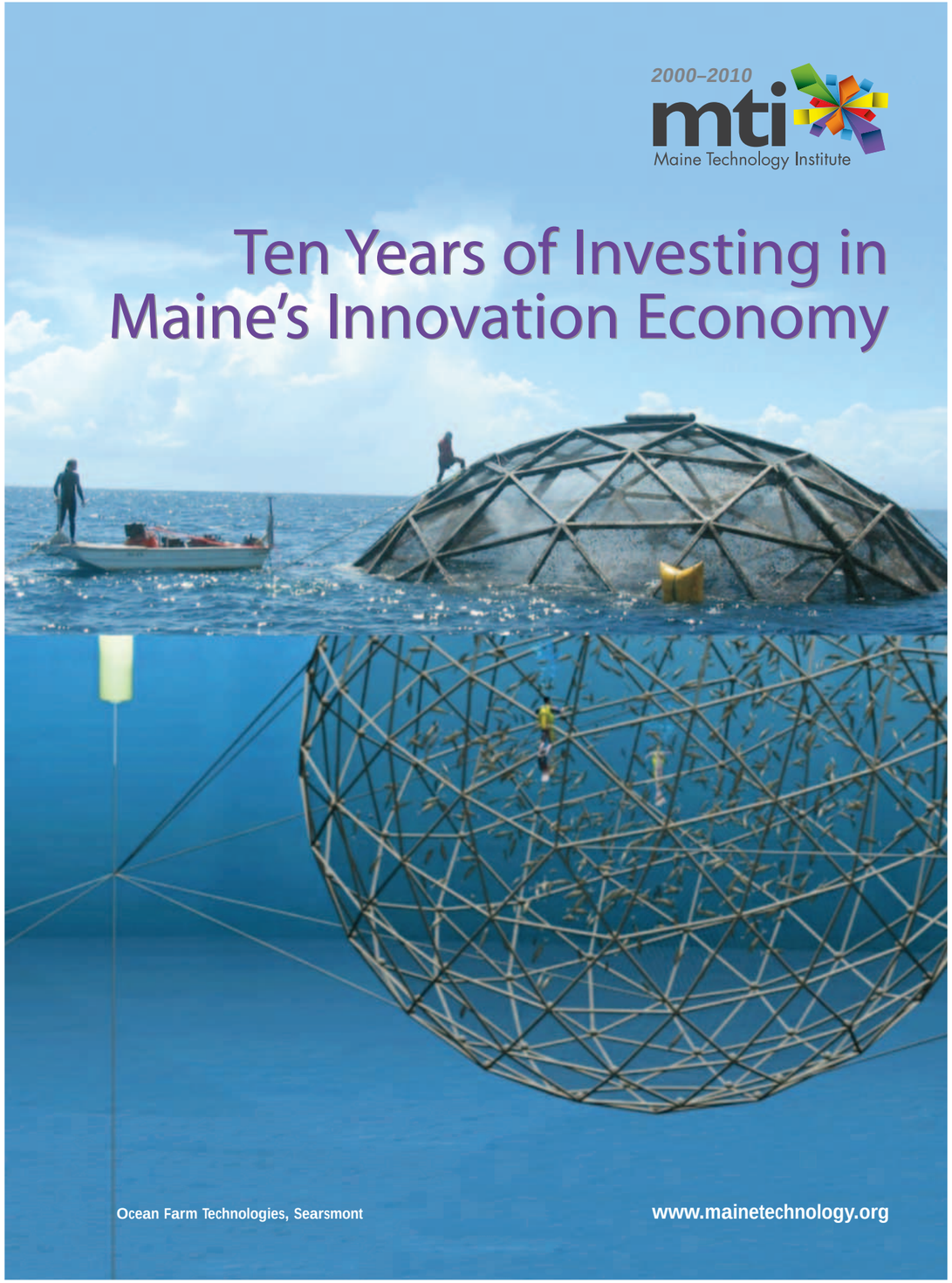
2000–2010

mti Maine Technology Institute

Ten Years of Investing in Maine's Innovation Economy



Ocean Farm Technologies, Searsmont

www.mainetechnology.org

MAINE TECHNOLOGY INSTITUTE SIGNFICANT DATES:

Oct. 1999 .....MTI established by recommendation of the Maine State Legislature's Joint Select Committee on Research and Development

2000 .....MTI's Seed Grant, Development Award and Cluster Enhancement funding programs established

2000 .....MTI makes first awards

2001 .....Maine State Planning Office publishes "30 and 1000" boosting case for R&D investments

2002 .....MTI commissioned first study of Maine's Technology Clusters

2005 .....Maine's Third Science and Technology Action Plan published

2005 .....MTI funds its 500th Maine company through its Seed Grant and Development Award programs

2006 .....Brookings Report "Charting Maine's Future" recommends that Maine invest in its promising industrial clusters

2007 .....Governor Baldacci introduces, Maine Legislature approves and Maine voters approve $50 million bond to create the Maine Technology Asset Fund

2007 .....MTI and Maine Office of Innovation publish second study of Maine's Technology Clusters

2008 .....MTI-assisted companies increased employment by 2.6% compared to overal Maine employment growth of .8%

2008 .....MTI announces first round of MTAF awards of $24.8 Million

2009 .....Cluster Initiative Program makes first award

2009 .....MTI announces second round of MTAF awards of $20.8 Million

2010 .....MTI named a Maine Development Foundation "Champion of Economic Development"

2010 .....MTI awards Round Three of MTAF for a total investment of $52.85M in 35 R&D Projects across Maine leveraging $82 Million in private and Federal funds

MTI investments consistently leverage over $14 for every $1 invested.

LETTER FROM THE PRESIDENT AND CHAIR

Dear Friends of MTI:

We are pleased to bring you this overview of the Maine Technology Institute's first decade. Over the past ten years, MTI has become a nationally-regarded organization that is growing Maine's innovation-based economy and helping Maine's companies and research organizations create and sustain good jobs across Maine.

MTI was born out of the realization that without more investment in innovation by Maine businesses to produce nationally and globally competitive products and services, the outlook for the future growth and competitiveness of Maine's economy was poor. Since 2000, MTI has provided grants, loans, technical assistance and commercialization support to over 725 companies and research organizations, which—matched by their own investments—have successfully brought new technologies to the market, attracted follow-on private and public capital to Maine, and created and sustained good jobs across the state. These new technologies range from Maine's traditional industries, such as agriculture, forestry, manufacturing and marine science, to the emerging sectors of composite materials and information technology.

As a publicly-supported nonprofit organization, we provide information to the public, our funders, about the impact of MTI's investments, through an annual report to the Legislature and information in the State's Research and Development Evaluation. However, we are frequently asked for stories illustrating MTI's investments. As we begin MTI's second decade, we present this overview of the past ten years so that Maine's track record of innovation reaches across the state and beyond.

Of course, this is a team effort. We acknowledge all of the partners, organizations and individuals who have contributed to MTI's impact. They include Maine's technology, business and investment communities, the governors and legislators who have served during the last decade, the Department of Community and Economic Development, MTI's volunteer Board and Technology Boards, and its small but extremely capable staff team. Thank you all for your dedication to Maine's innovative companies and organizations, to MTI and to Maine.

Sincerely,

JIM DETERT
President/CEO, Rynel Inc.
Wiscasset Site Director,
Mölnlycke Health Care AB

BETSY BIEMANN
President, Maine Technology Institute

THANK YOU TO ALL
who have served on the MTI Board over the past 10 years including:

Tim Agnew
Susan Airhart
Jim Atwell
Bruce Bornstein
Jack Cashman
Claire Collins
Jim Conlon
Peter Cowin
Jim Damicis
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Martin Grimnes
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Catherine Renault
Evan Richert
Joel Russ
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Jane Sheehan
Mark Tilly
Peter Triandafillou
Janet Yancey-Wrona

LETTER FROM GOVERNOR JOHN BALDACCI

Congratulations to the Maine Technology Institute for ten years of investing in Maine's innovation economy.

