



## AGENDA

IALR Board of Trustees

### MANUFACTURING ADVANCEMENT COMMITTEE

Thursday, October 31, 2024 - 10:45 am - Conference Room 203

- |  |                                      |
|--|--------------------------------------|
| I. <b>Convening of Meeting</b>                                   | Mr. Ben Davenport                    |
| A. Welcome   |                                      |
| B. Call to Order and Confirmation of Quorum                      |                                      |
| C. Call for Changes to Agenda                                    |                                      |
| II. <b>Approval of Minutes</b>                                   | Mr. Ben Davenport                    |
| A. August 1, 2024  |                                      |
| III. <b>Manufacturing Advancement Update</b>                     | Ms. Amanda Hylton<br>Mr. Jason Wells |
| IV. <b>Open Discussion of Concerns, Issues, and Observations</b> | Group                                |
| V. <b>Adjournment</b>  | Mr. Ben Davenport                    |

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|--|
| Reference material included: "Advanced Manufacturing Update" |
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#### Future Committee Meetings

#### Future Plenary Meetings

November 21, 2024

#### Advanced Manufacturing Committee Members

Mr. Ben Davenport, *Chair*  
Mr. David Bennett  
Mr. Don Gibson  
Dr. Greg Hodges  
Mr. Mark Holland  
Mr. Don Merricks, *Ex Officio*  
Connie Nyholm  
Dr. Jerry Wallace

#### IALR Staff

Mr. Telly Tucker, President  
Dr. John Hughes, EVP of Operations  
Ms. Amanda Hylton, VP, Strategic Initiatives  
Ms. Pam Patterson, BOT Secretary  
Mr. Jason Wells



**IALR BOARD OF TRUSTEES (BOT)**  
**MANUFACTURING ADVANCEMENT COMMITTEE**  
**Minutes – August 1, 2024 - 10:45 a.m. – Conference Room 203**

|   |   |
|---|---|
| <b><u>Members Present</u></b><br>Mr. Ben Davenport, <i>Chair, via Zoom</i><br>Mr. David Bennett<br>Mr. Don Gibson<br>Dr. Greg Hodges, <i>left at 11:30 am</i><br>Mr. Mark Holland<br>Mr. Don Merricks, <i>Ex Officio</i><br>Dr. Jerry Wallace<br><br><b><u>Members unable to attend</u></b><br>None | <b><u>IALR Staff Present</u></b><br>Mr. Telly Tucker, President<br>Dr. John Hughes, Executive Vice President of Operations<br>Ms. Pam Patterson, BOT Secretary, <i>via Zoom</i><br>Ms. Amanda Hylton, VP, Strategic Initiatives, Man. Adv.<br>Mr. Jason Wells, EVP, Manufacturing Advancement<br><br><b><u>IALR Staff Unable to Attend</u></b><br>Mr. Tim Robertson, Chief Operating Officer, Man. Adv.<br><br><b><u>Guests</u></b><br>None |
|---|---|

**Call to Order / Confirmation of Quorum / Changes to the Agenda**

Mr. Ben Davenport, Chair, called the meeting to order at 10:45 a.m. on Thursday, August 1, 2024. A quorum was present. There were no changes to the agenda.

**Attendance of Committee Members by Electronic Communication Means**

All committee members attended in person.

**Approval of Minutes**

- **Motion** – Dr. Greg Hodges made a motion to approve the Minutes from the May 2, 2024 meeting. Mr. Don Gibson seconded the motion. The motion was approved by unanimous vote.

**Manufacturing Advancement Update**

Mr. Jason Wells was appointed as Executive Vice President of Manufacturing Advancement. Mr. Wells and Ms. Amanda Hylton presented the Manufacturing Advancement narrative report (**Exhibit A**). Other personnel updates included new hires, promotions, and open positions.

ATDM completed a reorganization to support the next scaling phases as the training moves into the dedicated facility and grows to over 800 students yearly. To date, 447 students have

completed the training. Career-seeking students (101) were placed in Submarine Industrial-Based (SIB)/Defense Industrial-Based (DIB) jobs in May, June, and July.

