



REGIONAL ADDITIVE
MANUFACTURING
PARTNERSHIP OF MARYLAND

2016

Annual Report

RAMPMD





Rick Decker, left, Cyrus Etemad-Moghadam, middle, and Dave Wheatley, right, prepare to cut RAMP MD's first birthday cake at its 2015 Open House.

RAMP MD Turns Two

A message from Dave Wheatley

As the owner of a company that uses additive manufacturing technologies to develop products for our customers, I've long understood the potential of additive manufacturing to radically change how products are made. Additive manufacturing has been called the transformative technology of the 21st Century and Maryland is at its leading edge.

However, the capital outlay of investing in state-of-the-art additive manufacturing equipment puts this technology beyond the means of many businesses, which could potentially stunt the growth of the additive manufacturing industry in Maryland.

The Regional Additive Manufacturing Partnership of Maryland (RAMP MD) solves this problem, creating a bridge for companies to access extensive equipment and capabilities through private-public partnerships with federal government

facilities. RAMP MD partners have access to the tremendous resources of Edgewood Chemical Biological Center, which has some of the most advanced capabilities in the nation, as well as 25 years of experience creating solutions using additive manufacturing technology.

For my business, this partnership has provided access to sophisticated equipment that expanded my company's capabilities, and provided access to people with decades of trial and error in this field.

This year RAMP MD celebrates its second birthday. As of this writing, RAMP MD has established 15 partnerships with firms doing business in Maryland and we expect that number to continue to grow. As we turn two, we recognize the successes of the past and the enormous potential of the future.



Dave Wheatley is chairman of the Board of RAMP MD and owner of D. Wheatley Enterprises, a Harford County-based manufacturer of parts for defense and medical applications.

Growth & Highlights

Year Two brought more growth for RAMP MD, as it worked to increase resources and expand opportunities for Maryland's additive manufacturing industry. RAMP MD is grateful for the continued support of RAMP MD's Board of Directors, volunteers, partners, Harford and Cecil County Offices of Economic Development, Economic Alliance of Greater Baltimore, and the Maryland Department of Commerce.



JUNE 2014

- » Former Governor Martin O'Malley signed into law SB 889 establishing the Northeastern Maryland Additive Manufacturing Innovation Authority (renamed RAMP MD) with a mission to further additive manufacturing technology in Maryland. The Authority was formalized on June 22, 2014 with approval of the by-laws of the non-profit, IRS Code 501 (c)(3).



JULY 2014 – APRIL 2015

- » The technical director of the US Army Edgewood Chemical Biological Center (ECBC), and the executive director of RAMP MD signed a Cooperative Research and Development Agreement as the first significant step in making the Authority a productive reality. This overarching agreement accommodates partnerships with numerous private entities.
- » The board submitted per law its business plan to Maryland's Secretary of Commerce. The document provided an overview of RAMP MD, its market position, near-term operating plan and quantitative goals. RAMP MD received start-up funding from MD Department of Commerce, Harford County, and Cecil County.
- » RAMP MD executed 10 separate Joint Work Statements with both large and small firms.



MAY 2015

- » RAMP MD held its first symposium, entitled "Additive Manufacturing: It's more than 3D Printing," which attracted over 150 leaders from industry, academia, government, and education.
- » RAMP MD launched its web site at rampmd.org



JULY 2015 - FEBRUARY 2016

- » RAMP MD held its first anniversary Open House in July, which attracted about 60 people from industry, government, and academia.
- » Legislators and community leaders attended a Legislative Breakfast in September where participants discussed the role of RAMP MD, its Board composition, five-year strategic plan, and future funding sources.
- » Edgewood Chemical Biological Center (ECBC) Advanced Manufacturing Division moved into its new 289,000 SF facility at Aberdeen Proving Ground, Downer Hall, bringing all additive manufacturing capabilities under one roof and providing room for partners to work on site.



MARCH 2016

- » “New Frontiers in Bio-Medical Additive Manufacturing” was the theme of RAMP MD’s March 2016 symposium. Approximately 120 people attended to hear speakers and panelists explore this topic.



APRIL - JUNE 2016

- » Maryland General Assembly passed SB 882, which expanded RAMP MD’s Board membership and officially changed its name to RAMP MD.
- » RAMP MD provided monthly tours of ECBC’s additive manufacturing facilities for potential partners, legislators, and other stakeholders.
- » RAMP MD add two new industry partners to the roster, bringing the total to 15.

