



Status Update

October 1, 2026

Where innovation becomes impact



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Commonwealth Center
for Advanced Manufacturing

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This update is being submitted as required by HB30, Item 115 K.5:

K.5. “CCAM shall submit a report on October 1 of each year to the Secretary of Finance, Chairs of the House Appropriations and Senate Finance and Appropriations Committees, and VIPA containing a status update of all new incentive programs, including but not limited to the following: (i) MOUs it has entered into with each university partner; (ii) funds disbursed to both university and private sector partners of CCAM, as well as any other recipients; (iii) any other agreements CCAM has entered into with representatives of the public and private sectors that may impact current and future incentive fund disbursements; (iv) all efforts and costs associated with obtaining federal research grants; and (v) any additional information requested by the Secretary of Finance, or the Chairs of the House Appropriations and Senate Finance and Appropriations Committees.”

Elements requested in K.5. are outlined in Section 11. In addition to those required items, this report provides a broader overview of CCAM's FY26 performance and impact.

1. Executive Summary

Financial Update

- FY26 comparable operating revenue totaled approximately \$13.74 million, representing 5 percent growth over FY25 and 78 percent growth since FY22. This measure excludes approximately \$1.56 million in non-recurring equipment contributions and other one-time benefits, providing a more consistent comparison of operating performance over time.
- CCAM is in the process of completing its annual audit for FY26. Final audit results are expected later this calendar year with an expected designation of an unqualified opinion. Audited financial statements for FY26 can be provided once received by CCAM.
- CCAM's unrestricted cash position as of September 29, 2026, is [REDACTED] and all trade debt is current.
- CCAM is estimated to have a Commonwealth economic impact of \$56 million in annual economic activity, supporting more than 230 high-paying jobs in Virginia¹.

Federal Funding & Workforce Development

- CCAM recognized \$5.0M in federal project revenue (61% increase over FY25) and secured approximately \$4.7 million in new federal awards during FY26.
- CCAM played a supporting role in developing the regional collaboration and strategy that helped position coalition partners for success, culminating in a \$16 million EDA investment in Virginia's end-to-end pharmaceutical manufacturing capabilities.

¹ Linear calculation based on Chmura Economics & Analysis, 2022 report. Chmura's analysis indicates that each dollar of state funding generates \$17.3 in economic impact in the Commonwealth of Virginia.

- In FY26, CCAM grew the region's GO TEC footprint by launching five new Career Connections Labs and adding a sixth school to the initiative. Since late 2022, CCAM's GO TEC leadership has established 13 Career Connections Labs that have reached more than 3,100 students with STEM career experiences. More than 1,000 of those students participated through labs launched under CCAM's FY26 grant initiative.
- The VTOP and State Council of Higher Education for Virginia named CCAM a 2026 Top Employer for Interns. CCAM hosted 11 university interns in summer 2025 and 13 in summer 2026 which produced individual hiring and recognition outcomes.

Business and Capability Development

- Maintained 100% retention of research members during the transition to CCAM's new membership model while generating approximately \$5.0 million in industry-supported research activity.
- Expanded industry engagement to more than 30 active opportunities spanning membership, projects, partnerships, and federal collaborations, strengthening the pipeline for future sponsored work and membership growth.
- Advanced Virginia small-business participation in federal manufacturing programs by supporting R3-Digital Sciences' SBIR-funded technology demonstrations, facilitating engagement with Navy technical leaders, and providing access to production-scale manufacturing testbeds.
- Launched CCAM's first multi-member Industry 5.0 collaborative program and established a shared intellectual property framework that enables multiple companies to co-invest in pre-competitive manufacturing research.
- CCAM increased its technical capabilities with two high-temperature furnace test rigs, two wire-arc additive manufacturing cells, expanded in-situ assessment technologies, and a dedicated Industry 5.0 environment for human-centered manufacturing.
- CCAM achieved Cybersecurity Maturity Model Certification (CMMC), Maturity Level 2. CMMC is a Department of War framework that verifies that contractors protect Federal Contract Information (FCI) and Controlled Unclassified Information (CUI).

Key Risks and Mitigation Actions

- **Industry Portfolio Transition.** A major industry development program is expected to successfully conclude during FY27. CCAM is developing replacement projects, multi-member initiatives, and new partner opportunities to sustain growth.
- **Federal Portfolio Concentration.** [REDACTED]
[REDACTED] CCAM is actively diversifying its federal portfolio across additional agencies, consortia, and manufacturing mission areas.
- **Execution and Timing.** Larger programs increase execution demands and create timing gaps between award capture and revenue-producing execution. CCAM is strengthening program-delivery capabilities while maturing future opportunities to support continued growth.

2. FY26 Results at a Glance

FY26 was a year of strong performance and expanding impact for CCAM. Commonwealth investment provided the foundation for increased industry and federal activity, broader workforce and university engagement, and collaborative initiatives that attracted additional resources to Virginia. This section presents the headline results, explains how Commonwealth-supported capacity contributed to those results, and provides selected examples of the model working in practice.

The results in this section should be read as both direct CCAM performance and evidence of a broader leverage model. Some measures, such as revenue and federal awards, flow through CCAM directly. Others, including partner-directed federal investment and regional workforce activity, reflect the value of Commonwealth-supported capacity even when the dollars are recorded by another organization.

2.1 Commonwealth ROI Scorecard

Commonwealth investment provides the foundation from which CCAM attracts and executes industry, federal, workforce, and university-supported activity. In FY26, CCAM generated \$13.7 million in revenue, excluding non-recurring equipment contributions and other one-time benefits. This represents an increase of approximately 5 percent over FY25 and 78 percent since FY22. This adjusted revenue measure is used because one-time equipment contributions expand CCAM’s future capabilities but do not represent an equivalent level of economic activity during the current reporting period. The FY26 revenue result exceeded CCAM’s \$13.3 million annual goal.

