



2019 MIF Annual Report

Connecticut[®]

Manufacturing
Innovation Fund
Advancing Manufacturing Faster

MIF | 2019 Annual Report

This Annual Report recaps the initiatives supported by investments from the Manufacturing Innovation Fund (MIF) — and the impact those investments have had on the economic vitality of Connecticut, the growth of our manufacturing businesses and the development of our advanced manufacturing talent pipeline.

Key Statistics Advanced Manufacturing in Connecticut	2
Overview Manufacturing Innovation Fund	3
Financial Overview	4
Program Reports Initiatives Funded by the MIF	
Accelerating Business Growth	5
▪ <i>Voucher Program</i>	6
▪ <i>Energy on the Line Program</i>	7
Helping Businesses Cultivate Talent	8
▪ <i>Incumbent Worker Training Program</i>	9
▪ <i>Apprenticeship/Pre-Apprenticeship Program</i>	10
Helping Individuals Investigate Careers	11
▪ <i>College Connections Program</i>	12
▪ <i>Connecticut Dream It. Do It. Program</i>	13
▪ <i>Young Manufacturers Academy Program</i>	14
Facilitating Innovation	15
▪ <i>Research and Innovation Initiatives</i>	16
Designated Communities	17
Advisory Board of Directors	18

Key Statistics | Advanced Manufacturing in Connecticut

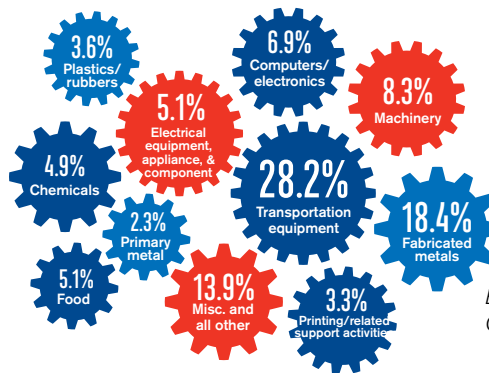
Connecticut's advanced manufacturers continue to be a powerhouse for economic growth. The sector employs almost one out of every ten Connecticut workers. It represents nearly 11% of Connecticut's Gross State Product (GSP). Furthermore, it generates high return in downstream activity — a strong stimulus for economic development. To keep these metrics improving steadily and rapidly, the MIF helps businesses stay ahead of the competitive curve. Many of the initiatives are focused on Connecticut's small and mid-sized manufacturers, and most of the programs have leveraged significant industry investments in technology, capacity or training.

Jobs/Businesses



Manufacturing directly supports **160,900 employees** and an annual payroll of **\$14.9 billion**.

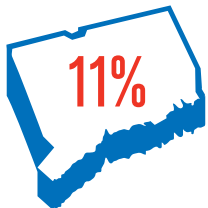
Connecticut Business & Industry Association, Connecticut Manufacturing Report 2019



4,400+ companies are involved in precision manufacturing in CT.

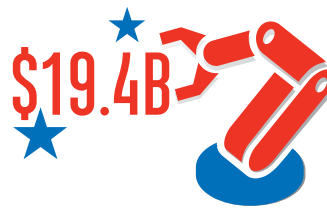
Economic Modeling Specialists, Inc.; CERC calculations 2018

Manufacturing Impact



Advanced manufacturing generates nearly **11%** of Connecticut's gross state product (GSP).

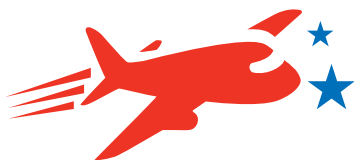
National Association of Manufacturers, Connecticut Facts 2019



Connecticut manufacturers bring in nearly **\$19.4 billion** in defense contracts.

State of Connecticut Office of Military Affairs Annual Report, Fiscal Year 2018-2019

Exports



Connecticut manufacturers export **\$16 billion+** each year, representing **92%** of the state's exports.

National Association of Manufacturers, Connecticut Facts 2019



France, Germany and Canada were the **top 3** destinations for goods exported from Connecticut in 2018.

