HUMAN CAPITAL

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INTELLECTUAL CAPITAL

FISCAL YEAR 2019

ANNUAL REPORT

Massachusetts LIFE SCIENCES CENTER

The capital of scientific revolution.

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Timothy J. McGourthy
Interim President & CEO
MLSC

Deputy Secretary
Executive Office of Housing and Economic Development

The Patients Are Waiting

Around the globe, billions of patients and their loved ones await advances in health care that will produce the products, devices, and therapies to alleviate suffering, improve treatment, and save lives. Much of that attention falls on Massachusetts, as the world looks to our ecosystem to deliver the breakthroughs that further unlock our understanding of human physiology, harness the power of data science, and work across scientific disciplines to improve patient outcomes.

This remains our mindset as we write the next chapter of the Massachusetts Life Sciences Center, following the passage and signing of *An Act Providing Continued Investment in the Life Sciences Industry in the Commonwealth*. This legislation authorizes the investment of up to $623 million in bond authorization and tax credits over five years in education, research and development, and workforce training. With this nearly 25 percent increase in the Center's authorized capital and tax funding, we carved a path forward for new opportunities to support Massachusetts' vibrant life sciences ecosystem in four areas:

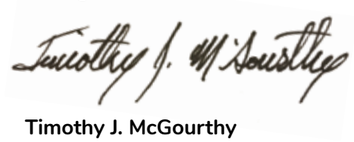
- STEM education and workforce development
- Innovations and technologies that improve patient outcomes and lower patient costs
- Cutting-edge shared infrastructure and capabilities that advance the R&D enterprise
- Convergence technologies that marry biology, data science, and engineering

Toward these goals, we are driven by our foundational principles of regionalization and equity, and our core belief that the entire Commonwealth can benefit from life sciences endeavors.

This past fiscal year offered us the chance to take impactful steps toward leveraging those opportunities on a broad scale. We ran programs investing in people, places, and partnerships, representing more than $76 million in support of job growth, talent development, and entrepreneurial growth throughout the Commonwealth. We celebrated our history and achievements, while also charting new programs and initiatives to ensure that Massachusetts remains the global leader in the life sciences despite intensifying competition.

Amidst it all, we recognize that what separates the Massachusetts ecosystem from those in other states and countries is our culture, a potent combination of capital, collaboration, political and civic leadership, public policy, and unbridled enthusiasm to positively advance human health. Together, with your support, we hope to remain the capital of scientific revolution for this generation and generations to come.

With gratitude,



Timothy J. McGourthy
Interim President & CEO, MLSC
Deputy Secretary, Executive Office of Housing and Economic Development

VISION & STRATEGY

The Capital of Scientific Revolution

Here in Massachusetts, we share constitutions and covenants that transcend centuries. We are forever joined by the ideals of those industrious, ingenious few who first sought our shores. United in their conviction that there was more of life to be discovered and made in fellowship with a commitment to the Commonwealth, it is here that we have seen revolutions and age-defining breakthroughs.

Human Capital Investing in the next generation of life science professionals is at the core of how we fulfill our mission, with a strategic eye toward readying our workforce for the jobs that the life sciences industry continues to bring to Massachusetts.

Innovation Capital We are capitalizing on great science, inventions, and innovations that extend across the entire life sciences value chain.

Growth Capital As the capital of the knowledge economy, we are committed to building from the density, proximity, and diversity of its resources through concentrated investment.

Intellectual Capital As a leader and convener we are well-positioned to accelerate synergy and act as a partner in catalyzing breakthroughs and the innovation environment that makes them possible.

In Massachusetts the life sciences is not just a sector. It's a culture.

To build that culture, it takes an ecosystem comprised of government, academic, and industry stakeholders working together. This cross-sector leadership remains integral to continuing the scientific and economic development achieved here.

The MLSC is grateful to the Baker-Polito Administration and legislative leaders for including an appropriation of $10 million for the Life Sciences Investment Fund, after a declaration of a consolidated net surplus, in the Fiscal Year 2020 budget. The Investment Fund is a critical component of our budget, fueling MLSC's innovative programming and operations.

In order to advance the life sciences culture in Massachusetts, the MLSC will deepen its commitment to regionalization and equity, with an aim toward:

Investing in **human capital** for current and future workforce needs

Providing companies with **investment capital**, infrastructure, and community support to grow

Developing new **scientific innovations** that deliver higher outcomes, lower-cost therapies to patients

Leading the **convergence revolution** in digital health, biopharma, medical device, and engineering

FISCAL YEAR 2019 HIGHLIGHTS

76% total investment in job creation incentives through the Tax Incentive Program going toward expansion efforts beyond Greater Boston

11,000+ students served via a new targeted STEM District initiative providing $1.14 million in STEM equipment and professional development across five under-resourced school districts

Up to $1 million capital investment available through the new Seed Fund to bolster promising life sciences start-ups in communities with individual investments up to $250,000 in convertible notes

$13.8 million capital funding to support new initiatives catalyzing biomanufacturing innovations and workforce development

THE BOTTOM LINE

Since inception approximately $748M of investments have been committed into the life sciences ecosystem as follows:

Programs	Award Amount	Number of Awards
Capital Projects	$480,867,876	115 projects
Company Grants and Loans	$37,513,418	101 awards
Research Grants	$27,108,205	53 projects
Tax Incentives	$142,102,967	160 awards
Internships and Apprenticeships	$27,832,421	4000+ internships
STEM Equipment and Supplies	$18,423,382	196 awards
Other Grants	$13,762,185	116 awards
TOTAL	**$747,610,454**	

The impact of MLSC investments since inception:

- **Generated $3.3 billion** of leveraged investments in the Commonwealth
- **Created more than 13,000 jobs** in Massachusetts through tax incentive and capital programs
- **Supplied STEM equipment grants** to Massachusetts schools, serving 28% of public middle and high school students
- **Funded 4,000+ internships** at 750 Massachusetts companies
- **Directly supported 185 Massachusetts companies** throughout the past 11 years via various grants, loans, and tax incentive programs

Internship Challenge:
Enhancing Career Exploration and Expanding the Talent Pipeline

This year, the MLSC celebrated 10 years of the award-winning Internship Challenge, a program that embodies our belief in the power of experiential learning to cultivate a workforce pipeline. At the close of the 2018-2019 program year, the Internship Challenge had produced nearly 4,000 college internships at over 700 companies since its inception in 2009. Interns have represented 230 different academic institutions. Nearly 40% of the graduating interns receive an offer of employment at the conclusion of their internship.

The workforce development program enables small companies to hire paid college interns by connecting them with candidates through an online platform and reimbursing them for intern stipends.

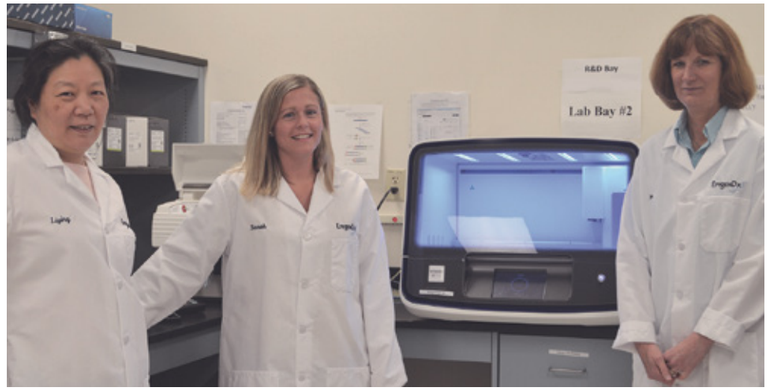
As the longest-running program at the MLSC, investing in the next generation of life science professionals, like Brian McCarthy, is at the core of how we fulfill our mission. Brian, who attended Holyoke Community College prior to Western New England University, interned with FloDesign Sonics at what was very much the startup days for the company. The Wilbraham-based medical device company aims to apply its acoustic cell processing to industrialize cell therapy manufacturing to reduce cost and improve patient accessibility.

According to Brian, "even in a small startup company, the internship involved a lot of mentoring. If not for the program, I wouldn't have gotten that internship to gain real-world experience, the opportunities to present at conferences, get my name on patents, and now a full-time job."

Brian, now a Senior Engineer with FloDesign Sonics, is mentoring the next cohort of interns walking through the door. "It's technical, hands-on work right out of the gate with not a lot of sitting around waiting for the interns to find something to do," said Brian. "We want the students with initiative that have an interest in research and design testing that we can develop as they jump right into the lab." Brian is not the only one paying it forward and supporting the next generation. Many interns who have joined the company in full-time roles now oversee current interns.

Lt. Governor, Karyn Polito and EOHED Secretary Mike Kennealy alongside host companies, Enable Life Sciences and STC Biologics, and intern Nelson Nunez.

For the Internship Challenge to be successful to former interns like Brian, the program recruits small companies, of 100 employees or less, with a passion to teach and inspire the next generation of the life sciences workforce. EpigenDx, located in Hopkinton, is one of a handful of companies to have provided internship opportunities all 10 years. Ann Meyer, Associate Director of Operations for EpigenDx, knows how essential the Internship Challenge is to developing and retaining talent. "We rely on our interns to fill real, much-needed roles. We've been fortunate enough to offer many of our interns full-time positions, but it has also been a real source of pride to see interns come through, gain experience in our lab, and move on to other roles in similar-sized or larger companies."



Ann Meyer, Associate Director of Operations for EpigenDx (right), along with Liying Yan, President (left), and former intern, Sarah Miller (center).

Brian McCarthy (second from left) and his colleagues at FloDesign Sonics.

In fiscal year 2019, the Internship Challenge served the highest number of internships in the program's history, placing 554 internships at 300 companies throughout the Commonwealth.

Project Onramp Launch: Accelerating Workforce Diversity

PROJECT ONRAMP

As part of an ongoing and strategic effort to support the development of a diverse workforce talent pipeline for the life sciences industry, the MLSC partnered with MassBio, MassBioEd, Life Science Cares, and Bottom Line in January of 2019 to launch Project Onramp. The pilot program encouraged life sciences employers to hire first generation black and latinx interns that are first-generation college students and students from low-income backgrounds. The program secured 52 internships with 35 companies during the summer of 2019. Diversity is key to our state's competitiveness and the MLSC is proud to work alongside industry to ensure the sciences become more inclusive.

554
Interns in the 2018-2019 program year

300
Companies provided internship opportunities

114
Academic institutions represented

INTERNSHIP 10 YEARS CHALLENGE

10 Year Anniversary

This year we proudly marked 10 years of our flagship Internship Challenge program. This initiative has produced many profoundly positive stories and perspectives on enhancing career exploration and expanding the talent pipeline, making an impact in the lives of students and the success of growing life sciences companies. Now, 10 years on, is the perfect time to celebrate and recognize the people, places, and partnerships that have enabled students from across the Commonwealth to begin successful careers in the life sciences industry.

4,000
Internships created since inception

750
Companies provided internship opportunities

230
Academic institutions represented

High School Apprenticeship Challenge: Creating Experiential Learning Opportunities

The High School Apprenticeship Challenge facilitates and funds paid internship opportunities for Massachusetts high school students interested in STEM. Students throughout the Commonwealth are eligible to apply for paid summer internships with research institutions and life sciences companies. Eligible employers receive a reimbursement of up to $2,880 per intern, based on $12/hour for six weeks of work.

Since the program first launched in 2016, the MLSC has supported more than 220 internships with nearly 70 life sciences companies and research institutions. Interns represented 87 different high schools.

During the summer of 2018, the program placed 117 students in internships with 42 life sciences companies and research institutions. A majority of interns were female (61 percent) and diverse (65 percent). Interns represented 55 different high schools. MLSC funding for FY19 internships totaled $292,773.

The program also offers a pre-internship lab training program that provides intensive biotechnology and professional skills development. Since 2016, the program has been active in Brockton, New Bedford, Worcester, and Cambridge (serving Boston, Cambridge, and Everett students) and takes place after school or during the summer. Each year, the program has expanded to a new region of Massachusetts.

Cambridge students in the biotech after school program.

In the summer of 2018, the MLSC co-sponsored the Health Resources in Action's LEAH Knox Scholars Program, a five-week MIT-based biomedical research training program that prepares students for internships the following summer. The program served 26 high school students from Boston and Everett. A significant majority of the students were female (77 percent) and diverse (92 percent). Participants represented seven different high schools. MLSC funding for the LEAH program totaled $58,582.