Using the same linear methodology applied in CCAM’s recent Commonwealth reports, FY26 activity is estimated to have generated approximately \$56 million in annual economic activity and supported more than 230 high-paying jobs in Virginia. The calculation scales the annual economic-impact and employment results from the 2022 independent analysis by Chmura Economics & Analytics based on CCAM’s subsequent revenue growth, while adjusting the estimated economic activity per job for inflation.

Table 1: FY26 Commonwealth ROI Scorecard

Measure	FY26 Result
Revenue used for economic-impact calculation	\$13.7M
Revenue growth over FY25	5%
Revenue growth since FY22	78%
Estimated annual economic activity in Virginia	\$56M

Estimated high-paying jobs supported	>230
Federal project revenue	\$5M
New federal awards	\$4.7M
Commonwealth funding used during FY26	\$3M

Federal project revenue totaled approximately \$5.0 million, while new federal awards totaled approximately \$4.7 million. Commonwealth funding used during FY26 included operating support, industry incentive funding, university research funding, and federal-pursuit funding. Additional detail on the receipt, use, commitment, and availability of these funds is provided in Section 11.

These results demonstrate that Commonwealth support is being combined with industry, federal, and other external resources to sustain a substantially larger base of advanced-manufacturing research and program activity. Commonwealth investment also supports the institutional capacity required to identify opportunities, develop partnerships and proposals, meet matching and non-reimbursable program requirements, and execute complex manufacturing programs.

CCAM's broader impact also includes external funding attracted to Virginia companies, university partners, workforce organizations, and regional initiatives through programs that CCAM helps shape, lead, or support, even when those funds do not flow through CCAM's financial statements. Examples and amounts associated with these collaborative efforts are addressed in the federal, university, workforce, and regional economic-development sections of this report.

2.2 Commonwealth Investment Producing Results

FY26 results show that the Commonwealth's continued investment in CCAM is producing measurable returns. CCAM exceeded its annual revenue goal, expanded federal activity, sustained a strong industry portfolio, and helped position Virginia partners for additional outside investment. Together, these results demonstrate how Commonwealth-supported capacity is being converted into economic activity, research growth, workforce value, and regional competitiveness.

The Commonwealth ROI Scorecard in Section 2.1 summarizes FY26 revenue growth, economic activity, jobs supported, federal project revenue, new federal awards, and Commonwealth funding used during the year. The results below show how that performance translated into federal, industry, workforce, university, and regional outcomes.

Federal activity continued to be an important source of growth and outside investment. CCAM recognized approximately \$5.0 million in federal project revenue and secured approximately \$4.7 million in new federal awards during FY26. These results reflect substantial growth in CCAM's ability to compete for and execute federally supported manufacturing programs. They also expand opportunities for Virginia companies, universities, and other partners to participate in national advanced-manufacturing, maritime, defense, and supply-chain initiatives.

Industry activity remained strong, with approximately \$5.0 million in industry revenue during FY26. The result reflects continued research activity with existing members and partners. After completing the transition to its revised membership model, CCAM accelerated the strategic use of industry grants to shape emerging opportunities, create lower-risk entry points for existing and prospective partners, and prepare credible teams and evidence for new programs of work. This approach supports a broader pipeline of project-based relationships that can develop into funded projects and, where appropriate, future membership.

CCAM also continued to use its convening, proposal-development, and program-leadership capabilities to help attract funding that does not flow directly through CCAM. During FY26, CCAM helped advance collaborative initiatives that attracted significant federal investment to Virginia companies and regional partners. Although these funds are not recorded as CCAM revenue, they represent an important extension of the Commonwealth's investment in CCAM and its ability to position Virginia organizations for larger opportunities. Selected examples are presented in Section 2.3.

Together, these results demonstrate that Commonwealth support is providing the foundation for a substantially larger portfolio of industry, federal, workforce, and regional economic-development activity. Continued Commonwealth investment allows CCAM to maintain the people, capabilities, infrastructure, and proposal-development capacity needed to compete for larger opportunities, bring additional resources to the Commonwealth, and position Virginia organizations for larger collaborative investments.

2.3 Selected FY26 Examples

The following examples illustrate how Commonwealth-supported capabilities allow CCAM to contribute to larger manufacturing initiatives, attract outside investment, and position Virginia organizations for continued growth. Additional details are provided in the federal, workforce, university, and regional economic-development sections.

Strengthening the Maritime Industrial Base

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Section 5.2 provides a full discussion of CCAM’s technical role in AMPro/Sub, including its leadership of the Navy’s Additive Manufacturing Center of Excellence in Virginia and work supporting supplier qualification, component readiness, manufacturing data, workforce development, technology maturation, and qualification activities.

Turning Regional Collaboration into Federal Pharmaceutical Investment

Central Virginia has significant pharmaceutical-development and manufacturing assets, but competing for national investment requires coordinated action across companies, universities, workforce providers, economic-development organizations, and government partners. CCAM led the Advanced Pharmaceutical Manufacturing Tech Hub on behalf of the Alliance for Building Better Medicine, helping organize the coalition, develop shared strategy, and coordinate a complex federal proposal effort. Commonwealth support provided organizational and proposal-development capacity that could be applied to an initiative extending well beyond CCAM.

FY26 result: The End-to-End Commercialization project, led by Civica, received a \$16 million federal Tech Hub award. The funding does not flow through CCAM, but it represents significant outside investment in a Virginia initiative that CCAM helped organize and advance. CCAM will continue contributing manufacturing-transition and commercialization expertise as Tech Hub leadership transitions to ABBM.