U.S. Census Bureau, Origin of Movement Data Series, 2019

Overview | Manufacturing Innovation Fund Impact

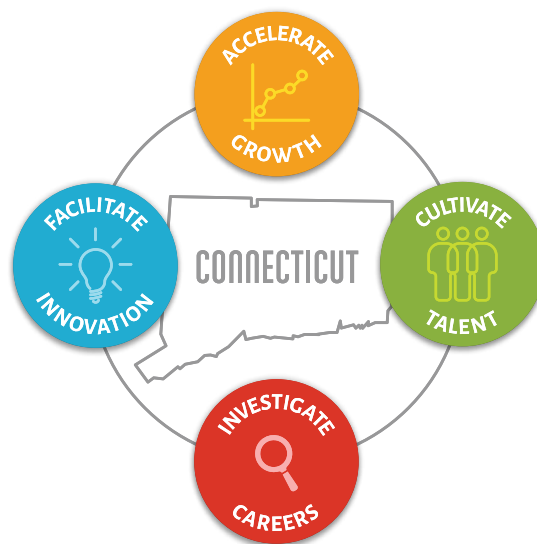
The \$75 million fund has launched many successful initiatives that facilitate technology innovation, accelerate growth through supplier networks and cultivate talent development. As of the end of Fiscal Year 2019, \$60.6 million had been approved to fund projects and initiatives.

Mission and strategic objectives

The Manufacturing Innovation Fund was formed to ensure that manufacturers in the state have access to the tools, training and innovation they need to be competitive in an ever-changing and competitive marketplace.

Key partners

Creating a vibrant ecosystem in manufacturing requires a collaborative effort through key partners in industry, academia, not-for-profit, labor, and state, regional and federal governments.



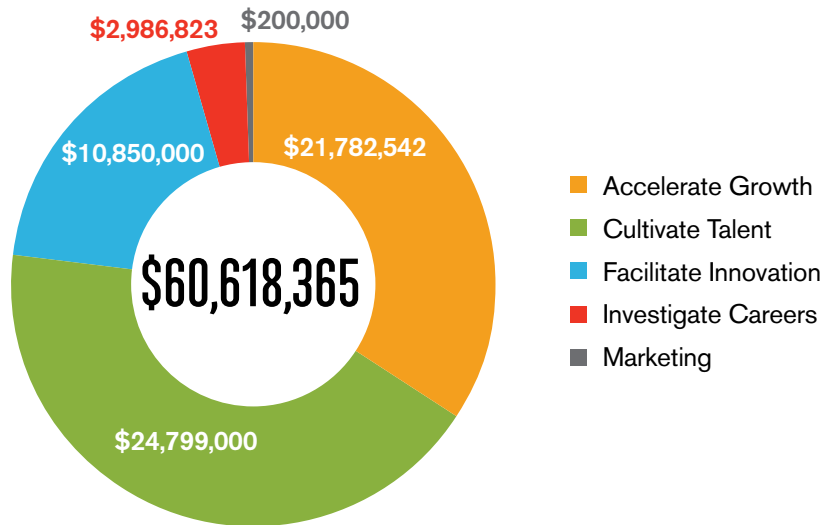
Manufacturing Innovation Fund results by fiscal year

Metrics	2015	2016	2017	2018	2019	Cumulative Totals
Board-Approved Program Funds	\$26,829,000	\$5,347,200	\$11,594,865	\$14,442,678	\$2,404,622	\$60,618,365
Total MIF Funding for Companies' Projects and Initiatives	\$4,448,675	\$9,420,193	\$18,056,424	\$12,813,099	\$12,646,625	\$57,385,016
Total Investment*	\$26,479,000	\$46,969,084	\$25,771,751	\$25,223,192	\$33,112,460	\$156,855,487
Companies	120	299	478	383	395	1,675
Jobs Retained/ Created	0	1,911	2,585	4,917	4,925	14,338
Employees Trained	1,400	1,360	4,554	7,077	5,797	20,188
Apprentices	0	108	134	151	107	500
Pre-Apprentices	0	0	21	54	75	150
New Programs	3	2	4	2	0	11

*Total value of projects and initiatives, which includes private industry, state and federal matches

