Maine Office of Innovation

DECD
Maine Department of Economic and Community Development

A Science and Technology Action Plan for Maine

2005

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Innovation drives a vibrant, globally competitive economy in Maine.

GOAL: Maine's R&D activity will equal $1 billion per year by 2010.

Executive Summary

Today, people, products, and ideas move across the globe more easily than our grandparents traveled across town. The economy is no longer driven by manpower or machinery, but by minds - and the knowledge, innovation, and creativity they produce.

Maine's economic strength has historically depended on raw natural resources. The keys to our economic future now lie in knowledge and ideas, where wealth and job creation derive from innovation and technology embedded in all sectors of the economy, including our natural resource-based industries of forestry, marine and agriculture.

To capture the full economic benefit of innovation, Maine must develop the tools, incentives and infrastructure that will support an innovation-driven economy. Innovation is the process whereby new ideas are turned into products and processes, and it is increased productivity and the commercialization of new products and services that lead to sustainable jobs and broad-based economic prosperity.

R&D is the activity through which ideas are conceived and innovation occurs – fundamental discoveries are made; process improvements are tested and adopted; new products and services are developed and produced. R&D capacity, infrastructure and know-how comprise the key foundation on which an innovation-driven economy is built.

The 2005 Maine Science and Technology Action Plan is put forward to coordinate and promote quantifiable actions to ensure Maine cultivates an innovation-driven economy. The plan was developed with the active participation of the Maine Science and Technology Advisory Council (MSTAC) and its Executive Committee, representing a broad cross section of Maine's technology sectors, non-profit research institutions, universities and for profit companies. It creates the road map toward achieving the objective of higher per capita income set forth in the State Planning Office's "30 and 1000 Plan" created in 1998.

The 2005 Science and Technology Action Plan sets the goal of doubling the state activity in research and development to $1 billion by 2010. This goal puts Maine at the national average for state R&D activity of 3% of Gross State Product, - or roughly $1357 of R&D activity per worker.

Reaching this goal will require continued, strategic expansion of Maine's entire R&D enterprise. This level of activity is required for Maine to realize even a portion of its economic potential. It is an ambitious target, but one that is achievable with the commitment of Maine's research community, business community, political leaders, the Governor and the Legislature.

This plan outlines specific actions and outcomes in the area of science and technology that are critical to moving Maine's economy forward. Some of the actions require additional targeted investment on behalf of the state; many others make better use of existing resources by building connections and collaborations between groups.

While setting forth specific steps to be taken for investments in research and development over the next few years to move Maine's economy forward, there remain critical elements that are beyond the scope of this plan, including energy costs, personal property and income tax, transportation infrastructure, wireless and broadband infrastructure and workforce development. Governor Baldacci has recognized the importance of these issues with several key initiatives addressing tax reform, and task forces to develop workable solutions for workforce preparedness and universal broadband and wireless access. The Department of Economic and Community Development will continue to work with these ongoing efforts so that these overriding issues will be addressed and the economic potential of the science and technology action plan can be realized.

A better future is within our grasp, but it will not be easy. With the continued targeting of current resources, the development of new key programs, strong leadership within state government and coordinated efforts among Maine's R&D community, all Maine people will have the economic opportunity the innovation economy promises.

ACTION PLAN: Maine will achieve $1 Billion in R&D Activity by 2010.

KEY OBJECTIVE ONE:

Maine's investments in R&D will stimulate and sustain consistent, competitive growth for Maine's economy.

1.1 Support and advocate for focused state R&D investments at levels that keep Maine competitive, nationally and internationally, in Maine's targeted technology areas:

- ☐ Biotechnology
- ☐ Composite
- ☐ Environmental
- ☐ Marine and Aquaculture
- ☐ Information
- ☐ Precision Manufacturing
- ☐ Agriculture and Forestry

1.2 Target state R&D investments to those strategic areas or clusters within the state's technology-intensive industrial sectors with the greatest potential to support jobs and competitive businesses.

2010 OUTCOME: State investment in R&D reaches $120 million per year, is focused on key strategic areas with the best potential to benefit Maine, and contains a state-sponsored R&D Seed Fund for emerging ideas and collaborative proposal development.

KEY OBJECTIVE TWO:

Stimulate a robust R&D enterprise by boosting academic R&D capacity, developing an educated, technically skilled workforce, broadening the impact from the nonprofit research institutions and increasing private sector R&D activity in key strategic areas important to Maine.

2.1 Using a portion of state funding (Objective 1.1), create the equivalent of a virtual Tier I[1] statewide research enterprise, encompassing research universities, institutions and private companies, that attracts scientific participation in basic research from the national research community.

2.2 Develop research universities and institutions that are hubs for entrepreneurial activity.

2.3 Build strategic alliances and research collaborations between and among Maine's research institutions, universities, entrepreneurs and companies.

[1] The Carnegie Classification for Tier One universities are those institutions that offer a full range of baccalaureate programs, are committed to graduate education through the doctorate degree, and give high priority to research. They award 50 or more doctoral degrees each year. In addition, they receive annually at least $40 million or more in federal support.

2010 Outcome: Maine's annual R&D activity will be comprised 75% ($750,000,000) of private sector R&D and 25% ($250,000,000) of research university and institution R&D.

KEY OBJECTIVE THREE:

Maine's Legislature and key policy makers recognize, advance and celebrate Maine's R&D investments and strategic priorities

3.1 Legislators are informed through frequent, precise, interesting reports.

3.2 Accurate and reliable information, data and analysis on Maine's innovation-based economy are developed and provided, promoting understanding and informing policy at the state and federal levels.

2010 OUTCOME: Strategic areas and proposals from MSTAC are a key component of the Governor's and Legislature's budget and bond proposals.

KEY OBJECTIVE FOUR:

Maine's unique R&D assets and their significance to Maine's economy are used to draw new business and investment to the state of Maine.

4.1 Market Maine's Science and Technology strengths and assets to existing Maine students and businesses

4.2 Maximize the benefits of Maine's proximity to leading centers of innovation and innovative businesses in the United States and Canada

2010 OUTCOME: Location and/or expansion of 8 new research-intensive businesses in Maine.

KEY OBJECTIVE FIVE:

Foster growth of research intensive companies through a comprehensive network of services and support.

5.1 Public and private funding sources are developed that support early stage research-intensive business development targeted to the capital gap between R&D funding and cash flow positive.

5.2 Build a critical mass of entrepreneurial management assistance that enables the growth of research-intensive businesses in Maine.

5.3 Develop appropriate statewide business support to shepherd research-intensive businesses throughout their unique business lifecycle.

2010 OUTCOME: Maine reaches the top 25, compared to other states as measured in the CFED Development Report Card for the states, for: venture capital investments; SBIC financing; loans to small businesses; employment growth; job growth due to new businesses; technology industry employment; and change in new companies.