Connecting Manufacturing Technology and Workforce Development

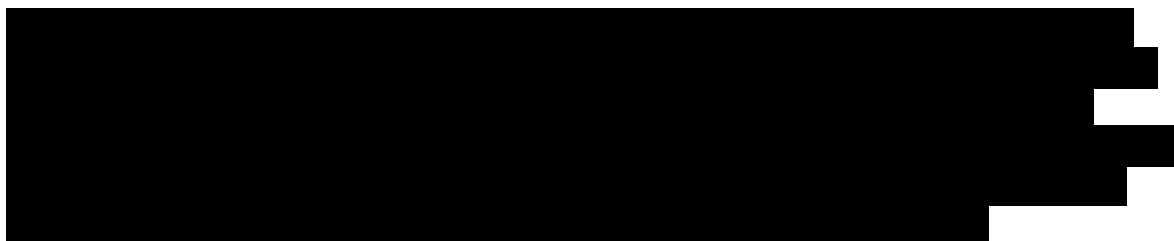
Manufacturers need better ways to capture expert knowledge, improve training, and prepare workers for complex operations where full automation is not practical. In FY26, CCAM and its partners expanded the applied Industry 5.0 platform, demonstrated it in a representative multi-person manufacturing environment, and established a pathway for additional deployment with Virginia industry and workforce partners. Section 6.3 explains the platform and its human-centered manufacturing approach in greater detail.

3. The CCAM Model: Leveraging Commonwealth Investment

The Commonwealth's investment in CCAM provides the operating base, early-stage funding, shared infrastructure, technical expertise, partnerships, and workforce-development pathways needed to turn manufacturing opportunities into executable programs. It gives CCAM the flexibility to act with speed and agility before conventional project funding is available by helping define partner needs, assess risk, assemble collaborators, prepare capabilities, and move promising opportunities toward fundable programs. This capacity allows CCAM to organize industry, universities, federal agencies, workforce organizations, and regional partners around opportunities that are too complex, too early, or too cross-cutting for any one organization to develop independently. Commonwealth funding supports four complementary functions that help convert public investment into industry growth, federal awards, workforce outcomes, and regional economic value:

- **Operating support** sustains the financial, IT, administrative, contracting, cybersecurity, and program-management capabilities needed to manage increasingly complex industry and federal programs. These capabilities enable CCAM to develop opportunities, assemble partnerships, execute programs, and attract industry and federal investment into Virginia.
- **Industry incentive funding** helps move opportunities from initial interest to practical engagement. During FY26, these funds supported the revised membership model, partner roadmapping, seed projects, capability development, and multi-member research activities. These investments helped retain CCAM's research membership base, expand the opportunity pipeline, launch the Industry 5.0 collaborative program, and position future sponsored projects and memberships.
- **University research funding** connects Virginia faculty and students with production-relevant manufacturing challenges. During FY26, these funds supported internships, experiential learning, university research collaborations, and proposal-development efforts that generated funded projects, publications, workforce-development activities, and stronger positioning for future federal opportunities.

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Together, these funding categories create a pathway from opportunity identification to implementation. Operating support sustains CCAM's core organization and shared infrastructure. Industry, university, and federal-growth funding help develop opportunities,

engage partners, generate evidence, and position Virginia organizations for larger industry and federal investments. Successful programs then advance technology demonstration, workforce preparation, qualification activities, and operational impact.

This model creates value both through CCAM's direct activities and through opportunities captured by Virginia companies, universities, workforce organizations, and regional initiatives. By providing flexibility before traditional project funding becomes available, the Commonwealth's investment in CCAM helps convert emerging opportunities into industry growth, federal funding, workforce outcomes, and long-term manufacturing value for Virginia.

4. Industry Growth and Member Value

CCAM helps manufacturers evaluate, mature, and implement new technologies in a production-relevant environment before committing production resources. Commonwealth industry incentive funding strengthens this model by sharing early development risk and enabling collaborative research among industry partners.

FY26 represented the first full year under CCAM's revised membership model and refreshed value proposition focused on reducing technology-adoption risk. Industry activities generated approximately \$5.0 million in revenue, reflecting continued engagement from existing members and partners.

4.1 Membership Growth and Portfolio Strength

CCAM retained 100% of its FY25 research members during the transition to the new membership structure. Rolls-Royce, Northrop Grumman, Altria, and BWX Technologies continued as Strategic Research Members, with BWXT advancing from the Standard level, and Amsted Rail continued as a Standard Research Member. Creaform, CGTech, Hexagon, National Instruments, and WAAM3D remained Technology Members, while NASA Langley Research Center continued as a Government Member. FY26 focused on retaining this strong base and building the pipeline: CCAM tracked 32 active opportunities across membership, projects, partnerships, and federal collaboration, and the Board approved two prospective members. These efforts position CCAM to convert qualified opportunities into future projects and memberships while deepening relationships with existing members.

4.2 Member Value and Technology Transition

CCAM gives members a neutral, production-relevant environment to evaluate emerging technologies, generate decision-ready evidence, and reduce adoption risk. In FY26, CCAM held recurring business reviews and technology roadmapping sessions; convened 75 participants, including every Strategic Research Member and university partner, at NASA Langley Research Center for an additive manufacturing qualification program; supported a Rolls-Royce-sponsored University of Virginia capstone project on coating adhesion; and gained Board support for an AI for Manufacturing working group.

CCAM also brought a Technology Member and Research Member together to evaluate scanning technology for a shared application, generating adoption evidence and insights for product improvement. Its multi-member Industry 5.0 program combines Strategic Research Member investment with Commonwealth industry funding to share development work,

improve knowledge capture and worker proficiency, and prepare technologies for deployment in Virginia facilities, including a new factory identified with one Strategic Research Member.