Industry engagement included more than 30 new companies during the past quarter. Additional processes were developed to support an increase in participating companies.

Construction remained on schedule for the dedicated training facility. The second phase of construction was awarded.

The NASAM Additive Manufacturing Training program completed its third cohort in July, with total enrollment for the fourth and fifth cohorts. Currently, 36 students have graduated from the program, and efforts are underway to secure funding to continue the training through FY25.

The Defense Manufacturing Community Support Program (DMCSP) has enrolled 569 students in Old Dominion University's (ODU's) Manufacturing Engineering Technology (MfgET) degree program, 185 in Danville Public Schools, and 150 in Pittsylvania County Schools. GO TEC expansion efforts have impacted 8,153 individuals, while outreach at Virginia State University (VSU) has reached 28,256 students and educators.

A whitepaper was submitted for the next phases of the DMCSP grant and the renewal of its Defense Manufacturing Community designation. Henry County Schools completed preparations for new coursework, and a no-cost extension was submitted to continue activities through March 31, 2025.

The Center for Manufacturing Advancement (CMA) completed virtual and onsite ISO 9001:2015 audits, and an updated business case was finalized in June. This year, the CMA hosted over 600 visitors and trained 125 students.

The Additive Manufacturing Center of Excellence (AM COE) printed 127 Navy parts and machined 90 parts. A capital investment of approximately \$2.2 million in Computer Numerical Control (CNC) equipment is planned for GVT in FY25 Q1.

The first Haas Technical Education Community (HTEC) training has been completed. Collaboration with the Gene Haas Foundation is underway to develop courses integrating robotics into CNC machine instruction. Additionally, two workshops were selected for presentation at the National HTEC Conference in July.

The 10th cohort of Integrated Machining Technology (IMT) students will begin in the fall, and a lab technician has been hired in partnership with Danville Community College (DCC).

#### **Center for Manufacturing Advancement (CMA) Update**

Mr. Tucker confirmed that funding approval was received to move forward with an RFP for architectural and engineering drawings for the CMA expansion, which will be issued soon. This will be a topic of discussion with Ms. Andrea Peeks and the House Appropriations team during their

September 24, 2024, visit. A decision is needed on whether to request construction funding again in the upcoming Governor’s budget.

**Open Discussion of Concerns, Issues, and Observations**

Mr. Tucker stated that the acquisition of 149 Slayton Avenue (formerly known as Kyocera) is expected to wrap up by the end of August. A meeting with the bank to review the term sheet was scheduled. Several companies have expressed interest in renting space in the building. A Foundation Board of Directors (FBOD) meeting has been scheduled to finalize the purchase.

Mr. Tucker added that the second phase of the Navy’s National Training Center (NTC) was approved by the Department of Defense (DoD) for \$85.9M and 107,000 square feet.

**Adjournment**

Mr. Davenport adjourned the meeting at 11:33 a.m.

Minutes Recorded By:

Minutes Approved By:

\_\_\_\_\_  
Pam Patterson  
BOT Secretary

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Mr. Ben Davenport, Chair  
Advanced Manufacturing Committee

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

**Attachments Included as Official Part of Minutes**

Exhibit A - Manufacturing Advancement Narrative Report

Exhibit B – Manufacturing Advancement Quad Chart Report

Manufacturing Advancement Report  
Jason Wells, Executive Vice President  
Amanda Hylton, VP Strategic Initiatives  
October 18, 2024