About RAMP MD

Additive Manufacturing has the potential to have a tremendous impact on our communities. Not only will the capability create new high-tech jobs for people of all skill levels, it has the potential to change the way we live, work, and play.

In 2014, local leaders recognized that northeastern Maryland had existing additive manufacturing capabilities that could be leveraged to build a regional center of excellence for the industry. This led to creation of state legislation forming the Regional Additive Manufacturing Partnership of Maryland (RAMP MD) passed by the Maryland General Assembly in 2014 to expand the state's capabilities in additive manufacturing.

RAMP MD is a consortium of private businesses, educational institutions, and governmental agencies, working together to achieve three goals:

1. Provide businesses access to additive manufacturing facilities, equipment, and expertise
2. Build the required infrastructure to support the manufacturing base
3. Educate a supporting workforce

Through RAMP MD, companies partner with the U.S. Army Edgewood Chemical Biological Center, which has some of the most advanced additive manufacturing capabilities in the nation and has been using additive manufacturing technology for over 25 years. The collaboration permits manufacturers





Mark Schlein, left, head of advanced manufacturing for ECBC, talks with RAMP MD partner Chad Schneider, owner of Root3 Labs.

to move a product from inspiration to production faster than ever.

RAMP MD currently holds partnership agreements with 15 industry partners and is in the process of negotiating more.

Part of RAMP MD's mission is to improve the accessibility of and connections between the existing resources in the region. RAMP MD does this by:

- Fostering partnerships among Federal, State, and local government, businesses, educational institutions, entrepreneurs, and innovators.
- Supporting manufacturing businesses in retaining and expanding production and jobs.
- Obtaining, coordinating and disseminating marketing resources to promote and enhance additive manufacturing opportunities and investment in the region.

- Facilitating the involvement of Harford Community College, Cecil College, Towson University, and other segments of the higher learning community in developing and sustaining a skilled AM workforce through degree, certification, specialized training, and continuing education programs.
- Assisting Cecil and Harford County Public Schools in preparing students for AM employment.
- Supporting priority access to workforce training funds and enterprise investment tax credits for entities that are investing resources and creating jobs.
- Pursuing public and private funding initiatives.

Year Two Highlights

Legislative Outreach



Maryland Governor Larry Hogan, center, signs SB882. Senator JB Jennings, left, was the bill's sponsor. Bryson Popham, right, represented RAMP MD at the bill-signing.

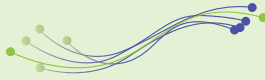
In September 2015, RAMP MD held its annual Legislative Breakfast. The goal of this meeting was to educate legislators about new applications of additive manufacturing and to inform legislators about the mechanism behind RAMP MD's private-public partnerships (P3), which could be adopted by other communities to encourage growth of additive manufacturing in other regions. Approximately 35 legislators and RAMP MD Board members attended the session.

RAMP MD also presented proposed changes to legislation that would allow the non-profit to expand industry participation on its Board of

Directors, and officially change the name to RAMP MD. The bill, SB 882, passed the Maryland House and Senate unanimously and was signed by the Governor in May.



State Senator Bob Cassilly, center, talks with RAMP MD Board members during the 2015 Legislative Breakfast.



RAMP MD Symposium on Bio-Medical Additive Manufacturing

Additive manufacturing is revolutionizing the way products are designed and manufactured. But nowhere is it revolutionizing an industry more than in bio-medical applications. Additive manufacturing is resulting in shorter and less invasive surgery, faster recovery, reduced cost, and increased capabilities. Because of the enormous bio-medical capability in Maryland, our state is on the leading edge of the transformations additive manufacturing will bring to the health and medical industry.

In March, RAMP MD held a Symposium entitled, “New Frontiers of Bio-Medical Additive Manufacturing,” which attracted about 130 attendees and speakers from Walter Reed, DARPA, Naval Research Lab, Army Research Lab, Johns Hopkins, University of Maryland, University of Delaware, WL Gore, Terumo, and many other organizations from around the region. The event was held at the new Cecil County School of Technology



Dr. Peter Liacouras, from Walter Reed National Military Medical Centers talks to RAMP MD Symposium participants about his organization's application of additive manufacturing.

in Elkton because Northeastern

Maryland is home to many companies with significant capabilities in bio-medical additive manufacturing, such as WL Gore, Terumo Medical, Operative Experience, Micropore, and Graftworx.



