

Emerging Technology Fund

Quarterly Report to the Legislature

April 1, 2019 to June 30, 2019

Summary

The Emerging Technology Fund (ETF) helps grow technology and advanced manufacturing companies in Massachusetts. Since its creation in 2003, the ETF has helped cutting-edge companies locate or expand in the Commonwealth, providing jobs and strengthening the innovation economy. Fifty-six loans and guarantees totaling \$84.3 million have closed through June 30, 2019. Thirty-one companies have repaid their ETF loans and the majority of these companies are still thriving in Massachusetts.

Through these financings, the ETF has leveraged private investment for companies and maintained its ability to serve as an “evergreen fund,” providing unconventional risk capital in the form of debt to development-stage emerging technology companies seeking to commercialize their products. In an effort to increase both employment and production, the Commonwealth passed legislation in 2010 that allowed MassDevelopment to add a working capital term loan financing product to the Fund, which helps growing companies address staffing and other working capital needs. The new capability has been well received, and eight term working capital financings have closed as of June 30, 2019.

The ETF was last recapitalized in 2007, and in 2010 the Legislature transferred \$15 million to launch the Massachusetts Growth Capital Corporation. Since then, the Fund has taken various measures to ration capital. These measures, as well as early loan payoffs from successful portfolio companies, have stabilized the Fund’s liquidity position. The Fund has restored its maximum loan size to \$2.5 million and can now support larger expansions. The ETF, however, continues to rely on loan repayments to capitalize new loans and may need recapitalization if new investments for business expansions and relocations outpace loan repayments.

ETF Company of the Quarter

On May 31, 2019, MassDevelopment closed on a \$2.5 million term loan to First Light Diagnos-



tics, Inc. First Light was incorporated in 2006, and is a Chelmsford developer of automated medical diagnostic systems for rapid and cost-effective diagnosis and treatment of life-threatening multi-drug resistant infections.

First Light is in the late stages of developing a medical diagnostic platform to rapidly determine the type of, and appropriate therapy to treat, over 200 types of pathogens through various unprocessed sample types (blood, urine, stool, saliva, etc.). The company is initially targeting *C. Difficile* (a bacterial infection of the colon), Urinary Tract Infection identification, and a related antimicrobial susceptibility test (AST) as the first tests that will be submitted for FDA 510(k) approval. The company’s patent-protected MultiPath platform and associated tests can perform pathogen identification tests within 30 minutes while providing antimicrobial susceptibility tests within four hours, both of which drastically outperform the current culture-based identification products on the market. Additionally, the company’s MultiPath analyzer can perform up to 40 antimicrobial susceptibility or 200 pathogen identification tests within an eight-hour period. The MultiPath analyzer is fully automated from the point the cartridge is placed within the analyzer until a result is determined.

Leveraging its recently closed Series A-2 round of equity financing, First Light will use loan proceeds to hire 71 new full-time staff.

Background

Chapter 141 of the Acts of 2003 created the ETF. The statute requires submission of this quarterly report to certain legislative committees. Established to leverage private investment and to recruit and retain technology-based and advanced manufacturing companies in the Commonwealth, the approximately \$44 million Fund provides loans and guarantees for the purchase, expansion, or improvement of real estate; equipment purchases; and working capital needs. The Fund was initially capitalized with \$24.75 million, recapitalized in September 2006 with \$10 million as a result of an economic stimulus bill passed by the Legislature, and then recapitalized again in November 2007 with an additional \$15 million. In November 2010, \$15 million was transferred from the Fund to capitalize the Massachusetts Growth Capital Corporation in accordance with signed legislation. As of June 30, 2019, the Fund had \$19.5 million available to make loan commitments and a pipeline of \$28.4 million of projects that are considering applying or are in the underwriting process.

The Fund is governed by an Advisory Committee that has adopted the following mission statement:

The mission of the Emerging Technology Fund is to create jobs in Massachusetts by providing financing for facilities, equipment and working capital that leverages private financing to growing companies employing or commercializing emerging technologies.

ETF Activity Summary

As of June 30, 2019, the ETF has made loans and guarantees to 49 companies totaling \$84,347,115. Potential loans of another \$28.4 million were in the ETF pipeline as of June 30, 2019. Additional loans, totaling \$3.5 million, have been approved by the MassDevelopment Board of Directors and were in the closing process as of June 30, 2019. While the Agency has closed 56 loans and guarantees over the lifetime of the ETF, 31 of those have been paid off in full and are no longer in the portfolio. The Fund also received partial proceeds after liquidation of certain assets on loans provided to eight companies in the portfolio and charged-off \$5,775,098. Six of the companies involved have ceased to exist.