Member strategy sessions produced roadmaps for deeper collaboration, and senior representatives described CCAM as a trusted partner and collaborative platform for maturing and validating manufacturing technologies. CCAM reinforced that value with a

[REDACTED]

4.3 Strategic Deployment of Industry Grants

Commonwealth industry grants give CCAM the agility to advance promising manufacturing opportunities before they are mature enough for full company or agency funding. In FY26, CCAM used these funds to define partner needs, reduce early technical and commercial risk, build teams and capabilities, and generate the evidence needed for larger programs. Multi-member and Discovery seed projects created lower-risk entry points for shared exploration, while direct engagements, capability investments, and federal positioning moved opportunities from initial demand signals toward credible, fundable programs.

CCAM committed approximately \$2.4 million in incentive funds during FY26, excluding operating support. [REDACTED]

[REDACTED]

[REDACTED] These amounts are commitments—not expenditures, disbursements, awards, or recognized revenue—and require final reconciliation before publication. In FY27, CCAM will continue deploying industry grants as a disciplined, agile tool to accelerate sponsored work, deepen partnerships, and build reusable capability and relationships that strengthen Virginia's manufacturing ecosystem.

4.4 Capabilities That Attract and Retain Partners

CCAM attracts and retains partners by providing flexible access to multidisciplinary expertise and production-relevant capabilities that move manufacturing challenges from feasibility through demonstration and implementation. Its facility and testbeds allow

partners to evaluate technologies outside active production, while CCAM experts can also work at partner or ecosystem facilities and across supply chains. This model extends CCAM's reach to processes such as forging, casting, joining, heat treatment, and assembly, giving Virginia manufacturers specialized support and decision-ready evidence without requiring them to recreate those capabilities internally.

CCAM combines strengths in quality and inspection, additive manufacturing, coatings and high-temperature testing, machining and repair, robotics and controls, digital manufacturing, artificial intelligence, and human-centered manufacturing. Applied individually or as an integrated system, these capabilities help partners mature processes, generate qualification evidence, prepare workers, connect equipment and data, detect deviations earlier, improve control, and move toward implementation with greater confidence.

In FY26, CCAM added two high-temperature furnace test rigs, two wire-arc additive-manufacturing cells, expanded in-situ assessment technologies, and a dedicated Industry 5.0 environment. Driven by partner and program needs, these investments expand CCAM's ability to test demanding processes, [REDACTED] connect process evidence with quality outcomes, and evaluate technologies that augment skilled workers.

5. Federal and Defense Programs: Bringing National Investment to Virginia

5.1 Federal Portfolio and Leverage

Commonwealth investment continues to serve as a catalyst for CCAM's growth in federally aligned advanced manufacturing programs. In FY26, CCAM recognized approximately \$5.0 million in federal project revenue and secured approximately \$4.7 million in new federal awards, expanding opportunities for Virginia manufacturers, universities, and workforce partners to participate in nationally significant manufacturing initiatives.

CCAM's federal strategy is focused on areas where Virginia has strong industrial and national-security relevance, including maritime manufacturing, advanced pharmaceutical manufacturing, artificial intelligence for manufacturing, additive manufacturing, Industry 5.0, and workforce development. Through these efforts, CCAM helps attract external investment, build partnerships, and position Virginia organizations for participation in larger federal programs.

CCAM also continues to play a lead role in consortium-based federal programs that align Virginia's advanced manufacturing capabilities with national priorities. Through AMPro and related Navy additive manufacturing initiatives, CCAM supports the Navy's Advanced Manufacturing Center of Excellence activity in Virginia by identifying, assessing, and advancing manufacturing tools and techniques that can strengthen the submarine industrial base and accelerate adoption across the additive manufacturing supply chain. This work contributes to federal efforts aimed at strengthening defense manufacturing capacity, supply-chain resilience, and technology transition. These programs also help enhance Virginia's broader advanced manufacturing ecosystem and reinforce the Commonwealth's attractiveness for advanced manufacturing investment, including Avio USA's planned investment of more than \$500 million to establish an advanced manufacturing operation in Pittsylvania County, as announced by the Virginia Economic Development Partnership (VEDP).

Commonwealth federal-growth funding enables CCAM to pursue opportunities before traditional project funding becomes available. During FY26, these resources supported activities such as:

- Participation in Manufacturing USA organizations, including ARM and America Makes.



- Development of seed projects and concept maturation activities aligned with advanced manufacturing, artificial intelligence, workforce development, and supplier readiness priorities.

Federal and congressional investments also continued to strengthen Virginia's advanced manufacturing infrastructure. The WAAM3D RoboWAAM-XP system shown in Figure 1 provides members, universities, and federal partners with access to industrial-scale wire-arc additive manufacturing for demonstrations, process development, qualification activities, and workforce development. Together with prior Navy and NIST investments, these capabilities help CCAM mature manufacturing concepts, build credible teams and partnerships, and position Virginia organizations for future federal and industry opportunities.