One of my administration's key priorities has been to grow our economy while maintaining our quality of life, our natural environment and our unique Maine heritage. During my tenure as Maine's governor, the Maine Technology Institute has been a strong collaborator in the strategy to grow our economy through investments in technology-based research and development and the commercialization of products.

Investing in research and development is one of the most powerful ways to boost our per capita income. Together, we've worked to expand Maine's R&D bond investments, enabling the state to be more competitive for federal funding and fueling Maine companies with cutting-edge technologies so they can be engines for economic growth and job creation. In 2007, we introduced a public bond initiative to establish $50 million to support projects that develop and bring new technologies to market and leverage federal funds boosting our economy and creating and sustaining good jobs for Maine people. The Maine State Legislature authorized and the voters approved those funds, and in 2010, voters authorized another $3 million. MTI has awarded $52.85 million of the bond-funded Maine Technology Asset Fund (MTAF) to 35 exciting projects across the state. MTAF awards have already leveraged more than $82 million in private and Federal funds.

We've also worked to grow the innovation economy by expanding the support for Maine's technology-intensive clusters. Development of industry-led cluster initiatives brings together companies in similar industries and technology areas to identify common opportunities and find solutions to shared problems. My administration expanded a modest program already underway by MTI by providing planning and implementation awards.

Today, Maine's future is brighter because of the impact of the MTI programs across Maine.

Thank you for all of your efforts and again, congratulations!

GOVERNOR JOHN BALDACCI

MTI grants and awards are highly competitive. On average MTI funds fewer than one of every three applicants.

RECALLING THE ORIGIN OF MTI

Reminiscence with Governor Angus King and Evan Richert, former Director of State Planning

EVAN: Midway through your first term, Angus, you asked why Maine's incomes were chronically lower than most other states'. Your challenge got us thinking. Were we doomed to low incomes by location or our rural economy? We at the State Planning Office began digging and found this connection between education, R&D, and income. We boiled it down in a little publication called "30 and 1000"—meaning that if Maine could get to 30% of adults with at least a 4-year college degree and to $1000 of R&D per worker, we could predict that Maine's per capita income would catch up to the nation.

ANGUS: I thought this made sense, particularly when I saw what was happening around places like Austin, the Research Triangle, and Silicon Valley. I have to admit, though, that I was a little late in understanding how important this could be. Senate President Mark Lawrence, for example, got it long before I fully jumped in. But once I saw the data, I was convinced and then it became a question of how much investment and where to make it. Of course, it helped that we were still seeing the surpluses from the end of the 90's boom; otherwise it never would have happened at the scale we ultimately achieved.

EVAN: As important as the amount of the investment was how it should be made. In cooperation with the Legislature, the University System and our great nonprofit laboratories like Jackson and Bigelow, we had already set a course toward R&D. But, the missing piece was industry. We knew, from looking at other states, that something like 60%–70% of all investment in R&D had to be by industry—where R&D translates quickly into jobs and income. And that was the inspiration behind Maine Technology Institute—to leverage innovation in industry. Fortunately, the Legislature, led by people like Rick Bennett, Carol Kontos, Jill Goldthwait and Steve Rowe, had just set up a special committee on R&D. We worked hand-in-hand on the enabling legislation.

ANGUS: The result was the MTI. The idea was to provide matching funds to incent private companies to do more and more effective R&D. Has it worked? Hard to take direct measurements in such a complex economy, but R&D as a percentage of our Gross State Product has doubled—from .5% of GSP to 1%. This is still a long way from the target of 2% or more, but it's real progress. Among the states, we've gone from dead last to 38th in R&D. Not where we'd like to be, but, again, progress.

But the real target was always income relative to other states and here, I think, we can do a little chest-thumping. For years personal income in Maine was stuck at 12% to 18% below the national average. Today, we're at 92% of the national average, just 8% below. We can't assign any one driver for this improvement, but we know these investments are paying off. The key now, more than ever, is to maintain the effort. This is a long-term strategy and if we keep it up, we'll see a day when we reach the national average (something Maine hasn't done in a hundred years)—and keep going.

In 2009, the average wage of MTI-funded companies was $49,053, higher than Maine as a whole at $36,317 and higher than the US average of $45,563 (2009 R&D Evaluation).

The Maine Technology Institute

The Maine Technology Institute (MTI) was created by Maine's legislature in 1999 to "promote, stimulate and support research and development activity leading to the commercialization of new products and services in Maine's technology-intensive sectors to increase the likelihood that one or more of the sectors will develop into an economic cluster of activity." This publicly-funded, nonprofit corporation offers early-stage capital and commercialization assistance in the form of competitive grants, loans and equity investment for the research, development and application of technologies that create new products, processes and services, generating good jobs across Maine.

It is governed by a board made up of industry leaders and representatives of several public agencies that share MTI's mission of supporting research and development and the commercialization of products and services in Maine's technology sectors. Its president reports to the Board, the Department of Economic and Community Development as well as to the Legislature's oversight committee on research and economic development.

MTI programs help innovators accelerate their progress to the market, leverage additional private and public investment, and ultimately, expand their economic impact in Maine. Since 1999, MTI has funded innovative technologies across the state to help accelerate commercial success in Maine's seven technology sectors: biotechnology, composites and advanced materials, environmental technologies, forest and agriculture products, information technology, marine technology and aquaculture and precision manufacturing. From FY99-FY2010, MTI has funded 1,425 projects throughout the state, a financial commitment of nearly $112 million, leveraging co-investment of $182 million.

TAPPING MAINE'S BUSINESS AND TECHNICAL EXPERTISE: MTI'S TECHNOLOGY BOARDS

Nearly 100 experienced business and technology experts volunteer over 5,000 hours each year to ensure that MTI channels state funds to the projects with the greatest commercial and economic potential. Members of MTI's seven Technology Boards evaluate applications, make funding recommendations, and give advice to the MTI Board of Directors and staff in matters of policy based on their in-depth knowledge of their industries' technologies and needs in Maine.

2010 TECHNOLOGY BOARD MEMBERS

Thank you to all who have served on Maine Technology Institute's Technology Boards over the past 10 years including:

Advanced Technologies for Forestry and Agriculture

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Manoush Associates

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Richard Dorey
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Thomas West
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MTI HELPS

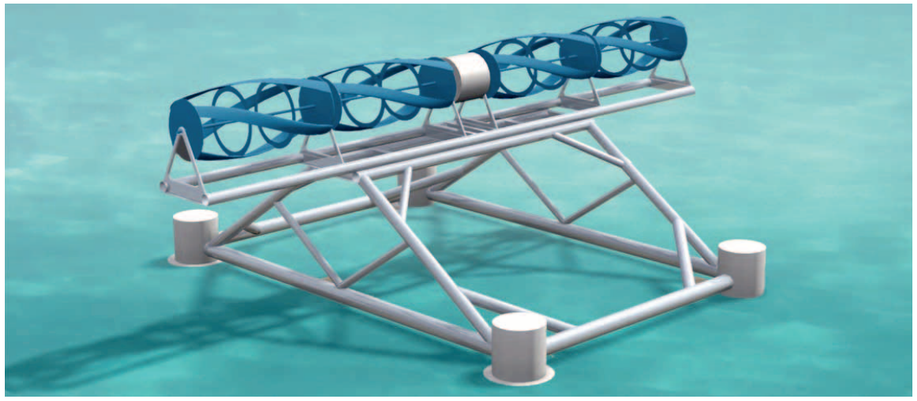
ORPC LAUNCH AN INDUSTRY IN TIDAL POWER

Ocean Renewable Power Company launches the Energy Tide 2 in Eastport.