New Bedford High School students at the celebration of their successful completion of the lab training program.

In the spring of 2019, the MLSC launched its fourth round of the High School Apprenticeship Challenge with after school training programs in Brockton and New Bedford, serving 38 students. Students who completed the training, demonstrated proficiency of skills, and were available for a six-week internship earned a recommendation for paid research positions with partner employers during the summer of 2019. A significant majority of participants were female (76 percent) and diverse (84 percent). Funding for lab training programs at Brockton and New Bedford totaled $87,455.

Championing Biotech in Brockton

A core mission of the MLSC is preparing students for successful employment in the life sciences and enhancing the talent pipeline for life sciences companies in Massachusetts. A foundational piece of that core mission is supporting experiential learning opportunities for students at both the college and high school level. "In particular for the life sciences, we cannot rely only on supporting students at the colleges and universities," said MLSC President and CEO Travis McCready. "Through partnerships with industry and school districts across the Commonwealth, we can extend these experiential learning opportunities into the high school by pairing dedicated young people, such as those in Brockton, with the training, education, and career opportunities to spark and cultivate their interests in the sciences."

Brockton High School students at the celebration of successful completion of the lab training program.

The month of May marked the completion of the MLSC's intensive, biotechnology lab training program for 24 Brockton High School students. In recognition of their successful completion of the training program, students received certificates of completion and $500 stipends for their participation.

The MLSC is grateful for the partnership and commitment experienced from the ground level up in Brockton. This past year, Brockton High School biotech teacher David Mangus received the 2019 Ron Mardigian Memorial Bio-Rad Explorer Award from the National Science Teaching Association. The award recognizes and rewards an outstanding high school teacher who has made biotechnology learning accessible to the classroom.

"The Apprenticeship Challenge is an amazing opportunity given to kids to help them further their knowledge in biotechnology," said Brockton High School student Angela Thevenin, who is interested in pursuing a degree in biomedical engineering. "In this program, I believe I was given the most memorable experiences Brockton High has to offer to kids interested in going into the field of biotechnology. With the help of this program, I was given the opportunity to put one foot forward in achieving my goals for the future."

Brockton High School students working together, learning in the lab.

The largest high school in Massachusetts, Brockton High School is a previous recipient of three STEM equipment grants from the MLSC. Overall, the MLSC has provided Brockton High School with approximately $400,000 in STEM equipment and supplies funding, teacher professional development, and annual support of the lab training program. As part of the MLSC's fiscal year 2019 STEM District Grant Program, Brockton also received $200,000 for Brockton middle schools. The middle school grant will catalyze the district's plans to adopt a comprehensive and innovative science curriculum for all seven of their middle schools.

HUMAN CAPITAL

A STEM District Approach:
Supporting Education Equity

In May, 2019, the MLSC announced $1.14 million in STEM equipment and professional development funding through its STEM District Grant Program. Nearly 12,000 students across 36 public middle schools and high schools in the five school districts of Boston, Brockton, Lawrence, Lowell, and Springfield will benefit from the education equity initiative.

This new pilot program awards grants to large, under-resourced school districts to support comprehensive and strategic plans for adequately supporting STEM education across multiple schools. By awarding districts, rather than individual schools, the MLSC hopes to provide coordinated professional development and student engagement opportunities from multiple schools, thereby better addressing skills gaps and inequities district-wide.

Representatives from all five school districts: Boston, Brockton, Lawrence, Lowell, and Springfield.

The schools receiving funding have either not previously received grants from the Center or received significantly less funding relative to other schools. They have disproportionately higher populations of underrepresented and economically disadvantaged students or serve student populations that have historically underperformed in STEM subjects.

Since 2011, the MLSC has awarded nearly $18 million in STEM equipment and professional development funding to 191 public high schools and middle schools located throughout Massachusetts. The grants have enabled vocational-technical and economically disadvantaged public schools to purchase necessary lab equipment and supplies, as well as state-of-the-art tools and technology to better train and prepare students for life sciences careers. The program also offered funding to support teacher professional development related to curriculum implementation and equipment training.

The MLSC's STEM equipment and professional development grants have leveraged more than $1 million in matching funds from industry partners and served schools in 13 of the 14 Massachusetts counties and 24 of the 26 Gateway Cities. Twenty-eight percent of all Massachusetts public school students attend a school that has received an MLSC grant.

Historically, the Center has provided nearly $550,000 to more than 80 middle schools and high schools to support teacher professional development. This STEM funding facilitates training teachers to use the equipment and provides access to relevant curricula and activities that support learning goals throughout the academic year.

"This new seed money will support locally owned healthcare startups based right here in Western Mass, helping them expand their businesses and hire more workers. This grant also helps us make good on our commitment to spread the growth we have seen in this sector beyond Boston/ Cambridge, bringing jobs in this dynamic industry to every corner of our state."

State Senator Eric Lesser
Chair, Massachusetts
Senate Committee on Economic
Development and Emerging
Technologies

INNOVATION CAPITAL

New Seed Fund Launches
to Catalyze Life Sciences Innovations in Underserved Regions of Massachusetts

At the end of fiscal year 2019, the Center launched a new regional Seed Fund, to drive regional economic development and strengthen life sciences innovation clusters outside of Greater Boston. With $1M allocated for the first year, the Seed Fund will invest up to $250,000 in convertible notes to companies developing novel innovations in all life sciences sectors, including: diagnostics, digital health/ bioinformatics, medical devices, medtech, and therapeutics. The companies must be located in or establish a presence in one of the five pilot locations for the duration of the note: Lowell, Worcester, Amherst, Springfield, and Pittsfield.

To launch the fund, MLSC leveraged a competitive federal grant from the Department of Commerce's Regional Innovative Strategies Program, whose goal is to catalyze regional capacity-building efforts to better identify and align assets to translate innovations into jobs. The MLSC applied for and received the grant through a competitive process. The award is a $300,000 match to operationalize the fund.

With this new initiative, MLSC aims to build upon the capital infrastructure investments it has historically made across the state. Through this Fund, we will connect, educate, and serve as a convener by promoting regional strengths in addition to identifying gaps, to serve as a connector to business expertise, diverse talent, and valuable infrastructure. We aim to create targeted opportunities for other investors to follow the MLSC's lead and exponentially increase the amount of risk capital invested in these regions.

"The Massachusetts Life Sciences Center has been a leader in support of economic development, scientific innovation, and job creation in the Commonwealth. I applaud the Center's continued efforts to further cultivate the life sciences industry, particularly here in Western Massachusetts."

State Representative Joseph Wagner
Massachusetts House of Representatives, Assistant Majority Leader

Bits to Bytes:
Data Science to Solve Complex Healthcare Concerns

The MLSC launched a novel digital health/big data program called Bits to Bytes, which awarded $6.7 million in capital funding to nine data-driven, cross-sector projects focused on imaging, cancer, neuroscience, drug discovery, and clinical trial design. The MLSC is funding approximately $750,000 per project. Non-profit and industry partners on these projects have committed more than $13 million in matching funds leveraging the MLSC's investment nearly 2:1.

The convergence of data science with life science sectors is having a profound impact on the future of healthcare. Understanding this, the MLSC developed Bits to Bytes to catalyze the generation and analysis of large datasets to answer pressing life science questions, and to attract and train data scientists in the Commonwealth.

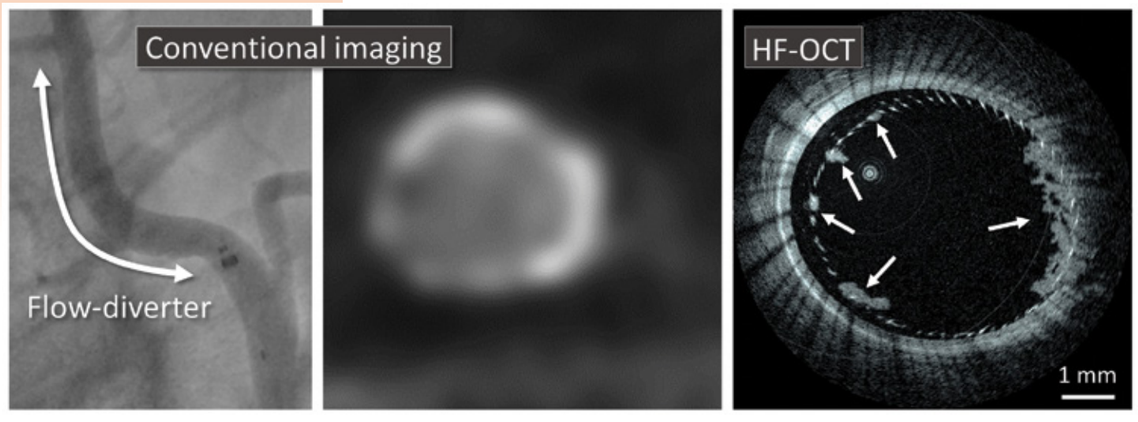
"These grants represent an important investment in data science that will help propel important discoveries and further strengthen the thriving life sciences industry here in Massachusetts," said Executive Office for Administration and Finance Secretary Michael J. Heffernan, Co-Chair of the MLSC Board.

Massachusetts recognizes that the role of data science in life science innovation has evolved rapidly and has the potential to catalyze innovation at unprecedented rates. Increasingly, leadership in the life sciences has become a function of an ability to amass, understand, and put to use increasingly available extremely detailed data about human physiology and the mechanisms of disease.

The MLSC and its partners are committed to a collective goal of attracting, training, and retaining data scientists to the life sciences. By investing in projects with unmet medical needs, the Bits to Bytes program aims to expose new data scientists to careers within the healthcare industry and to encourage the application of their much-needed skill sets to the mission-driven work of the life sciences.

The program also encourages further collaboration between academia and industry, including both early-stage and larger companies, and non-traditional life sciences companies. For example, Gentuity, LLC is working with researchers at UMass Medical School to revolutionize the current treatments of hemorrhagic stroke. The financial support provided by the MLSC will contribute to the creation of a large imaging database and the development of artificial intelligence (AI) processing methodologies, which in turn will propel new discoveries to improve the current understanding and treatment of brain aneurysms.

The role of data science in life science innovation is rapidly evolving. If harnessed, the information explosion has the potential to catalyze new discoveries and treatments to benefit patients. The MLSC launched the second round of the Bits to Bytes program in the fall of 2019.



High-Frequency Optical Coherence Tomography (HF-OCT) imaging (right) reveals details of neurovascular devices used to treat brain aneurysms not evident on currently available imaging technologies (left). HF-OCT can inform the neurointerventionalist about unsatisfactory device implantation and possible steps to correct it, such as clot formations (arrows) and incomplete flow-diverter apposition on the artery wall (between 6 and 12 o'clock).

New Brain Imaging Techniques
to Better Understand Diseases Like CTE and Alzheimer's

There is currently no way to track the subtle brain changes caused by traumatic head injuries or degenerative neurological diseases—but that is finally poised to change. A $4.9 million capital grant from the MLSC, awarded to the Center for Translation Neurotrauma Imaging (CTNI) at the Boston University School of Medicine, supports the CTNI's efforts to improve brain imaging techniques and open doors to developing diagnostics and treatments for neurodegenerative diseases.

The grant to Boston University was part of $30 million in capital grant funding awarded by the MLSC toward infrastructure development to support advances in human health, accelerate innovation in the areas of clinical and translational research, and expand the capacity of life sciences development and job growth across the Commonwealth.

In addition to the MLSC grant, the CTNI has received additional in-kind donations valued at $6.2 million, and it will collaborate with clinicians and researchers at Boston Medical Center, which has the busiest level 1 trauma and emergency services in the region.

The researchers are also interested in developing imaging techniques to be able to see signs of chronic traumatic encephalopathy (CTE), which cannot yet be detected in living people, but has made news headlines for being found in hundreds of brains from deceased National Football League players and military service people who sustained repetitive hits to the head during their lives.

Before emerging treatments for brain injury can be successfully tested and used clinically in humans, novel research efforts such as this must fill the gap in imaging technology.

INNOVATION CAPITAL

Increasing Access to Innovative Treatments for the Patients and Communities in Western Massachusetts

The MLSC awarded Baystate Medical Center $3.9M in capital grant funding to expand Baystate's capacity to perform clinical trials in Western Massachusetts by building a clinical trials unit at Baystate Medical Center in Springfield and a satellite unit at Baystate Franklin Medical Center in Greenfield, and enhancing training in clinical research in collaboration with local community colleges.