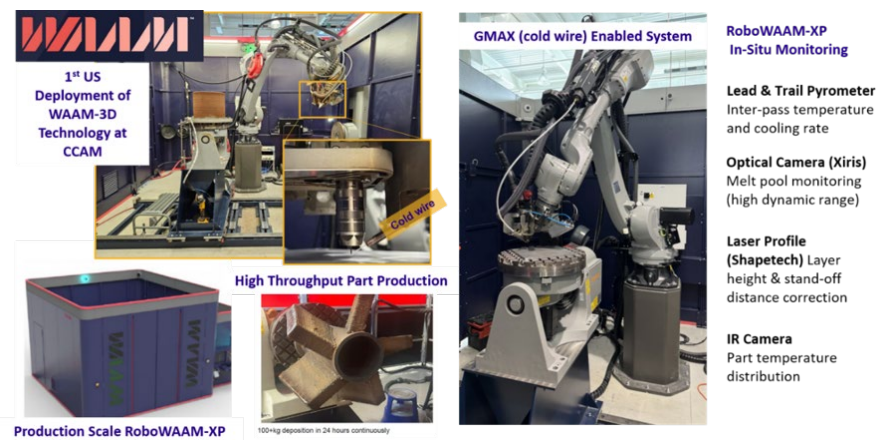


Figure 1: WAAM-3D's RoboWAAM-XP system with integrated GMAX process.

5.2 Maritime Industrial Base and AMPro/Sub

CCAM leads advanced manufacturing for the Navy's Additive Manufacturing Center of Excellence in Virginia, connecting shipbuilders, suppliers, technology providers, universities, and federal stakeholders to mature additive manufacturing tools and supplier-ready practices. Its production-relevant testbeds reduce deployment risk and support Navy requirements for quality, repeatability, data capture, cybersecurity, and transition readiness.

In FY26, CCAM expanded its Intelligent Additive Manufacturing Testbed to demonstrate in-situ monitoring, analytics, simulation, manufacturing-data systems, and support for CMMC Level 2 requirements. One demonstration detects improper powder dosing in laser powder bed fusion and alerts operators before quality is affected. Planned transition to the Navy's

AMCOE facility in FY27 will test the approach during part production and prepare it for broader supplier-base use.

5.3 Physical AI and AI for Manufacturing

Physical AI combines artificial intelligence with machines, sensors, robotics, and human workflows to improve productivity, quality, workforce effectiveness, and manufacturing resilience. As manufacturing becomes increasingly connected, CCAM is helping bridge the gap between AI concepts and practical factory-floor implementation by integrating equipment, data, workers, and manufacturing processes within production-relevant environments.

CCAM's experience in this area builds on prior digital manufacturing efforts, including its leadership of the NIST-funded *Roadmap to Strengthen the U.S. Manufacturing Supply Chain via Digital Thread Technology*. That work established foundations for connecting manufacturing systems, data, quality evidence, and decision-making across the product lifecycle.



5.4 Virginia Small-Business and Supplier Support

Small businesses play an important role in manufacturing innovation by helping transition emerging technologies into practical industrial applications. CCAM supports Virginia small businesses by providing access to production-scale manufacturing testbeds, technical expertise, federal collaboration opportunities, and connections to industry and government partners. During FY26, CCAM increased its engagement through SBIR/STTR-related activities, collaborative proposal development, and networking events that expanded access to members and federal stakeholders.

R3-Digital Sciences of Blacksburg, Virginia, provides one example of this approach. Through ongoing SBIR-funded efforts, CCAM is supporting demonstrations of R3-DS digital

manufacturing technology [REDACTED]
[REDACTED]
[REDACTED]

Building on these efforts, CCAM plans to expand engagement with Virginia small businesses that align with its manufacturing capabilities and can benefit from access to its production-scale technology maturation environment and growing collaboration ecosystem.

6. University Collaboration, Talent, and Workforce

Virginia's manufacturing competitiveness depends on strong university partnerships and a skilled workforce. CCAM connects both to industry need by providing faculty and students access to real manufacturing challenges, equipment, data, and industry partners. Commonwealth funding supports university collaboration, student engagement, workforce development, and the early-stage activities needed to position larger external opportunities. During FY26, CCAM expanded university partnerships, hosted 13 interns, grew the GO TEC program to 13 Career Connections Labs reaching more than 3,100 students, and continued advancing Industry 5.0 and human-centered manufacturing initiatives.

6.1 Strategic University Engagement

CCAM's university collaborations connect faculty expertise and student talent with production-relevant manufacturing challenges while building partnerships capable of attracting external funding. During FY26, activities focused on human-centered manufacturing, manufacturing AI, cybersecurity, additive manufacturing, and workforce development, resulting in funded projects, proposals, publications, and student engagement opportunities.

Selected FY26 examples include:

- Collaboration with Old Dominion University's Virginia Digital Maritime Center that produced a CCAM-funded project, a funded Epic MegaGrants proposal, and a jointly authored conference publication.
- Support for successful cybersecurity research involving George Mason University and VCU through the Commonwealth Cyber Initiative.
- Additive manufacturing collaborations involving VCU, Virginia State University, University of Virginia, Virginia Tech, and technology partner WAAM3D.
- Mentorship of university capstone and senior design projects supporting NASA and industry-sponsored manufacturing challenges.
- Participation by all university partners in CCAM's member and partner convening at NASA Langley Research Center.

Together, these collaborations demonstrate how Commonwealth-supported university engagement produces externally funded opportunities, research outcomes, and workforce experiences aligned with industry and federal priorities.

6.2 Workforce Programs and Results

CCAM's workforce programs support Virginia's advanced manufacturing talent pipeline from middle school through university and into employment. During FY26, Commonwealth support enabled CCAM to expand workforce-development activities, strengthen industry-connected learning opportunities, and increase student exposure to advanced manufacturing careers.