**Congressman
Andy Harris,
center, talks
with RAMP MD
Board members
and partners at
RAMP MD's 2016
symposium.**

RAMP MD Partnerships

While the cost of additive manufacturing is decreasing for consumer applications, high capital outlay can be a barrier for business adoption of additive manufacturing technologies and applications.

We are fortunate because here in Maryland we have federal lab facilities that have already made multi-million dollar investments in additive manufacturing equipment and resources. And they have a mandate for technology transfer, meaning the mechanisms exist for public-private partnerships. But the process for partnering with the federal government can be complicated for a small business or start-up.

To streamline this process, and expand the use of additive manufacturing technology, the Maryland General Assembly established RAMP MD to grow the additive manufacturing industry in Maryland.

RAMP MD's job is to attract and connect industry partners with our region's capabilities and resources in additive manufacturing. In doing so, RAMP MD is expanding the additive manufacturing industrial base, and adding local jobs to Maryland's economy.

RAMP MD established an overarching Cooperative Research And Development Agreement (CRADA) with US Army Research Development and Engineering Command. Under this agreement, private industry can access the facilities and expertise within the Edgewood Chemical Biological Center and the US Army Research Laboratory. Current partners collaborate with these agencies on a variety of additive manufacturing products.

On the follow pages of this Annual Report, we spotlight a few of these organizations and their work.

CURRENT PARTNERS

- RPM Tech
- Integrata Security, LLC
- Xometry
- Orbital ATK Missile Defense & Controls
- Danko Arlington, Inc.
- Root3 Labs, Inc.
- iDim LLC
- LEIDOS Corporation
- D. Wheatley Enterprises, Inc.
- UMBC
- Direct Dimensions
- Quicksilver
- Unitec
- BME Systems

Partner: Danko Arlington

Almost 100 years ago, Joseph O. Danko, Sr. entered the manufacturing business when he established the Danko Pattern and Manufacturing company at the corner of Light and Lee Streets in Baltimore City. The company produced patterns for railroad switches, locomotive fire box grates, wheels, and other components used at the B & O's Mount Clare Shops, Roundhouse, and Bethlehem shipyards.

Over the decades, the company prospered by incorporating new technologies, and apprenticeship programs, and adding new capabilities to meet customer demands. Two world wars and 100 years later, Joseph's grandson John, now president of Danko Arlington, Inc., is moving the company into the modern age, incorporating additive manufacturing technologies

into its service offerings for clients in military and commercial sectors.

Rapid prototyping has moved to the top of the list of capabilities, and Danko Arlington claims the largest commercial 3-D printing capacity in the Mid Atlantic region. Each machine can print within an envelope of 36" x 24" x 36" with accuracies of .0035" inches or +/- .0015 inch per inch, creating thermoplastic models, prototypes, and production parts. Danko Arlington partnered with RAMP MD to ensure that it could handle a sudden surge in customer demand, and as back-up capability.



John Danko holds a 3D printed copy of the key to the home of Elizabeth Anne Seton, made by Danko Arlington when President Obama presented the original key to Pope Francis upon his arrival at the White House in September 2015, as an official United States gift to the Vatican. Photo courtesy Danko Arlington.

Danko Arlington employs about seventy full time people and is a certified SBA Small Business HUBZone concern. As a result of the company's investment in additive technology for its tooling, the company is a low cost provider of

complex foundry tooling, which traditionally had been made in wood or metal by skilled craftsmen who have long retired. Danko performs spare part casting work for the Department of Defense, Northrop Grumman, Lockheed Martin, and General Dynamics.

The influx of many new 3-D additive tools has also spurred the company to invest in state-of-the-art metal casting solidification software to simulate the cooling of metal for many of its 100% x-rayed critical components, laser scanning for 100% casting dimensional inspection, and new multi-axis CNC machinery to turn, mill, drill, and tap castings in one operation.

In 2016, the company re-acquired an adjacent 20,000 square foot facility for expansion. The facility coincidentally was built by Joseph O. Danko, Sr. in 1953 as a machine shop, then later sold in 1959, and had been a warehouse over the past five decades. The company plans to incorporate advanced assembly in the refurbished facility for continued progression in to next-generation manufacturing.