Chris Sauer believes that tidal power has the potential to be a $1 billion industry for Maine, and his Portland-based company, Ocean Renewable Power Company (ORPC), is on the forefront of turning this vision into reality. Financing from MTI has enabled ORPC to launch the US's largest-ever ocean energy power system in Eastport, all while creating or retaining 80 jobs, pumping more than $5 million into the state economy, and providing work to more than 40 businesses and contractors in eight counties. MTI's investment is building on a significant strength of Maine, its tremendous tidal resources. The tidal power industry can bring more than 500 jobs to the state, while positioning Maine as the leader in tidal power research, development, and generation. A critically important impact has been on the youth of Eastport, who have been inspired by ORPC to pursue higher education in marine engineering and related fields. And as the company begins to generate revenues from its success, its repayments will fuel MTI awards to other innovative Maine companies.

"MTI's unwavering commitment to ORPC is profoundly appreciated and has enabled ORPC to become the leader in U.S. tidal energy and to achieve world-wide recognition. MTI's support has also allowed us to leverage multiples of additional private investment, and for that we are very grateful. MTI's support and stamp of approval have a very positive impact on potential investors. In every case where we have gotten an award from MTI, we have been able to raise at least 100 percent more of it in the private sector."

~ Chris Sauer
CEO, Ocean Renewable Power Company



ORPC's TidGen™ Power System

MTI AWARDS CRUCIAL TO ORPC'S SUCCESS

ORPC was a virtual company originally based in Florida that considered relocating to Alaska or Massachusetts before chosing Maine. "MTI was the deciding factor," says Sauer. "We wouldn't be here without MTI. We probably wouldn't have located here or have survived without them. It's that simple."

ORPC has received $1.75 million from MTI, including awards from the bond-funded Maine Technology Asset Fund and from the Development Award and Accelerated Commercialization Fund programs. The money has been instrumental to ORPC's ability to develop and test its technology, but it has also enabled the company to attract follow-on investment: in July 2010, ORPC was awarded $750,000 from the Department of Energy (DOE) to refine its turbine technology, and in September, it received an additional $10 million matching grant from DOE for a $21 million project to build a commercial-scale array of five grid-connected tidal power devices.

Sauer cites an early loan from MTI as crucial to the company's ability to raise several million in private capital. "In every case where we have gotten an award from MTI, we have been able to raise at least 100 percent more of it in the private sector," says Sauer, who notes that the private market respects MTI's rigorous evaluation process.

MTI AWARDS TO ORPC IMPACT THE ENTIRE STATE

ORPC has worked with more than 40 companies in the state, including Topsham-based R.M. Beaumont Corp. (RBC). "ORPC is taking advantage of Maine resources by using a Maine workforce and skills to create an industry," says founder Ryan Beaumont. ORPC hired his firm to design the hydraulic lift system used to deploy ORPC's current Beta Power System Project. Beaumont also designed the electronics system used to track power flow for this project. "ORPC enabled me to grow my business," says Beaumont. "I was just getting started, and their work helped to establish my company."

"ORPC is taking advantage of Maine resources by using a Maine workforce and skills to create an industry. ORPC enabled me to grow my business. I was just getting started, and their work helped to establish my company."

~ Ryan Beaumont
Founder R.M. Beaumont Corp

ORPC also has spent upwards of $2 million supporting Eastport businesses. "Our hotels and restaurants have had a tremendous boost in income, especially in the off-season," says Captain Bob Peacock, chairman of the Eastport city council.

Will Hopkins, executive director of the Cobscook Bay Resource Center worked with ORPC and the fishing community to determine appropriate sites to test ORPC's turbine generator units, and provided data on tidal flow in the bay. "So many of the skills that fishermen, fish farmers, and marine fabricators use apply perfectly to the development of tidal power," says Hopkins.

Eastport Middle School students christen the Energy TIde 2 *at the launch ceremony on March 2, 2010.*

But even more important, ORPC has brought hope to a community that has struggled during the economic downturn. "Having people here who bring a different viewpoint and skill set gives our kids more insight into the value of getting an education," says Peacock. "I think, in the long run, the inspiration of our youth is the most important impact of the launch of ORPC's technology," says Peacock. "Yes, creating renewable energy is important, and the financial impact on the town has been great, but the inspirational impact on the town's psyche is invaluable."

WHAT THE FUTURE HOLDS

MTI's investment in ORPC has turned Maine into a leader in tidal energy, with the potential for it to become the tidal research center of the world. In addition to creating jobs in the state, it will help create a brain trust of highly sought-after information in the use of composites, strategies and toolsets for environmental monitoring, and other technical services that can be used not only in tidal power, but also to help launch the offshore wind industry in Maine. "These are capabilities that are entirely exportable," says ORPC's Sauer. "We are getting queries from people all over the world, and we are setting the standard for the industry."

This vision is exciting for a state seeking new markets, particularly as it recovers from a global recession. "MTI is a growth engine for a state that desperately needs new growth. MTI is the vehicle to get us there," says ORPC's Sauer.

MTI funds early stage technology development and industry cluster growth to boost innovation and market success through highly-competitive grants and loans.

FUNDING PROGRAMS INCLUDE:

- Seed Grants
- Development Awards
- MTI's Accelerated Commercialization Fund
- MTI Phase 0 and Pre-Phase II grants
- Cluster Initiative Program Grants
- Maine Technology Asset Fund

MTI FUELS

Entrepreneurial Vision

Ben Brickett of Eliot with VFG generator technology in a specialized water turbine.

Maine's entrepreneurial culture is thriving, despite the exhaustive work required to turn exciting ideas and innovative technologies into sustainable, growth-oriented businesses and new revenue streams. When Maine's entrepreneurs are successful, their vision creates new businesses and products that attract investment capital, quality workers, and invaluable market attention. To reach this level of success takes a certain amount of boot strapping, and while entrepreneurs aren't strangers to stretching finances, it's often the reason that many businesses—despite strong leadership, great ideas, and even high demand —don't survive.

Through Seed Grants and Development Awards that span an entrepreneur's development stages, MTI works in tandem with entrepreneurs in the state's seven technology sectors to address the difficult challenges of funding a business's development of new and growing technologies. Through 2009, MTI had awarded more than $106 million, and in fiscal year 2010, provided 130 projects another $6.2 million in funding. Just as important, MTI's awards have leveraged public and private co-investment of more than $182 million to date. Whether working with young professionals to launch their first venture or established businesses looking for help to commercialize promising new products, MTI provides entrepreneurs with the opportunity to bring their ideas for new, higher value-added technologies to the market. These new technologies then help companies create good jobs, be globally competitive, and contribute to shaping Maine's economy.

AccelGolf, South Portland, allows golfers to use their mobile devices to manage their game, both on and off the course.

AIMING FOR THE GREEN: MTI CAPITAL DRIVES INNOVATION AND NEW COMPANY START-UPS

Born into an entrepreneurial family, William Sulinski found himself at the age of 24 with what he calls "an incredible opportunity." When the firm he was working for closed its Portland offices and offered him a promotion in New York, he decided instead to start his own company in Maine. Partnering with a friend who'd been a fellow finance major at the University of Maine Orono, they developed a business plan for AccelGolf, an application that allows golfers to use their mobile devices to manage their entire game, both on and off the course. After winning the University of Southern Maine's Business Plan Competition and then a Seed Grant from MTI that allowed it to hire more developers, AccelGolf teed off.

Since its launch, the South Portland-based company has grown quickly, earning a second Seed Grant and later, a Development Award of $235,500 from MTI that is enabling it to add a B2B revenue model to its B2C offering. This approach has earned AccelGolf some 80,000 users—powerful leverage as the company partners with such heavy hitters as the USGA, golf equipment suppliers, golf instruction schools, and courses around the world.

"When we applied for the development award in 2008, it was not the best time economically for angel investors, and since we were so early stage, in a brand-new mobile industry, it was tough raising capital," says CEO Sulinski. "Not only did the development award give us much-needed credibility, but it helped us get into the TechStars program," a highly selective funding and mentorship "bootcamp" for technology startups. "We were able to learn from the best of the best who mentor people in strategies for building tech companies and taking them public. Today, we continue to learn from our mentors at TechStars and from the Maine Center for Enterprise Development."