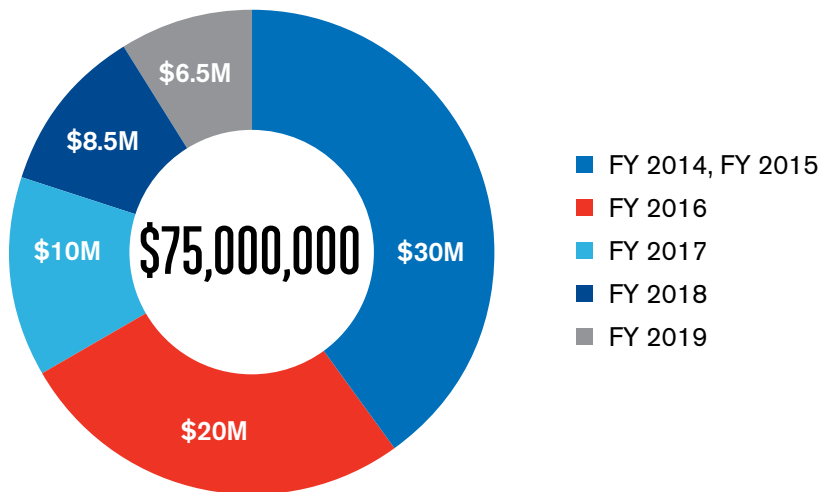
Financials

Total committed funds of \$60.6 million* as of June 30, 2019



*Includes the 5% statutory allowance for program administration

Legislative authorization by year 2014-2019





“ We are seeing increased efficiency, better control of our production processes, and a greater expertise that will allow us to excel and better differentiate ourselves from our competitors. The assistance of this grant program has been tremendous for the growth of our company. We are very grateful. ”

Kyra Harnett, Co-Owner, Twenty2, LLC, Bantam, CT



Manufacturing Voucher Program

Administered by CCAT



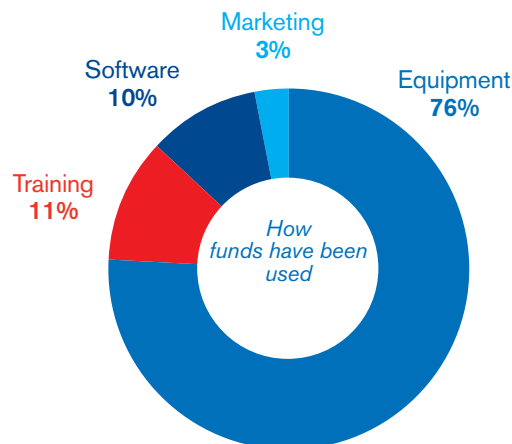
To date, 524 Connecticut companies have capitalized on the Manufacturing Voucher Program: upgrading equipment and processes, training employees on new skills, and incorporating the latest software into their IT systems. As of June 30, 2019, the MVP has provided more than \$18 million in grants that have acted as a catalyst for over \$75 million of industry, state, and federal matches. By leveraging the MVP to innovate, manufacturers optimize efficiency while they maximize profitability.

WHY this is critical

Bringing critical technologies online is an increasingly expensive proposition for today's manufacturers. Not only do they need to invest in sophisticated new equipment and software, but they may also need to test new materials, restructure their processes and upgrade the skills of the workforce to truly maximize their returns on those investments.

HOW this program works

The Manufacturing Voucher Program can help defray the significant cost of investing in state-of-the-art manufacturing advances. Eligible companies can apply for matching grants from \$5,000 up to \$50,000 to fund a wide array of advancements — from specialized equipment and workforce training to R&D and marketing.

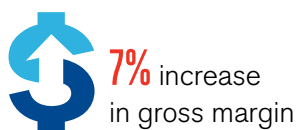


WHAT economic impact/business results this program has delivered by fiscal year

Cumulative Metrics	2015	2016	2017	2018	2019
Funding to Companies	\$3,376,987	\$8,192,411	\$13,206,474	\$16,369,636	\$18,850,078
Total Investment*	\$7,000,000	\$32,769,644	\$50,198,820	\$63,110,525	\$75,856,168
Companies Assisted	91	262	354	444	524
Jobs Created/Retained	0	381	548	818	984

*Total value of projects and initiatives, which includes private industry, state, and federal matches

As of 2019: The Voucher Program has helped recipients generate these business results.**



**Self-reported by company participants

Energy on the Line Program

Administered by the Connecticut Green Bank



Connecticut businesses are installing solar panels, upgrading to energy-efficient heating and cooling, and achieving new savings through Energy on the Line — a partnership with the Connecticut Green Bank's C-PACE (Commercial Property Assessed Clean Energy) program. With board-approved funding of \$800,000, Energy on the Line has awarded grants totaling more than \$399,000 to keep Connecticut companies on the forward edge of energy efficiency.