Danko Arlington's marketing plans include fostering greater relationships with outstanding organizations like RAMP MD through open houses, conferences, training, and information exchanges. The company continues to be an anchor for manufacturing jobs in Northwest Baltimore's Arlington neighborhood, employing its neighbors who include ex-offenders and those from recovery program.

Danko Arlington offers apprenticeship programs for students from local schools. In the picture below, Danko gives a tour to students from Community College of Baltimore County. Photo courtesy Danko Arlington.





Partner: Root3 Labs

Root3 LabsSM was founded in 2012 by Chad Schneider, P.E., a mechanical engineer with over 18 years of engineering R&D and product design experience, to turn ideas into prototypes and prototypes into finished products. With a current staff of three experienced engineers with broad expertise and a variety of part-time support, Root3 supports a variety of customers and projects.

Root3 Labs focuses on engineering research and development for the medical device and defense industries. Its clients appreciate the ability to quickly develop working prototypes to evaluate concepts, and Root3's experience working with safety, reliability, and risk variables in strict regulatory environments.

Root3 Labs works with doctors, manufacturers, and federal laboratories looking for an experienced engineering resource to support their research and development activities.

As an example, Root3 recently collaborated with a trauma physician at University of Maryland to develop a novel method to insert a feeding tube under ultrasound guidance so that non-surgical providers can perform the procedure outside the hospital setting with inexpensive equipment while reducing the rate of complication.

Another recent product is a wearable device that locates and tracks personnel in areas where GPS is not available, such as indoors or underground. Root3 Labs used

additive manufacturing technologies to quickly fabricate prototypes to evaluate the look, feel, and functionality of the device. Root3 used a wide array of 3D printing techniques and materials to develop this prototype. Root3 has the capability to test fit and functionality, demonstrate mechanical concepts, or build fixtures to use in the fabrication or assembly of other components.

Through its partnership with RAMP MD, Root3 Labs has gained access to large-scale additive manufacturing equipment and expertise.

This summer, Root3 Labs is opening up a new prototyping and manufacturing facility just outside of Baltimore.



**Chad Schneider
of Root3 Labs
talks about his
company's products
with attendees of
RAMP MD's Open
House in 2015.**

Partner: Unitec

Unitec delivers hardware and software products to the car wash industry. Specifically, Unitec is responsible for the car wash code entry interface that customers use to order and pay for car washes at gas stations and other points of sale.

Unitec's history traces back to the 1980s when the founders of Unitec developed the first discreet code entry system for the car wash market. From a basement workshop the two partners designed, produced and marketed their "Touch N'Go" system engineered to prevent the costly abuse inherent in the then current 'code-of-the-day' system. Unitec was incorporated in 1985 and was in full production by 1987.

Since then, Unitec has developed new products for the car wash market, incorporating new technologies as they became available. Compared to the early products, today's car wash owners enjoy a suite of new capabilities, including touch screen technology, remote management, and embedded marketing programs.

Currently Unitec has 70 employees and is headquartered in Elkridge, MD.

Unitec signed an agreement with RAMP MD so that it can collaborate with 3D printing experts on prototype development and low rate production. Unitec is also exploring different 3d methods to develop new product designs,



and experimenting with both cosmetic and functional changes.

Unitec developed the first discreet code entry system for the car wash market. Unitec is collaborating with RAMP MD to further improve design and function of its products. Photo courtesy Unitec.

Partner: Xometry

Xometry provides the next generation of advanced manufacturing solutions by integrating 3D printing of plastics and metals, CNC machining, sheet metal, casting, and proprietary technology to build parts and prototypes on-demand for a variety of customers. Using a web interface, Xometry customers upload a computer-aided design file and can price, manage, and order parts, in addition to getting live engineering assistance.

Founded in 2013 by Randy Altschuler and Laurence Zuriff, Xometry has quickly found its market niche and supports a range of companies, including Toyota, Caterpillar, US Department of Defense, Boeing, Proctor & Gamble, and start-ups.

Additive manufacturing is an important part of Xometry's offerings, allowing it to offer on-demand

manufacturing and small quantity production. For example, Xometry has used their large format FDM printers to make purpose-built fixtures for major automotive production lines to hold hydraulic tubing.