"This support will expand our capacity to perform efficient and compliant clinical trials by building a Clinical Trials Unit at Baystate Medical Center, speed medical advances, and make novel treatments available to our diverse patient population. We are grateful to MLSC, our legislators, the Governor and the citizens of the Commonwealth for this investment in the future of biomedical research in Western Massachusetts," said Dr. Peter Friedmann, Chief Research Officer for Baystate Health and Associate Dean for Research, University of Massachusetts Medical School-Baystate.

For Baystate and its partners in Western Massachusetts, the project will increase access to innovative treatments for the patients and communities within the region, expand collaborations with academic and industry partners, and develop a workforce skilled in clinical research. The grant will expand local capacity to perform clinical trials in digital health and medical device innovations and as a result, patients in Western Massachusetts, will now have access to clinical trials infrastructure.

The MLSC presented Baystate Medical Center with a check to expand Baystate's capacity to perform clinical trials in Western Massachusetts.

Baystate has long partnered with UMass Medical School, the Pioneer Valley Life Sciences Institute, and the Institute for Applied Life Sciences at UMass Amherst, and the Clinical and Translational Science Institute at Tufts University to promote translational research in the western part of the state. Baystate's Clinical Trials Office, launched in 2018, builds upon these research partnerships, as well as relations with industry sponsors to conduct innovative translational research and high-impact clinical trials.

Since inception, the MLSC capital program has contributed to the creation of more than 1.9 million square feet of new life sciences research and manufacturing space across the Commonwealth, while creating more than 6,000 jobs in the building trades and life sciences sector. During this past year, nine funded capital projects were completed, bringing the total completed projects to 72 representing over $396 million in MLSC investments.

See a complete list of MLSC capital projects on page 26.

GROWTH CAPITAL

Supporting A Thriving Environment of Early-Stage Activity

The focus of MLSC's industry programs has been designing targeted investments in early-stage companies in order to feed the life sciences innovation and start-up economy in the Commonwealth. The MLSC has historically been able to promote excellence in innovative solutions in the life sciences, bridge the funding gaps associated with the long-life sciences R&D cycle, lessen the high cost of translating research into commercially viable products, and assist early-stage companies' goals to advance its product to commercialization. Moreover, these programs empower underserved entrepreneurs within the sector, filling critical funding needs and other supports not met by venture capital or industry.

Vera Hoffman, CEO of Reveal Pharmaceuticals, Inc., with her team.

In September, the MLSC announced more than $1.9 million in funding to support 10 early-stage life sciences companies in Massachusetts. The funding was through the MLSC's Milestone Achievement Program (MAP), which addresses the needs of early-stage life sciences companies by providing grant funding to execute critical, value-creating technical milestones. The 10 awardees are located across six Massachusetts communities and every major life sciences sector is represented among the companies.

"The milestone achievement program has been enabling for Mytide as it provides not only funding but external validation through the scientific advisory board process," said Dale Thomas, co-founder of MAP awardee Mytide Therapeutics. Mytide, which has recently located to South Boston, is building and validating a second-generation fully automated manufacturing platform system.

"Reveal has received tremendous support from the MLSC, first through the MassNextGen program, and now with the Milestone Achievement Program," said Vera Hoffman, who serves as CEO at Reveal Pharmaceuticals, Inc. Reveal was an inaugural awardee of the MLSC's Massachusetts Next Generation Initiative (MassNextGen), a competitive program to support women entrepreneurs in early-stage life sciences companies. "We are thrilled to have been selected for this award, which is enabling us to advance vital work toward a safer MRI contrast agent that will benefit millions of the most vulnerable patients."

Previous portfolio successes include greater than $41 million of follow on funding received, including a $15 million investment from Takeda, Pfizer, and AbbVie. This is in addition to a greater than $16 million to continue MAP-related activities through Phase I and II SBIR/STTR programs. Previous awardees have increased their headcount by 75 percent in two years to continue working as a result of the milestone funded by the MLSC.

Throughout the fiscal year, the MLSC has also leveraged its dollars to supplement other innovative opportunities for life sciences entrepreneurs in the Commonwealth. These funds provide additional funds to new and existing programs or initiatives. This includes providing $100,000 to support the MassMEDIC IGNITE program, a competitive initiative providing the medtech startup community with training, mentorship, and networking opportunities for founders and entrepreneurs.

Fueling Women-Led Ventures

Five early-stage life sciences companies receive capital and access to illustrious coaching network

The Massachusetts Next Generation Initiative (MassNextGen) launched in FY18 as a five year $1 million initiative aimed at increasing gender parity in the next generation of life science entrepreneurs and has grown significantly since then.

The MLSC, with Lt. Governor Karyn Polito, formally announced the 2019 awardees at a celebratory event at Sanofi in Cambridge. Five women-led companies were awardees through the second year of the competitive MassNextGen program. These companies represent a wide range of applications to improve human health. The $437,500 made available for this year's cohort, is an increase of more than $300,000 from the inaugural round. The addition of new corporate sponsors and an additional authorization from the MLSC Board of Directors made this increase in funding possible.

"This program demonstrates our administration's commitment to supporting diversity in the life sciences and the innovation economy," said Lt. Governor Polito. "The work and research of these female entrepreneurs and their respective companies represent what is possible in Massachusetts when we work together to provide critical capital funding and supports to help female leaders thrive and build successful enterprises."

In addition to the funding, awardees gain access to a yearlong, curated coaching program and network. The coaching program focuses on key topics such as pitching to investors, pricing and reimbursement, as well as negotiating term sheets. Equally as important, the coaches open up an invaluable network for awardees. Experienced entrepreneurs, investors, as well as business development professionals from large life sciences companies make up the MLSC's panel of committed coaches. These mentors provide the awardees with key tools to help further their company's success.

"As a MassNextGen coach, it is incredibly rewarding to provide expertise to help these companies advance to the next stage," said Jo Viney, PhD, Co-founder, President, and CSO of Pandion Therapeutics. "The real beauty of the MassNext-Gen program stems from organized group coaching sessions in concert with 1:1 regular interaction between entrepreneurs and the experienced coaches. We provide sage advice on creating a successful venture, help awardees expand their networks, and connect them with seasoned venture partners."

Since it launched, the program has already grown to more than a $2 million initiative through both funding and in-kind support from industry, including Takeda, King Street Properties, and Sanofi. The Center's Board and MassNextGen sponsors have been instrumental to the success of the program, with their commitment extending beyond financial support through providing coaches and space for events.

As an extension of MassNextGen, the Center hosted *A Pitch of Their Own* event in November 2018. Ten women pitched their early-stage companies to an audience of more than 60 life science investors and stakeholders. The women received feedback from a panel of judges and were able to network with investors.

The success of this program and the awardees continues to engage more support for greater gender parity in the life sciences and to highlight groundbreaking innovations launched by women in Massachusetts. We are proud to take the lead and to engage other leaders in understanding the imperative of establishing Massachusetts as the most equitable and diverse life sciences ecosystem in the country.

Awardees and supporters gather at the MNG 2019 Awards event, hosted by Sanofi.

"More women at all levels of the life sciences ecosystem make our industry stronger. We designed this initiative to first and foremost support women entrepreneurs, but also to shift the conversation towards the financial and the societal benefit of having a diverse team."

Jennifer Griffin, PhD
Vice President, Industry Strategy and Investments, MLSC

Year 1 Successes

Elizabeth O'Day, PhD, CEO and Founder of Olaris, has been able to expand her team to seven employees, enabling her to take a more active role in the company's business development and fundraising. Olaris recently closed a Series A round of funding. Dr. O'Day also continues to serve as co-chair of the Global Future Council on Biotechnology at the World Economic Forum. Olaris is validating the result of pivotal trials and upon successful completion aims to launch their first commercial diagnostic product that uses AI metabolomics profiling to match the right drug to the right patient. O'Day says MNG helped her venture to grow and succeed, to open doors, and to help her become a better CEO and leader.

Vera Hoffman CEO and Founder of Reveal Pharmaceuticals, a first-time founder, has accelerated the company's progress toward the clinic with their safer alternative to toxic, gadolinium-based MRI contrast agents. MLSC funding supported preparations for meetings with the FDA and hiring expert consultants to assist the development and derisking of Reveal's product, achieving significant advances toward clinical use. Vera also expanded her network through the MNG panel of coaches, enabling her to successfully translate her entrepreneurship skills from tech entrepreneurship to the life sciences.

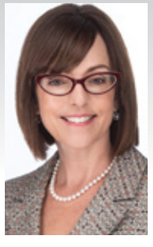
MassNextGen Fiscal Year 2019 Awardees

Azadeh Khanicheh, President, Envision Endoscopy Kanicheh and the EnVision Endoscopy team are developing a suturing adjunct that can be used with any endoscope, reducing steps and procedure time.

Carmela Mascio, President and CSO, LivOnyx To decrease the number of healthcare-associated infections, Mascio and LivOnyx are developing a rapid hand disinfection system.

Amy Ripka, CEO and President, Lucy Therapeutics Lucy Therapeutics, under Ripka's leadership, aims to develop a pharmaceutical to treat Rett Syndrome by targeting the mitochondria.

Minmin Yen, CEO, PhagePro To combat cholera outbreaks, PhagePro provides an oral cholera vaccine that offers immediate protection to families of patients infected with cholera. The work is an extension of Yen's PhD.

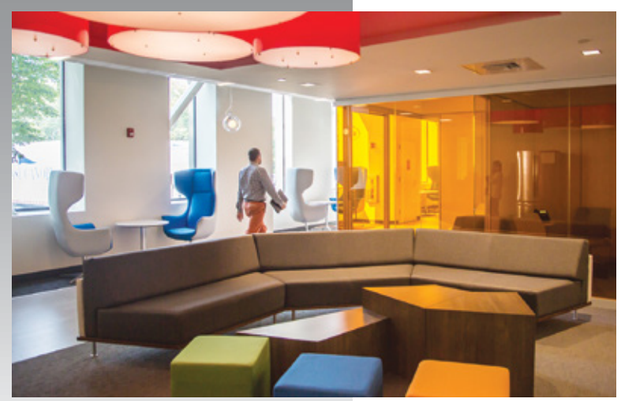


Suzanne Mitchell, CEO, See Yourself Health Mitchell and See Yourself Health provides diabetes patients with a digital health platform to empower and prepare patients to reverse the course of diabetes.

Tax Incentives: Catalyst for Innovation and Growth in the Life Sciences Across the Commonwealth

In Fiscal Year 2019, the MLSC awarded $20 million in tax incentives to 27 life sciences companies under the MLSC's 2018 Tax Incentive program. The companies receiving tax incentive awards have committed to creating 1,259 new jobs in the Commonwealth during the calendar year 2019 and retaining them at least through 2023.

"We are proud of the continued leadership that the Massachusetts Life Sciences Center has brought to keeping the Commonwealth as the most desirable place for life sciences companies to grow and succeed," said MLSC Co-Chair and Housing and Economic Development Secretary Mike Kennealy. "These awards are just one piece of this administration's efforts to train the next generation of talent, invest in infrastructure and equipment, and do our part to support the groundbreaking advancements being made in labs across Massachusetts."



Moderna's state-of-the-art facility in Norwood.

The 27 awardees represent a diverse cohort of companies representing various locations in the Commonwealth. The majority of the awardees (70 percent) are companies that are either headquartered or expanding to a multi-facility location outside of the Greater Boston area.

"Masy is so pleased to be recognized by Massachusetts Life Science Center as we continue to add jobs in Pepperell, invest in our business, and support our pharmaceutical, biotech, and medical device customers," said Masy BioServices President Laurie Masiello. "The tax incentive provides real jobs for real families to support our growth and we are proud to make these investments for our customers and our families."

The MLSC carefully monitors the performance of companies that have received tax incentives to ensure compliance with the headcount commitments they are required to reach per their agreement with the Center. As part of the MLSC's agreements with awardees, recipients of tax incentives are required to report job creation results to the Center by the end of the calendar year. Under the Life Sciences Act, the Department of Revenue has the authority to recover or "clawback" incentives in full or in a prorated amount from companies that the MLSC determines will not meet the minimum job creation threshold in their tax incentive agreement.