**Personnel Updates:**

- ATDM
  1. Xavier Rodgers – ATDM Shift Manager
  2. Bobby Moran – ATDM Precision Manufacturing Lab Technician
  3. Ryan Moore – ATDM Precision Manufacturing Lab Technician
  4. Christopher Grubb – ATDM Shift Manager
  5. Thomas Lynch – NASAM Technician
  6. Christopher Chandler – ATDM CNC Machining Instructor
  7. John Smith – ATDM Technical Program Manager
  8. Michael Walker – ATDM Floating Instructor
  9. David Gauldin – Promoted to CNC lead
- CMA
- Manufacturing Advancement
  1. Cassidy Edwards – Executive Assistant
  2. Wesley Cifers – Promotion to Assistant Director, Advanced Training and Operations
  3. Rhonda Reavis – Promotion to Senior Financial Reporting Specialist
- Open Positions
  1. ATDM Manufacturing Industry Representative (Begins October 25)
  2. ATDM NDT Instructor
  3. ATDM NDT Lab Technician
  4. ATDM Student Success and Compliance Advisor
  5. ATDM Floating Instructor – 1 position
  6. ATDM Additive Manufacturing Instructor
  7. ATDM Welding Technician
  8. NASAM Program Coordinator
  9. ATDM Welding Instructor
  10. ATDM Welding Fabrication Instructor
  11. ATDM Welding Fabrication Technician
  12. ATDM Operations Analyst
  13. ATDM Precision Manufacturing Lab Technician – multiple positions
  14. ATDM Career Services Coordinator
  15. ATDM CNC Instructor
  16. Director, Workforce Training
  17. Vice President, Business Development
  18. Contract and Financial Reporting Specialist
  19. Contracts Manager
  20. CMA Quality Assurance Specialist

## **Accelerated Training in Defense Manufacturing**

- Budget and Contracting
  - ATDM 3.0 has rolled into ATDM 4.0 combining the two into the one full period of performance
    - Total Budget is \$43.6M
    - Total Expended to Date is \$21.6M
  - The RTC/NTC bid proposal for Phase II has been approved
    - Total funded to date is \$85.9M
  - Revisions and next steps for funding for the next 5 years for ATDM/NTC Operations is ongoing with several upcoming meetings with IBAS/ICAM and Navy to discuss next steps
- Tiger Teams
  - Graduation Rate Tiger Team has completed 18 of 29 actions
  - A rapid team was developed to discuss
- Staffing
  - Work continues on hiring staff to support the ramp to 800 students in the upcoming year
  - The work-study program was launched this quarter to provide an opportunity for students who need extra income; the students supporting recruitment and admissions made over 1,029 calls in their first month
- Recruitment
  - The team attended a record of 45 events this quarter
  - 1,127 active applications; 22,109 active leads/inquiries
  - Students have come from 45 states plus Washington D.C., Puerto Rico, Australia, and Guam
  - Recruiting staff were on site at IMTS to support the build submarines booth space within the Student Summit Hall at IMTS. This was well attended with a very high level of interest that resulted in running out of actual brochures to provide due to the interest in the program being so high
- Training
  - 57 students graduated in August, bringing the total number of graduates to date over 600
  - Current enrollment to date is 962 (with two cohorts currently in process)
  - The team planned and presented an instructional professional development day for instructors and technicians which included classroom management and other relevant skills
- Industry Engagement
  - Additional Industry Engagement consultants have been contracted to support the work being completed by Ray Montgomery
  - An Industry Engagement strategy is being developed and piloted to support the efforts of the team
  - More than 40 new companies were engaged during this quarter

- The team made more than 30 offsite supplier visits this quarter and hosted more than 38 companies onsite
- Career Services
  - 58 career-seeking students were placed in MIB/DIB jobs in May, June and July, bringing the total to over 508
  - 83% placement rate to date for students completing ATDM
  - July's Career Fair featured 35 companies
  - Students have been placed in 37 states
  - Multiple companies held in-person interviews for students on site during the quarter, including BWXT, HII/NNSB, Puget Sound, and Arrowhead
- Student Services
  - Coordinated housing for all new and incoming students, as well as exit interviews and inspections for all graduating students
  - Began a dedicated volunteer opportunity for students to participate with over 24 students participating in community service projects and volunteer opportunities each month, ranging from Habitat for Humanity to Riverwalk clean up with Danville Parks and Recreation
- Dedicated Training Facility
  - Construction remains on schedule
  - Coordination and planning for the move from "bridge" spaces into the new facility continues and is on track.
  - Second phase of construction has begun and is on schedule
- Other Highlights
  - The ATDM participated in the FanZone for the Richmond and Talladega races and will participate in Martinsville in November
  - The team hosted a Senior Advisory Council meeting in September to communicate to industry partners updates on the program, including the reorganization of the staff and the introduction of new leadership