Selected FY26 workforce outcomes include:

- Hosted 13 university interns in summer 2026, many of whom supported funded industry and federal projects, providing hands-on experience in production-relevant manufacturing environments.
- Recognized as a 2026 Top Employer for Interns by the Virginia Talent + Opportunity Partnership (VTOP) and the State Council of Higher Education for Virginia (SCHEV). Former interns continued to transition into full-time manufacturing careers, including employment opportunities at CCAM.
- Continued serving as the GO TEC coordinating organization for GO Virginia Region 4, launching five new Career Connections Labs and adding a sixth school through grant expansion during FY26.
- Expanded the regional GO TEC network to 13 Career Connections Labs that have reached 3,118 students with STEM and advanced manufacturing career experiences since late 2022. More than 1,000 students participated through labs launched under CCAM's FY26 initiative.
- Strengthened workforce partnerships through collaboration with the Virginia Academy of Science, Engineering and Medicine (VASEM), regional school divisions, educators, employers, and workforce-development organizations.

These activities demonstrate how CCAM connects education, industry, and workforce partners to strengthen Virginia's manufacturing talent pipeline and prepare students for careers in advanced manufacturing and related STEM fields.

6.3 Industry 5.0 and Human-Centered Manufacturing

Industry 5.0 focuses on using advanced technologies to augment human capability rather than replace it. CCAM's approach combines sensing, artificial intelligence, data analytics,

robotics, and digital guidance to help manufacturers improve quality, productivity, training, safety, and knowledge transfer while maintaining human oversight where it adds value.

During FY26, Commonwealth support enabled CCAM to expand its human-centered manufacturing capabilities through a dedicated Industry 5.0 development environment and collaborative activities involving industry, university, and workforce partners. These efforts supported research projects, publications, proposal development, and the launch of CCAM's first multi-member Industry 5.0 collaborative program.

For Virginia manufacturers, this work provides practical pathways to improve workforce effectiveness, accelerate training, capture critical knowledge, and evaluate emerging technologies before deployment in operational environments.

7. Regional Economic Leadership: Advanced Pharmaceutical Manufacturing

Virginia has an opportunity to strengthen domestic production of essential medicines while building a nationally significant advanced pharmaceutical manufacturing sector. Persistent drug shortages and reliance on global supply chains underscore the need for stronger domestic capabilities spanning pharmaceutical inputs, active ingredients, finished medicines, manufacturing technology, commercialization, and workforce development. The federally designated Advanced Pharmaceutical Manufacturing Tech Hub was created to help address these needs by bringing public, private, academic, workforce, and community partners together around a more resilient domestic manufacturing system.

The Commonwealth's support for CCAM provided leadership and operating capacity that could be applied to this complex regional opportunity. CCAM served as the Advanced Pharmaceutical Manufacturing Tech Hub lead on behalf of the Alliance for Building Better Medicine (ABBM), coordinating companies, universities, workforce providers, government agencies, nonprofit organizations, and economic-development partners around a shared strategy for growth.

A critical part of CCAM's contribution was its role as a neutral, independent collaboration platform. By helping partners establish common goals, coordinate activities, and identify the organizations best positioned to lead individual initiatives, CCAM helped create the trust, continuity, and operating structure needed to advance the region from coalition-building toward long-term implementation.

7.1 FY26 Leadership and Organizational Progress

During FY26, ABBM reached an important institutional milestone by becoming an independent 501(c)(3) organization with its own governance and operating responsibilities. ABBM now serves as the formal convening and governance organization for Virginia's advanced pharmaceutical manufacturing cluster.

CCAM played a key role in supporting this transition. As the coalition matured, CCAM provided organizational structure, fiscal and administrative support, strategic coordination, partner convening, proposal-development capacity, and operational continuity while the permanent organization and governance model were established. As a result, Virginia now has a dedicated organization positioned to sustain collaboration across the advanced pharmaceutical manufacturing sector.

Immediately following FY26, the U.S. Economic Development Administration announced a \$16 million investment in the End-to-End Commercialization Project. Led by Civica and supported by Phlow, Occam Systems, and the broader ABBM partner network, the project connects domestically sourced pharmaceutical inputs with active pharmaceutical ingredient manufacturing, finished-dose production, regulatory approval, commercial manufacturing, and delivery of essential medicines.

The funding does not flow through CCAM, but it demonstrates the value of the collaborative structure and regional strategy that CCAM helped establish. While ABBM now leads the coalition and governance platform, CCAM remains a founding member and strategic partner, contributing manufacturing-transition expertise, program development, and collaborative capacity to support continued growth of Virginia's advanced pharmaceutical manufacturing ecosystem.

7.2 Innovation-to-Commercialization Strategy

The End-to-End Commercialization Project is one implementation of a broader Innovation-to-Commercialization strategy. The regional challenge extends beyond discovering promising technologies or medicines. Innovations must also move through technical maturation, manufacturing-process development, regulatory and quality requirements, workforce preparation, scale-up, and commercially sustainable production.

The Innovation-to-Commercialization roadmap is intended to identify the capabilities, partnerships, and investments needed to address these challenges. Areas of focus include technology transfer, pilot and GMP capabilities, regulatory and analytical support, automation, translational research, and advanced manufacturing approaches such as continuous processing, modular manufacturing, automated technology transfer, and AI-enabled process control.

CCAM supports this strategy by helping partners move promising technologies toward manufacturing use. Its manufacturing-transition model combines technology assessment, production-relevant demonstration, automation, manufacturing data, digital integration, process intelligence, workforce preparation, and transition planning to reduce adoption risk and create practical pathways from technical promise to production.

This role should be distinguished from regulated pharmaceutical development and production activities led by companies, laboratories, and other specialized organizations within the coalition. CCAM contributes advanced manufacturing and technology-transition

expertise as part of a broader ecosystem in which each partner provides capabilities appropriate to its role.

