



Department of Defense Manufacturing Technology Program

Promoting domestic advanced manufacturing growth to support the national defense and economic prosperity

Notable Events:

- ManTech at International Manufacturing Technology Show, Chicago, IL: Sep 12-16, 2022
- Pentagon Energy Expo, Washington, DC: Sep 21-22, 2022
- DoD MII 5 year Plan Review, Alexandria, VA: Oct 11-13, 2022
- National Manufacturing Day: Oct 7, 2022

Inside This Issue:

MII Member Events	1
MxD: The Search for Scalable Solutions	2
ManTech Picatinny Visit	2
AIM Photonics Summer Interns Graduate	3
DEIA Project Call	3
News of Note	4
About ManTech	4

MIIs Celebrate Member Network Achievements

On August 2, 287 **NextFlex** members and government partners gathered in-person and virtually for **Innovation Days 2022**: two days of presentations, demonstrations, and a celebration of results of the past year. This year's event featured a keynote presentation by Ms. Barbara McQuiston, Deputy Chief Technology Officer, Science and Technology (DCTO(S&T)) for the Department of Defense. Ms. McQuiston spoke about the importance of the MII network that supports DoD Critical Technology Areas, the role of the institutes in developing next generation technology, and growing the national defense industrial base and manufacturing in the U.S. An amazing exhibit hall of FHE-enabled demonstrators from 46 members and government partners provided the opportunity to share technology learning and the chance to meet potential collaboration partners. Supported by an outstanding member-driven Advisory Committee, this year's Innovation Days elevated the conversation about results collectively achieved in manufacturing and workforce development as well as highlighted the strategic importance of FHE and the member community to the Department of Defense, both for commercial applications and national security.



America Makes' Member Meeting & Exchange

on Aug 15-18, 2022, in Youngstown, OH, was a great success in bringing together industry experts and leaders in additive manufacturing (AM) from across the country. America Makes and local businesses hosted open houses to showcase first-hand the many ways AM technology is changing American manufacturing. Dr. Kevin Geiss, Director of Science & Technology Futures, helped kick off MMX by sitting down to a round table with leaders from both large and small companies to hear about their progress, challenges, and ideas for future collaborations with the DoD. These companies are among the more than 1590 entities from industry, academia and government that are members of one or more of the nine DoD-sponsored public-private partnerships in the MII network.

In his keynote speech, Dr. Geiss emphasized that advanced manufacturing is a vital component of building DoD's enduring advantage and maintaining technology dominance. It's been a decade since the launch of America Makes—the first, and pilot, MII—and the MMX event included a party to celebrate the milestone. The MII network is demonstrating how its unique public-private partnership model is transforming advanced manufacturing and helping build the skilled workforce of tomorrow.



NextFlex leaders (L to R) Dr. Janos Veres, Director of Engineering, Dr. Art Wall, Director of Fab Operations, Dr. Scott Miller, Director of Technology, and Emily McGrath, Director of Workforce Development, participate in a Q&A session moderated by Dr. Giorgio Bazzan, AFRL and NextFlex Government CTO



"If we can't make it, the war fighter can't have it!"

MxD: The Search for Scalable Solutions



Berardino Baratta, new CEO of MxD

Berardino Baratta, the new CEO of MxD (Manufacturing x Digital), recently sat down with *Machine Design* for a discussion on the strengths and priorities of MxD under the new leadership. In his role, Baratta oversees all the technology investments, partner relations and project execution for MxD's more than \$120 million portfolio focused on advanced manufacturing technology, cybersecurity and workforce development.

Baratta talked about MxD's success to date, how more manufacturers could use MxD on their own projects, and the future of digital technology. He noted that in the last three years, MxD tripled the number of active projects to 66 today, across its entire portfolio: digital supply chain, factory floor, cybersecurity and workforce. Today MxD has almost as many active projects as it completed in its first eight years.

"We've started doing some work, in the last two years, with the Department of Defense...facilities to help them modernize. We're working with Rock Island Arsenal here in Illinois...helping them lead some of their

modernization efforts to really start bringing advanced manufacturing to their floor."

"Workforce development is probably the most important thing that we do, because this is really making sure that not only do we have the factories of tomorrow with the technologies of tomorrow, but also the people to run them and to produce the parts that we want." Key to this effort is the development and launch of the Cybersecurity for Manufacturing Hiring guide that identified over 180 roles that [reflect] how cybersecurity affects manufacturing. "In total, we have over 427 roles identified and we built out success profiles and career pathways."