Xometry looks forward to opportunities brought through the Joint Work Statement CRADA developed with RAMP MD and Edgewood Chemical Biological Center.

Xometry's capabilities include CNC machining, sheet metal fabrication, direct metal laser sintering, selective laser sintering, fused deposition modeling, polyjet 3D, metal binder

jetting, and urethane casting.

Xometry plans to expand its online interface, www.xometry.com, offer more capabilities and increase production capacity.



Xometry employees participated in the White House's National Week of Making initiative in June 2016, and hosted entrepreneurs for an information session on 3D printing for start-ups. Photo Xometry.



More RAMP MD Partners

RPM Tech

RPM Tech provides technology consulting, product design and in-house prototyping to offer end-to-end solutions to the high tech industry. RPM Tech has been involved in a variety of military and homeland security projects from design to qualification and production. Projects have included tracking, positioning devices, rugged power supplies, rugged networking modules and fabric antenna pouches. With extensive experience in communication, defense, telecom, medical, industrial, energy and commercial industries, RPM Tech has developed a broad base of partners that allow rapid development using the best technology. RPM Tech works to optimize efficiencies and reduce cost while providing superior technologies to its customers. For more information, visit www.rpm-tech.com.

Integrata Security, LLC

Integrata Security is a cyber security firm offering a suite of wireless intrusion detection and prevention solutions suitable for enterprises with the highest wireless security concerns. Its devices combine software, network management, and hardware solutions. For more information, visit www.integratasecurity.com

Orbital ATK Missile Defense & Controls

Orbital ATK designs, builds, and delivers space, defense, and aviation-related systems to customers around the globe. The company is a world-class manufacturer of composite structures for commercial and military aircraft and launch vehicles. Orbital ATK uses additive manufacturing technology to complete quick turnaround prototype and multi-part run jobs. The company

specializes in machining difficult types of materials, ranging from rubber and composites to rare materials. Visit www.orbitalatk.com for more information.

D. Wheatley Enterprises, Inc.

D. Wheatley Enterprises, Inc. (DWE) is a plastics engineering & manufacturing company that services the medical, defense, and aerospace industries. Headquartered in the Aberdeen Technology Park, its facilities cover 40,000 sq. ft. and house engineering, molding and assembly operations. A second campus located in Woodlawn, MD has full factory capability with an additional 40,000 sq.ft. of manufacturing space. DWE offers over 25 years experience integrating injection-molded plastic products into medical, aerospace and defense systems, particularly engineered plastics for the NBC protection/detection field. For information, visit www.dweplastics.com.

iDim LLC

A Harford County-based electronics manufacturer, iDim designs and manufactures lighting controls and solutions and provides residential and commercial customers with innovative technology designed to reduce energy consumption, enhance the quality of life, and control all their lighting sources. For more information, visit www.idimllc.com.

Leidos

Leidos is a science and technology solutions leader working to address some of the world's toughest challenges in national security, health, and engineering. The company's 22,000 employees support vital missions for government and the commercial sector, develop innovative solutions to drive better outcomes, and defend our nation's digital and physical infrastructure from 'new world' threats. Leidos is headquartered in Reston, VA, and its local offices are in Abingdon. Visit www.leidos.com for more information.

UMBC

UMBC is a dynamic public research university integrating teaching, research and service to benefit the citizens of Maryland. UMBC emphasizes science, engineering, information technology, human services and public policy at the graduate level. UMBC contributes to the economic development of the State and the region through entrepreneurial initiatives, workforce training, K-16 partnerships, and technology commercialization in collaboration with public agencies and the corporate community. For more information, contact www.umbc.edu.

Direct Dimensions

Direct Dimensions specializes in the on-site application of digitizers, laser scanners, and the conversion of complex three-dimensional data into 3D computer models. Now 14 years old, Direct Dimensions has expanded from Aerostructures and Military Engineering applications, into cultural

preservation, medical prosthetics, and even color 3D imaging for consumer applications. Please visit <http://www.dirdim.com> for more information.

Quicksilver

Quicksilver Analytics, Inc. (QS) is an Service Disabled Veteran Owned Small Business that provides custom chemical and biological detection products and services to the U.S. Government, civilian agencies and individuals around the world. For more information, please visit <http://www.chembiokits.com>.