7.3 Workforce, Investment, and Commonwealth Value

Virginia's pharmaceutical manufacturing opportunity depends on an employer-aligned workforce with the technical, quality, regulatory, and production skills needed to operate increasingly advanced facilities. Throughout FY26, CCAM helped connect manufacturing priorities with workforce development initiatives, education partners, employers, and regional stakeholders to strengthen Virginia's talent pipeline and support growth of the pharmaceutical manufacturing ecosystem.

Selected FY26 workforce and economic-development outcomes include:

- Support for coalition development, workforce strategy, and partner coordination that contributed to the Good Jobs Challenge program, led by Reynolds Community College and the Community College Workforce Alliance. The program includes a \$3.94 million award intended to prepare 228 individuals for technician-level pharmaceutical manufacturing and biotechnology careers.
- Co-leadership of the advanced pharmaceutical manufacturing and biotechnology workforce sector partnership with ABBM, Reynolds, CCWA, and Brightpoint, helping align workforce-development activities with documented employer needs.
- Development of the Workforce Expansion component of the Advanced Pharmaceutical Manufacturing Tech Hub implementation proposal through engagement with more than 55 organizations across industry, workforce, education, and economic development.
- Support for ABBM's pursuit of an AI-enabled labor-market intelligence and career-pathways platform and participation in regional discussions on pharmaceutical manufacturing workforce development.

Virginia's pharmaceutical manufacturing opportunity is further reflected by major public and private investments across the Commonwealth. Announcements by Eli Lilly, AstraZeneca, and Merck represent nearly \$13 billion in combined capital investment, followed by an additional \$120 million commitment to the Virginia Center for Advanced Pharmaceutical Manufacturing workforce partnership. While these investments should not be attributed to CCAM or any single coalition initiative, they demonstrate the scale of

opportunity and the importance of coordinated manufacturing, workforce, and commercialization efforts across Virginia.

8. Operational Readiness: Building the Platform for Results

CCAM's ability to create impact depends on its ability to execute. During FY26, CCAM strengthened its delivery model, expanded organizational capacity, and continued investing in the people, systems, facilities, and secure operations needed to support increasingly complex manufacturing programs.

The Commonwealth's investment in CCAM helps sustain these capabilities, enabling the organization to respond quickly to new opportunities and deliver consistent value to industry, government, and university partners.

8.1 Partner-Focused Delivery and Organizational Capacity

CCAM has organized around partner success. During FY26, the organization strengthened program leadership, partnership management, project management, and organizational capacity to improve coordination, accountability, and execution. The introduction of Strategic Partnership Management, Program Lead, and expanded Project Management Office functions helps ensure partner needs are understood, opportunities are developed effectively, and programs are delivered consistently.

CCAM also continued developing a scalable operating model that expands leadership depth, strengthens accountability, and reduces reliance on a small number of individuals. These investments position the organization to support increasingly complex industry, federal, university, and workforce initiatives while maintaining a focus on partner outcomes and technology transition.

8.2 Secure Operations and Digital Infrastructure

Manufacturing increasingly depends on connected equipment, data, software, and digital workflows. As a result, secure delivery and information protection have become integral components of manufacturing capability rather than administrative functions performed after technical development. CCAM incorporates cybersecurity, information protection, data stewardship, and secure digital infrastructure into its operations so partners can pursue advanced manufacturing initiatives with confidence.

During FY26, CCAM achieved Cybersecurity Maturity Model Certification (CMMC) Level 2, strengthening its ability to support both industry and federal programs that require protection of sensitive manufacturing information. This capability complements broader investments in digital manufacturing, connected assets, manufacturing data systems, in-situ monitoring, and emerging AI-enabled technologies. Together, these capabilities help

position CCAM to support increasingly complex programs while maintaining secure and responsible management of manufacturing data and digital assets.

8.3 Facilities and Technical Capabilities

CCAM's facilities, equipment, and testbeds provide manufacturers with production-relevant environments to develop, test, validate, and mature new technologies before deployment in operational settings. These resources enable companies to evaluate risk, generate decision-ready evidence, and accelerate technology adoption without disrupting active production operations.

During FY26, CCAM expanded capabilities in areas including high-temperature testing, wire-arc additive manufacturing, in-situ assessment technologies, and human-centered manufacturing. These investments complement existing strengths in additive manufacturing, coatings and advanced materials, robotics and automation, quality and inspection, digital manufacturing, artificial intelligence, machining and repair, and manufacturing data systems.

Together, these facilities and technical capabilities provide Virginia manufacturers, universities, and federal partners with access to specialized expertise and infrastructure that would be difficult for many organizations to maintain independently. They support technology maturation, workforce development, qualification activities, supplier readiness, and future industry and federal growth opportunities across the Commonwealth.

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Execution and Compliance Readiness. As programs become larger and more complex, success increasingly depends on project management, leadership capacity, specialized talent, cybersecurity, export-control compliance, secure data systems, and production-relevant infrastructure. During FY26, CCAM continued strengthening its Program Lead structure, Project Management Office, cybersecurity capabilities, and operational systems to support reliable execution and future growth.

Opportunity Development and Timing. Industry and federal revenue generally support defined scopes once projects begin, but they do not consistently fund the activities required to develop future opportunities, maintain shared capabilities, meet matching requirements, or bridge the period between award capture and revenue-producing execution. The Commonwealth's investment remains important because it provides the flexibility needed to develop partnerships, mature opportunities, maintain strategic capabilities, and bridge the period between opportunity development and revenue-producing execution.

These are manageable growth risks within a stronger and increasingly diversified operating model. CCAM's mitigation approach focuses on broadening industry and federal participation, strengthening execution readiness, and maintaining the flexibility needed to convert emerging opportunities into long-term economic impact for the Commonwealth.