Rounding out the interview were topics including the importance of partnerships, MxD's focus on enabling cybersecurity for smaller companies, targeting internal cybersecurity threats and barriers for advanced computing technologies.

Watch the interview [here](#).

Service ManTech Partnerships

ManTech Tours Picatinny Arsenal Tech Programs

On August 9 - 10, Tracy Frost, Director of the DoD Manufacturing Technology Program in the Office of the Secretary of Defense (OSD), visited U.S. Army DEVCOM-Armaments Center located at Picatinny Arsenal, New Jersey, along with members of the OSD ManTech team for a technical update on existing projects and strategic planning for future collaboration. In 2013, the small caliber manufacturing pilot facility was opened at Picatinny by DEVCOM-Armaments Center and PEO Ammo with a mission to demonstrate new manufacturing processes in munition development. The primary goal for the facility is to transition technology data to suppliers and other organic industrial members that provide life cycle support for munitions programs.

The ManTech leadership team was met by DEVCOM-Armaments Center Technical Director, Anthony Sebasto.

During this visit, the ManTech Manufacturing Science and Technology Program (MSTP) received updates on current manufacturing DEVCOM-AC projects as well as updates from previously funded work.

The technology updates briefed to ManTech leadership included DBX-1 green primer for small caliber munitions, flammable cellulose for disposable cartridge cases and roll to roll printing of non-energetic chaff. ManTech MSTP had previously supplied funding to the chaff work between FY16 and FY21. During this project, the Army principle investigator developed a new material solution and vendor supply chain for non-energetic chaff, which led to multiple follow on projects by the Army S&T and PM community for transitioning these solutions to the warfighter.



AIM Photonics MII Reflects on its Graduating Summer Intern Class of 2022

As summer draws to an end, it's somewhat bittersweet for AIM Photonics to bid farewell to the remarkably bright and talented students in their Summer Intern Class of 2022, as students complete their internships and embark on further studies and future careers armed with the specialized knowledge and skills that could only be gained in a unique work environment like AIM Photonics.

"The goal of AIM Photonics' internship program is to give highly qualified students hands-on education and training opportunities in all aspects of photonic integrated circuit design, fabrication and packaging in our unique R&D/ Manufacturing setting," said Robert Geer, Director of Education and Workforce Development at AIM Photonics. "Students who come through our internship program get a valuable, real world educational work experience in our advanced manufacturing facilities in Albany and Rochester, which then gives them a powerful launching pad for interesting and rewarding employment opportunities in the U.S. integrated photonics industry."

Developing an effective internship program in an emerging technology such as integrated photonics required a

specialized effort. It's important that AIM Photonics provided a learning experience that was both challenging and useful to the intern, while providing them with opportunities to conduct work that contributes directly to the advancement of the technology. That involved matching up students' individual interests and skills with specific projects that must be completed within a defined timeframe.

Read more about the students and their program [here](#).



The AIM Photonics Class of 2022 summer internship program culminated in a research poster session held recently at the Albany Nanotech Complex. Participants included (L-R): Amit Dikshit, technical mentor; Nickolas Fahrenkopf, technical sponsor; Quentin Curry, summer intern; Javery Mann, summer intern; Daniel Crowley, summer intern; Jobayer Hossain, technical mentor, and M. Rakib Uddin, photonic component design engineer. Not pictured: Jaydn Lee, summer intern and Lewis Carpenter, technical mentor.

NextFlex Launches MII Collaborative DEIA Project Call

On August 23, a \$1.9 million Diversity, Equity, Inclusion, and Accessibility (DEIA) Special Call, managed administratively by NextFlex, kicked off with an informational Zoom call followed by release of the funding opportunity announcement (FOA). Four \$475,000 awards with an 18-month period of performance will be made to accelerate the DoD Manufacturing Innovation Institutes' adoption of DEIA as a core mission, expand partnerships with minority-serving institutions or organizations, and enhance the impact of Education and Workforce Development (EWD) programing on underrepresented groups. The project call will help DoD/OUSD(R&E) build workforce capacity in advanced manufacturing by tapping the potential of underrepresented populations and align DoD investments in the MII education and workforce development programs with the objectives of R&E's STEM Strategic Plan. The DoD MIIs will submit abstracts and white papers

for feedback and proposals for scoring within 90 days of FOA. The Office of the Secretary of Defense Manufacturing Technology Office EWD Program will provide technical assistance on change management and partnerships with Minority Serving Institutions through Building Engineering & Science Talent (BEST). A second call is anticipated during fiscal year 2023 to foster the alignment of all nine DoD MIIs.