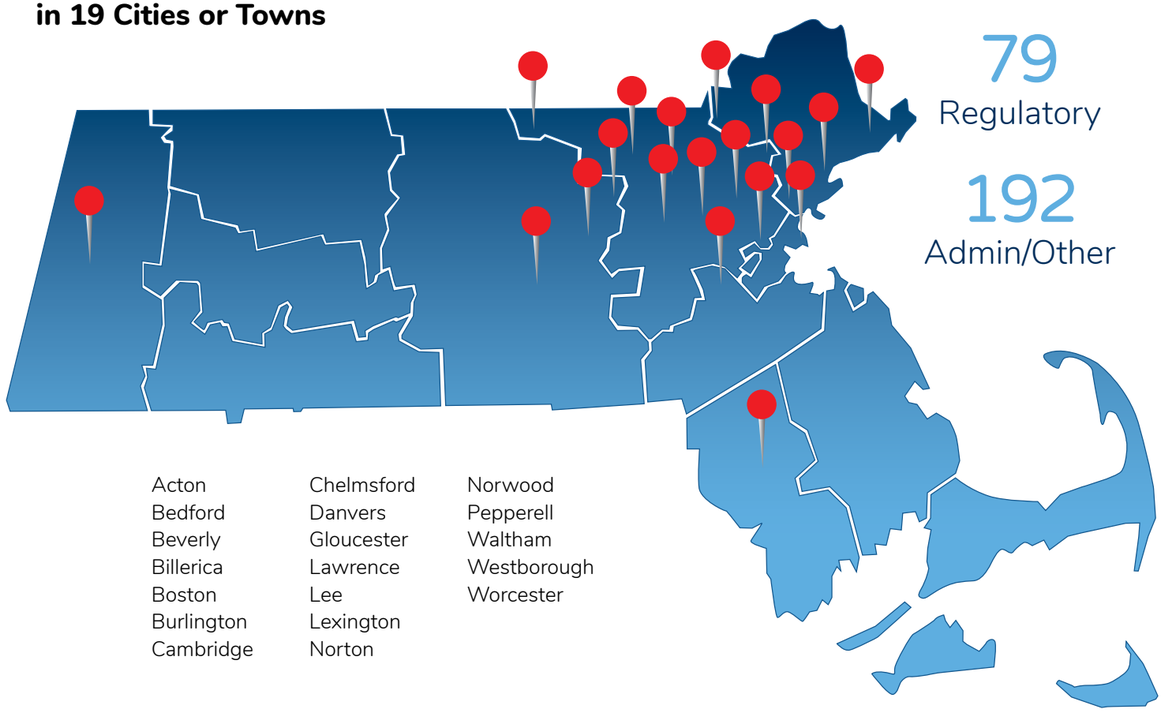
"The life sciences industry continues to be a center of innovation and job growth in the Commonwealth, and the tax incentive program is an essential tool to advance the progress that Massachusetts has made," said Administration and Finance Secretary Michael J. Heffernan, co-chair of the MLSC board. "This program and today's awardees represent another example of the Administration's commitment to job growth in every corner of the Commonwealth."

Since inception, the MLSC Board of Directors has authorized 256 awards under this program representing more than $221 million of incentives with the goal of creating approximately 11,337 net new jobs across the Commonwealth and maintaining them over a 5-year period.

- **21 awardees** have been declined due to changes in their business or general economic conditions and did not claim the incentives on their tax returns.
- **75 awardees** have been terminated due to the inability to reach their job creation commitments under the statutory guidelines and were required to refund their incentives either in full or on a prorated basis to the Department of Revenue. The MLSC has decertified three awardees for not achieving the statutory thresholds who did not voluntarily terminate their award.
- **72 awardees** from 2009 to 2013 programs have completed their 5-year term and no future reporting is required. Collectively, the completed awards have created, hired, and maintained 2,531 net new jobs over a period of 5 years under the program.

As of June 30, 2019, there were 88 active awards from 2014 through 2018 program years, with a combined commitment of 4,895 net new jobs under the program. To date, the Tax Incentive Program has resulted in combined net new hire commitments or actual new hires of 7,426 jobs among active and completed awards.

Fiscal Year 2019 Awardee Companies Located in 19 Cities or Towns



Acton	Chelmsford	Norwood
Bedford	Danvers	Pepperell
Beverly	Gloucester	Waltham
Billerica	Lawrence	Westborough
Boston	Lee	Worcester
Burlington	Lexington	
Cambridge	Norton	

Jobs Created by Function in Sectors (estimated)

462
Manufacturing

114
Sales

58
Data Science

355
R&D

79
Regulatory

192
Admin/Other

Notable Expansions and Arrivals
to Massachusetts, the Life Sciences Hub

The Massachusetts Life Sciences Center is dedicated to making strategic investments that will strengthen the Commonwealth's flourishing ecosystem by supporting innovation, R&D, commercialization, and manufacturing. The Life Sciences Tax Incentive offers a suite of incentives to companies growing their activities in these areas through a competitive, annual process.

This year, MLSC strategically deployed these highly competitive awards to promote advances in key growth technologies including cell and gene therapy, data science, and enabling technologies.

Cell and Gene Therapy

Many 2018 awardees are advancing first-in-class cell and gene therapies from the lab into early-stage manufacturing. These highly complex products hold the promise of treatments or even cures for millions of patients worldwide.

Homology, a Bedford-based biotechnology company recently built out a 25,000 square foot GMP manufacturing facility to accommodate early clinical trials of its pipeline of gene therapy and gene editing technologies. The company focuses on curing monogenetic diseases, or diseases caused by a defect in a single gene, through a proprietary platform involving novel delivery vectors.

Astellas Institute for Regenerative Medicine (AIRM) is applying stem cell research in ophthalmology and recently inked a deal with Boston-based Frequency Therapeutics to expand into hearing loss. AIRM occupies two facilities in Marlborough and is in the construction phase of a 250,000 square foot buildout in Westborough to accommodate rapid growth in Massachusetts.

Companies developing advanced therapeutics that do not have the internal manufacturing capabilities rely on third-party manufacturing through contract development and manufacturing organizations (CDMO). Many have found the lack of available CDMO capacity or interest in producing the small batches of product necessary for clinical trials to be a crucial limiting factor. MLSC is leveraging resources to address this issue.

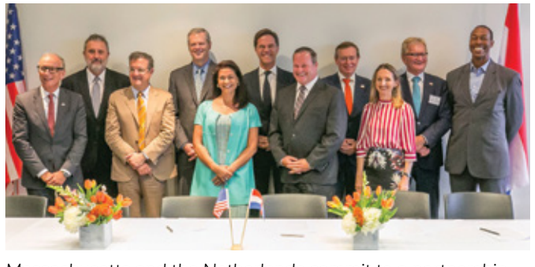
Through the Massachusetts Transition and Growth Program (MassTAG), a recruitment tool to target companies establishing their first presence in Massachusetts, MLSC awarded Lykan Bio grant funding to build out a 60,000 square foot contract manufacturing facility, with an initial focus on providing end-to-end manufacturing solutions for new CAR-T therapies.

Festo Corporation is a manufacturing company that develops controls and processes for industrial automation in labs.

Enabling Technology

The role of data science in life science innovation is rapidly growing and evolving. If harnessed, the information explosion has the potential to catalyze new discoveries and treatments in healthcare to benefit patients in need. Companies continue to see Massachusetts as the place to locate and grow during this time of digital transformation.

Medidata, the global life sciences and analytics company, purchased Waltham-based Shyft Analytics in June 2018, expanding its footprint to a 117,000 square foot R&D hub in Boston's financial district. With the support of MLSC's Tax Incentive program, Medidata plans to expand its capacity by adding new data scientist jobs over the next five years to provide cloud computing, clinical trial management, and data analytics services, now as a division of Dassault Systemes — a global software company with a major presence in Massachusetts.



Massachusetts and the Netherlands commit to a partnership.

Governor Baker joins Insulet and legislative leaders to cut the ribbon on the expanded Acton facility.

Invicro, headquartered in Boston, supports drug discovery, development, and trials through advanced imaging and data analytics services. The company is expanding its downtown headquarters to support significant headcount growth throughout 2018 and 2019, bringing on additional researchers and data scientist.

Medical Device

A key cornerstone to Massachusetts' thriving life sciences ecosystem is the presence of leading medical device companies. Insulet was a 2018 Tax Incentive award recipient, committing to create 85 jobs in Acton. The company's 330,000 square foot facility houses more than 700 employees on four manufacturing lines. Insulet produces the OmniPod, a customizable insulin delivery system, and other advanced drug delivery platforms.

International Arrivals

Massachusetts continues to command the attention of international companies looking to propel their research to the next level by capitalizing on the state's talented workforce, leading academic research and medical institutions, cutting-edge research facilities and equipment, and robust and intelligent risk capital. As the international hub for life sciences innovation and collaboration, countries like the Netherlands maintain an incubation and collaboration hub in Cambridge. Taipei and Denmark established similar programs this year.

Governor Baker welcomes Servier leadership to the state.

Netherlands Prime Minister Mark Rutte and other cabinet officials joined Governor Baker (and MLSC President and CEO, Travis McCready), in signing a Memorandum of Understanding committing to a broad-based partnership to advance collaboration between the Netherlands and the Commonwealth of Massachusetts.

Global pharmaceutical company Servier established its first U.S. presence with a collaboration hub in Kendall Square and its North American Headquarters in Boston's Seaport District.

At MassEcon's Annual Corporate Welcome Reception, Governor Baker honored both Ontoforce, a Belgian data and visualization platform provider, and Festo, a specialist in lab services automation from Germany.

SPOTLIGHT ON RNA-Based Therapeutics

RNA acts as the principal messenger delivering instructions from DNA to control protein synthesis. Massachusetts is a hotbed of RNA-based research, drug development, and manufacturing. Following on the heels of Massachusetts-based Alnylam's groundbreaking approval of the first RNA interference drug, these 2018 awardees are expanding the possibilities of leveraging RNA in treating and curing disease.

Dicerna Pharmaceuticals, Inc., another company focused on RNA interference, is developing therapeutics for diseases involving the liver. The company plans to double its Massachusetts headcount this year, moving its headquarters from Cambridge to a larger facility in Lexington to accommodate aggressive growth.

Stoke Therapeutics, in Bedford, announced the closing of its initial public offering (IPO), raising approximately $142 million for testing of its Dravet drug, an experimental therapy for a rare form of epilepsy. Stoke's platform utilizes pre-messenger RNA to restore healthy protein expression.

Moderna Therapeutics also utilizes messenger RNA to direct the body to produce healthy proteins. The company recently cut the ribbon on a state-of-the-art 200,000 square foot clinical development manufacturing plant in Norwood, built to advance the company's vast pipeline of mRNA-based vaccines, immune-oncologics, and other regenerative therapies.

Catalyzing Biomanufacturing Innovation

Biomanufacturing is a widely known challenge across all biotech sectors, with significant challenges noted in novel modalities. Massachusetts recognizes that as the development of new innovative therapeutic treatments continues, currently marketed and future products can benefit from biomanufacturing innovation to reduce costs and avoid drug shortages.

This past May, the MLSC announced $2.82 million in funding through a new capital program focused on catalyzing biomanufacturing innovation. The Building Breakthroughs capital program will fund four projects led by Worcester Polytechnic Institute (WPI), UMass Lowell, and the Massachusetts Institute of Technology (MIT). The capital program is part of a robust, collaborative effort by the MLSC and its partners to encourage cross-sector leadership in the area of biomanufacturing.

In 2016, the MLSC announced its partnership in the nation's first biomanufacturing innovation institute, known as the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL). The Center serves as the anchor to the northeastern sector for the biopharmaceutical manufacturing project.

Photo: Matthew Modoono/Northeastern University

Northeastern University's Biopharmaceutical Analysis Training Laboratory (BATL).

Northeastern University's Biopharmaceutical Analysis Training Laboratory (BATL) will open a new facility on Northeastern's Innovation Campus in Burlington, Massachusetts, to train students in drug creation, manufacturing, and regulatory steps.

"The MLSC's funding will allow BATL to expand into training on biomanufacturing and grow the biologics field in Massachusetts," said Dr. Jared Auclair, Director of Northeastern University's BATL.

In addition, this past fiscal year the MLSC provided $5 million in capital funding to support the build-out of LabCentral 238, a new facility to support expansion of local biomanufacturing and life sciences technical talent. MLSC funding will support the necessary infrastructure and purchase of lab equipment, which will include process development labs and non-GMP pilot plant capabilities for companies to perform process development, scale-up, and engineering runs.

A rendering of LabCentral 238, which will be a fully functional life sciences laboratory with a focus on scale-up biomanufacturing comprising approximately 100,000 square feet.