For AccelGolf, MTI provided credibility that's allowed it to connect with a vast network of business mentors, partners, and other investors. Sulinski also credits Maine's overall business culture—primarily the willingness of business advisors to meet with and mentor him—with helping his company find early success.

"Maine will never benefit from an entrepreneurial culture without people getting experience by just doing it," says Sulinski. "We've been able to meet with experienced business people throughout the State and elsewhere who've helped us build a professional network. MTI made that possible when we weren't attractive to risk capital in the sense of offering equity. Its backing allowed us to be seen in a positive light by other investors and advisors."

Moreover, its entrepreneurial success allows AccelGolf to attract talented employees—including from local universities—who get experience they wouldn't gain in large companies. The company currently has six full-time employees and six contract employees. "Every one of my team members—from the entry level to our lead developer—gets to be an entrepreneur, and I use that as a recruiting tool," says Sulinski. "With the experience they get here, I guarantee that all of my team members will be entrepreneurs at some point and they'll be well-positioned because of the experience they're getting."

"I joined the team as an intern while studying at the University of Southern Maine primarily so I could work with new mobile and web technologies. As the team grew, it exposed me to leaders in the industries and I've been able to gain experience leading a development team and architecting several products from the ground-up. It has been nothing short of incredible. Without MTI funding, I'm certain the company wouldn't have been able to gain a foothold in this fast-moving space and I would have nowhere near the experience or network I have now."

~ Mike Nelson
Lead Developer, AccelGolf

MTI Awards have leveraged more than $182 million in public and private coinvestment in Maine.

CashStar, Portland, is a leader in the online gift card market.

Like Sulinski, David Stone wanted to launch a company in Maine, and credits MTI with not only providing funding for Portland-based CashStar, but for paving the way to bring in a significant amount of outside capital.

"I wanted to create a company here and not in Massachusetts, or New York, or Silicon Valley," says Stone, CEO of CashStar. "Raising capital has always been a challenge in Maine, and MTI has helped us do that." Including his initial round of funding, MTI financing, and more recent outside investment, Stone has raised nearly $10 million for CashStar, a leader in the digital gift card market with partnerships with more than 80 leading retail brands, including CVS, Home Depot, Staples, Pottery Barn, and Travelocity.

At this point, digital gift card sales represent just a small percentage of the $90 billion gift card market, but with online card sales expected to hit nearly $6 billion by 2014, according to Javelin Strategy & Research, the potential is tremendous.

Stone intends to take advantage of that potential to grow CashStar and pave the way for further economic opportunity in the area. To date, CashStar employs 40 people and continues to hire engineers and other employees to keep pace with growth. The digital age has arrived, says Stone, and CashStar is prepared to capitalize on that shift.

"Everything's going digital and we're in the eye of that storm," he says.

"Working on CashStar's Offer Management System has been a terrific career opportunity. It's very interesting to see how our tool is used to drive substantial growth for our clients' eGift Card sales. In addition, by developing a deep understanding of the tool, I've been able to work with the Engineering and Client Services teams to help brainstorm future offers that we hope our client base will want to implement."

~ Derek Finkleman
Product Manager, CashStar

MTI has awarded CashStar two Development Awards to add functionality to its digital gift card management technology. The first, for $472,572, was for its offer management system, which allows retailers to create additional revenue streams by targeting both gift card recipients and purchasers. The second, more recent award is being used to develop an iPhone application for a large financial services provider that wants to allow its customers to download reward points and convert them to digital gift cards—a growing trend among gift-card purchasers that CashStar will leverage to market to retail chains.

Not only has CashStar been able to keep Mainers in the state, taking advantage of strong technical skills from a cadre of payment technology engineers available here, it's been able to attract out-of-state talent interested in working for a cutting-edge company in a state with strong quality-of-life attributes. "We have good talent to draw from and that's important because I want to create good jobs in the state," says Stone.

What MTI does is very important, particularly for startups that need early-stage capital, adds Stone. "Maine often isn't seen by many venture capitalists as a place to invest, and without MTI, several companies in this state wouldn't be where they are. I'm a big believer in what they do."

MTI works in close partnership with organizations across the state including:

- Maine Angel Network
- Maine Department of Economic and Community Development
- Maine Innovation Economy Advisory Board
- Maine International Trade Center
- Maine Manufacturing Extension Partnership
- Maine Patent Program
- Maine Procurement Technical Assistance Center
- Maine Small Business Development Centers
- Maine's Technology Centers
- Small Enterprise Growth Fund
- University of Maine System

Auburn Manufacturing Inc., Mechanics Falls, specializes in coated textiles and composite fabrics for extreme temperature applications.

BEYOND LAUNCH: COMPANIES CONTINUE TO INNOVATE AND GROW

Auburn Manufacturing Inc. (AMI), too, has used MTI funding to expand its offerings to enter new growth markets. Though the company's been in the textile manufacturing business for 30 years, specializing in coated textiles and composite fabrics for extreme temperature applications, it's creating a value-added product set for the insulation market that targets such underserved customers as educational institutions, hospitals, and government agencies.

"Textile manufacturing is considered by many to be a dying industry in the U.S.," says Kathie Leonard, president of the Mechanics Falls-based company. "But as a specialty manufacturer, we've identified new end uses for our products that present strong growth curves. With MTI's help, we're able to tap into a new market."

Based on its experience with specialty textiles in insulation applications, AMI recognized that many institutions seeking energy savings need an affordable, modular insulation product. It approached MTI and was awarded two Seed Grants over time, which it paired with its own R&D investment.

In September, 2010, MTI was honored at the Maine Development Foundation Annual Meeting as a Champion of Economic Development recognizing commitment to economic growth in Maine, ability to collaborate and create partnerships, high professional standards and innovativeness.

When it realized its initial plan to develop a super-insulating composite wasn't viable, it concentrated on developing a modular insulation kit that customers could install on bare components, such as pipes, valves, and fittings. AMI's second grant was dedicated to developing prototypes for these kits and testing them for commercial use at five demonstration sites, including Bates College and Central Maine Medical Center. After completing the second grant phase, AMI invested in equipment to automate production to meet anticipated market demand.

"With just $25,000 in materials invested in five demonstration projects, we were able to deliver total energy savings of around $45,000 annually to these institutions," says Leonard.

Even in a tough manufacturing climate, AMI been able to continue to innovate to increase growth, currently employing 50 people. Though they've been in the textile manufacturing business for more than 30 years, "we're not doing the same things we did 30 years ago," says Leonard. "These new commercial opportunities should allow us to increase sales by 50% annually."

Leonard praises MTI for its ability to help small manufacturers innovate for sustainable growth that allow Mainers to flourish, both as business owners and employees. Even though the manufacturing sector has suffered both locally and nationally over the last several years, there's opportunity for the right ideas to find market demand.

"What's great about MTI is that it allows a small company to take on a sophisticated project not only by providing matching funds, but by holding us accountable," says Leonard. "Through its proposal process, it gave us the framework to focus our project properly. They're there to help companies that want to continue to evolve."

"Learning the computer-driven technology we purchased to automate the production of our new insulation kits has been a wonderful opportunity for me. Not only has it given me the opportunity to use state-of-the-art technology, I'm able to understand the capabilities of the machine for future innovation."

~ Dan Gurney,
Lead technician, Auburn Manufacturing Inc.

Maine Technology Asset Fund

Investing IN Our Future

It's easy to get excited about the future of Maine when viewing it through the eyes of the entrepreneurs and researchers who are recipients of Maine's competitive bond-funded programs: Entrepreneurs have tested the largest tidal power turbine in the U.S., scientists have done pioneering work building the capacity of Maine's aquaculture industry, and the groundwork is in place to build universal rural wireless connectivity. These are just a few results of Maine's bond investments, but recipients believe that today's results will be dwarfed by what's to come.