- ◇ **Accelerate MII adoption of DEIA as a core institute mission.** The goal of prioritizing DEIA is to catalyze and accelerate substantial change in the culture, structure, and operations, enterprise wide, of the MIIs.
- ◇ **Expand MII relationships with MSIs and community-based or national non-profits serving underrepresented groups.** Expanding ties with organizations serving underrepresented groups will increase MII access to valuable networks, capabilities, and pools of talent.
- ◇ **Enhance the DEIA impact of institute EWD programs.** The MIIs are building capacity through a range of program activities that engage diverse populations by creating awareness, developing curriculum and work-based learning, and through mentorships, internships, and apprenticeships.



CONTACT US

Strategic Communications Team

Office of the Secretary of Defense
Manufacturing Technology
Program

Lynn.b.mcconaughey.ctr@mail.mil

FOLLOW US

For the latest updates, follow us
on social media
and visit our website:

<https://www.DoDManTech.mil>

LinkedIn: [Department of Defense
Manufacturing Technology Program](#)

Office of the Under Secretary of
Defense for Research and
Engineering (OUSDR&E):
<https://www.CTO.mil>
@DoDCTO on Twitter

“One tactic we intend to leverage with America Makes and the other institutes, is to focus future DoD investments on addressing targeted challenge problems to meet DoD needs. By ensuring DoD equities are well represented, the MIIs will be able to influence the developing U.S. manufacturing ecosystem to encompass technologies critical for DoD applications, including the DoD’s critical technology areas.”

*-Dr. Kevin Geiss, Director Science &
Technology Futures, at America Makes, Youngstown, OH, Aug. 17th*

“ARM Institute-funded projects are impactful because they bring together diverse teams comprised of academia, end-users, other solution providers, and small businesses. This dynamic enables a variety of perspectives and really allows for impactful solutions to emerge.”

*-Matt Robinson, Program Manager at ROS Industrial Consortium/SwRI
Manufacturing Technologies, an ARM Institute Member*

“The U.S. Department of Defense is really focused on making things at speed and scale as it contributes funding to manufacturing innovation institutes like ARM and BioFabUSA. The DoD cares about this because it’s about national and economic security. If we don’t make these investments now, we will not be able to maintain our leadership position.”

*-Barbara McQuiston, DoD Deputy CTO for Science and Technology,
at BioFab USA Member Meeting, Manchester, NH, June 7th*

News of Note

MMX 2022: Celebrating 10 Years of America Makes & 3D Printing in Ohio

America Makes was launched as the pilot institute, now part of a network of nine.

- <https://3dprint.com/293431/mmx-2022-celebrating-10-years-of-america-makes-3d-printing-in-ohio/>

DOD's Chief Technology Officer Shares Career Advice With Women STEM Majors

Earlier this year, Hon. Heidi Shyu spoke with students at the 2022 Women in STEM conference. Ms. Shyu discussed her own career progression, challenges she faced, and the lessons she learned that allowed her to advance in her career.

- <https://www.defense.gov/News/News-Stories/Article/Article/3007977/dods-chief-technology-officer-shares-career-advice-with-women-stem-majors/>

Biden Signs CHIPS and Science Act

The CHIPS and Science Act intends to invest funds for manufacturing that will leverage interest and additional investments in the ManTech MII Program, while also promoting growth in workforce and education.

- <https://www.msn.com/en-us/news/politics/biden-signs-executive-order-kick-starting-implementation-of-sweeping-us-chip-manufacturing-law/ar-AA1159W8>

About the ManTech Program

The DoD ManTech Program, created in 1956, is composed of the Military Service and DoD Agency (or "Component") investment programs operated out of the Army, Navy, Air Force, Defense Logistics Agency (DLA), Missile Defense Agency (MDA), and Office of the Secretary of Defense (OSD).

The OSD ManTech Office is responsible for administering the DoD ManTech Program by providing central guidance and direction to the Component ManTech Programs. Along with providing oversight to DoD ManTech, the OSD ManTech Office also manages two investment portfolios: the Manufacturing Science & Technology Program (OSD MSTP) and DoD Manufacturing Innovation Institutes (DoD MIIs).

The nine DoD MIIs are proud members of Manufacturing USA, the network of 16 institutes sponsored by the Departments of Commerce, Defense and Energy.