Closed Loan Activity

Loans Closed

Company	Loan Amount	Date Closed	Municipality	Industry
Amastan Technologies LLC	\$2,000,000	6/30/17	North Andover	Advanced Material Manufacturer
Biomedical Research Models, Inc.	\$500,000 and \$200,000 (Guarantee)	11/17/10	Worcester	Contract Research (Biotechnology)
Biomedical Research Models, Inc. (Replacement Facilities)	\$500,000 and \$200,000 (Guarantee)	10/29/14	Worcester	Contract Research (Biotechnology)
Biomedical Research Models, Inc. (Replacement Facilities)	\$500,000 and \$500,000 (Guarantee)	12/29/15	Worcester	Contract Research (Biotechnology)
First Light Diagnostics, Inc.	\$2,500,000	5/31/19	Chelmsford	Medical Device
Lionano Inc.	\$2,500,000	2/1/19	Woburn	Battery Material Manufacturer
MedMinder Systems Inc.	\$1,500,000	5/11/18	Needham	Medical Device
N12 Technologies, Inc.	\$2,500,000	12/12/14	Cambridge	Composite Materials
Nano-C, Inc.	\$2,400,000	11/10/18	Westwood	Advanced Material Manufacturing
Scencio Systems, Inc.	\$650,000	8/18/14	Boxborough	Telemedicine
Vyasa Analytics, LLC	\$1,800,000	6/27/18	Newburyport	Software
Zylotech	\$500,000	8/15/18	Boston	Analytics Software
Sub-Total	\$18,750,000			

Loans Closed and Repaid in Full

Company	Loan Amount	Date Closed	Municipality	Industry
Acacia Communications, Inc. (paid off 5/14/15)	\$3,000,000	2/25/11	Maynard	Information Technology
Aspen Aerogels, Inc. (paid off 12/2/11)	\$1,500,000	1/12/05	Northborough	Advanced Materials
Atentiv Holdings Inc. and Atentiv LLC (terminated by borrower 6/17/17)	\$3,000,000	3/4/16	Waltham	Medical Device
BioVex Group, Inc. (paid off 3/1/11)	\$2,500,000	6/29/06	Woburn	Biotechnology
Blue Sky BioTech, Inc. (paid off 7/9/07)	\$150,000	9/24/05	Worcester	Contract Research (Biotechnology)
Celldex Therapeutics, Inc. (formerly Avant) (paid off 3/30/11)	\$903,657	12/12/03	Fall River	Biopharmaceutical
ConforMIS, Inc. (paid off 12/23/16)	\$1,445,000	6/28/11	Burlington	Medical Device
Court Square Group, Inc. (paid off 9/30/16)	\$500,000	3/28/12	Springfield	Software & IT
CryoXtract Instruments LLC (paid off 4/21/17)	\$800,000	5/15/12	Woburn	Medical Device
Cytonome, LLC (paid off 2/27/09)	\$600,000	6/30/05	Boston	Medical Devices
Dynamo Micropower (paid off 5/12/16)	\$175,000	1/30/15	Somerville	Fuel Flexible Turbine Power Systems
E-Ink Corporation (paid off 8/31/09)	\$1,000,000	5/15/07	Cambridge	Electronic Display
Fusion Optix, Inc. (paid off 11/5/18)	\$1,500,000	8/30/12	Woburn	CleanTech
Gingko Bioworks (paid off 10/5/16)	\$1,000,000	12/15/14	Boston	Biotech Engineering
Hyaluron, Inc. (paid off 6/14/10)	\$1,000,000	12/19/05	Burlington	Contract Manufacturer (Biopharma)
InVivo Therapeutics Corp. (paid off 3/1/19)	\$2,000,000	10/5/12	Cambridge	Medical Device
Lexington Medical, Inc. (paid off 6/12/19)	\$2,500,000	2/22/17	Billerica	Medical Device
Luminus Devices, Inc. (paid off 8/22/13)	\$2,500,000	12/26/07	Billerica	Solid State Lighting
MicroTest Laboratories Inc. (paid off 7/31/12)	\$799,340 (Loan) \$367,500 (Mortgage Guarantee)	7/6/05	Agawam	Contract Manufacturer (Biopharma)
Middleton Aerospace Corporation (paid off 8/31/16)	\$2,000,000	8/11/06	Haverhill	Military and Commercial Aircraft Component Manufacturer
Nuvera Fuel Cells, LLC (paid off 12/22/10)	\$2,500,000	1/31/07	Billerica	Hydrogen Fuel Cell Developer and Manufacturer
Persimmon Technologies (paid off 12/18/15)	\$1,500,000	10/1/13	Wakefield	Vacuum Robots
PoroGen Corporation (paid off 10/2/15)	\$1,000,000	4/1/13	Woburn	Industrial Filtration Systems
PowerHouse Dynamics (paid off 3/1/18)	\$1,000,000	3/30/12	Newton	CleanTech
Premium Power Corporation (paid off 4/13/12)	\$2,500,000	5/28/09	North Reading	POS Battery Manufacturer
Qteros, Inc. (terminated by borrower 11/22/10)	\$2,000,000	10/29/09	Chicopee	Biofuel Developer
Quiet Logistics, Inc. (paid off 12/28/18)	\$2,500,000	1/16/12	Devens	eCommerce and Fulfillment Systems
RenaMed Biologics Inc. (paid off 12/29/06)	\$2,300,000	6/14/06	Westborough	Bioreplacement Therapies
T2 Biosystems, Inc. (paid off 12/30/16)	\$1,687,500	5/9/11	Lexington	Medical Device
TeraDiode, Inc. (paid off 3/7/17)	\$2,000,000	12/6/12	Wilmington	Industrial Lasers
Valeritas, Inc. (paid off 5/19/14)	\$2,500,000	1/12/07	Shrewsbury	Medical Device
Sub-Total	\$50,727,997			