9.3 FY27 Outlook

[REDACTED]

Federal activity will emphasize both execution and diversification. [REDACTED]

[REDACTED]

Because federal awards typically precede revenue-producing execution, successful FY27 campaigns are expected to contribute more significantly to revenue in FY28 and beyond.

State funding provides the flexibility needed to develop replacement opportunities, maintain shared capabilities, support proposal development and matching requirements, and position Virginia organizations for larger future investments. Together, these efforts are intended to sustain FY26 momentum, broaden CCAM's portfolio, and strengthen the foundation for long-term economic impact in the Commonwealth.

10. FY27 Agenda: Extending Commonwealth Impact

In FY27, CCAM will build on the momentum created in FY26 by advancing technologies, partnerships, and programs that strengthen Virginia's manufacturing competitiveness and expand opportunities for industry, universities, workforce organizations, and regional partners.



Work will emphasize production-relevant demonstrations, workforce integration, qualification pathways, and technology transition into industrial use. Technology roadmaps will continue to align emerging capabilities with documented partner needs and future funding opportunities.

CCAM will also continue supporting strategic Commonwealth priorities through maritime and defense manufacturing, advanced pharmaceutical manufacturing, university collaboration, workforce development, and expanded engagement with Virginia suppliers and small businesses. These efforts are intended to connect innovation with implementation and accelerate the translation of technology into economic and workforce value.

The Commonwealth's investment in CCAM enables the organization to identify emerging opportunities, develop partnerships, mature technologies, and position Virginia organizations for larger industry and federal investments. By combining technical expertise, production-relevant infrastructure, collaborative networks, and workforce-development pathways, CCAM will continue converting public investment into manufacturing growth, federal funding, innovation, and economic impact across the Commonwealth.

11. HB6001, Chapter 2, Item 115 K.5 Requirements

11.1 University MOUs

There have been no additional MOUs developed with university partners this past year.

11.2 Funds Disbursed to Partners and Other Recipients

Industry Research Grants

These investments continue to expand opportunities for member engagement, advance strategic research initiatives, and strengthen the capabilities needed to address evolving industry challenges. They support efforts that promote innovation, foster collaboration, and deliver measurable value to members, partners, and the regional economy. Aside from the funds utilized in FY26 (table below), CCAM currently has \$675K scoped on open Industry Research Grant projects.

Industry Grant Category	Grant Funding
(iii) Matched Project Funding	\$210,378
(iv) Seed Projects	\$722,834
	\$932,762

University Research Grants

University Grant funds are being leveraged to strengthen collaborative partnerships between CCAM and Commonwealth universities while advancing research initiatives aligned with industry and federal priorities. These investments support strategic engagement, interdisciplinary teaming, and the maturation of emerging concepts into competitive research opportunities. Funding will continue to facilitate proposal development, partnership growth, and the generation of preliminary results that enhance the competitiveness of future federal funding pursuits while creating shared value for researchers, students, and industry partners. In addition to the funds utilized in FY26 (table below), CCAM currently has \$323K deployed towards open University Research Grant projects.

University Member(s)	Detail	Grant Funding
ODU	Project E-165 I5.0: Identify, Inform and Measure Training Strategies	\$113,163
UVA, VCU, VSU, VT	Project E-150/E-151 CCAM Intern Program Development	\$104,650
UVA	Project E-120/E-142 Cooperative Processing (CooP) Pilot Program	\$65,465
VCU	Project E-163 Extraction of Meaningful Workpiece Quality Information during Post-Processing of AM Components	\$54,531
VSU, VT	Project E-162 Universities Collaboration in Execution of AM NSF Grants	\$17,775
All	Project E-146 University Hatchling Concepts	\$11,770
VT	Project E-127 In-situ Part Quality Assurance in LPBF using Heterogenous Sensor Data	\$9,059
VSU	Project E-103 Distributed Manufacturing Node – Intelligent Cell	675

\$377,088

11.3 Other Public and Private Agreements

- In September 2025, CCAM completed a strategic equipment transfer to Rowanty Technical Center through a fully executed donation agreement, preserving the value of advanced manufacturing training assets and enabling their continued use in technical education programs. The transfer included robotics and automation training platforms that support expanding access to hands-on technical training opportunities and preparation and career pathway development for future manufacturing talent in the Commonwealth of Virginia.
- In December 2025, CCAM established and executed a formal Memorandum of Understanding with the Virginia Academy of Science, Engineering and Medicine (VASEM), creating a framework for joint workforce development, policy engagement, intern and fellow collaboration, advanced manufacturing thought leadership, and coordinated partner engagement through 2027. The agreement led

to participation of CCAM interns in the VASEM COVES Policy Fellowship program and created a platform for future joint initiatives.

11.4 Federal Award Program Development

Commonwealth funding provides the flexibility needed to engage federal partners, develop opportunities, prepare capabilities, and support critical pre-award activities that are not consistently funded through project awards. During FY26, CCAM broadened the use of these funds to strengthen partnerships, improve readiness, and enhance responsiveness to emerging federal priorities. Continued investment from major federal customers reflects confidence in CCAM's performance and reinforces its role as a trusted partner. These efforts help sustain long-term growth while maintaining a strong pipeline of opportunities aligned with federal mission needs. In addition to the funds utilized in FY26 (table below), CCAM also has \$456K actively scoped on open Federal Award Program Development projects.

Category	Detail	Grant Funding
Business Development	Engagement with federal agencies, exploration of award solicitation, campaign material development, travel for award related business development, pre-proposal research, process infrastructure consulting and development (award admin, export control, CMMC compliance).	\$533,286
Proposal Development	Concept paper & proposal ideation, development and submission.	\$264,359
		\$797,645

11.5 Additional Information Requested

There are no open requests for additional information currently.