### **NASAM Additive Manufacturing Training**

- NASAM received financial support for government FY25, which allows for a Program Coordinator to be hired
- The NASAM Technician has been hired
- Development work into a similar training program for NAVSEA is underway

### **Defense Manufacturing Community Support Program (DMCSP)**

- Total student enrollments to date: 724 students in ODU coursework leading to MfgET degree; 322 in Danville Public Schools 9<sup>th</sup> and 10<sup>th</sup> grade programs; 265 in Pittsylvania County Schools 9<sup>th</sup> and 10<sup>th</sup> grade programs and welding; 8,153 impacted by GO TEC expansion efforts; Over 28,000 students and educators impacted by 476 outreach visits at VSU
- IALR has been invited to participate in the Commonwealth's defense manufacturing strategy sessions

- Henry County Public Schools finalized equipment purchases to expand the 9<sup>th</sup> and 10<sup>th</sup> grade Career Academies to additional school systems in the region
- A no-cost extension was approved to continue activity through March 31, 2025

### **Center for Manufacturing Advancement**

- The Partnership Agreement and Terms was finalized this quarter to start pursuing industry partners
- The CMA has delivered its first contract for Optimization Partnering outside the COE project. This has been provided to Bechtel Plant Machinery, Inc. (BPML) which is a prime contractor for the Navy Nuclear Propulsion Program. They represent a consortium of companies that they seek to provide a path to the CMA in order to engage in Optimization efforts.
- The CMA received its official certificate for ISO certification
- CMA branding was completed this quarter to supporting outreach and awareness efforts
- Jeremiah Williams co-presented well-attended seminar on the machining of Wire Arc Additive Manufactured parts at Fastec. He was able to communicate data that showed a significant optimization impact in a production part created by Fastec with Kyocera-SGS tooling that should a cycle time reduction from 2 hours and 36 minutes down to less than 22 minutes.
- Several team members of the CMA attended IMTS this year to explore the various emerging technologies developing within industry. The team identified a large push into AI across multiple various disciplines with manufacturing and a real need to have a strategy around this technology on campus at the IALR.
- The CMA is rapidly growing to full capacity. With the addition of heat treat equipment in Bay 3, NDT and DT equipment in Bay 1, the Hermle 5 Axis in the spring to Bay 2, and 4 more AM machines spread across Bays 3/4/5, there will be no spare space within the facility for an additional growth in Capital equipment
- Funding was approved from the state to engage in the A&E activity for adding on to the CMA facility, with the likelihood of future funding for expansion
- The CMA hosted a Manufacturing Roundtable through the Chamber of Commerce for local manufacturers

### **Additive Manufacturing Center of Excellence (AM COE)**

- The CMA has just proposed the addition of a second shift to the COE prime Austal. They seek to ensure capacity availability as the program sees growth in sustainment part efforts. In addition, there is a plan for approximately 35% capacity growth in additive with 4 additional machines coming onboard by spring and Philips adding more hours to their workdays. If this addition of staffing occurs, the CMA team would grow from 11 to 18
- 203 Navy parts have been printed in the AMCOE; 124 of those prints have been machined
- Funding is confirmed for the Hermle machine, but we are awaiting a formal PO from Austal



## **Specialized Training**

- Work with the Gene Haas Foundation is ongoing to develop courses for robotics integration into CNC machine instruction

## **Integrated Machining Technology**

- The 10<sup>th</sup> cohort of IMT students began this fall
- Plans are underway to develop additional training to refresh the training program