"As the Chair of the Maine Innovative Economy Advisory Board for almost all of MTI's first decade, I can state unequivocally that MTI's leadership has been absolutely invaluable in assuring that legislative and bond funding for R&D in Maine (not the least of which is MTAF) has always been utilized to support competitive research proposals with the very best possibility of creating jobs and ensuring economic growth in our State. The people of Maine can take great comfort in knowing that thanks to MTI, their tax dollars dedicated to R&D are put to the very best use to further the Maine economy."

~ Miles Theeman
Former Chair, Maine Innovation Economy Advisory Board
President and CEO, Affiliated Healthcare System, Inc.

Bigelow Laboratory for Ocean Science's Center for Blue Biotechnology in East Boothbay.

Spurred in part by the 2006 Brookings Institution report *"Charting Maine's Future,"* leaders within the Legislature, at Maine universities, and in business realized that broadening Maine's R&D bond investments could fuel Maine companies with cutting-edge technologies to be engines for economic growth and job creation, and would enable the state to be more competitive for Federal funding. "The Legislature and the public had begun to understand that these types of investments work," says Rep. Emily Cain, Former House Chair of the Joint Standing Committee on Appropriations and Financial Affairs. "We believed that Maine had a critical mass of companies that wanted to do research and development, and that high-quality companies would apply for funds if we made it a competitive process and expanded it to the seven targeted technologies in Maine's economy."

The result of these leaders' efforts was the Maine Technology Asset Fund (MTAF), a bold initiative launched to fund capital expenditures supporting R&D and commercialization projects that will lead to significant economic benefit for Maine. In 2007, the Maine State Legislature authorized and the voters approved $50 million in bond funds, and in 2010, voters authorized another $3 million. The Legislature directed MTI to administer this fund based on its track record for managing competitive technology funding programs.

Fast forward to October 2010 and MTI has awarded $52.85M of MTAF funding to 35 projects, 26 of which are already underway. MTAF awards under contract have leveraged more than $82 million in matching funds with increasing new follow-on investments flowing as the projects advance. In September 2010, the program was recognized with a national award from the State Science and Technology Institute (SSTI) for building R&D collaborations between universities, companies, and nonprofit research institutions and for its impressive impact in just three years of existence. SSTI is a national nonprofit organization based in Ohio that leads efforts to improve state and regional economies through science, technology and innovation.

"These investments have created and sustained good jobs across Maine, in some of our most innovative companies, university centers, and nonprofit research institutions," says Betsy Biemann, President, MTI. "They have attracted new private and Federal investment to Maine. And very importantly, they have given young Mainers work opportunities that have inspired them to go on and get further training and degrees."

Measuring the value of traditional infrastructure bonds versus bonds funding research and development impact and feasibility is challenging: It's easy to understand the impact of a new bridge, but investments in R&D can take time to fully appreciate. "Economists tell us that between 75 and 80 percent of all economic growth comes from new innovation," says Catherine Renault, former Director of Maine's Office of Innovation with the Department of Economic and Community Development. "I believe five years from now, we will look back and say that MTAF marked the turning point in accelerating growth in Maine." MTAF investments enable the growth of new markets that build on Maine's traditional resources. "Through MTAF, we have discovered a number of new projects across multiple sectors, and areas where we have strengths and where we are competitive. We have the capacity to make a difference," says Renault.

Following are three examples of companies and research groups that have received funds from MTAF, and the wide-ranging results they are seeing.

AEWC, UNIVERSITY OF MAINE, ORONO—BUILDING LEADERSHIP IN OFFSHORE WIND ENERGY

AEWC Advanced Structures and Composites Center at the University of Maine has received the largest allocation from the Maine Technology Asset Fund (MTAF)—$5 million—with a potential payoff of $20 billion in the offshore wind industry for Maine. AEWC is using MTAF funding to identify opportunities in renewable energy and has become a hub for Maine's nascent offshore wind industry. It has leveraged the original MTAF investment into $30 million in additional Federal funds to build and grow its new facility, and to accelerate the commercialization of products for this important market.

The Maine coast has an enormous offshore wind resource, with upwards of 150 gigawatts available for harvesting. "The majority is in deep water, and the technology doesn't yet exist to put turbines

AEWC Masters Student Kate Stephens on Mark V *Testing Hull.*

there," says Bob Lindyberg, Assistant Director at AEWC and Program Manager for the DeepCwind Consortium National Research Initiative.

The MTAF investment, along with competitive Federal funding, is enabling AEWC to construct the Offshore Wind Laboratory. The state-of-the-art Offshore Wind Laboratory expands the existing facility to 87,000 ft2 and will enable the design, manufacture, and testing of structural hybrid composite and nanocomposite components for wind structures up to 70 m, such as blades, towers, hulls, and spars—all under one roof. This expansion adds important new capabilities to the existing AEWC facility, including additional structural testing, environmental simulation, automated manufacturing, and nanocomposites research laboratories.

The Offshore Wind Laboratory will serve a wide range of clients, from OEMs to resin and composites manufacturers, and will allow AEWC to commercialize deepwater offshore wind structures in Maine via its DeepCwind Consortium. Comprising more than 35 companies, universities, and research labs worldwide, the consortium is the acknowledged leader in deepwater offshore wind research and development, and estimates that a fully utilized offshore wind industry could create between 7,500 and 15,000 jobs and build a $20 billion industry for the state.

"Without the $5 million investment from MTAF, we would not have been able to compete for the Federal R&D funds, and we would not have had the capacity to pursue the offshore wind market," says Lindyberg. "The strategic investment from MTAF has put us in the lead in offshore wind, and that has generated attention from manufacturers that will consider investing in our state. The leverage from this investment is huge."

FHC, BOWDOIN, MAINE—ENABLING LIFE-CHANGING BRAIN TREATMENTS

The human brain contains more than 100 billion active neural cells, and improving the ability to capture data from them is key to medical therapies for diseases such as Parkinson's. FHC developed a microelectrode to record signals from individual brain cells in 1969, and has seen a new market develop for using them to facilitate the placement of deep brain stimulating leads. Alongside its mission to collaborate with the neuroscience communities to create, manufacture, and market innovative products worldwide is its commitment to the state of Maine—both of which have been strengthened by funding from MTAF.

"We are absolutely committed to maintaining our presence in the state of Maine as a manufacturing company," says Fred Haer, CEO of FHC. "We do not want to get swallowed up by a big company and have our operations transferred to another location."

"To be able to work with senior R&D and engineering staff on a project that involves laser, mechanical motion, surface chemistry, and firmware/software technologies, right out of college, is exciting and challenging."

~ Alex Lorenzo, FHC

In September 2010, MTI was recognized with a national award from the State Science and Technology Institute (SSTI) for building R&D collaborations between universities, companies, and nonprofit research institutions and for its impressive impact in just three years of existence.

Haer understands the impact his company has on the local community in Bowdoin as it has grown from a start-up to a 90-employee-strong company. But that commitment comes at a cost: Accessing capital is more challenging for companies that choose not to have a windfall shareholder exit strategy, often requiring them to slow their growth plans or take a pass on emerging markets. With the MTAF matching loan funding, FHC was able to secure $438,000 to purchase the type of micro-fabrication equipment it needed to develop the next generation of neurosurgical devices.

"With the MTAF funds, we were able to get going much faster," says Haer. The company has installed new technology that will enable it to place more contacts on each microelectrode, and position them in a geometric pattern that facilitates data recording. The company has already added three new positions, and anticipates adding more than a dozen employees as production ramps up. "We recruit locally, offer training and a promising career path to our local workforce that will allow them to stay in Maine, raise their families and grow their professional careers here at home," says Haer.

THE JACKSON LABORATORY, BAR HARBOR—GENETICS AND HUMAN HEALTH

Sometimes basic researchers don't understand the impact of scientific discoveries until years, or even decades after the fact. At The Jackson Laboratory, one of the goals for its $4.7 million investment from MTAF is to speed the pace of developing products and services that will help shorten the time from "bench to bedside". It has secured $11.9 million in matching funds to build the facilities it needs to add up to 200 Maine jobs during the next decade while making it possible to reduce the cost of medical therapeutics by learning how to tailor drugs at the genetic level.