WHY this is critical

Connecticut has some of the highest energy costs in the country. These costs especially impact manufacturers, whose businesses are more dependent on electric power than those in other sectors. Manufacturers and building owners like the idea of cutting their energy bills, but the upfront costs of these improvements stop many companies from making them.

HOW this program works

Through the Energy on the Line program, the Manufacturing Innovation Fund provides upfront grants of up to \$40,000 per project.

The Connecticut Green Bank connects participating companies to C-PACE financing, which helps defray the total upfront cost of energy efficiency, and businesses can also take advantage of incentives and tax credits to further defray the costs.

WHAT economic impact/business results this program has delivered by fiscal year

Cumulative Metrics	2016	2017	2018	2019
Funding to Companies	\$25,729	\$68,418	\$359,115	\$399,115
Total Investment*	\$359,761	\$888,684	\$6,058,694	\$7,164,381
Companies Assisted	1	4	17	18
Jobs Created/Retained	3	4	54	58

*Total value of projects and initiatives, which includes private industry, state, and federal matches

As of 2019, the Energy on the Line program has generated these business results.



Saved the 18 participating businesses enough electricity to power **425 homes each year**



Building owners expect to save **\$17.2 million** over the useful lives of these improvements

TALENT



“ Sign Pro, Inc. has leveraged productivity, growth and competitive advantage through accessing Manufacturing Innovation Funds through the Incumbent Worker Training program. This funding resulted in our growth to 70 employees and positioned us for selection as a ‘2019 Best Place to Work in Connecticut.’ ”

Peter Rappoccio, President, Sign Pro, Inc., Plantsville, CT • “A 2019 Small Business Leadership Award Recipient”



Incumbent Worker Training Program

Administered by the Department of Labor



19,538 Connecticut workers have now upgraded their skills through the Incumbent Worker Training Program. Capitalized with \$13.3 million, the program focuses on training in advanced manufacturing skills, but it also encompasses lean manufacturing, technical and leadership training. It's an investment in the talent pipeline, enabling companies to promote from within as they replace senior personnel who retire.

WHY this is critical

As technology evolves, manufacturers need to continually invest in new equipment. But to truly optimize these investments, their employees need to learn how to operate this high-tech equipment — and how to integrate it into lean manufacturing processes. However, given today's tight margins, companies don't always have the funds to pay for this essential training.

HOW this program works

The Incumbent Worker Training Program was designed to help defray the costs of training employees on new technology and processes. It provides companies with matching grants of up to \$50,000 to help pay for training that keeps employees' skills up to date and to develop the next generation of leadership.

WHAT economic impact/business results this program has delivered by fiscal year

Cumulative Metrics	2015	2016	2017	2018	2019
Funding to Companies	\$1,076,807	\$3,475,867	\$7,185,112	\$10,025,493	\$13,300,000
Total Investment*	\$1,076,807	\$3,475,867	\$7,185,112	\$10,025,493	\$13,300,000
Companies Assisted	29	108	251	345	446
Jobs Retained/Created	1,530	2,409	3,939	8,536	12,114
Workers Trained	1,400	2,652	7,072	14,149	19,538

**Total value of projects and initiatives, which includes private industry, state, and federal matches*

As of 2019, Incumbent Worker Training has generated these business results.



446 participating companies



81% of companies report skill upgrades from trainees



63% of companies expected productivity gains

Apprenticeship/Pre-Apprenticeship Program

Administered by the Department of Labor



Today, 198 employers have boosted their talent resources through this program, training 650 apprentices and pre-apprentices. \$10.8 million in MIF funding helps pay for third-party training and subsidize wages for new workers while it trains and credentials them for the jobs of tomorrow.