"This new facility will provide start-ups access to high quality biomanufacturing facilities to start their process development activities earlier, while also making connections with Massachusetts contract bio-manufacturing companies and creating a biomanufacturing workforce development program to expand biotech jobs in Massachusetts," said Johannes Fruehauf, Co-founder and President of LabCentral.

Since 2016, the MLSC has committed more than $21 million to leverage outside investment to accelerate biomanufacturing innovation, support the development of standards that enable more efficient and rapid manufacturing capabilities, and educate and train a world-leading manufacturing workforce.

Supporting the Broader Life Sciences Community

In February 2019, the MLSC proudly awarded the National Society of Black Engineers Boston (NSBE Boston) with a $25,000 grant to support NSBE Boston's pre-collegiate, collegiate, and professional development initiatives. NSBE Boston's bold vision is encouraging students to pursue a career in engineering, with an ultimate goal of increasing the annual number of black engineering bachelor's degree recipients to 10,000 by 2025. With this worthy mission in mind, NSBE Boston has shaped its programming to inspire the innovators of tomorrow through professional advancement, youth, pre-college, and collegiate initiatives, and cultural and community-focused initiatives.

As part of the Center's mission to support the growth and development of the life sciences in Massachusetts we must support organizations, like NSBE Boston, that are making tremendous efforts to propel the development of new therapies, devices, scientific advancements, and drive economic development initiatives within the Commonwealth. Throughout the 2019 fiscal year, the MLSC awarded funding to Quincy College's Biotechnology and Good Manufacturing Practice training program, i2 Learning, Life Science Cares, MassMEDIC, and NSBE Boston, totaling nearly $200,000.

MLSC staff welcomed NSBE Boston Professionals, students from Boston's Jeremiah E. Burke High School, and industry leaders from MassMEDIC, UMass Lowell, Insulet, and Boston Engineering to the MLSC office.

"All black students should be able to envision themselves as engineers or scientists. Moreover, there is a national imperative for more black engineers to continue our country's progress in STEM fields. We are grateful for the funding the MLSC is providing to spark and sustain interest in engineering and technology and provide experiences for students and professionals. This will open new doors and opportunities in academic achievement, leadership, and collaboration."

Ladi Olaoye
President of NSBE Boston

Financial Summary

Statement of Net Position
July 1, 2018–June 30, 2019

Assets	
Current assets	$44,325,828
Assets held on behalf of Neuroscience Consortium	1,841,060
Noncurrent assets	464,543
Capital assets	113,968
Total assets	**$46,745,399**
Liabilities	
Current liabilities	$10,366,539
Noncurrent liabilities	2,052,060
Total liabilities	**12,418,599**
Net Position	
Net investment in capital assets	113,968
Unrestricted	34,212,832
Total net position	**34,326,800**
Total liabilities and net position	**$46,745,399**

Statements of Revenues, Expenses and Changes in Net Position

Revenues and Expenses	
Operating revenues	$18,031,944
Operating expenses	-26,413,376
Operating loss	**-8,381,432**
Nonoperating revenues	730,455
Capital contributions	10,000,000
Increase/(decrease) in net position	**$2,349,023**

The complete audited financial statements are available on the Massachusetts Life Sciences Center website: www.masslifesciences.com or you can request a copy by calling 781-373-7777.

Fiscal Year 2019 Investments

Awards Approved by the MLSC Board of Directors

Month/ Year	Awardee	Program	Headquarters/ Work Performed	Award Amount
Oct-18	Quincy College	Investment Fund	Quincy	$8,820
Dec-18	FY19-20 Internship Program	Internship Challenge	Various, Statewide	$3,700,000
Dec-18	2019 High School Apprenticeship Program	High School Apprenticeship	Various, Statewide	$550,000
Dec-18	MassMedic IGNITE	Investment Fund	Boston	$100,000
Dec-18	UMass Lowell	Capital, NIIMBL	Lowell	$300,000
Feb-19	Baystate Health	Capital	Springfield	$3,949,912
Feb-19	Boston University Medical School	Capital	Boston	$4,991,000
Feb-19	Brigham & Women's Hospital	Capital	Boston	$5,000,000
Feb-19	Boston Children's Hospital	Capital	Boston	$1,545,050
Feb-19	Gloucester Marine Genomics Institute	Capital	Gloucester	$174,383
Feb-19	Massachusetts General Hospital	Capital	Boston	$4,805,000
Feb-19	Northeastern University	Capital	Boston	$4,271,867
Feb-19	Quincy College	Capital	Quincy	$725,739
Feb-19	MassBay Community College	Capital	Wellesley	$500,000
Feb-19	Massachusetts Biomedical Initiatives	Capital	Worcester	$3,494,256
Feb-19	North Shore InnoVentures	Capital	Beverly	$1,500,000
Feb-19	MIT/MassBiologics	Capital, NIIMBL	Cambridge	$418,000
Feb-19	MIT	Capital, NIIMBL	Cambridge	$50,225
Feb-19	MIT	Capital, NIIMBL	Cambridge	$272,646
Feb-19	MIT	Capital, Building Breakthroughs	Cambridge	$750,000
Feb-19	MIT	Capital, Building Breakthroughs	Cambridge	$750,000
Feb-19	MIT	Capital, Building Breakthroughs	Cambridge	$750,000
Feb-19	MIT	Capital, Building Breakthroughs	Cambridge	$750,000
Feb-19	UMass Lowell	Capital, Building Breakthroughs	Lowell	$746,118
Feb-19	WPI	Capital, Building Breakthroughs	Worcester	$580,500
Feb-19	Boston Public School District	STEM Equipment and Professional Development	Boston	$421,668
Feb-19	Brockton Public School District	STEM Equipment and Professional Development	Brockton	$200,000
Feb-19	Lawrence Public School District	STEM Equipment and Professional Development	Lawrence	$134,373
Feb-19	Lowell Public School District	STEM Equipment and Professional Development	Lowell	$65,317
Feb-19	Springfield Public School District	STEM Equipment and Professional Development	Springfield	$316,697
Feb-19	National Society of Black Engineers, Boston	Investment Fund	Boston	$25,000
Mar-19	Life Science Cares	Investment Fund	Various, Statewide	$7,500
Apr-19	FY19 Seed Fund	Seed Fund	Lowell, Worcester, Amherst, Springfield, and Pittsfield	$1,000,000
Apr-19	Abiomed, Inc.	Tax Incentive Program	Danvers	$459,125
Apr-19	Alkermes, Inc.	Tax Incentive Program	Waltham	$1,185,000
Apr-19	Alnylam Pharmaceuticals, Inc.	Tax Incentive Program	Cambridge/Norton	$2,250,000
Apr-19	Astellas Institute for Regenerative Medicine	Tax Incentive Program	Marlborough	$382,605
Apr-19	Berkshire Sterile Manufacturing, Inc.	Tax Incentive Program	Lee	$215,000
Apr-19	Charm Sciences, Inc.	Tax Incentive Program	Lawrence	$153,042
Apr-19	Corbus Pharmaceuticals, Inc.	Tax Incentive Program	Norwood	$525,000
Apr-19	Day Zero Diagnostics, Inc.	Tax Incentive Program	Boston	$150,000
Apr-19	Dicerna Pharmaceuticals, Inc.	Tax Incentive Program	Cambridge	$1,125,000
Apr-19	EMD Holding Corporation	Tax Incentive Program	Burlington	$1,125,000
Apr-19	Freudenberg Medical, LLC	Tax Incentive Program	Gloucester	$153,042
Apr-19	Gritstone Oncology, Inc.	Tax Incentive Program	Cambridge	$330,000
Apr-19	Homology Medicines, Inc.	Tax Incentive Program	Bedford	$918,250
Apr-19	Instrumentation Laboratory Company	Tax Incentive Program	Bedford	$351,996

Fiscal Year 2019 Investments (continued)

Month/ Year	Awardee	Program	Headquarters/ Work Performed	Award Amount
Apr-19	Insulet Corporation	Tax Incentive Program	Acton	$1,700,000
Apr-19	inviCRO, LLC	Tax Incentive Program	Boston	$595,000
Apr-19	Ipsen Biopharmaceuticals, Inc.	Tax Incentive Program	Cambridge	$1,225,000
Apr-19	Kiniksa Pharmaceuticals Corp.	Tax Incentive Program	Lexington	$825,000
Apr-19	Masy Systems, Inc.	Tax Incentive Program	Pepperell	$153,042
Apr-19	Medidata Solutions, Inc. and SHYFT Analytics, Inc.	Tax Incentive Program	Boston	$500,000
Apr-19	ModernaTX, Inc.	Tax Incentive Program	Cambridge/Norwood	$2,400,000
Apr-19	Nova Biomedical Corporation	Tax Incentive Program	Waltham	$1,147,814
Apr-19	Quanterix Corporation	Tax Incentive Program	Lexington	$306,084
Apr-19	Solid Biosciences Inc.	Tax Incentive Program	Cambridge	$375,000
Apr-19	Stoke Therapeutics, Inc.	Tax Incentive Program	Bedford	$300,000
Apr-19	Wuxi Biologics USA, LLC	Tax Incentive Program	Worcester	$400,000
Apr-19	Zoll Medical Corporation	Tax Incentive Program	Chelmsford	$750,000
Apr-19	Flaskworks, LLC	Milestone Achievement Program (MAP)	Boston	$200,000
Apr-19	Gel4Med, Inc.	MAP	Lowell	$200,000
Apr-19	Lumme, Inc.	MAP	Amherst	$197,500
Apr-19	MyTide Therapeutics, Inc.	MAP	Boston	$200,000
Apr-19	PhAST Corp.	MAP	Cambridge	$200,000
Apr-19	Prapela, Inc.	MAP	Concord	$200,000
Apr-19	Reveal Pharmaceuticals, Inc.	MAP	Cambridge	$200,000
Apr-19	UrSure, Inc.	MAP	Allston	$196,800
Apr-19	Versatope Therapeutics, Inc.	MAP	Lowell	$193,000
Apr-19	XGenomes Corp.	MAP	Cambridge	$200,000
Apr-19	Envision Endoscopy	*MassNextGen	Somerville	$87,500
Apr-19	LivOnyx, Inc.	*MassNextGen	Allston	$87,500
Apr-19	Lucy Therapeutics, Inc.	*MassNextGen	Reading	$87,500
Apr-19	PhagePro, Inc.	*MassNextGen	Somerville	$87,500
Apr-19	See Yourself Health, LLC	*MassNextGen	Beverly	$87,500
Apr-19	Lykan Bioscience, LLC	MassTAG	Hopkinton	$420,000
Jun-19	i2 Learning	Investment Fund	Attleboro, Everett, Methuen, Peabody, Westfield	$50,000
Jun-19	Boston Children's Hospital	Capital, Bits to Bytes	Boston	$658,167
Jun-19	Brigham and Women's Hospital	Capital, Bits to Bytes	Boston	$748,826
Jun-19	Brigham and Women's Hospital	Capital, Bits to Bytes	Boston	$750,000
Jun-19	Broad Institute	Capital, Bits to Bytes	Cambridge	$821,000
Jun-19	Broad Institute	Capital, Bits to Bytes	Cambridge	$750,000
Jun-19	Harvard Medical School	Capital, Bits to Bytes	Boston	$750,000
Jun-19	Harvard School of Public Health	Capital, Bits to Bytes	Boston	$736,750
Jun-19	Northeastern University	Capital, Bits to Bytes	Boston	$750,000
Jun-19	UMass Medical School	Capital, Bits to Bytes	Worcester	$750,000
Jun-19	2019 High School Apprenticeship Program	High School Apprenticeship	Various, Statewide	$100,000
Jun-19	LabCentral	Capital	Cambridge	$5,000,000
Total Fiscal Year 2019 Awards				**$76,063,614**

*MassNextGen is also supported by funds from Takeda, King Street Properties and Sanofi Genzyme.

