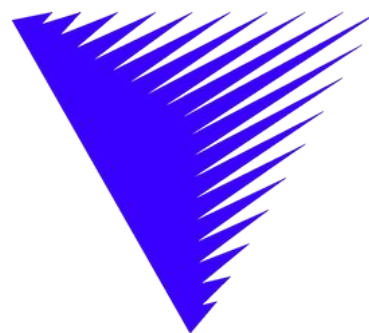


Aerial Drone Competition at NASA Langley



Virginia Smart
Community STEM
Camp





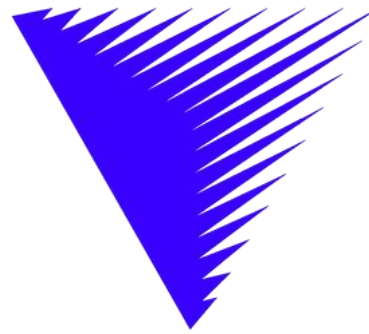
Aerospace Academy of the Eastern Shore

ODU Partnership Laboratory School

- Mission: provide at-risk and/or underrepresented populations access to the knowledge, skills and abilities needed to be successful in aerospace and adjacent industries identified as priorities by the Governor's Virginia Region 5 Economic Development Authority.
- Student pathway options include Aerospace Technology, Cybersecurity, UAS and Geospatial Technology.
- Current industry partners include NASA Wallops Flight Facility, Hampton Roads Workforce Council, Sentinel Robotics, Amazon
- Looking for additional industry partners for sustainability and scalability



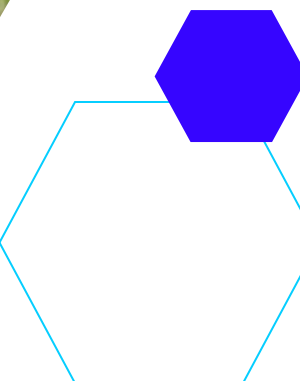
AAM Workforce Development Recommendations



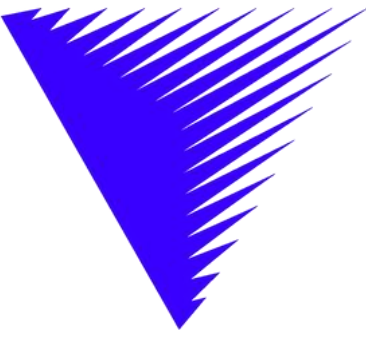
- Support VSGC to facilitate pre-college and community college sUAS/AAM course development and professional development for teachers and facilitate statewide collaborations in support of the workforce pipeline.
- Leverage CSIP to expand undergraduate student internships with AAM employers.
- Conduct a Developing a Curriculum (DACUM) panel and workforce studies to define the workforce and quantify predicted demand.
- Create more programs based on best practice models such as VSGC's precollege, crewed/uncrewed pilot, and internship programs.
- Support VDOE to continue to develop high school courses and train teachers.



- From "Virginia's Advanced Air Mobility Future – AAM's economic benefit for the Commonwealth" white paper commissioned by the Virginia Innovation Partnership Corporation and The Office of the Secretary of Commerce and Trade



Next Steps



AAM Workforce Development Advisory Committee

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