A REPORT TO THE
123rd LEGISLATURE
FIRST REGULAR SESSION

Final Report of the JOINT SELECT COMMITTEE ON RESEARCH, ECONOMIC DEVELOPMENT & THE INNOVATION ECONOMY

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Executive Summary

Recognizing the important impact of research, economic development and innovation on Maine's economy, the 122nd Legislature established the Joint Select Committee on Research, Economic Development and the Innovation Economy. The members of the Joint Select Committee began their work with the goal of achieving bipartisan support for bold leadership in this important arena, as well as a solid commitment to fiscal responsibility in their investment recommendations. The Committee was guided in their efforts by former legislators, state employees, and public and private institutional leaders whose dedication to advancing Maine's competitiveness in the areas of research and development over the past decade have been instrumental in facilitating Maine's transition into the new globally-competitive innovation economy.

Joint Study Order S.P. 847 established the Joint Select Committee on Research, Economic Development and the Innovation Economy. The Study Order directed the Committee to review the current status of state efforts to address research and economic development and to develop recommendations for future legislative action to expand research and economic development activities in the State.

The Committee was formed during the fall of 2006 with the appointment of 13 members representing eight joint standing committees of the Legislature. The Committee held 5 public meetings in Augusta on September 14, October 5, November 1, November 14 and November 30, 2006.

The Committee received presentations from over 20 presenters that addressed, among other things:

- The history of Maine's R&D efforts,
- Current R&D and innovation efforts,
- The evaluation of the State's investment in R&D,
- The impact of state R&D efforts on R&D businesses and entrepreneurs,
- Taxation policies and incentives related to R&D; and
- Collaboration among R&D performance sectors.

The Committee's work was informed by the work of several groups including the reports of the 118th Legislature's Joint Select Committee on Research and Development, the implementation work done by the 119th Legislature's Joint Select Committee on Research and Development, the evaluations performed by the University of North Carolina at Chapel Hill, and the Brookings Institution's report on promoting sustainable prosperity in Maine.

During the course of the Committee's work, the following themes emerged which guide the Committee's recommendations.

A. Innovation drives economic growth.
B. A long-term commitment and vision for state investment in research and development are necessary ingredients for success.
C. Sustained investment is essential to success.
D. When possible, state resources should be provided through a competitive process.
E. Collaboration among academia, non-profits and industry should be encouraged.
F. Use of Maine's limited resources should be focused.

After receiving presentations and information and after consideration of proposals put forward by Committee members, the Committee makes the following recommendations:

1. The Committee recommends that the important work and leadership of the Governor's Maine Science and Technology Advisory Council be continued as a permanent advisory board that will be responsible for developing the State's roadmap for research and development activity and cultivating Maine's innovation economy. The Committee recommends that this council be established in statute as an advisory board, with the new title "*The Maine Innovation Economy Advisory Board.*" The committee also recommends that the duties of the board be expanded.

2. The Committee recommends that the Maine Economic Growth Council expand its leadership role in strategic planning for research and development by requiring the council to develop specific annual budgetary recommendations to support the Innovation Economy Action Plan's vision and goals, with input from the Office of Innovation and the Maine Innovation Economy Advisory Board. The Committee recommends that the council be responsible for providing recommendations for any necessary bonding and general fund appropriations that will be essential for advancement of the vision and goals outlined in the innovation economy action plan. In addition, the Committee recommends that the council's membership be amended to include one member of the Maine Innovation Economy Advisory Board.

3. The Committee finds that the Office of Innovation's comprehensive research and development evaluation, statutorily required to be performed by independent reviewers every 5 years, is a useful tool for the Legislature in assessing the competitiveness of the technology sectors and the impact of the State's research and development activities on economic growth. Accordingly, the Committee recommends that the statute be amended to formally require the office and the independent reviewers to submit to the Governor and the Legislature an annual progress report on the status of the evaluation beginning on February 1, 2008 and on February 1st every year thereafter.

4. The Committee recommends that the Taxation Committee study the issue of tax reform, specifically as it relates to research and development entrepreneurs and businesses and encourages the committee to consider the creation of new tax policies and incentives that will boldly support the growth of research and development and the innovation economy in Maine.

5. The Committee recommends a steady increase in on-going general fund support of research and development over the next ten years. Accordingly, beginning in fiscal year 2008-09, the Committee recommends that the Governor, when submitting the budget to the

Legislature, be required to submit a funding level recommendation for research and development that is the equivalent of not less than 1% of total actual General Fund revenue of the previous fiscal year. For each successive year for the next ten fiscal years, the Governor shall increase the funding level recommendations by at least two-tenths of 1% and by fiscal year 2018-19 shall submit legislation setting forth appropriations for research and development that are the equivalent of not less than 3% of total actual General Fund revenue of the previous fiscal year. If the Governor's budget sets forth recommendations for research and development that differ from the above, the Governor shall simultaneously submit a report to the joint standing committees of the Legislature having jurisdiction over appropriations and financial affairs and research and development matters explaining the funding difference.

