

# MAINE STATE LEGISLATURE

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# 2016 ANNUAL REPORT

*The Maine Technology Institute*



## MAINE TECHNOLOGY INSTITUTE YEAR IN REVIEW

The Maine Technology Institute (MTI) was established by the Maine Legislature to encourage, promote, stimulate and support research and development activities leading to the commercialization of new products and services in the state's seven targeted technology sectors; to enhance the competitive position of those sectors; and, increase the growth of clusters of industrial activity within those sectors, thereby generating new jobs for Maine people.

MTI is critical to the state's economic development strategy and a significant driver in the long-term expansion of research and development assets resulting in the creation of new ventures. ***In fiscal year 2016, MTI invested over \$7.24 million in 150 innovative projects across Maine through its suite of funding programs (Matched by \$16.4 million). Additionally, it administered two momentous bond-funded projects totaling \$13 million (Matched by \$16.7 million) for state-awarded research infrastructure improvements at the Jackson Laboratory and Mount Desert Island Biological Laboratory.***

***MTI's Impact and Effectiveness Evaluated*** - As part of the State of Maine's biennial review of its economic investments, Investment Consulting Associates (ICA), an independent consulting firm, presented its "Comprehensive Evaluation of State Investment in Economic Development" to the Maine Department of Economic & Community Development in January 2016. The review was the result of months of work and was designed to evaluate the cost/benefit of the state's economic investments.

*"Maine Technology Institute has been critical to our ability to grow, attract out-of-state capital and talent, and provide bright young Mainers with technology-driven work opportunities.*

*MTI provides critical funding, but also advice, mentorship, and connections to other key resources enabling young companies to build their skills, find their market, and execute effectively."*

*Pika Energy, Westbrook  
ICA Report, January 2016*

ICA used MTI as a case study in its report and concluded that “**MTI is the focal point of Maine’s R&D efforts,**” it “**encourages growth in an active, hands-on, collaborative way,**” and is “**true to its mission and mandate.**” Additionally, they conducted a cost benefit analysis of MTI’s Development Loan (DL) program and determined that the “**Development Loan effectively improves innovation, economic development, and the R&D environment while also providing a positive return on investment**” for the State of Maine. The full report can be found on MTI’s website: [www.mainetechnology.org](http://www.mainetechnology.org)

**Scratchpad** - In the fall of 2015, MTI collaborated with the University of Maine to launch a business accelerator in Bangor. The Scratchpad accelerator helped four Maine startup companies “test, improve, and figure out how to commercialize their ideas fast.” Scratchpad was a pilot project and provided intensive mentoring and assistance to the four companies – Coursestorm, Double Blue Sports Analytics, Tip Whip and L&K Manufacturing. All the companies benefited greatly from the intensive four month, full-time program.

**New Website** - In early 2016, MTI unveiled its new and improved website. The consequential project to redesign and revamp the website vastly improved the site’s functionality, messaging, and appearance. It now more aptly reflects the mission and image of a leading edge technology organization.

**TechWalk 2016** – MTI’s signature annual event that showcases its impressive portfolio companies, helps nurture connections, and highlights its programs, achievements and impacts, occurred on Wednesday evening, June 22, at the Westin Portland Harborview Hotel. The energy and enthusiasm was infectious as 46 of MTI’s portfolio companies exhibited and nearly 350 people attended this spirited networking function.

**Maine Start-up and Create Week (MSCW)** took place June 20-26 at the Maine College of Art in Portland. The 7-day event brought together inspirational speakers, featured valuable discussion panels, and integrated exhilarating and entertaining evening networking events. The Maine Technology Institute was proud to be a sponsor of MSCW and particularly enjoyed the many beneficial stories that were conveyed by Maine’s dreamers, doers, and risk takers.



## ORGANIZATION

The Maine Technology Institute (MTI) leads the development of a strong culture of innovation in the State of Maine and is well-positioned for continued growth and effectiveness. It is organized as a nonprofit corporation, consistent with the provisions of the Federal Internal Revenue Code. By-laws were drafted and corporation documents filed in September of 1999. A Board of Directors consisting of thirteen voting members and two non-voting members governs MTI. The Governor appoints ten directors, eight representing the targeted technologies and two of whom have demonstrated finance, lending or venture capital experience. The Commissioner of the Maine Department of Economic and Community Development, the Chancellor of the University of Maine System, the President of the Maine Community College System and the Director of the Office of Policy and Management, or their designees, are ex-officio members. The MTI President is a non-voting director. Seven subsidiary boards, each representing a targeted technology sector, were formed to support the MTI Board. Approximately 100 subject matter experts comprise the membership of these Tech Boards.