Certified Life Sciences Companies

List of Certified Active Life Sciences Companies as of June 30, 2019

Company	Location
3Derm Systems, Inc.	Boston
908 Devices, Inc.	Boston
AbbVie, Inc.	Worcester
Abiomed, Inc.	Danvers
Acorda Therapeutics, Inc.	Waltham
Akili Interactive Labs, Inc.	Boston
Alcyone Lifesciences, Inc.	Lowell
Aldatu Biosciences	Watertown
Alkermes, Inc.	Waltham
Alnylam Pharmaceuticals, Inc.	Cambridge
Amgen, Inc.	Cambridge
Astellas Institute for Regenerative Medicine	Marlborough
Berkshire Sterile Manufacturing	Lee
Bio2 Technologies, Inc.	Woburn
Blueprint Medicines Corporation	Cambridge
Charles River Laboratories, Inc.	Wilmington
Charm Sciences, Inc.	Lawrence
Citra Labs, LLC	Hanover
Commonwealth Diagnostics Int'l., Inc.	Salem
Corbus Pharmaceuticals, Inc.	Norwood
Day Zero Diagnostics, Inc.	Allston
Decibel Therapeutics, Inc.	Boston
DetectoGen, Inc.	Westborough
Dicerna Pharmaceuticals, Inc.	Cambridge
EMD Holding Corporation	Burlington
Emulate, Inc.	Boston
Enanta Pharmaceuticals, Inc.	Watertown
Envision Endoscopy	Somerville
Eutropics Pharmaceuticals, Inc.	Cambridge
Evelo Biosciences, Inc.	Cambridge
Excellims Corporation	Acton
Flaskworks, LLC	Boston
Fresenius Kabi Compounding USA, LLC	Canton
Freudenberg Medical, LLC	Gloucester
Fulcrum Therapeutics, Inc.	Cambridge
Gel4Med, Inc.	Lowell
Ginkgo Bioworks, Inc.	Boston
Gritstone Oncology, Inc.	Cambridge
GlaxoSmithKlein, plc	Waltham
Hepatochem, Inc.	Beverly
Homology Medicines, Inc.	Bedford
HydroGlyde Coatings, LLC	Worcester
Indigo Agriculture, Inc.	Boston
InsomniSolv, Inc.	Beverly
Instrumentation Laboratory Company	Bedford
Insulet Corporation	Acton
inviCRO, LLC	Boston
Ipsen Biopharmaceuticals, Inc.	Cambridge
Kala Pharmaceuticals, Inc.	Waltham
Kiniksa Pharmaceuticals Corporation	Lexington
Lariat Biosciences, Inc.	Beverly
LivOnyx, Inc.	Allston
Lucy Therapeutics, Inc.	Reading
Lumme, Inc.	Amherst
LX Medical Corporation	Westwood
Lykan Bioscience, LLC	Hopkinton
Masy Systems, Inc.	Pepperell
Medidata Solutions, Inc. and SHYFT Analytics, Inc.	Boston
Micro-Leads, Inc.	Somerville
Moderna Therapeutics, Inc.	Cambridge
MyTide Therapeutics, Inc.	Boston
Nitto Denko Avecia, Inc.	Milford
Nova Biomedical Corporation	Waltham
Olaris Therapeutics, Inc.	Cambridge
PhagePro, Inc.	Somerville
PhAST Corporation	Cambridge
Platelet Biogenesis, Inc.	Cambridge
Prapela, Inc.	Concord
ProTom International Holding Corporation	Wakefield
Quanterix Corporation	Cambridge
Quest Diagnostics, Inc.	Marlborough
Radius Health, Inc.	Waltham
REBIScan, Inc.	Boston
Reveal Pharmaceuticals, Inc.	Cambridge
Rubius Therapeutics	Cambridge
Sage Therapeutics, Inc.	Cambridge
See Yourself Health, LLC	Beverly
Seres Therapeutics, Inc.	Cambridge
Siemens Healthcare Diagnostics, Inc.	East Walpole
Snapdragon Chemistry	Waltham
Solid Biosciences, Inc.	Cambridge
Spero Therapeutics, Inc.	Cambridge
SQZ Biotech	Watertown
Stoke Therapeutics, Inc.	Bedford
Takeda Pharmaceuticals America, Inc.	Cambridge
TESARO, Inc.	Waltham
UrSure, Inc.	Allston
Vaxess Technologies, Inc.	Cambridge
Versatope Therapeutics, Inc.	Lowell
Vicarious Surgical, Inc.	Cambridge
WAVE Life Sciences	Cambridge
Windgap Medical	Watertown
Wuxi Biologics USA, LLC	Cambridge
XGenomes Corporation	Cambridge
Zoll Medical Corporation	Chelmsford

Capital Awards

Includes all Capital Awards from inception through June 30, 2019.

Institution	Total Award	Year of Award	FY 2019 Status
Bay Path College	$50,000	FY 2013	Completed
Bay Path University	$499,996	FY 2015	Completed
Baystate Health	$3,949,912	FY 2019	Ongoing
Baystate Medical Center/Health Informatics & Technology Innovation Center	$5,500,000	FY 2013	Completed
Berkshire Community College	$499,998	FY 2015	Completed
Berkshire Innovation Center	$2,300,000	FY 2018	Ongoing
BioBuilder	$500,000	FY 2017	Ongoing
Bits to Bytes			
Boston Children's Hospital (Subcellular Dynamics)	$658,167	FY 2019	Ongoing
Brigham and Women's Hospital (Pathology Images)	$748,826	FY 2019	Ongoing
Brigham and Women's Hospital (Serum miRNA)	$750,000	FY 2019	Ongoing
Broad Institute (Cell Painting)	$821,000	FY 2019	Ongoing
Broad Institute (Data driven approaches to cardio diseases)	$750,000	FY 2019	Ongoing
Harvard Medical School (Metabolomics and Big Data)	$750,000	FY 2019	Ongoing
Harvard School of Public Health (Microbiome in chronic disease management)	$736,750	FY 2019	Ongoing
Northeastern University (In Silico design of an arrary chromophores)	$750,000	FY 2019	Ongoing
UMass Medical School (AI in high resolution neurovascular imaging)	$750,000	FY 2019	Ongoing
Boston Children's Hospital	$1,545,050	FY 2019	Ongoing
Boston Children's Hospital	$4,014,031	FY 2013	Completed
Boston Children's Hospital	$2,263,133	FY 2015	Completed
Boston University Biomedical Lab and Clinical Sciences Program	$180,000	FY 2015	Completed
Boston University Business Innovation Center	$363,750	FY 2015	Completed
Boston University Medical School	$4,991,000	FY 2019	Ongoing
Boston University Medical School	$1,743,648	FY 2015	Completed
Brigham & Women's Hospital	$5,000,000	FY 2019	Ongoing
Brigham & Women's Hospital	$2,603,537	FY 2015	Completed
Bristol Community College	$4,400,000	FY 2017	Ongoing
Building Breakthroughs			
MIT (CCTC- Braatz)	$750,000	FY 2019	Ongoing
MIT (Model Predictive Controls)	$750,000	FY 2019	Ongoing
UMass Lowell (Integrated Continuous Biopharma Manufacturing)	$746,118	FY 2019	Ongoing
WPI (Recombinant Adeno-Associated Virus)	$580,500	FY 2019	Ongoing
Bunker Hill Community College	$200,000	FY 2013	Completed
Cape Cod Community College	$394,912	FY 2014	Completed
City of Taunton	$55,000	FY 2014	Completed
Dana-Farber Cancer Institute	$4,629,019	FY 2017	Completed
Dana-Farber Molecular Cancer Imaging Center	$10,000,000	FY 2012	Completed
Dean College	$297,030	FY 2017	Completed
Framingham State University	$454,000	FY 2017	Completed
Framingham State University	$3,000,000	FY 2014	Completed
Framingham Wastewater and Pumping Station	$12,860,534	FY 2009	Completed
Gloucester Marine Genomics Institute	$2,744,219	FY 2017	Ongoing
Gloucester Marine Genomics Institute	$174,383	FY 2019	Ongoing
Harvard Medical School	$4,345,000	FY 2017	Ongoing
Harvard Medical School	$4,999,921	FY 2013	Completed
Harvard School of Public Health	$4,912,307	FY 2017	Ongoing
Holyoke Community College	$3,800,000	FY 2013	Completed
Holyoke Community College	$300,000	FY 2015	Completed
Institute for Protein Innovation	$5,000,000	FY 2017	Ongoing
Joslin Diabetes Center's Translational Center for the Cure of Diabetes	$5,000,000	FY 2012	Completed
Just-A-Start	$46,079	FY 2014	Completed
Just-A-Start	$49,992	FY 2015	Completed
LabCentral	$4,955,515	FY 2013	Completed
LabCentral	$5,000,000	FY 2014	Completed
LabCentral 238	$5,000,000	FY 2019	Ongoing
MA Green High Performance Computing Center	$4,540,000	FY 2013	Completed
Marine Biological Laboratory in Woods Hole	$10,000,000	FY 2009	Completed
Massachusetts Biomedical Initiatives	$3,494,256	FY 2019	Ongoing
Massachusetts General Hospital	$4,805,000	FY 2019	Ongoing
Massachusetts Institute of Technology	$1,838,000	FY 2015	Completed
MassBay Community College	$500,000	FY 2019	Ongoing
MassBay Community College	$43,920	FY 2014	Completed
MassBiologics-UMass Medical School	$5,000,000	FY 2014	Completed
Merrimack College	$500,000	FY 2017	Completed
Middlesex Community College	$36,664	FY 2013	Completed
Middlesex Community College	$3,000,000	FY 2014	Completed
Mount Wachusett Community College	$1,646,787	FY 2017	Ongoing
Mount Wachusett Community College	$499,146	FY 2014	Completed
Museum of Science "Hall of Human Life"	$5,000,000	FY 2012	Completed
New Bedford Economic Development Council	$75,000	FY 2014	Completed
NIIMBL - MassBiologics	$447,566	FY 2018	Ongoing
NIIMBL - MIT (Nanofluidic Analytics)	$50,225	FY 2019	Ongoing
NIIMBL - MIT (Small-scale Membrane-less Perfusion Bioreactor System)	$272,646	FY 2019	Ongoing
NIIMBL - MIT (Viral Vaccines)	$418,000	FY 2019	Ongoing
NIIMBL - MIT/WPI	$599,696	FY 2018	Ongoing
NIIMBL - UMass Lowell	$246,754	FY 2018	Ongoing
NIIMBL - UMass Lowell-Lyophilization Scale-up	$1,000,000	FY 2018	Ongoing
NIIMBL - UMass Lowell-Lyophilization Scale-up (Additional funding)	$300,000	FY 2019	Ongoing
NIIMBL - WPI-SPIDER Project	$140,000	FY 2018	Ongoing
North Shore Biotech Consortium	$5,000,000	FY 2014	Completed
North Shore InnoVentures	$1,500,000	FY 2019	Ongoing
Northeastern University	$4,271,867	FY 2019	Ongoing
Northern Essex Community College	$1,242,000	FY 2013	Completed
Pittsfield Economic Development Authority	$55,000	FY 2013	Completed
Pittsfield Economic Development Authority/Berkshire Innovation Center	$9,670,000	FY 2014	Ongoing
Quincy College	$725,739	FY 2019	Ongoing
Quincy College	$78,799	FY 2013	Completed
Quincy College	$499,872	FY 2014	Completed
Quinsigamond Community College	$310,000	FY 2013	Completed
Quinsigamond Community College	$499,880	FY 2014	Completed
Quinsigamond Community College	$4,999,998	FY 2015	Completed
Regis College	$50,000	FY 2013	Completed
Regis College	$355,000	FY 2015	Completed
Roxbury Community College	$3,000,000	FY 2015	Completed
Smith College	$489,435	FY 2017	Completed
Springfield Technical Community College	$85,673	FY 2013	Completed
Springfield Technical Community College	$972,850	FY 2015	Completed
The Forsyth Institute	$4,133,215	FY 2013	Completed
The Forsyth Institute	$2,210,229	FY 2015	Completed
Tufts/Cummings School of Veterinary Medicine, NE Regional Biosafety Lab in Grafton	$9,500,000	FY 2009	Completed
UMass Amherst Life Sciences Laboratories	$95,000,000	FY 2013	Completed
UMass Boston /Dana-Farber Center for Personalized Cancer Therapy	$2,000,000	FY 2011	Completed
UMass Boston /Dana-Farber Center for Personalized Cancer Therapy Expansion	$7,878,503	FY 2014	Completed
UMass Boston VDC	$588,848	FY 2014	Completed
UMass Dartmouth Advanced Technology Manufacturing Center (ATMC)	$11,400,000	FY 2012	Completed
UMass Dartmouth/Vector Manufacturing Center	$20,600,000	FY 2012	Completed
UMass Lowell	$5,000,000	FY 2017	Completed
UMass Lowell Emerging Technologies and Innovation Center	$10,000,000	FY 2012	Completed
UMass Lowell Innovation Hub	$1,000,000	FY 2014	Completed
UMass Lowell M2D2	$4,046,592	FY 2014	Completed
UMass Medical School	$5,000,000	FY 2015	Completed
UMass Medical School Albert Sherman Center	$90,000,000	FY 2010	Completed
Venture Cafe	$347,000	FY 2014	Completed
Wellesley College	$49,376	FY 2015	Completed
Western New England University	$497,449	FY 2014	Completed
Westfield State University	$43,564	FY 2017	Completed
Worcester Polytechnic Institute (Biomanufacturing Education & Training Center)	$5,149,999	FY 2010	Completed
Total Capital Awards	**$480,867,876**		

Academic and Workforce
Program Diversity Statistics

Total funds expended on high school internships	$292,774
Total funds expended on college internships	$3,700,000
Percentage of high school internships awarded to minority students attending schools where at least 80 per cent of the student population is eligible for free or reduced lunch	50 non-white interns (43%) attended economically disadvantaged schools
Percentage of college internships awarded to minority students enrolled full-time or part-time at a community college	4%
Racial and ethnic composition of the high school internship program	35% White 29% Asian 17% Latino 15% Black 4% Multi-Racial/Other
Racial and ethnic composition of the college internship program	55% White; 30% Asian; 7% Latino; 6% Black; 2% Multi-Racial/Other)
Analysis of the impact of the college internship program on the ability of its participants to enter the full-time job market in the life science industries after graduation	For the 2018-19 Program Year, 64 interns of 168 recent grads/seniors (38%) were reported to have been hired for full-time positions by the company that hosted them.