WHY this is critical

Connecticut's manufacturing sector is growing faster than it has in years, creating demand for more skilled workers. Coupled with the fact that a significant portion of today's workers are nearing retirement age, our manufacturers need to train thousands of new workers in occupations like CNC machining — which can be costly and time-intensive.

HOW this program works

The Apprenticeship/Pre-Apprenticeship Program helps defray the costs of training new and incumbent workers by subsidizing wages and classroom education for registered apprentices, allowing such workers to obtain the necessary credentials after completing their apprenticeships. It also helps support pre-apprenticeships for high school and college students who want to pursue manufacturing careers.

WHAT economic impact/business results this program has delivered by fiscal year

Cumulative Metrics	2016	2017	2018	2019
MIF Funding	\$7,799,000	\$7,799,000	\$10,799,000	\$10,799,000
Total Investment*	\$10,391,000	\$13,103,000	\$19,727,000	\$22,799,000
Companies Assisted	48	87	153	198
Apprentices	108	221	372	500
Pre-apprentices	0	21	75	150
Schools/Training Providers	10	11	11	11

*Total value of projects and initiatives, which includes private industry and state matches
Note: Program launched in 2015.

As of 2019, these programs have helped to train 650 individuals.



CAREERS

“ What did you like best about the Young Manufacturers Academy workshops? ”

“I liked to be able to make models, and doing that made me feel like a true engineer.”

7th grade student, E.B. Kennelly School, Hartford

“We used technology to design and create real life objects.”

7th grade student, E.B. Kennelly School, Hartford

“Being able to get to do what people in manufacturing do.”

7th grade student, West Middle School, Hartford

College Connections

Administered by Connecticut State Colleges & Universities (CSCU)



As of June 30, 2019, 245 students have completed the College Connections program. The CSCU system carefully built this initiative over the past ten years; it has now expanded it through \$600,000 from the Manufacturing Innovation Fund. This additional funding is critical to ensuring the program's growth.

WHY this is critical

One of the most pressing needs for Connecticut's growing manufacturing sector is access to highly skilled professionals. So to continually prime the talent pipeline for our advanced manufacturers, we need to get more students interested in careers in this field at younger ages — particularly at the high school level.

HOW this program works

This program connects high schools to neighboring CSCU Advanced Manufacturing Technology Centers across the state. Through these connections, high school students get hands-on exposure to the rewarding work and strong earnings potential a career in advanced manufacturing can offer.

Participating high schools include:

<i>Bassick</i>	<i>East Hartford</i>	<i>Pathways East Hartford</i>
<i>Bunnell</i>	<i>Enfield</i>	<i>Stratford</i>
<i>Cathedral</i>	<i>Granby</i>	<i>Suffield</i>
<i>Crosby</i>	<i>Hartford</i>	<i>Windsor Locks</i>
<i>Derby</i>	<i>Kolbe Cathedral</i>	
<i>East Granby</i>		

WHAT results this program has delivered by fiscal year

Cumulative Metrics	2017	2018	2019
Students Enrolled	95	152	245

As of 2019, this program has introduced hundreds of students to the field.



Approximately **25%** of those students have gone on to enroll in manufacturing-related programs at CSCU colleges

Connecticut. Dream It. Do It. Program

Administered by the Connecticut Center for Advanced Technology (CCAT)



Thanks to this nationally recognized program, 8,283 students have discovered the fascination of a manufacturing career. With \$1,129,145 in MIF funds, Connecticut. Dream It. Do It. programs reach K-12 students, families and educators through high-impact activities held during and outside of school, including events and a targeted marketing campaign that raise awareness about diverse career opportunities in advanced manufacturing.

WHY this is critical

Connecticut's advanced manufacturers will need thousands of new workers annually for the foreseeable future — not only to replace those nearing retirement age, but also to meet the increasing demand for their products. To meet this demand, manufacturers believe they need to get more students interested in the field — as early as middle school.

HOW this program works

This funding makes possible such initiatives as Manufacturing Mania and Making It Real: Girls and Manufacturing. In the 2018-19 school year, over 1,000 middle grade students participated in workshops on the Mobile Lab with Goodwin College and CCAT staff. The “What’s So Cool About Manufacturing?” video competition provides teams of high schools the opportunity to tour area companies to see what it’s really like on the shop floor.