The Jackson Laboratory's Importation Facility, Bar Harbor

"Approximately 50 percent of the drugs prescribed today do not help the patient," says Jill Goldthwait, Director, Office of Government Relations at The Jackson Laboratory. While some do no harm, she cites the recent news about the drug Vioxx, which was found to be fatal to certain individuals. "After all of those trials, and all of the development, the drug was pulled from the market and is now lost to everybody, even the people that it helped," says Goldthwait. "If we can determine genetic risk factors for an adverse reaction, we could begin to understand how to tailor the drugs at the genetic level it and wouldn't have to take them off of the market, and we could save a lot of money in the system." The impact on the medical system—both in terms of eliminating the waste of prescribing drugs that will not work for certain individuals as well as in discovering those that might be fatal to others—is enormous for not only Maine, but to the nation's health care quality and cost-control as a whole.

As it pursues its growth, the Laboratory is committed to supporting the people of the state by providing jobs at every level of the workforce, not just highly educated scientists. "Half of the jobs at the Laboratory require only a high-school degree, and we offer college tuition support and classes and certifications that enable people to move up through the ranks," says Goldthwait. "We have a strong career path available to our workers, and we have good-paying, year-round jobs."

The Laboratory also works closely with the state's university system to discover and encourage new talent. One of the Laboratory's biomedical engineers, Gardiner-born Joan Malcom Albee, participated in the Laboratory's Co-Op summer internship program while enrolled in the University of Maine's Graduate School of Biomedical Studies. She now works full time for Jackson Lab and has conducted work enabled by the MTAF program. "Working on and being awarded these grants inspired me as it exposed me to countless other dedicated and driven Maine companies," says Albee.

In all, Jackson Lab has contracted with 30 primary vendors in seven counties as a result of the MTAF award. It has spent more than $9.2 million with these Maine-based firms and numerous subcontractors as it has built new facilities—a real-life example of how MTAF dollars boost the entire state's economy.

Goldthwait says the funds from MTAF are critical to the laboratory, particularly during a time when fewer Federal resources are available to support infrastructure development at research institutions. "I can't overstate the value of the MTAF funding," says Goldthwait. "It has been critical in terms of our ability to move forward."

BUILDING FOR OUR FUTURE

MTAF recipients include private companies, non-profit research organizations and university-based programs—all of which share a common goal of expanding the possibilities for the future for the people and economy of the state of Maine. "The one thing we know about economic development is that it requires sustained investment over time," says Representative Cain. "For-profit businesses, universities, or non-profit research centers can drive the economy in new and innovative directions, but only if they know they are supported for the long term. If we can make MTAF a long-term, sustained investment, it will improve the likelihood that innovative, exciting people and businesses will choose to come to Maine, and will stay here."

"Long-term, sustainable economic development is the only avenue for the people of Maine to improve, to grow, and to have the strong economy that is central to a fulfilled life here in Maine," says Senator Chris Rector, Senate Chair of the Legislature's oversight committee on research and economic development. "We will only be as successful as our investments, and over time, they do pay returns. We are investing in world-class operations, and we have fantastic things happening in Maine."

MTI has approved $52.85 million of MTAF awards to the following organizations across Maine:

Bar Harbor Biotechnology, Inc., Trenton
Bigelow Laboratory for Ocean Sciences, West Boothbay
Biovation, LLC, Boothbay
CrossRate Technology, LLC, Windham
Dielectric Communications, Raymond
Downeast Institute for Applied Research and Education, Beals
FHC, Inc., Bowdoin
Gulf of Maine Research Institute, Portland
Hodgdon Defense Composites, Portland and East Boothbay
Maine Aquaculture Innovation Center, Waldoboro
Maine Institute for Human Genetics and Health, Brewer
Ocean Renewable Power Company, LLC, Portland and Eastport
Packgen/E-Pack, Auburn
The Jackson Laboratory, Bar Harbor
University of Maine System
University of New England, Portland and Biddeford

MTI-administered bond funds include:

- The Maine Technology Asset Fund has approved awards totaling $52.85 million
- The Maine Marine Research Fund awarded approximately $6 million
- The Maine Biomedical Research Fund (MBRF) awarded approximately $42.5 million

"After growing up in Oxford County, I have had the wonderful opportunity to work at this extremely high-impact biomedical research institution while staying in my beloved state of Maine! Here at The Jackson Laboratory I manage a resource that provides the scientific community with detailed expression data for Cre-recombinase mouse strains maintained at the institution. I hope to apply to veterinary school in fall of 2011, and my self-directed research experience at The Jackson Laboratory will prove invaluable in this endeavor."

~ Caleb Heffner
Jackson Lab

Maine's Clusters

Accelerating and Sustaining Businesses

Maine needs more than individual successful companies to have a vibrant economy. Strong clusters—a critical mass of businesses that share knowledge, a skilled workforce, R&D capacity, capital, supply-chain efficiencies, strong industry associations, natural and other important resources—create stronger, more globally competitive companies. Under the Maine Technology Institute's Cluster Initiative Program, which targets high-potential technology clusters throughout the state, companies in Maine's existing and emerging clusters can tackle obstacles and transform ideas into competitive products and services that drive economic growth.

"When the Committee on Jobs, Innovation and the Economy recommended that Maine make a significant bond investment in its entrepreneurs, researchers and talented workforce, our report noted that, 'We believe that the prospects for economic growth and job creation in the state of Maine are positive. Investment in research and development will give Maine companies access to world class technology. These investments will allow some of the vibrant clusters of Maine companies to compete and succeed in the global economy. If we make these investments in a focused and disciplined way they will lead to the growth of well paying jobs in successful and enduring Maine companies.' It is exciting to see the progress that Maine companies and research institutions have already made, translating their awards into new technologies, attracting an impressive amount of private and public investment, and creating quality jobs across the state."

~ Karen Mills
Former Chair of Maine's Committee on Jobs, Innovation and the Economy

Maine's bioplastics cluster seeks to create renewable plastic using the starch from potatoes, a longstanding staple of Maine's economy

Interface Fabrics, now True Textiles Inc., of Guilford.

MTI support for clusters began soon after MTI's creation. Its premise was that industry-led cluster initiatives could bring together companies in similar industries and technology areas to identify common opportunities and find solutions to shared problems. MTI's early, more modest funding for cluster initiatives was later expanded, with support from Governor Baldacci and the Legislature and the recommendation of the Brookings Institution's *Charting Maine's Future* report, into a larger program providing competitive planning and implementation awards.

Strong clusters typically build on a region's strengths and are shaped by a region's knowledge, skills, and innovation. Maine has a long agricultural heritage and abundant natural resources. Building on these assets are two Maine clusters showing enormous promise: the emerging bioplastics cluster and maturing value-added food cluster. Each benefits from Maine's traditional strengths in such areas as crop and soil science R&D, manufacturing, food and marine sciences, an exceptional university system, and educated workforce, giving them a solid platform from which to innovate, enhance, and bring to the market new products. Backed by trade associations dedicated to their industries' growth, these cluster initiatives are gaining traction and advancing MTI's mission of ensuring a thriving regional economy through supporting the commercialization of new technologies that lead to vibrant industry clusters.

PLASTICS FROM POTATOES

Maine's bioplastics cluster seeks to create renewable plastic using the starch from potatoes, a long-standing staple of the state's economy. The effort took root when Guilford-based True Textiles (formerly InterfaceFABRIC) and the Environmental Health Strategy Center (EHSC) decided to see if it could make polylactic acid (PLA), a polymer with biodegradable properties, using Maine potatoes rather than the Midwest corn True Textiles currently employs for textile production. A PLA that uses potatoes accomplishes several things that make it

Undergraduate research at Forest Bioproducts Research Institute, UMaine, Orono.

both environmentally and economically viable: It's made from a combination of potato processing waste and cull potatoes rather than food-grade potatoes; eliminates the genetic modification issues associated with corn; and can ultimately result in a biopolymer that can form the base of products from packaging to toys.