Internship and Apprenticeship Host Companies

Company/Organization	Location
AB Biosciences, Inc.	Boston
Abpro Labs	Woburn
Access Vascular, Inc.	Woburn
ActivSignal, LLC	Natick
Adeo Health Science, Inc.	Boston
Adeptrix Corporation	Beverly
AdMeTech Foundation	Boston
Admetsys Corporation	Boston
Advanced Continuing Education Association	Boston
Advanced Radiation Therapy, LLC	Tyngsborough
Advanced Research and Development	North Andover
Advanced Silicon Group	Lincoln
Advantagene, Inc.	Boston
Affera, Inc.	Watertown
Akaza Research, LLC	Waltham
Akcea Therapeutics	Cambridge
Akili Interactive Labs, Inc.	Boston
Akita Innovations	Billerica
Aldlab Chemicals, LLC	Woburn
Alira Health Boston LLC	Framingham
Alkeus Pharmaceuticals, Inc.	Somerville
Allurion Technologies	Natick
Amplyus	Cambridge
Anderson Biotest, LLC	Bedford
Antagen Pharmaceuticals, Inc.	Boston
Apex Neuro, Inc.	Boston
Aphios Corporation	Woburn
Applied Pathology Systems	Shrewsbury
Aquinnah Pharmaceuticals, Inc.	Cambridge
Arteriocyte Medical Systems (DBA Isto Biologics)	Hopkinton
Arteriocyte, Inc. (DBA Compass Biomedical)	Hopkinton
Astarte Medical Partners	Boston
Atantares Corp	Cambridge
Atlantic Lab Equipment, LLC	Salem
Atlas5D, Inc.	Cambridge
Averica Discovery Services, Inc.	Marlborough
Aveta Biomics, Inc.	Bedford
AzzTek, LLC	Boston
Bach Pharma, Inc.	North Andover
Barrett Technology, Inc.	Newton
Baystate Medical Center	Springfield
Beantown Biotech, LLC	Natick
Behavioral Health Innovators, Inc.	S. Chatham
Berkshire Sterile Manufacturing, Inc.	Lee
Bio2 Technologies	Woburn
Bioechem LLC	Somerville
BioSensics LLC	Cambridge
Biostage, Inc.	Holliston
BioSurfaces, Inc.	Ashland
Bitome, Inc.	Boston
Blossom Innovations	Boston
Blue Sky Biotech, Inc.	Worcester
Boston Bioskills Lab	Boston
Boston Children's Hospital	Boston
Boston Institue of Biotechnology LLC	Southborough
Boston MedTech Advisors	Dedham
Boston University DAMP Lab	Boston
Boyd Technologies	Lee
BrainCo, Inc.	Somerville
Cam Med, LLC	West Newton
Cambridge Scientific Products	Watertown
CDX Analytics, LLC	Salem
Celldex Therapeutics, Inc.	Needham
Cellino Biotech, Inc.	Cambridge
Celltreat Scientific Products	Shirley
Cephos Corporation	Pepperell
CheckMate Diabetes Corporation	Boston
China Med Device	North Andover
Cisbio US, Inc.	Bedford
Clearit, LLC	Boston
Clover Medical, LLC	Dover
Cocoon Biotech, Inc.	Lowell
Codiak Biosciences, Inc.	Cambridge
Cognito Therapeutics	Cambridge
Common Sensing, Inc.	Cambridge
CONTINUUS Pharmaceuticals, Inc.	Woburn
Convergent Dental	Natick
Corbus Pharmaceuticals, Inc.	Norwood
Court Square Group, Inc.	Springfield
CovalX	Sagus
Covaris, Inc.	Woburn
CreaGen Biosciences, Inc.	Woburn
CuriRx, Inc.	Wilmington
CYTO Consulting	Lexington
Dana-Farber Cancer Institute	Boston
Datycs, Inc.	Methuen
Day Zero Diagnostics, Inc.	Boston
Delsys, Inc.	Natick
Dermal Photonics Corporation	Middleton
Diagnosys, LLC	Lowell
Docent Health	Boston
DoDoc Corp.	Boston
Dragonfly Therapeutics, Inc.	Waltham
Dynocardia, Inc.	Lowell
EChO- Eradiacte Childhood Obesity Foundation, Inc.	Cambridge
Elektrofi, Inc.	Cambridge
Embera NeuroTherapeutics, Inc.	Sudbury
EMBR Labs, Inc.	Cambridge
eMotionRx	Boston
Empatica, Inc.	Cambridge
Enable Life Sciences LLC	Worcester
EndoSim, LLC	Bolton
EpigenDx, Inc.	Hopkinton
Essential Life Solutions Ltd	Stoughton
Established, Inc.	Haverhill
Eutropics Pharmaceuticals	Cambridge
Excellims Corporation	Acton
Extend Biosciences, Inc.	Cambridge
Fairbanks Pharmaceuticals	Concord
Figur8, Inc.	Boston

Internship and Apprenticeship Host Companies (continued)

Company/Organization	Location
Fikst, LLC	Woburn
First Light Biosciences	Bedford
Five Star Manufacturing, Inc.	New Bedford
FloDesign Sonics	Wilbraham
Fluigent, Inc.	Lowell
Founders Science Group	Taunton
Fractyl Laboratories, Inc.	Waltham
Frequency Therapeutics, Inc.	Woburn
FTL Labs Corporation	Amherst
Fuse Therapeutics, LLC	Worcester
Gel4Med	Boston
Genocea Biosciences, Inc.	Cambridge
Genomic Expression Inc.	Beverly
Genoskin, Inc.	Boston
Gentuity, LLC	Sudbury
Giner, Inc.	Newton
Glycologix, LLC	Beverly
Glycosyn, Inc.	Medford
Glympse Bio, Inc.	Cambridge
Glyscend, Inc.	Lowell
Goddard Technologies, Inc.	Beverly
Greenlight Biosciences, Inc.	Medford
Health Helm, Inc.	Boston
HealthBeacon	Boston
HepatoChem, Inc.	Beverly
HiFiBiO, Inc.	Cambridge
Histogenics Corporation	Waltham
Holobiome	Cambridge
Human Systems Integration	Walpole
Hyalex Orthopaedics, Inc.	Lexington
Hybrigenics Corporation	Cambridge
iHope Network	Beverly
Imagine Optic, Inc.	Boston
InCrowd, Inc.	Boston
Innovara, Inc.	Hadley
Institute for Pediatric Innovation, Inc.	Cambridge
Instylla, Inc.	Waltham
Integral BioSystems, LLC	Bedford
iOmics Corporation	Cambridge
IonSense	Saugus
iQuartic, Inc.	Boston
iSpecimen, Inc.	Lexington
IVIVA Medical	Beverly
J&J Machine Company, Inc.	Marlborough
Jana Care	Boston
Kephera Diagnostics, LLC	Framingham
KeraFAST	Boston
Keryx Biopharmaceuticals	Boston
KEVA Health	Lexington
KnipBio	Lowell
LabMinds, Inc.	Boston
Lariat Biosciences, Inc.	Beverly
LaunchPad Medical, LLC	Lowell
LaVoie Health Sciences	Charlestown
Legionarius, LLC	Sudbury
Leuko Labs, Inc.	Boston
Lexington Medical, Inc.	North Billerica
Liberating Technologies, Inc.	Holliston
Life Science Nation	Boston
Liquiglide, Inc.	Cambridge
Little Sparrows Technologies, LLC	Winchester
Locust Walk	Boston
Luminopia	Cambridge
Lumme, Inc.	Amherst
MakerHealth	Boston
Manus Biosynthesis, Inc.	Cambridge
Massachusetts Biomedical Initiatives	Worcester
Massachusetts General Hospital	Boston
Massachusetts Institute of Technology	Cambridge
MassBiologics	Boston
Matrivax R&D Corporation	Boston
MCR Labs, LLC	Framingham
Mediate	Somerville
Medicinal Genomics Corporation	Woburn
MedPanel	Cambridge
Merrimack Ventures, LLC (DBA Avastus Preclinical Services)	Cambridge
Microbiotix, Inc.	Worcester
Micro-Leads, Inc.	Boston
Micromedicine, Inc.	Watertown
Millimeter Wave Systems, LLC	Amherst
Morphic Therapeutic Inc.	Waltham
Mouse Specifics, Inc.	Framingham
My'deas, LLC	Woburn
Myomo, Inc.	Cambridge
N2 Biomedical, LLC.	Bedford
NEHI, Inc.	Cambridge
Neo-Advent Technologies, LLC	Marlborough
Neograft Technologies, Inc.	Taunton
NeuroMetrix, Inc.	Waltham
New England Peptide, LLC	Gardner
Nexcelom Bioscience, LLC	Lawrence
NinePoint Medical, Inc.	Bedford
North East Biomedical, Inc.	Tyngsborough
Novabioassays, LLC	Woburn
Novatein Biosciences	Woburn
NovoBiotic Pharmaceuticals, LLC	Cambridge
Obsidian Therapeutics	Cambridge
Octagon Therapeutics	Allston
OMNI Life Science, Inc.	East Taunton
One Cyte Biotechnology	Somerville
Opus KSD, Inc.	Halifax
PanTher Therapeutics, Inc.	Cambridge
Pear Therapeutics	Boston
PharmaCompany, Inc.	Boston
PhAST Corporation	Boston
Phosphorex, Inc.	Hopkinton
pION INC	Billerica
PlenOptika,Inc.	Boston
Podimetrics, Inc.	Somerville
Polestar Technologies	Needham
Portal Instruments, Inc.	Cambridge
Prapela	Concord
Precision Fabricators Ltd.	Stoughton
Precisionary, LLC	Boston
Pressure BioSciences, Inc.	South Easton

Internship and Apprenticeship Host Companies (continued)