## **Additional Highlights**

- The division continued to host and support record numbers of tours and visits during the quarter, including the following:
  - Hosted a Hawaiian contingent on behalf of NAVSEA interested in the regional talent pipeline
  - A team led by the COMSUBLANT Director, Submarine Requirements and Warfare Development
  - Tidewater Community College
  - Staff from Senator Kaine's Office
  - State Senator Aaron Rouse
  - Virginia Ship Repair Association
  - BWXT and University of Akron
  - PEO-SSBN Gamma Center
  - Austal USA
  - Siemen's Energy
  - Admiral Weeks
  - Phillips Corporation
  - Kamm Consulting
  - PMS 525
  - Virginia State Appropriations Committee
- The Manufacturing Advancement leadership team is developing and defining metrics and reporting mechanisms to help strengthen operational awareness
- The first round of the Sea Cadet program was completed that supports 17- and 18-year-old JROTC students in their exposure to defense manufacturing. Future opportunities are in discussion

## **Contributions to the Strategic Plan**

- **Accelerated Training in Defense Manufacturing**

- Center of Excellence for Education & Workforce Development – ATDM is the pilot for a national network of accelerated training programs aimed at reducing “time-to-talent” for the defense industrial base (DIB) and filling critical skills gaps in defense manufacturing. As a national-in and national-out training platform, it partners with recruiting sources and industries nationwide
- Globally Competitive Ecosystem – ATDM provides a robust level of industry engagement that allows industry to send students for training and place students in employment. As with previous models, such as Integrated Machining Technology, it has been shown that industry is interested in locating near training facilities to recruit workers at velocity and scale, which ATDM will produce. These trained individuals will support a workforce pipeline that will make the region more globally competitive
- Collaborative Team Success – ATDM relies on external partnerships with recruitment sources, job placement entities, industry and technology partners. The multiple subcontractors involved in making the training a success provide opportunities to collaborate with other internal divisions

- **Defense Manufacturing Community Support Program**

- Virginia's Go-To Partner for Business and Economic Growth – DMCSP supports the Virginia Maritime Industrial Base Consortium (VMIBC) as a leading hub for developing skilled workers and the engineering workforce for the maritime industry in Virginia; supports local, regional, state, and national economic development through the designation as a Defense Manufacturing Community (DMC) and the collaborative partnerships created through the VMIBC; IALR serves as the convener of partners to execute the DMCSP grant, providing the ability of IALR to be the go-to partner for the Virginia Department of Veterans and Defense Affairs in developing and enhancing workforce development pipelines that support Virginia's business and economic growth plans
- Center of Excellence for Education & Workforce Development – DMCSP supports education & workforce development through the DMC ecosystem which provides a K-12 to university and beyond workforce training system. This includes career connections, high school, community college, university and adult learner options for training students to support the Virginia maritime industry. DMCSP creates a pipeline for manufacturing engineering technologists and provides continuous improvement into training programs that rely on industry needs. The mission of the VMIBC (the designated DMC community) is to increase manufacturing capacity, capability, resiliency, and diversity in the maritime industrial base by creating a cross-region K-12 to university training pipeline for skilled workers and manufacturing engineers
- Globally Competitive Ecosystem – DMCSP advances and connects

businesses in the region through a strong collaborative network of industry, government and academia. DMCSP will increase the supply of skilled labor and manufacturing engineers that will help to close manufacturing skills gaps, address manpower shortages, build manufacturing capacity and capability, and modernize the workforce to enable the industrial base to fully support the Navy's sustainment and shipbuilding needs. This will position the Commonwealth to be globally competitive in attracting manufacturing industries that are aligned to the skills within the pipeline

- Collaborative Team Success – DMCSP strengthens collaborative, regional education partnerships (ODU, P&HCC, Virginia State University and K-12 school divisions in Southern Virginia and Hampton Roads) and supports internal collaboration through the integration and expansion of GO TEC into the Hampton Roads region through the DMCSP partnership

- **NASAM**

- Center of Excellence for Education & Workforce Development – Through efforts connected with ATDM, the Naval Aviation School of Additive Manufacturing will support active-duty military with Additive Manufacturing (AM) training directly related to Navy needs. These connections will also support the US Navy's effort to modernize the workforce and prepare for increasing AM production