WHAT results this program has delivered by fiscal year

Cumulative Metrics	2016	2017	2018	2019
MIF Funding	\$266,929	\$516,523	\$766,523	\$1,129,145
Companies Participating	32	110	183	331
Students Participating	1,304	3,036	5,824	8,283
Educators Participating	209	500+	800+	1,000+

As of 2019, programs supported by this funding have...



Worked with over **8,280** students



Sponsored **over 275** events and activities



Seen over **1,000** middle grade students participate in workshops

Young Manufacturers Academy

Administered by the Connecticut Center for Advanced Technology (CCAT)



To date, 4,125 students have learned about lean manufacturing, CNC machining, 3D printing, robotics and more in the Young Manufacturers Academy. This program, supported by MIF funding of \$1,257,678, focuses on grades 5 through 8. It's real-world learning with a real impact on tomorrow's innovators.

WHY this is critical

Connecticut manufacturers of all sizes are facing increasing demand — from Electric Boat, Pratt & Whitney and Sikorsky, to small shops that employ a handful of people. At the same time, a significant portion of their workforce is nearing retirement age. Getting young people interested in manufacturing will help ensure a steady flow of new, skilled workers ready to take on those challenges.

HOW this program works

The Young Manufacturers Academy opens the minds of middle grade students across Connecticut to the world of possibilities in manufacturing, from CNC machining to engineering to factory design. They tour local manufacturers and learn other critical skills like communication, resume preparation and interviewing techniques.

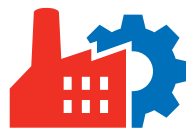
WHAT results this program has delivered by fiscal year

Cumulative Metrics	2016	2017	2018	2019
MIF Funding	\$423,000	\$673,000	\$965,678	\$1,257,678
Students Participating	142	546	2,224	4,125
Cities and Towns Represented	29	54	92	129
Manufacturers Hosting Site Visits	10	23	68	88

As of 2019, this program has engaged students and employers alike.



4,125 students from
129 towns



88 manufacturers who
hosted tours for YMA students

INNOVATION

“ Financing from the Manufacturing Innovation Fund has had a profound impact on our business. It has allowed us to develop and foster a culture of lifetime learners. WEPCO now hires for talent, and trains for skill. Much of our success can be attributed to this program. ”

Charles Daniels, Chief Financial Officer, WEPCO Plastics, Middlefield, CT



Research and Innovation Programs



Innovation is the lifeblood of manufacturing, and Connecticut has remained a leader for more than two centuries. That's why the Manufacturing Innovation Fund has invested \$10.85 million in research and development to spark new ideas and facilitate the adoption of new technologies, especially in small and mid-sized companies. The fund has focused its investments in three key areas: Advanced Composites, High-Rate Additive Manufacturing and Non-Destructive Testing and Scanning. With the key partnerships of industry, nonprofits, federal government, and academia, these investments help leverage advancements in these critical areas.

Advanced Composites

This program enables Connecticut manufacturers to use advanced, high-value structural composites to increase production speed, lower costs and ensure quality.

CT Center for Excellence for Composites Manufacturing

The Center is a private/public partnership focused on composite manufacturing technology. The goal is to grow composites capacity in our supply chain companies. The initial focus will be advanced manufacturing and automation, integrated product and process development, and prototyping of carbon fiber composite components.

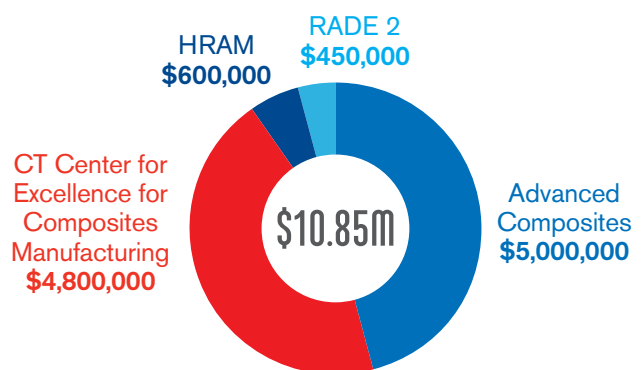
A critical part of the Center is developing the workforce trained to work with this technology. This will be accomplished by partnership of industry and key academic stakeholders that include: the state university and community college system, Goodwin College, UConn, University of Hartford and CCAT. The partnership is developing a statewide curriculum and certification program in Advanced Composites in order to help Connecticut manufacturers meet their needs for trained personnel in this area.