BME Systems

BME Systems creates instrumentation and software used in biomedical research by biotechnology, pharmaceutical and medical research companies and institutions. BME's products include informatic, mechanical, and electronic engineering tools and products. For information, visit www.bmesystems.com.

About Additive Manufacturing

From custom medical devices to buildings, additive manufacturing is changing everything we make and the way we make everything. It is the process of producing a three-dimensional object from a digital file by layering materials. The term additive manufacturing encompasses multiple technologies, such as 3D printing, rapid prototyping, direct digital manufacturing, just-in-time manufacturing, layered manufacturing, and additive fabrication.

The process starts with a 3D computer-aided design file sent to a 3D printer, which then creates layers upon layers of precisely measured

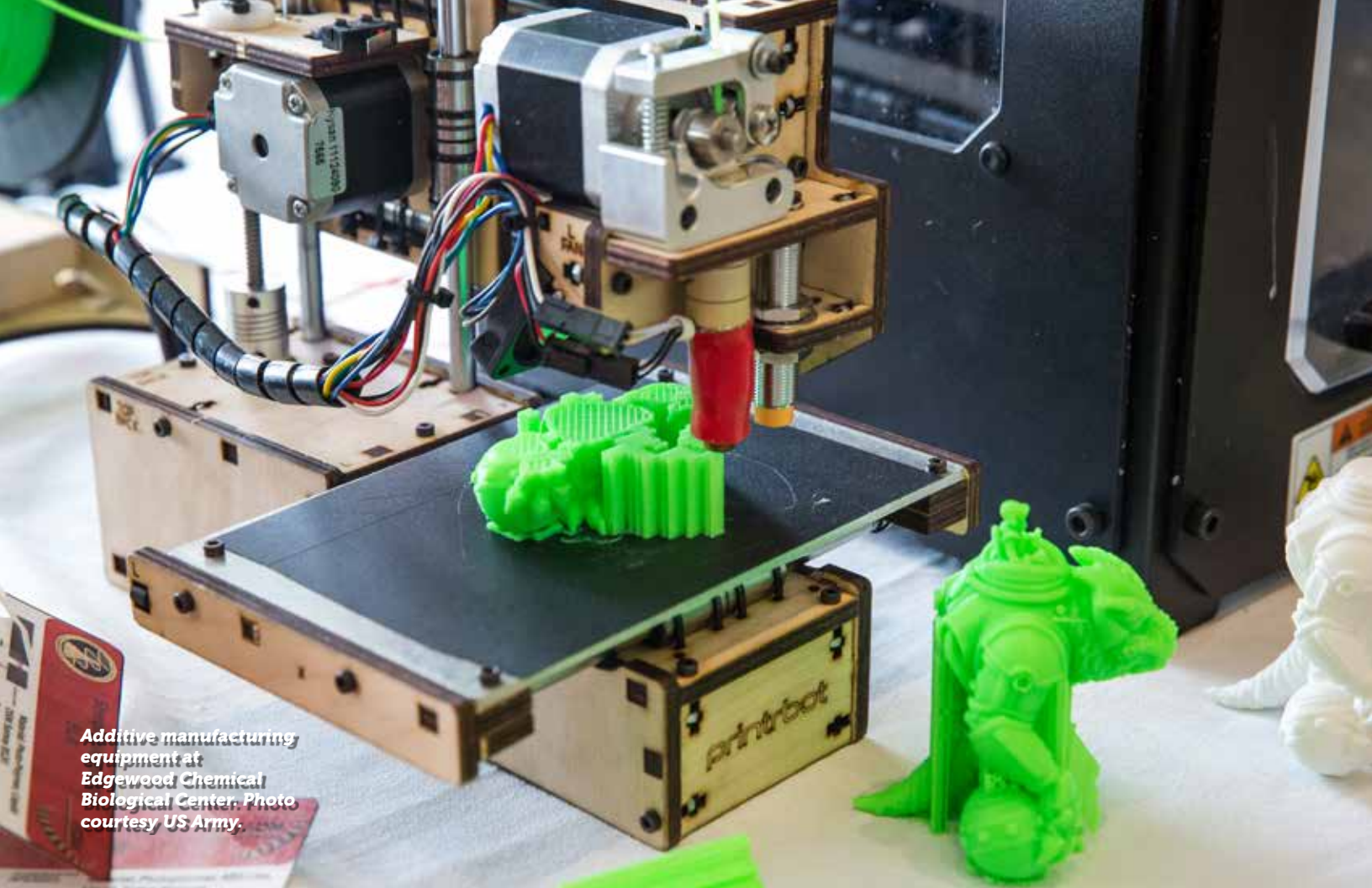
and formed materials, such as plastics, rubber, metals, or ceramics. This is different from traditional manufacturing technologies, which is considered a “subtractive” process where you start with a block of material and remove what you don’t need. As a result, additive manufacturing can be more efficient, flexible, and less wasteful. Additive manufacturing also reduces the time and costs to bring a new product to market because it can generate single prototypes that can be modified and re-printed for testing until the best final product is achieved.