Company/Organization	Location
Privo Technologies	Peabody
Proclara Biosciences, Inc.	Cambridge
Prospective Research, Inc.	Beverly
ProterixBio, Inc.	Billerica
Proveris Scientific Corporation	Marlborough
qPharmetra	Lawrence
QSM Diagnostics, Inc.	Boston
Quality Systems Integration, LLC	North Reading
Quantum Diamond Technologies, Inc.	Somerville
Raiing Medical, Inc.	Boston
RAN Biotechnologies, Inc.	Beverly
Ras Labs, LLC	Quincy
ReadCoor, Inc.	Cambridge
Remora Therapeutics	Brighton
Reprieve Cardiovascular	Milford
Respiratory Motion, Inc.	Waltham
ReSurfX LLC	Lexington
ReviveMed, Inc.	Cambridge
Right Submission, LLC	Newton
Riparian Pharmaceuticals, Inc.	Cambridge
Robie Device Group	North Andover
Rogers Sciences, Inc.	Boston
RowAnalytics, Inc.	Cambridge
RXi Pharmaceuticals	Marlborough
S2N Health, LLC	Boston
SafePath Medical, Inc.	Amesbury
Sage Science, Inc.	Beverly
Sagely Health	Newton
Scimpact, LLC	Cambridge
Seeding Labs	Boston
SeLux Diagnostics	Watertown
SemiNex Corporation	Peabody
Senscio Systems, Inc.	Boxborough
Sentien Biotechnologies, Inc.	Medford
seqWell, Inc.	Beverly
Shepherd Therapeutics, LLC	Boston
Siamab Therapeutics, Inc.	Cambridge
SLIPS Technoligies, Inc.	Cambridge
Snapdragon Chemistry, Inc.	Cambridge
Spectra Medical Devices, Inc.	Wilimington
Spectrus, LLC	Beverly
Spring Bank Pharmaceuticals, Inc.	Milford
Stability Health, LLC	Worcester
STC Biologics, Inc.	Cambridge
StemCellerant, LLC	Boston
TARIS Biomedical	Lexington
Tarveda Therapeutics	Watertown
Tepha	Lexington
Tetragenetics, Inc.	Arlington
Tetraphase Pharmaceuticals, Inc.	Watertown
TFC Biosciences, Inc.	Norwood
The Forsyth Institute	Cambridge
The Learning Corporation	Lexington
Thermal Technologies, Inc.	Cambridge
Thermedical, Inc.	Waltham
Thrive Biosciences, Inc.	Beverly
Tiba Biotech, LLC	Cambridge
Tilos Therapeutics, Inc.	Cambridge
Toothprints PC	Hopkinton
Triple Ring Technologies, Inc.	Lynnfield
Triton Systems, Inc.	Chelmsford
Trucode Gene Repair, Inc.	Woburn
Tufts Medical Center	Boston
Ultivue, Inc.	Cambridge
UMass Amherst	Amherst
UMass Lowell	Lowell
UMass Medical School	Worcester
Unicus Pharmaceuticals, LLC	Taunton
Union Biometrica, Inc.	Holliston
Unum Therapeutics	Cambridge
UrSure, Inc.	Boston
Valerion Therapeutics, LLC	Concord
Vaxess Technologies, Inc.	Cambridge
Vedanta Biosciences, Inc.	Cambridge
Velico Medical, Inc.	Beverly
Veralase LLC	Middleton
Versatope Therapeutics, Inc.	Lowell
VirTech Bio, Inc.	Natick
Virtudent	Boston
VisionCare-IMMAD	Quincy
Vivonics, Inc.	Sudbury
VL46, Inc.	Cambridge
VocaliD, Inc.	Belmont
Warner Babcock Institute for Green Chemistry, LLC	Wilmington
Woodland Biosciences	North Grafton
Worcester Polytechnic Institute	Worcester
WuXi NextCODE Genomics USA, Inc.	Cambridge
Wyss Institute at Harvard University	Boston
X-CHEM, Inc.	Waltham
Xeno Therapeutics, Inc.	Boston
Xios Therapeutics, Inc.	Waltham
Xtal BioStructures, Inc.	Natick
Yurogen Biosystems	Worcester
ZATA Pharmaceuticals, Inc.	Worcester

Number of Interns

High School Interns by School

High School	Location	Interns
Acton-Boxborough Regional High School	Acton	1
Amherst Regional High School	Amherst	5
Andover High School	Andover	1
Arlington Catholic High School	Arlington	1
Baystate Academy Charter Public School	Springfield	1
Belchertown High School	Belchertown	1
Belmont High School	Belmont	2
Boston Latin Academy	Boston	2
Boston Latin School	Boston	1
Brockton High School	Brockton	9
Cambridge Rindge and Latin School	Cambridge	2
Chelmsford High School	Chelmsford	1
Chicopee High School	Chicopee	1
Commonwealth School	Boston	1
Community Charter School of Cambridge	Cambridge	1
Diman Regional Vocational Technical High School	Fall River	1
Doherty Memorial High School	Worcester	6
Everett High School	Everett	5
Hampshire Regional High School	Westhampton	1
Hingham High School	Hingham	1
Hopkinton High School	Hopkinton	1
Lexington High School	Lexington	3
Lowell High School	Lowell	5
Lowell Middlesex Academy Charter School	Lowell	3
Malden High School	Malden	2
Marblehead High School	Marblehead	1
Massachusetts Academy of Mathematics and Science	Worcester	1
Medway High School	Medway	1
Montrose School	Medfield	1
Nashoba Regional High School	Bolton	1
Newton North High School	Newton	2
Newton South High School	Newton	1
North Andover High School	North Andover	2
Northampton High School	Northampton	3
Phillips Academy	Andover	2
Pioneer Valley Chinese Immersion Charter School	Amherst	5
Pope Francis Preparatory School	Springfield	1
Quabbin Regional High School	Barre	1
Ralph C. Mahar Regional High Schol	Orange	1
Revere High School	Revere	1
Roxbury Latin School	Boston	1
Salem Academy Charter School	Salem	1
South Hadley High School	South Hadley	1
Sutton Memorial High School	Sutton	1
The Bromfield School	Harvard	3
The Springfield Renaissance School	Springfield	3
Ursuline Academy	Dedham	1
Wachusett Regional High School	Holden	1
Waltham High School	Waltham	3
West Roxbury Academy	Boston	1
Wilbraham & Monson Academy	Wilbraham	1
Winchester High School	Winchester	1
Winsor School	Boston	1
Worcester North High School	Worcester	2
Worcester Technical High School	Worcester	13

High School Interns by School District

School District	Location	Interns
Acton-Boxborough Regional	Acton	1
Amherst Public Schools	Amherst	5
Andover	Andover	1
Belchertown	Belchertown	1
Belmont	Belmont	2
Bolton Public Schools	Bolton	1
Boston Public Schools	Boston	4
Brockton Public Schools	Brockton	9
Cambridge Public Schools	Cambridge	2
Chelmsford Public Schools	Chelmsford	1
Chicopee Public Schools	Chicopee	1
Everett Public Schools	Everett	5
Greater Fall River Vocational	Fall River	1
Hampshire Public Schools	Westhampton	1
Harvard Public Schools	Harvard	1
Hingham Public Schools	Hingham	1
Hopkinton Public Schools	Hopkinton	1
Lexington Public Schools	Lexington	3
Lowell Public Schools	Lowell	5
Malden Public Schools	Malden	2
Marblehead Public Schools	Marblehead	1
Medway Public Schools	Medway	1
Newton Public Schools	Newton	3
North Andover Public Schools	North Andover	2
Northampton Public Schools	Northampton	3
Quabbin Regional	Barre	1
Ralph C. Mahar Regional	Orange	1
Revere Public Schools	Revere	1
South Hadley Public Schools	South Hadley	1
Springfield Public Schools	Springfield	4
Sutton Public Schools	Sutton	1
Wachusett Regional	Holden	1
Waltham Public Schools	Waltham	3
Winchester Public Schools	Winchester	1
Worcester Public Schools	Worcester	21

College Interns by School

College/University	Location	Interns
Augusta University	Augusta, GA	1
Babson College	Wellesley	6
Bates College	Lewiston, ME	1
Becker College	Worcester	2
Benjamin Franklin Institute of Technology	Boston	2
Bentley University	Waltham	3
Berklee College of Music	Boston	2
Berkshire Community College	Pittsfield	3
Boston College	Chestnut Hill	6
Boston University	Boston	41
Boston University BioScience Academy	Boston	1
Brandeis University	Waltham	6
Bridgewater State University	Bridgewater	2
Bristol Community College	Fall River	1
Brown University	Providence, RI	2
Bryant University	Smithfield, RI	1
Bunker Hill Community College	Boston	9
Carleton College	Northfield, MN	1
Carnegie Mellon University	Pittsburgh, PA	1
Case Western Reserve University	Cleveland, OH	1
Clark University	Worcester	3
College of the Holy Cross	Worcester	8
Columbia University	New York, NY	2
Connecticut College	New London, CT	1
Cornell University	Ithaca, NY	1
Dartmouth College	Hanover, NH	4
Duquesne University	Pittsburgh, PA	1
Emerson College	Boston	2
Emmanuel College	Boston	3
Endicott College	Beverly	15
Fisk University	Maryland	1
Fitchburg State University	Fitchburg	2
Framingham State University	Framingham	2
Franklin W. Olin College of Engineering	Needham	2
Gateway Community College	New Haven, CT	1
Georgetown University	Washington, DC	1
Georgia Tech	Atlanta, GA	1
Gloucester Biotechnology Academy	Gloucester	7
Gordon College	Wenham	5
Hamilton College	Clinton, NY	1
Harrisburg University of Science and Technology	Harrisburg, PA	1
Harvard University	Cambridge	9
High Point University	High Point, NC	1
Hobart and William Smith Colleges	Geneva, NY	1
Hult International Business School	Cambridge	1
James Madison University	Harrisonburg, VA	1
Johns Hopkins University	Baltimore, MD	1
Juniata College	Huntingdon, PA	1
Just-A-Start Corporation	Cambridge	1
King's College	London, UK	1
Lafayette College	Easton, PA	1
Lehigh University	Bethlehem, PA	2
Massachusetts Bay Community College	Wellesley	1
Massachusetts College of Liberal Arts	North Adams	2
Massachusetts College of Pharmacy and Health Sciences University (MCPHS)	Boston	6
Massachusetts Institute of Technology	Cambridge	14
Massasoit Community College	Brockton	1
McGill University	Montreal, Canada	1
Merrimack College	North Andover	3
Middlebury College	Middlebury, VT	2
Middlesex Community College	Bedford	9
Mount Holyoke College	South Hadley	2
New York University	New York, NY	3
Nichols College	Dudley	1
North Shore Community College	Lynn	3
Northeastern University	Boston	104
Northern Essex Community College	Haverhill	5
Pennsylvania State University	Centre County, PA	1
Princeton University	Princeton, NJ	1
Providence College	Providence, RI	1
Purdue University	W. Lafayette, IN	1
Quincy College	Quincy	8
Quinnipiac University	Hamden, CT	2
Quinsigamond Community College	Worcester	4
Rensselaer Polytechnic Institute	Troy, NY	1
Rice University,	Houston, TX	1
Rochester Institute of Technology	Rochester, NY	1
Roxbury Community College	Boston	3
Saint Michaels College	Colchester, VT	1
Salem State University	Salem	5
Simmons College	Boston	1
Springfield Technical Community College	Springfield	1
Stonehill College	Easton	3
Suffolk University	Boston	4
Syracuse University	Syracuse, NY	1
Trinity College	Hartford, CT	1
Tufts University	Medford	15
Union College	Schenectady, NY	2
University of California	Berkeley, CA	1
University of California	Los Angeles, CA	1
University of California	San Diego, CA	1
University of Connecticut	Mansfield, CT	5
University of Hartford	West Hartford, CT	1
University of Maine	Orono, ME	2
University of Massachusetts Amherst	Amherst	38
University of Massachusetts Boston	Boston	8
University of Massachusetts Dartmouth	Dartmouth	7
University of Massachusetts Lowell	Lowell	42
University of Michigan	Ann Arbor, MI	2
University of New Hampshire	Durham, NH	2
University of North Carolina	Chapel Hill, NC	1
University of Notre Dame	Notre Dame, IN	1
University of Pennsylvania	Philadelphia, PA	1
University of Rhode Island	S. Kingston, RI	5
University of Tampa	Tampa, FL	1
University of Vermont	Burlington, VT	1
University of Washington	Seattle, WA	1
Washington University	St. Louis, MO	1
Wellesley College	Wellesley	2
Wentworth Institute of Technology	Boston	7
Western New England University	Springfield	5
Wheelock College	Boston	1
Worcester Polytechnic Institute	Worcester	22
Xavier University	New Orleans, LA	1

The Massachusetts Life Sciences Center (MLSC) is an economic development and investment agency with a mission of supporting the growth and development of the life sciences in Massachusetts.

Through public-private funding initiatives, MLSC supports innovation, research and development, commercialization, and manufacturing activities in the fields of biopharma, medical device, diagnostics, and digital health. As a quasi-public agency, MLSC also offers programs that fund innovation-driven economic and workforce development initiatives in Massachusetts.

MLSC's mission is to serve as the "hub" of the Massachusetts life sciences ecosystem, encourage innovation through investments in good science and good business, strengthen and protect Massachusetts' global leadership position in the life sciences, accelerate the commercialization of promising treatments, therapies, and cures that will improve patient care, and create jobs and drive economic and STEM workforce development.

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