6. The Committee supports bonding as a piece of the State's overall research and development investment portfolio, provided these investments are fiscally responsible and they continue Maine's tradition of demonstrated accountability for all investments. Accordingly, the Committee recommends a bond issue of up to $50 million for each of the next 5 years totaling up to $250 million for competitive grants administered by the Maine Technology Institute to stimulate economic growth and job creation through investments in research and development and commercialization, in anticipation of an additional $250,000,000 in federal and private funding.

I. INTRODUCTION

Recognizing the important impact of research, economic development and innovation on Maine's economy, the 122nd Legislature established the Joint Select Committee on Research, Economic Development and the Innovation Economy. The members of the Joint Select Committee began their work with the goal of achieving bipartisan support for bold leadership in this important arena, as well as a solid commitment to fiscal responsibility in their investment recommendations. The Committee was guided in their efforts by former legislators, state employees, and public and private institutional leaders whose dedication to advancing Maine's competitiveness in the areas of research and development over the past decade have been instrumental in facilitating Maine's transition into the new globally-competitive innovation economy.

The Joint Select Committee was created by Joint Study Order of the 122nd Legislature.[1] The Committee is composed of 13 legislators representing eight joint standing committees of the Legislature.[2] The Joint Study Order directs the Committee to review the current status of state efforts to address research and economic development and to develop recommendations for future legislative action to expand research and economic development activities in the State.

The Joint Study Order requires the Committee to submit a report to the First Regular Session of the 123rd Legislature by December 6, 2006. The Committee is also authorized to submit legislation related to its report to the First Regular Session of the 123rd Legislature at the time of submission of its report.

The Committee held 5 public meetings in Augusta on September 14, October 5, November 1, November 14 and November 30, 2006. Presentations were made to the Committee by the following people:

- Former Senate President Mark Lawrence, Former State Planner Evan Richert, Senator Scott Cowger, and Dr. George L. Jacobson Jr. (Panel discussion on the history of Maine's R&D efforts)
- Peggy Schaffer of Department of Economic and Community Development and Betsy Biemann of Maine Technology Institute. (Panel discussion on current R&D and innovation efforts)
- Jim Damicis from PolicyOne Research. (Initial discussion on the University of North Carolina Report assessing Maine's R&D efforts)
- Chris Frank of Intelligent Spatial Technologies, William Harris of MariCal, Peter Cowan of SeaBait, LLC. (Panel discussion with R&D-related businesses)
- Dr. Michael I. Luger and Brent Lane of the University of North Carolina at Chapel Hill and the Frank Hawkins Kenan Institute of Private Enterprise at UNC-Chapel Hill. (Presentation of 2005-2006 Evaluation of Maine's Public Investments in R&D)
- John Burns, Small Enterprise Growth Fund

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[1] S.P. 847. See Appendix A for the Joint Study Order.

[2] The Committee membership list is attached as Appendix B.

- Beth Bordowitz and Rob Small, Finance Authority of Maine. (Presentation on funding programs for research and development)
- Jake Ward, University of Maine. (Presentation on the roles of R&D organizations and the R&D continuum)
- Laurie Lachance, President and CEO of Maine Development Foundation, and Michael Allen, Director of Maine Revenue Services. (Panel discussion on funding, capitalization and taxation issues regarding R&D)
- Christina Sklarz-Libby for the North Star Alliance, Don Perkins for Maine Marine Research Coalition, Dr. Larry Beauregard for Biomedical Research Coalition, Dr. Keith Hutchison for UMaine Graduate School of Biomedical Sciences, Dr. Hemant P. Pendse for Maine Bioproducts Initiative, and Miles Theeman for Maine Science and Technology Advisory Council. (Panel discussion on successful models for collaboration)

During the course of the Committee's work, the following themes emerged which guide the Committee's recommendations.

A. Innovation drives economic growth.

B. A long-term commitment and vision for state investment in research and development are necessary ingredients for success.