The industry continues to grow at an impressive rate. A recent study conducted by Wohlers Associates, a 3D printing consulting group, reported that the industry has surpassed \$5.125 billion and some experts expect it to top \$20 billion by 2020, as desktop usage expands.

One of the areas of rapid growth in adoption and application is in the bio-medical industry. Because of Maryland’s network of medical research and clinical facilities, this presents an unprecedented opportunity for collaboration in Maryland to lead the world in bio-medical additive manufacturing.

Any industry that has a manufacturing component can adopt additive manufacturing technologies. Here are examples of specific additive manufacturing applications:

- Highly specialized and lightweight medical devices
- Bio-printing of prosthetics and tissue
- Models and buildings in the construction industry
- Design and manufacturing of custom and racing auto parts
- Engine and turbine parts for the aerospace industry
- Jewelry and household objects



**Additive manufacturing
equipment at
Edgewood Chemical
Biological Center. Photo
courtesy US Army.**

Looking Forward

Additive manufacturing has the potential to bring thousands of high-paying jobs to the state and dramatically increase Maryland's manufacturing footprint in the region. The Regional Additive Manufacturing Partnership of Maryland (RAMP MD) works to expand additive manufacturing in Maryland by creating opportunities for existing and start-up manufacturers through partnerships with federal laboratories.

The start- and scale-up phase is one of the most difficult for a manufacturer and RAMP MD's partnership structure solves this problem

by linking small businesses with government equipment and expertise that they would not normally be able to access. This model has worked for 15 companies in Maryland so far, with more coming on board each year.

RAMP MD is also effectively building a networked community of practice for additive manufacturing entrepreneurs across northern Maryland, creating an environment for information sharing, collaboration, and the exchange of best practices.

Looking forward, RAMP MD will continue to create opportunities for the additive manufacturing industry

through its Symposia, partnership opportunities, and work with school systems and community colleges so our students can take advantage of this growing industry.

We appreciate the continued support of the Maryland Department of Commerce, Harford and Cecil County governments, Edgewood Chemical Biological Center, and the many private sector organizations that participate in our events. We look forward to sharing the success of this coming year with you.

Rick Decker
Executive Director



2015–2016 Board Members

Randy Altschuler,
Xometry

Dr. Mary Way Bolt, Cecil College

John Desmone,
Towson University

Chris Cosgrove,
SURVICE
Engineering

Robert Daidone,
Orbital ATK

Bruce England,
Susquehanna
Workforce
Network

Jeff Fuchs,
MD Advisory
Commission on
Manufacturing
Competitiveness

Mike Galiazzo,
Regional
Manufacturing
Institute

Michael Gill, MD
Department of
Commerce

Mary Hastler,
Harford County
Public Library

Karen Holt,
Harford
County OED

Rod Hudson,
Quicksilver

**Dr. Jeffrey
Lawson,** Cecil
County Public
Schools

Rob Limpert,
Harford County
Public Schools

John Mayhorne,
Harford
Community
College

Harry McArthur,
Terumo

Jill McClune,
Army Alliance

Dan McDermott,
Upper Shore
Workforce
Investment Board

Morgan Miller,
Cecil County
Public Library

Mike Parker, NMTC

Mark Schlein,
Edgewood
Chemical
Biological Center

Lisa Webb, Cecil
County Office
of Economic
Development

Dave Wheatley,
D. Wheatley
Enterprises, Inc.

**RAMP MD
Executive
Director Rick
Decker, right,
presents a
RAMP MD shirt
to Congressman
Andy Harris in
appreciation
of his keynote
address at
RAMP MD's 2016
Symposium.**

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