Loans Closed and Principal Partially Charged-Off

Company	Loan Amount	Date Closed	Municipality	Industry
Acusphere, Inc.	\$2,000,000 (\$1,522,133 charged-off 5/19/09)	8/16/04	Tewksbury	Specialty Pharmaceutical
Advanced MicroSensors	\$2,000,000 (\$1,462,387 charged-off 3/31/14)	10/13/11	Shrewsbury	Electronics
Beacon Power, LLC	\$2,500,000 (\$898,333 charged-off 3/7/12)	6/30/08	Tyngsboro	Renewable Energy
ECI BioTech	\$630,000 (\$530,004 charged-off 1/31/16)	11/16/07	Worcester	Health Care Products
Konarka Technologies, Inc.	\$2,500,000 (\$344,417 charged-off 11/25/13)	2/11/09	New Bedford	Solar Power Consumer Product Manufacturer
Lilliputian Systems, Inc.	\$2,500,000 (\$298,507 charged-off 6/30/14)	11/13/09	Wilmington	Portable Fuel Cell Power Developer
Spherics, Inc.	\$2,500,000 (\$568,458 charged-off 11/19/08)	7/12/05	Mansfield	Pharmaceutical
WorkshopLive LLC	\$239,118 (\$150,860 charged-off 6/30/12)	5/26/05	Pittsfield	Music Software and Technology
Sub-Total	\$14,869,118			
Total	\$84,347,115			

Uncommitted Fund Balance

Between April 1, 2019 and June 30, 2019, the ETF received \$1,180,384 in loan repayments, interest income, and fees. Operating expenses were \$142,315 exclusive of loan loss provision. The uncommitted balance of the Fund on June 30, 2019 is \$19,453,313.

As of 6/30/19

Beginning Fund Balance	\$ 24,750,000
Fund Recapitalization	10,000,000
Fund Recapitalization	15,000,000

Total Funding	49,750,000
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Cash Activity (accumulated):

Net Loan Disbursements*	(11,749,596)
Operating Income	9,664,962
Operating Expenses	(6,033,340)
Transfer to MGCC	(15,000,000)
Investment Income	6,422,550
Non-operating Income	5,517,234
Accounts Receivable	0
Accrued Expenses	1,425
Accrued Interest Income	(155,710)
Prepaid Insurance	(2,350)
Unearned Insurance Premium	0
Deferred Income	30,975
Investment in Common Stock	(974,677)
Investment in Privately Held Companies	(641,339)
Equity Investment - Contributions	(3,915,673)

Cash Balance	32,914,460
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Less: Cash Commitments:

Reserved for Guarantees Closed	(464,294)
Undisbursed Loans and Guarantees	(8,412,525)
Approved Loans and Guarantees (not closed)	(3,500,000)
Available Committed Equity - MTDC	(1,084,328)

Uncommitted Cash Balance:	19,453,313
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Less:

Current Pipeline - potential new loans	(28,400,000)
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Pipeline Exceeding Available Cash	\$8,946,687
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* Total loan write-offs as of 6/30/19	\$5,775,098
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Financial and Technical Assistance

MassDevelopment assisted Acusphere, Inc., Celldex Therapeutics, Inc. (formerly Avant Immunotherapeutics Inc.), and Cytonome, LLC. in finding suitable facilities in the Commonwealth. All loan applicants received assistance in structuring financing for their projects with MassDevelopment and other lenders.

Geographic Distribution

As of June 30, 2019, the ETF has closed loans and guarantees with companies in each of the Commonwealth's five geographic regions as follows:

Region	Closed Loans	# of Companies
North	\$ 20,300,000	9
South	\$ 5,903,657	3
Central	\$ 13,980,000	7
West	\$ 3,905,958	4
Greater Boston	\$ 40,257,500	26
Total	\$ 84,347,115	49

Emerging Technology Fund Advisory Committee

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