MTI operates from one office located in Brunswick. Its staff is composed of one full-time program director, three portfolio managers, two program assistants, a director of business development, a director of finance and administration, and an office manager. The MTI President is employed by the Maine Department of Economic and Community Development.



A sampling of MTI staff at TechWalk 2016

## MTI FUNDING PROGRAMS

MTI makes direct investments in ventures pursuing promising technologies, providing targeted commercialization assistance to Maine companies and strengthening Maine's technology clusters. MTI's investments focus on the sectors of Aquaculture & Marine Technology; Biotechnology; Composites & Advanced Materials; Environmental Technologies; Forest Products & Agriculture; Information Technology; and Precision Manufacturing.

Over the past 16 years, the Maine Technology Institute has invested over \$200 million to help grow world-renowned research organizations like Jackson Laboratory, Bigelow Laboratory and Mount Desert Island Biological Laboratory and has funded diverse projects leading to innovations in gene sequencing and ocean microbial systems, guitar and surf board manufacturing, vodka from Maine potatoes, algae cultivation and eel aquaculture.

Funding from MTI signals a critical validation or endorsement of an idea, product or service. The MTI application process requires a disciplined approach demanding that the entrepreneur attempt to define a business model and build a business case for his idea, product or service. That validation helps lend credibility and better positions the product or process for success in the marketplace and with investors and traditional lenders.

MTI works with organizations and individuals focused on expanding the state's entrepreneurial ecosystem to stimulate new venture formation. Regarded as the leader and dominant player in this effort, MTI programs require at least a 1:1 matching contribution from award recipients. MTI award programs are based on scientific or technical merit, commercial feasibility and economic impact potential to the state.

Descriptions and summaries of the award programs, follows on the succeeding pages.

**TECHSTART GRANTS** are available to entrepreneurs and companies across Maine who are seeking to develop their inventive ideas into new, innovative products or services. Grants are awarded monthly and may be used to support specific activities such as business plan development, intellectual property filings, market analysis, or technology transfer activities out of research institutions. **In fiscal year 2016, MTI received 74 TechStart Grant applications and approved 38 awards, representing \$164,000 (matched by \$272,000).**

**PHASE 0 KICKSTARTER GRANTS** are offered to individuals and companies seeking to submit federal small business innovation research and small business technical transfer (SBIR/STTR) Phase I proposals to one of the eleven government agencies participating in the SBIR/STTR program. Awards of up to \$5,000 are offered to foster and support competitive federal proposal submissions from Maine applicants. Funds can be used for external direct costs associated with preparing an SBIR/STTR proposal, such as hiring grant writers, subject matter experts, other consultants or purchasing market research reports needed to inform a proposal. **In fiscal year 2016, MTI received 10 applications and awarded 10 Phase Zero Grants for \$49,000 (matched by \$52,000).**

**SEED GRANTS** are offered three times a year to support the conversion of innovative research into new products, processes, and companies. Funded activities may include proof of concept work, prototype development, field trials, prototype testing, pilot studies, or technology transfer activities. MTI offers Seed Grants as direct investments in companies that are pioneering Maine's future through their technology innovations. **In fiscal year 2016, MTI received 152 Seed Grant applications and approved 61 awards, representing \$1,405,000 (matched by \$2.9 million).**

**DEVELOPMENT LOANS** are competitive awards of up to \$500,000 per project and are awarded three times per year to support the conversion of innovative research into new products, processes and companies. **In fiscal year 2016, MTI received 17 development loan applications and funded 13 awards for \$3.9 million (matched by \$5.5 million).**



The **EQUITY CAPITAL FUND** provides investment capital to companies that have received Development Awards or Loans to help them leverage venture funds and individual equity investor capital. **In fiscal year 2016, MTI made two investments totaling \$175,000 (matched by \$2.7 million), on the same terms as lead venture capital funds and individual investors.**

**BUSINESS ACCELERATOR GRANTS** are available to start-up/early stage companies that have been awarded MTI Development Loans (DLs) and to companies that have recently been chosen for a federal Small Business Innovation Research /Small Business Technology Transfer (SBIR/STTR) Phase I or Phase II grant and/or a Broad Agency Announcement (BAA) award. Funds are to be used to advance the new technology to market and to firmly establish or increase the scope and sustainability of the business enterprise. **In fiscal year 2016, MTI received 15 applications and awarded 15 Business Accelerator Grants for \$413,000 (matched by \$3.4 million).**