High-Rate Additive Manufacturing (HRAM)

When fully implemented, this program is intended to make high-rate additive manufacturing technology available to all companies.

Non-Destructive Testing and Scanning

Through a federal grant, Connecticut received \$4.5 million that included the development of a coalition of New England states to form a regional cluster of defense-related manufacturers and investments in non-destructive scanning technology. MIF funded the required 10% match of \$450,000, which was used to acquire specialized equipment that is now increasing our defense manufacturers' competitiveness by enabling them to integrate innovative processes and scanning technologies into their production.



Designated Communities

Across 37 communities in every county in the state, the Manufacturing Innovation Fund builds on Connecticut's traditional hubs of manufacturing advancement. The MIF has given special consideration to proposals from a distressed municipality, targeted investment community, public investment community, enterprise zone or manufacturing innovation district. These funds have been critical to spurring municipal revitalization, job growth and employment opportunities. Of the total investments made by the MIF in 2019, \$3.06 million was targeted to distressed communities in need in Connecticut as shown in the chart below.

Total investments fiscal year 2019 - \$3.06 million*

DECD 2019	Distressed List FY2019 Approved	DECD 2019	Distressed List FY2019 Approved
Ansonia	\$38,260	Norwalk	\$0
Beacon Falls	\$0	Norwich	\$6,630
Bridgeport	\$0	Plainfield	\$65,539
Bristol	\$440,894	Plymouth	\$112,080
Derby	\$0	Putnam	\$53,476
East Hartford	\$0	Seymour	\$212,000
Enfield	\$58,000	Southington	\$157,581
Griswold	\$0	Sprague	\$0
Groton	\$6,934	Stamford	\$102,000
Hamden	\$30,000	Sterling	\$0
Hartford	\$28,029	Thompson	\$0
Killingly	\$0	Torrington	\$189,001
Lisbon	\$0	Waterbury	\$809,702
Meriden	\$81,000	West Haven	\$0
Middletown	\$36,100	Wethersfield	\$0
Naugatuck	\$86,000	Winchester	\$0
New Britain	\$341,169	Windham	\$28,000
New Haven	\$0	Wolcott	\$183,937
New London	\$0		\$3,066,332

*For the period July 1, 2018 – June 30, 2019. Direct funds to companies via the Manufacturing Voucher, Incumbent Worker and Energy on the Line program.

2019 Manufacturing Innovation Fund Advisory Board



Beatriz Gutierrez

*Executive Director
Office of Business Development,
Department of Economic and Community
Development (DECD)
Commissioner's Designee/Chairperson*



Shane Eddy

*Sr. VP of Operations
Pratt & Whitney*



Donald Balducci

*President
Balducci Associates, LLC.*



Todd Pihl

*Sr. Project Manager
Web Industries, Inc.*



Colin Cooper

*Executive Chairman
Whitcraft Group
Board of Directors
Aerospace Components Manufacturers, Inc.
(ACM)*



Emir Redzic

*Managing Director
Budney Aerospace, Inc.*



Beverlee Dacey

*President
Amodex Products, Inc.
Board of Directors, New Haven
Manufacturing Association*



Kelli-Marie Vallieres

*President & CEO, Sound Manufacturing Inc.
President Emeritus, Eastern Advanced
Manufacturing Alliance (EAMA)
Board of Directors, Eastern Workforce
Investment Board
CT State Apprenticeship Council Member*



Chris DiPentima

*President, Tube Division
President, Pegasus Manufacturing
Leggett & Platt Aerospace
Vice Chair Board of Directors, CBIA
Past President
Aerospace Components Manufacturers, Inc.
(ACM)*



Joe Zoldy

*Sales Manager
Metallon Inc.
Past President
Small Manufacturers Association (SMA)*

More Information



Please visit us at
ChooseCT.gov
for more program information.