In 2006, True Textiles received an MTI seed grant to investigate whether Maine had sufficient potato supply to meet PLA demand estimates. When the study proved positive, several Maine-based institutions teamed with the University of Maine Orono, where chemists successfully used stock-grade potatoes to create lactic acid, a first step in creating PLA. Joining with Tom's of Maine and Rynel Inc., a specialty foam producer in Wiscasset that was also developing organic polymers, the group applied for MTI's cluster enhancement award in 2008. The $200,000 award, with a match of $459,000, allowed the group to begin Phase I R&D efforts and work toward creating a sustainable cluster.

"Biovation is doing some pretty cool stuff in the world of bioplastics and biodegradable products, stuff that no one else is doing or can do. All this is manufacturing in a niche area where there is a need for our products—highly differentiated and technologically advanced products. So, we as a company and I as a member of the team work really hard. It's fun, extremely challenging, and rewarding. And all of this is in Maine."

~ Bob Hamlyn
Plant engineer, Biovation

"Stakeholders—from farmers to universities to manufacturers—have a great interest in commercializing potato-based PLA, whether it's for packaging, fabric or other applications," says Mark Dobrovolny, director of product supply at Kennebunk-based Tom's of Maine. "The cluster teamwork brings it all together."

MTI awarded the group another $500,000 in 2009 to continue support for the cluster initiative, in which the partners intensified research efforts, strengthened their case for branding potato-based PLA, and conducted sustainability analysis. They also formed a trade association, the Sustainable Bioplastics Council of Maine—an important milestone in their initiative. The association is integral in creating cohesion among members, raising public awareness about bioplastics among investors, manufacturers, and consumers, and developing a sustainable business model for potato-based PLA. The market opportunity for bioplastics is vast, positioning the state to generate new revenue streams, investment capital, and jobs across farms, university research centers, PLA manufacturers, product manufacturers, recycling and composting businesses, and other entities.

"The entire group is focused on sustainability, even at the raw materials level," says Vinitha Nair, interim director of the association. "Within this cluster, we can spur economic growth for so many different industries—all using Maine talent and resources."

One reason clusters are so effective is that they bring exponential benefits to associated institutions, says May Mitchell, marketing programs manager at Wiscasset-based Rynel. "It gives everyone access to research, resources, and experts we wouldn't get on our own. That has shortened the R&D timeline."

While it's always a challenge to keep such a diverse, complex entity focused and moving in the same direction, adds Mitchell, she credits MTI with providing necessary structure. "The MTI process takes a great idea and forces you to make a concrete plan, commit to deadlines, and meet objectives," says Mitchell. "The collective goal is to research and create products and commercialize them to bring business opportunities and jobs to the state."

"Stakeholders—from farmers to universities to manufacturers—have a great interest in commercializing potato-based PLA, whether it's for packaging, fabric or other applications. The cluster teamwork brings it all together."

~ Mark Dobrovolny
Director of product supply,
Kennebunk-based Tom's of Maine

FOOD PRODUCERS AT THE SAME TABLE

Like the bioplastics cluster, Maine's value-added food cluster comprises a diverse group—from food manufacturers, to distributors, retailers, and packaging providers. In 2009, MTI announced it was awarding a cluster enhancement award of $458,922, matched by outside funding of $680,268, to the Maine Manufacturing Extension Partnership (MEP). MEP collaborates with the Maine Grocers Association (MGA), Maine Tomorrow, and The Maine Food Producers Alliance (MFPA), a trade association formed as part of the cluster initiative, to promote the state's value-added food producers. As of 2008, according to a report prepared for MTI and the Office of Innovation, the cluster comprised about 200 companies including some 6,000 jobs.

The new MFPA has around 90 members, for whom it holds workshops, hosts conferences and networking events with grocers, distributors, and industry partners, and negotiates group rates for trade shows and co-op advertising. Members include food manufacturers ranging from established Stonewall Kitchen and Simply Divine Brownies to the fast-rising Zumsport, Ocean Approved, and Maine Distilleries. In October 2010, the Alliance and MGA co-hosted the second annual Maine Food Means Business Summit, which attracted more than 200 Maine producers, grocers, distributors, and partners and sold out available trade show space.

Portland's Ocean Approved Kelp Slaw Cut in a Sea Slaw.

"The Alliance oversees marketing opportunities and helps members collaborate to take advantage of economies of scale," says MFPA Executive Director Valerie Geredien, who points to a recent full-page ad that featured nine producers in a publication targeting the specialty food industry. "One of the biggest benefits of being in a cluster association is accessibility—to marketing opportunities, partnerships, and expertise."

Portland-based Ocean Approved, an MTI award recipient that produces table-ready kelp, sees significant benefits from its cluster involvement, according to founder Tollef Olson. For example, he says he expected a huge boost from a recent MFPA-hosted meeting with Hannaford, which, like many grocery chains, increasingly wants to carry products from local food producers.

"I was hired by Ocean Approved to assist in efforts to propagate indigenous species of kelp, which will enable transition from reliance on wild harvest to sustained cultivation and commercial farming operations. Successful introduction of kelp and other seaweed production along the coast of Maine offer new and expanded employment for watermen and, onshore, for laboratory jobs like mine. These efforts will create jobs in such areas as nursery production, processing, and the existing fisheries infrastructure."

~ Gary Arnold
Laboratory Manager, Ocean Approved, LLC

For Ocean Approved, its place in the food cluster closely aligns with its place in Maine's time-honored marine industry. "Just as we're an integral part of the food cluster, we're also part of a marine industry that's lost jobs in recent years, and we're creating jobs to replace those being lost," says Olson. "Everything we do—from growing product, to bringing it onshore, production at our facility, trucking it out, and distributing it—helps keep people working. MTI funding speeds growth and that growth creates jobs from new products."

Though scalability remains a challenge for value-added food providers, Maine products are part of a national specialty food and beverage sector that's seeing solid growth, increasing nearly 3% in 2009 to $63 billion in sales, according to the National Association for the Specialty Food Trade. There's been a significant movement across the country toward value-added/specialty foods, especially food and beverage whose raw materials are sourced locally.

Another of the food cluster's producers, Maine Distilleries, sprung up from the need to add value to and find new outlets for traditional Maine products.

"While expertise is easily recognized, the process through which it's gained is not. It's not often that an employee, in the course of a workday, can see that the task they're performing is creating expertise. At Maine Distilleries, the expertise needed to turn potatoes into spirits is not only tangible and mine, but it is continually amended and increased. For an employee, that is a true pleasure"

~ Joe Swanson
Assistant Distiller, Maine Distilleries

Both its vodka and gin products are made from Maine potatoes grown by Green Thumb Farms in Fryeburg, which wanted to find a new market for its potatoes beyond the tabletop. Both use water from the Cold River aquifer.

"Our vodka venture has provided our partner at Green Thumb a tremendous outlet for cull potatoes," says Bob Harkins, managing partner at the Freeport-based company, which used seed grants from MTI for R&D and market research. "We're a ground-to-glass operation, handling every process with Maine resources, from the planting of the potato, to distillation, to bottling." Cold River has also developed close relationships with Maine restaurateurs who tout local products.

As it grows, Cold River expects to work closely with other producers to leverage economies of scale. "We'll take advantage of cooperatives for everything from yeast, to packaging and point-of-sale materials," says Harkins.

"Our gantry technology that MTI funded creates an efficient process that eliminates waste in product, time, and labor. I have appreciated the opportunity to be trained in this technology as it has allowed me to expand my skills and save time that I can then dedicate to training other employees on packaging and decorating our products."