- **Center for Manufacturing Advancement**

- Virginia's Go-To Partner for Business and Economic Growth – The CMA supports Virginia manufacturers in their pursuit of manufacturing optimization and innovation. The CMA offers technical expertise, lab space, equipment and a collaborative environment to help existing and new Virginia manufacturers increase productivity that has direct economic impact. The CMA serves as a centralized resource of emerging, production ready technologies to help drive the success of Virginia manufacturers. The US Navy AM Center of Excellence within the CMA is expected to support additional companies in their ability to produce AM parts for Navy submarines, including companies in Virginia
- Center of Excellence for Education & Workforce Development – Through efforts connected with ATDM, the CMA's AM COE will connect ATDM graduates with Additive Manufacturing (AM) jobs directly related to the Submarine Industrial Base (SIB). These connections will support the recruitment and placement efforts of ATDM. These connections will also support the US Navy and the SIB's effort to modernize the workforce and prepare for increasing AM production
- Globally Competitive Ecosystem – The CMA will allow businesses in Virginia to be globally competitive through innovations in current and new manufacturing processes. The AM COE at CMA will also support a globally competitive ecosystem through development of innovative additive manufacturing strategies, technical data and processes

- Collaborative Team Success - The CMA serves as the go-to hub for manufacturing advancement and innovation for Virginia businesses and beyond. The CMA will bring internal and external partners together to form a cohesive group of manufacturing experts, technical partners, business leaders and government officials. These partnerships and collaboration will drive the projects and programs at the CMA. The projects and programs will lead to positive return on investment for IALR and project partners. Revenue generated through CMA projects will help support the Manufacturing Advancement division as a whole and help provide the required resources to remain industry relevant and globally competitive
- **Specialized Training**
  - Virginia's Go-To Partner for Business and Economic Growth – As one of four HTEC training centers in the country, IALR serves as the Go-To teacher training facility for Virginia
  - Center of Excellence for Education & Workforce Development – The mission of HTEC is to provide a collaborative space in which we collectively develop, deliver, and disseminate the best educational methods and techniques for CNC education in the world. The goal is to drive the upskilling of manufacturing educators, and transform CNC classrooms into modern, high-tech advanced manufacturing labs that both encourage students to seek successful careers in CNC and related fields and ensure that these students are well-equipped when they enter the field. The goal of specialized training within the manufacturing advancement department is to be the Go-To training provider on CNC and related machine technologies, including the upcoming Industry 4.0 integrations within the CMA
  - Globally Competitive Ecosystem – As a partner for the HTEC network and Phillips Corporation, the training facility at IALR serves as a global benchmark as Haas expands into other countries and provides the potential to be a train-the-trainer provider for global Haas activity
- **Integrated Machining Technology**
  - Virginia's Go-To Partner for Business and Economic Growth – IMT has supported extensive business and economic growth in the region by highlighting the ability of the region to train a workforce that can meet demands at multiple levels, from the work floor technician to front line management and beyond. The IMT program is the advanced level training and culmination of the workforce pipeline that begins in middle school. It has been identified as one of the reasons that multiple companies have located in the region and has been the catalyst for allowing IALR to support these companies through rapid launch space and concierge services
  - Center of Excellence for Education & Workforce Development – The IMT program has been a national benchmark for advanced training in CNC machining for years and delegations from multiple states and countries

have visited to learn more about how to execute similar programs. The continuous improvement and adoption of current technology allows this program to support the strategic goal of being a center for excellence for education & workforce development

- Globally Competitive Ecosystem – Technology in manufacturing is rapidly evolving. Providing relevant training in support of industry needs is critical as technology and processes continue to modernize. It is a key factor in providing a globally competitive ecosystem. IMT supports this goal by remaining at the forefront of technology and training and ensuring that students can enter the workforce and provide innovative solutions to workforce challenges

- **Additional Contributions to the Strategic Plan**

- Excellence in Board Leadership - All projects strive for transparency with the Board by providing needs, successes and areas of support required that allow the board to serve as community champions, share successes and stories and support public and private funding support which promotes excellence in board leadership as the board carries out these strategic activities
- Strategic Expansion of Applied Research and Culture of Learning - The Manufacturing Advancement division encapsulates a culture of learning in all projects. It fosters innovation and encourages continued efforts to remain current on the knowledge of existing and emerging