C. Sustained investment is essential to success.

D. When possible, state resources should be provided through a competitive process.

E. Collaboration among academia, non-profits and industry should be encouraged.

F. Use of Maine's limited resources should be focused.

II. R&D AND THE MAINE ECONOMY

Research and development plays a vital role in Maine's economy and Maine's economic future. Research and development stimulates innovation which can lead to new businesses and jobs and improved quality of life for Maine's citizens. In 1999, realizing the impact of research and development on Maine's economy, the 118th Legislature established the Joint Select Committee on Research and Development. That joint select committee (followed by the work of the 119th Joint Select Committee on Research and Development) created the framework for the research and development programs in Maine, including the seven targeted technology sectors.[3]

[3] The state's 7 targeted technologies are biotechnology, aquaculture and marine technology, composite materials technology, environmental technology, advanced technologies for forestry and agriculture, information technology and precision manufacturing technology.

In addition to creating the framework of programs and suggested funding levels, the 118th and 119th joint select committees recognized the competing nature of budget priorities for the Legislature and the Governor and that future funding for research and development would require strong and committed leadership. They recognized this on-going leadership as one of the biggest threats to Maine's research and development efforts.

Several themes shaped the 118th Joint Select Committee's recommendations. First, research and development is the foundation upon which a strong Maine economy will be built. Second, an educated and skilled workforce is a critical element in the development of the State's capacity to support research and development. Third, a strong University of Maine System is fundamental to growing research and development in the State. Fourth, Maine has several distinguished nonprofit research institutions that are key to attracting researchers and building a critical mass of research activity in the State. Fifth, the private sector plays a pivotal role in the "development" piece of research and development and in the creation of jobs and therefore it is in the State's interest to support companies that do research and development in the targeted technologies. Six, an important objective of investing in research and development is to create and retain high-skilled, high-wage jobs in the manufacturing sector through technology development and product commercialization.[4]

Among other funding recommendations, the 118th Joint Select Committee recommended investing $15 million per year in a program to support applied research, development and commercialization in the targeted technology sectors.[5] In 1999, the Legislature created the Maine Technology Institute[6] to encourage, promote, stimulate and support research and development activity leading to the commercialization of new products and services and appropriated $3,200,000 in FY 1999-00 and $6,400,000 in FY 2000-01.[7]

In 2001, the State Planning Office published the *30 and 1000 Report*[8] which was a call for action to increase the percentage of Maine's adults with 4-year college degrees to 30% and increase the amount of R&D spending (by all parties and from all sources) to $1,000 per employed worker in the state. The report, once again, recognized the need for a long-term commitment to fund the commercialization by industry of new technologies, products and services by increasing funding to the Maine Technology Institute to $15 million per year.[9] Since 2001, general fund appropriations to the Maine Technology Institute were:

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[4] "Final Report of the Joint Select Committee on Research and Development", December 1998, pp. 1-2.
[5] The 118the Joint Select Committee also recommended appropriating $20 million per year to the University of Maine System's Maine Economic Improvement Fund which is base funding for research and development. The Executive Summary of the Final Report of the Joint Select Committee on Research and Development, December 1998, which contains a list of the recommendations of the 118th Joint Select Committee, is attached as Appendix C.
[6] 1999 PL, ch. 401, Pt. AAA §3.
[7] In FY 2000-01, approximately $5,500,000 of general fund money was also appropriated to the Applied Technology Development Centers.
[8] "30 and 1000 - How to Build a Knowledge-based Economy in Maine and Raise Incomes to the National Average by 2010", November 2001.
[9] 30 and 1000 Report, p. 14.

- FY 2001-02: $5,403,912
- FY 2002-03: $4,786,836
- FY 2003-04: $5,586,486
- FY 2004-05: $5,758,274
- FY 2005-06: $5,509,051
- FY 2006-07: $5,487,528

The State's total investment in research and development has grown from approximately $15 million in FY 1999-00 to over $60 million in FY 2003-04. In 2004-05, Maine invested $21.9 million in research and development. Since 1990, the State has invested over $203 million in state funds for research and development. According to the 2005 Maine Innovation Index[10], Maine must maintain its commitment to public investments in research and development for the commitment to pay off.

As part of the implementation of the 118th Joint Select Committee's recommendations, the 119th Legislature created an evaluation process which requires an evaluation of state investments in research and development. The evaluation must be conducted every 5 years. The first evaluation was conducted by the University of North Carolina at Chapel Hill and included interim reports for 2001, 2002, 2003, and 2004-2005. The final report conducted during 2005-2006 was submitted in October 2006. Several factors outlined in the 2006 UNC report were considered by the Committee during its deliberations.