**CLUSTER INITIATIVE PROGRAM** awards are competitive grants aimed to accelerate the strength and scale of Maine's high-potential technology intensive clusters. Clusters are concentrations of companies and other organizations that serve similar customers or business interests and draw on similar knowledge and workforce skills in the development of innovative products and services. The Cluster Initiative Program supports the success of Maine businesses through joint work of companies, service providers, research laboratories and educational institutions by funding infrastructure or common programs that help them collectively to be more competitive, develop new products and services and reach new markets. The Cluster Initiative Program has made more than 100 awards totaling more than \$17 million helping create or support a number of vibrant industry organizations and programs that are critical to Maine's growing technology-based industries. **In fiscal year 2016, MTI received 13 applications and approved 11 awards for approximately \$1.2 million (matched by \$1.6 million).**



## BOND FUNDED PROGRAM ACTIVITIES

From time to time, the Maine Legislature passes research and development bond initiatives that are presented to Maine voters for approval. In most cases, once the bond issues are approved by voters, MTI is asked to administer the funds on behalf of the State of Maine. The following three bond initiatives are currently under active management by MTI.

MTI administers the **MAINE TECHNOLOGY ASSET FUND**, a competitive bond-funded program providing investments for facilities construction, renovation, and equipment. The investments help advance emerging technologies on the path to commercialization and help Maine companies, university centers and non-profit research institutions secure further investment.

The Maine Technology Asset Fund was first approved by the Maine Legislature and the state's voters in 2007 and was capitalized with \$50 million in bond funding focused on increasing research and development (R&D) facilities and resources in our state's seven targeted technology sectors. These monies were mostly expended in funding rounds in 2008, 2009 and 2010. The Legislature and voters approved an additional MTAF funding bill in the amount of \$3 million in 2009. Those funds, including approximately \$900,000 not awarded from earlier rounds and augmented by another \$921,871 in MTI funding, provided the source of funding for a 4<sup>th</sup> MTAF round. ***As a result, in fiscal year 2015, MTI issued a request for proposals, received 21 applications and approved 8 awards for approximately \$4.9 million (matched by \$12 million). While the funding awards were made in FY15, the projects are still under active MTI management.***

*“Matching funds from the Maine Technology Asset Fund will enable the Laboratory to test and validate an innovative concept and state-of-the-art automation equipment at our new facility in Ellsworth.*

*The new vivarium will create jobs in Maine and confirm JAX position as an industry leader for the foreseeable future.”*

Charles E. Hewett, COO  
The Jackson Laboratory  
Bar Harbor & Ellsworth  
ICA Report, January 2016

**Maine Cancer and Aging Research Bond:** In 2014, the Legislature authorized (Public Law 2014, Chapter 574), and the voters of the State of Maine approved, \$10 million in bond funds to build a research center, to discover genetic solutions for cancer and the diseases of aging, and to promote job growth and private sector investment in Maine. The funds were awarded through a competitive state process to expand the state's research capabilities in the areas of mammalian genetics and murine biometric analytics, make the state a global resource for precision medicine, improve the state's capacity to attract and retain young professionals, and bring additional grant funding, private sector investment, job growth, and economic activity to the state. **In July of 2015 (FY16), the Jackson Laboratory in Bar Harbor was announced as the highest scoring bidder and will match its \$10 million award with at least \$11 million in matching funds.**

**Maine Biomedical Research Bond:** Also in 2014, the Legislature authorized (Public Law 2014, Chapter 568), and the voters of the State of Maine approved, a \$3,000,000 bond issue to promote biomedical research at a Maine laboratory specializing in tissue repair and regeneration. The funds were awarded through a competitive process to modernize and expand infrastructure in a biological laboratory specializing in tissue repair and regeneration, in order to increase biotechnology workforce training, retain and recruit to the state multiple biomedical research and development groups and create a drug discovery and development facility that will improve human health and stimulate biotechnology job growth and economic activity. **In July of 2015 (FY16), the Mount Desert Island Biological Laboratory was announced as the highest scoring bidder and will match its \$3 million award with at least \$5.7 million in matching funds.**