~ Kim Larabee
Production Manager, Simply Divine Brownies

Trina Beaulier, president of Kents Hill-based Simply Divine Brownies, says cluster activity is critical to specialty food producers, many of whom are small and don't initially understand food industry business processes. Simply Divine, which received MTI seed grants for developing its manufacturing process and business development, has worked with other food producers to solve issues with refrigeration for ingredients sourcing, packaging, shipping, nutritional analysis, and labeling.

"Many of us in specialty foods come in knowing nothing about larger business issues," says Beaulier, whose company runs its baking operations in Kents Hill and has a retail shop in Freeport. "Working with others in the industry and with MTI has helped us a great deal as we grow."

While the members of Maine's various clusters tend to be less densely concentrated than in clusters found in Silicon Valley or Research Triangle, industry-led cluster initiatives can combat the challenges of geographic dispersal and smaller scale. With MTI's help, these initiatives can help companies draw on Maine's numerous strengths, as well as connect with each other and with the intellectual and financial resources they need to maximize their profitability and growth.

MTI targets investment in seven sectors:

– Advanced Technologies in Forest Products & Agriculture
– Biotechnology
– Composites & Advanced Materials
– Environmental Technologies
– Information Technology
– Marine Technology & Aquaculture
– Precision Manufacturing

Thank you to Maine's Trade Associations who work hard to support and grow their member businesses, including:

Bioscience Association of Maine
www.mainebiotech.org

Environment & Energy Technology Council of Maine
www.e2tech.org

Maine Aquaculture Association
www.maineaquaculture.com

Maine Built Boats
www.mainebuiltboats.org

Maine Composites Alliance
www.mainecompositesalliance.org

Maine Forest Products Council
www.maineforest.com

Maine Marine Trades Association
www.mainemarinetrades.com

Maine Potato Board
www.mainepotatoes.com

Maine Pulp and Paper Association
www.pulpandpaper.org

Maine Wood Products Association
www.mwpa.org

Manufacturers Association of Maine
www.mainemfg.com

Maine Organic Farmers and Gardeners Association
www.mofga.org

Technology Association of Maine (TechMaine)
www.techmaine.com

Wild Blueberry Commission of Maine
www.wildblueberries.maine.edu

Strong clusters typically build on a region's strengths and are shaped by a region's knowledge, skills, and innovation.

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10 YEARS OF INVESTING IN MAINE'S INNOVATION ECONOMY

10 years ago, Maine was ranked 50th in Research and Development nationally. Maine's per capita income was stuck well below the national average. 10 years later, we have seen Maine's R&D ranking rise to the high 30's. And we have seen Maine's per capita income rise to within 8% of the national average.

We can't say exactly how much MTI's impact has contributed to these changes. What we do know is for every $1 awarded by MTI, $14 dollars in private and non-state public investment in innovation is leveraged. And we know that MTI-funded companies pay wages that are more than 25% higher than the average Maine wage. These innovative companies are the kinds of companies that we need to continue to foster and grow.

This progress is due to the hard work and contributions of many across the state of Maine.

Thank you to the MTI-funded companies who work hard every day to keep their companies growing, to leverage the investment they receive from MTI and to continue to take bold steps in their research, development and innovation.

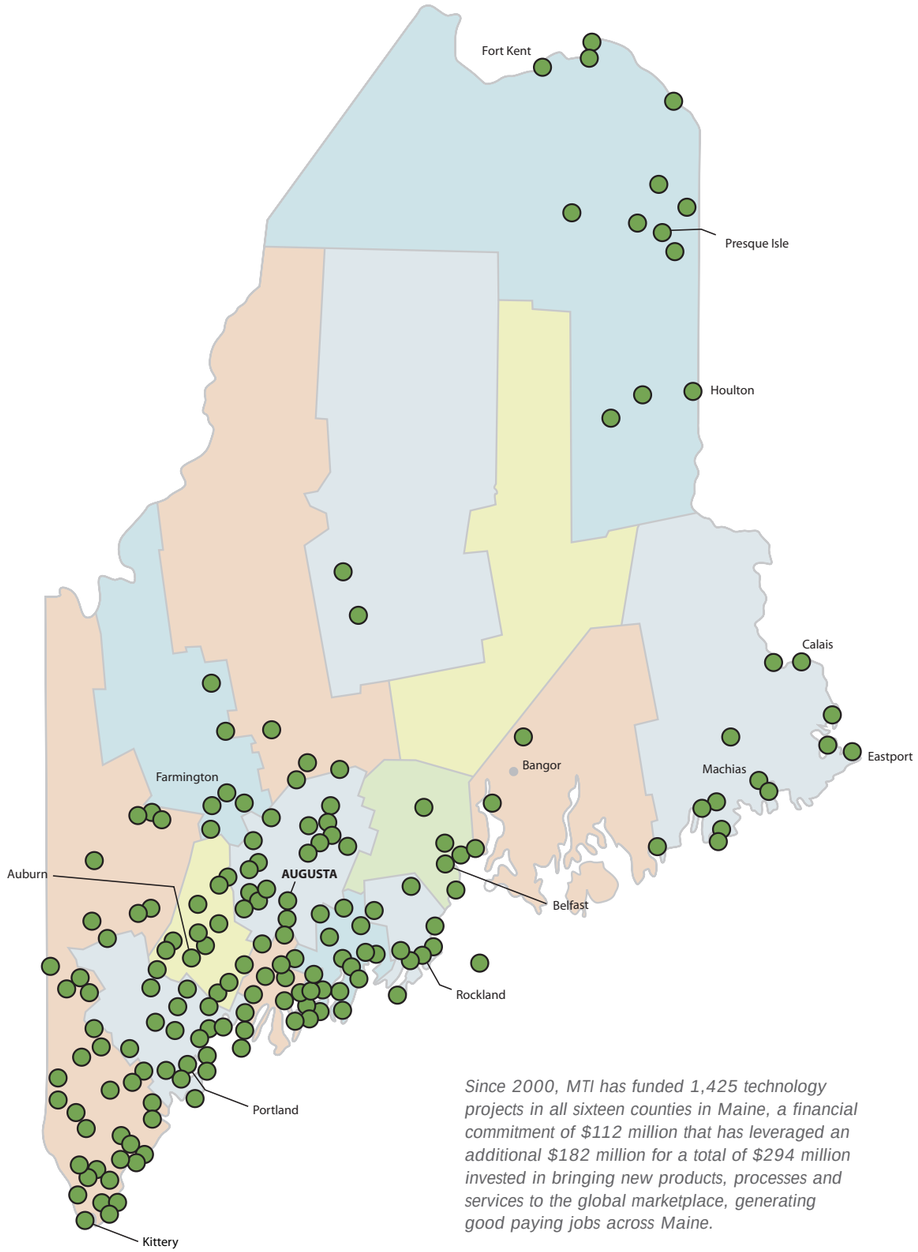
Thank you to the research and development community at Maine's public and private universities and non-profit research institutions who carve out world-class opportunities for Maine's entrepreneurs and for Maine students who are inspired by the cutting-edge research they see.

Thank you to the legislators and policy leaders who have seen, and acted on, the promise of continued investement in R&D through the MTAF and through continued funding for bringing new products and services to market. Their leadership has supported Maine companies in their efforts to continue to innovate, to grow and to strengthen Maine's economy.

Finally, thank you to the MTI Board and Tech Board Members who have volunteered over 50,000 hours over these 10 years to help channel MTI funds to the most promising technologies with the most robust plans to maximize the econonmic impact in Maine.

BETSY BIEMANN
President

MTI Staff (L-R): Shane Beckim, Jessie Gogan, Linda Adams, Betsy Biemann, Andrea Phillips, Roger Brooks, Patti Sutter, Joe Migliaccio, Jim Fecteau



Since 2000, MTI has funded 1,425 technology projects in all sixteen counties in Maine, a financial commitment of $112 million that has leveraged an additional $182 million for a total of $294 million invested in bringing new products, processes and services to the global marketplace, generating good paying jobs across Maine.

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