## OTHER MTI PROGRAMS OF ASSISTANCE

MTI employs an **Entrepreneur-in-Residence program** to provide portfolio firms with direct access to experienced entrepreneurs who have taken big risks, founded companies, raised capital, and created jobs. One of the most powerful tools one can provide to start-ups or less experienced teams is access to network contacts and mentors to offer advice and support from experienced entrepreneurs. MTI's Entrepreneur-in-Residence (EIR) program is intended, like other MTI programs, to improve the competitive position of Maine's technology-intensive sectors and ultimately lead to business growth and jobs for Maine people. It seeks to achieve this by:

- Keeping the scarce Maine resource of proven Chief Executive Officer (CEO) talent for start-up companies available in the Maine entrepreneurial market space
- Allowing former CEOs, who are now available, the opportunity to see the market opportunities available for establishing and growing companies in Maine
- Offering companies a mentor opportunity with proven CEO talent familiar with start-up issues
- Allowing interface between MTI staff and successful entrepreneurs, enabling MTI staff to keep current with the realities of start-ups to better assist MTI applicants and portfolio companies.

*"... When we began to work with MTI, they became part of our team. They are not just a resource for funding, they are a great group of smart people ... to build a strong innovation economy, Maine needs the whole startup ecosystem..."*

*Rockstep Solutions, Portland  
ICA Report, January 2016*

The **SBIR/STTR Technical Assistance Program** fulfills MTI's statutory mandate that it operate a program that provides technical assistance to Maine small businesses to help them develop competitive small business innovation research (SBIR) and small business technical transfer (STTR) proposals for submission to federal agencies participating in the SBIR/STTR programs. MTI provides advice on how best to fashion a competitive application for the

estimated \$2.5 billion that is available each year from the eleven federal agencies that participate in the SBIR/ STTR programs. Maine businesses receive approximately \$5 - \$6 million in total SBIR/STTR awards annually. The size of the individual federal grants can range from under \$100,000 to \$1 million.

## **PARTNERSHIPS TO PROMOTE MAINE’S INNOVATION ECONOMY**

In addition to its funding programs, MTI also helps *connect* and *grow* companies through investments in Maine's innovation ecosystem. Under its governing statute, MTI is instructed to cooperate with the **Maine Department of Economic & Community Development (DECD)**, **Manufacturing Extension Partnership (MEP)**, **University of Maine (UMaine)**, and others to ensure a complementary system of support services is available to companies and research laboratories.

To foster this complementary system of support service, MTI works collaboratively with organizations across Maine to support programs and initiatives designed to assist entrepreneurs and small businesses and to promote and celebrate Maine’s culture of ingenuity and its vibrant start-up community. Examples of collaborations include:

**Maine Accelerates Growth (MxG)** - At the conclusion of a successful four years of work as Blackstone Accelerates Growth (“BxG”), funded by a \$3 million grant from the Blackstone Charitable Foundation in 2011, the Maine Technology Institute and other partners announced the creation of a new consortium to support the increased growth in Maine’s innovation, startup and creative technology community. The work of this new consortium, called Maine Accelerates Growth, builds upon BxG’s success as summarized in the **Blackstone Accelerates Growth Impact Report** (found on MTI’s website).

Maine Accelerates Growth accelerates the growth of companies, communities, and talent by funding, creating, and leveraging high impact entrepreneurship and innovation programs and events through a collaborative and complementary network of organizations and individuals propelling prosperity across Maine. Recognizing that it takes an amazing amount of work,

skilled employees, training, education, capital and, sometimes, luck to build a company that makes a positive contribution to its stakeholders and the economy, MTI seeded this effort with a \$200,000 challenge grant, matching contributions to MxG on a one-to-one basis.

As one of the founding partners of Maine Accelerates Growth (MxG), MTI is pleased that it has now grown to almost 20 different groups working together to strengthen Maine's innovation and entrepreneurial atmosphere. Maine Accelerates Growth and its predecessor organization have created events and programs to grow Maine's innovation community and have been supported all over our State, with thousands of people participating in those events and programs.

Here are just some of the programs, events and organizations that have received support:

- *Our Katahdin (Millinocket & Medway)*
- *Engine Biddeford (Biddeford)*
- *Startup Weekend (Portland)*
- *Big Gig (Orono & Bangor)*
- *Maine Startup and Create Week*
- *Midcoast Magnet (Rockland)*
- *Top Gun (Lewiston-Auburn, Bangor, Midcoast and Portland)*
- *PubHub (Portland)*
- *Maine Wood Innovator's Conference (Hiram)*
- *Greenlight Maine*
- *Maine Business Challenge*
- *Maine House of Genius*
- *UMaine ScratchPad Accelerator Program*
- *Maine Food, Fish & Farm Challenge (Brunswick)*
- *Innovate for Maine Fellows Internship Program*
- *TedxDirigo*

To learn more about Maine Accelerates Growth, please visit its [website](http://www.maineacceleratesgrowth.com) (www.maineacceleratesgrowth.com).



ACTIVE MTI COLLABORATIONS, AFFILIATIONS AND PARTNERSHIPS



[www.maine.edu](http://www.maine.edu)



[www.maine.gov/decd](http://www.maine.gov/decd)



[www.mainemep.org](http://www.mainemep.org)



[www.mitc.com](http://www.mitc.com)



[www.mainesbdc.org](http://www.mainesbdc.org)



[www.mced.biz](http://www.mced.biz)



[www.maineangels.org](http://www.maineangels.org)



Maine Venture Fund

[www.maineventurefund.org](http://www.maineventurefund.org)



Maine

[www.scoremaine.org](http://www.scoremaine.org)



[www.e2tech.org](http://www.e2tech.org)





[www.famemaine.com](http://www.famemaine.com)



[www.ceimaine.org](http://www.ceimaine.org)



[www.mainestartupandcreateweek.com](http://www.mainestartupandcreateweek.com)



[www.mainesbdc.org](http://www.mainesbdc.org)



[www.mdf.org](http://www.mdf.org)



Maine Accelerates Growth

[www.maineacceleratesgrowth.com](http://www.maineacceleratesgrowth.com)



[www.maineco.org](http://www.maineco.org)



[www.mainecef.org](http://www.mainecef.org)



## LOOKING AHEAD

In the coming year, MTI anticipates playing a leading role in many noteworthy innovation and research and development initiatives.

***MTI Strategic Plan:*** The organization will continue its efforts to finalize its strategic planning efforts after a thorough and iterative monthly planning and visioning process that has examined the last 16 years of experience. The process will ultimately lead to a consensus strategic plan and a clear list of priorities deemed essential to fulfilling MTI's mission and catalyzing growth in Maine's innovation economy. This plan will help guide the organization's work for the next 3-5 years.

***Science & Technology Action Plan:*** MTI will also facilitate and shepherd the efforts of the Maine Innovation Economy Advisory Board (MIEAB) as it endeavors to develop Maine's five-year Science & Technology Action Plan. This plan will develop clear goals and tactics for growing and sustaining a diversified, vibrant and resilient innovation economy that leads to prosperity for Maine and its people.

***Marine Economy & Jobs Bond:*** In 2014, the Legislature authorized (Public Law 2014, Chapter 592), and the voters of the State of Maine approved, a \$7,000,000 bond issue to facilitate the growth of marine businesses and commercial enterprises that create jobs and improve the sustainability of the State's marine economy and related industries through capital investments. The bond funds were awarded after a competitive process was conducted by the Department of Economic and Community Development in consultation with the Department of Marine Resources and the Maine Technology Institute. A Request for Proposals was issued in November 2015 and an award was announced in June 2016. The University of Maine submitted the successful proposal and was awarded the project. MTI will be administering this award on behalf of the State of Maine.

***Research & Development Bond:*** The 127<sup>th</sup> Maine Legislature enacted, and the Governor signed, a \$50 million bond measure to "Stimulate Investment in Innovation by Maine Businesses to Produce Nationally and Globally Competitive Products and Services (Public Law 2016, Chapter 479). The bond question will be presented to Maine voters in June of 2017 and, if approved, the Maine Technology Institute will administer "\$45,000,000 for investment in research, development and commercialization in the State to be used for infrastructure, equipment and technology upgrades that enable organizations to gain and hold market share, to increase revenues and to



expand employment or preserve jobs for Maine people, to be awarded through a competitive process to Maine-based public and private entities, leveraging other funds in a one-to-one ratio and \$5,000,000 in funds to create jobs and economic growth by lending to or investing in small businesses with the potential for significant growth and strong job creation."

*MTI's commitment to serving the myriad innovation needs of Maine businesses and entrepreneurs continues to be incredibly strong. Looking ahead, we anticipate that MTI will continue to be a nimble and leading-edge organization that is known throughout Maine as the driving force behind our state's thriving private-sector innovation economy. MTI is pleased to play a pivotal role in helping to bolster and support Maine's innovation economy and looks forward to building on past commitments and launching new initiatives to help build a more robust economic climate across the State of Maine.*