According to the 2006 UNC Chapel Hill report, prior to 1999 R&D performance in Maine totaled $159 million. Beginning in 1999, R&D performance began growing rapidly and increased 169% to $429 million by 2002.[11] However, that gain must be measured in relation to Maine's relatively low R&D base level. In addition, between 1993 and 2002, Maine's ranking for total R&D per worker improved from 47th to 42nd. In 2002, Maine's total R&D spending per worker was $626 compared to $1,765 for the US, $3,328 for New England and $913 for EPSCoR states.[12]

Nationally, 3 performance sectors typically perform R&D: industry, universities and non-profits. In Maine, non-profits perform the largest percentage of R&D, followed by universities, and then industry. The 2006 UNC Chapel Hill report notes that approximately 76% of the almost $204 million state investment in R&D has been allocated to building Maine's research capacity at academic and not for profit institutions while approximately 23% has gone to supporting commercialization support programs such as the Maine Technology Institute, the Maine Patent Program, the Small Enterprise Growth Fund and the Applied Technology Development Centers.[13] The researchers also note that while enhancement of the research and development

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[10] "Maine Innovation Index 2005", June 2005, prepared by PolicyOne Research, Inc.
[11] "Evaluation of Maine's Public Investments in Research & Development, Final Report", October 2006, by UNC Center for Competitive Economies, Frank Hawkins Kenan Institute for Private Enterprise, The University of North Carolina at Chapel Hill.
[12] "Evaluation of Maine's Public Investments in Research & Development, Final Report", October 2006, pp. 9-10.
[13] "Evaluation of Maine's Public Investments in Research & Development, Final Report", October 2006, p. 26.

capacity of Maine's universities and research institutions is yielding economic benefits the dominant mechanism for achieving economic growth is through R&D commercialization. The researchers found that "while the efficacy of Maine's R&D commercialization programs are well demonstrated, their sufficiency is in question."[14]

In 2006, the Brookings Institution released the "*Charting Maine's Future*" report.[15] The report provides a roadmap for state-level policy reform aimed at promoting the goal of sustainable prosperity in Maine. The Brookings Institution recommends the creation of a $200 million fund of which $180 million should support job creating research and development in promising scientific and technical disciplines. They recommend that the other $20 million should go to fostering business-led partnerships that catalyze cluster-based job creation through collaboration on challenges such as workforce development and marketing. A point that is made in the Brookings report and was made to the Committee by various presenters is that Maine has been inconsistent in its state-level economic development efforts, including research and development efforts. The report concludes that Maine's efforts would have greater impact if they were supported with adequate, sustained funding and better-focused follow through.[16]

III. CURRENT SUPPORT FOR R&D IN MAINE

As mentioned in the previous section, programs and initiatives have been established to support research and development in Maine. These programs and initiatives are briefly described below.

A. Office of Innovation: The Office of Innovation within the Department of Economic and Community Development, was created in 2003 when the Maine Science and Technology Foundation was dissolved. The Office is charged with encouraging and coordinating the State's research and development activities to foster collaboration among the State's higher education and nonprofit research institutions and the business community.[17] The Office is also required to develop a science and technology action plan to improve the State's position in the global market; develop a science and technology report card that compares the State's science and technology infrastructure standing to that of other states, assesses the performance of the State and recipients of state funds and recommends ways to improve the results of the report card; develop the 5-year evaluation of state investments in R&D; and administer the EPSCoR program with the University of Maine System and the EPSCoR steering committee.[18]

B. Maine Technology Institute (MTI): MTI offers early-stage, patient capital and commercialization assistance for the research and development of innovative technologies that

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[14] "Evaluation of Maine's Public Investments in Research & Development, Final Report", October 2006, p. 27.
[15] "Charting Maine's Future: An Action Plan for Promoting Sustainable Prosperity and Quality Places", 2006, Brookings Institution Metropolitan Policy Program.
[16] See also Laurie Lachance's background report titled "In Search of Silver Buckshot: 30-years of Economic Development in Maine," October 2006, by Laurie Lachance, President and CEO of Maine Development Foundation.
[17] 5 MRSA §13105.
[18] See 5 MRSA §§13106, 13107 and 13110.

create new products and services. State appropriations to MTI in FY07 total $5,489,000. MTI's enabling statute sets an operations cap of 7% which is approximately $380,000. Since its inception in 1999, MTI has funded over 800 projects across all seven technology sectors and sixteen counties in Maine. MTI has calculated that for every $1 of MTI assistance, $26 in external funding is leveraged. MTI-funded companies have secured nearly $95 million in debt and equity funding and MTI clients have been awarded nearly $100 million in federal R&D support. MTI's programs include the following:

- Seed Grant Program - Grants of up to $10,000 are offered to support very early stage research and development activities for new products and services that lead to the market. Eligible projects include business planning, market research, patent filing, and technical assistance.
- Development Awards - Investments of up to $500,000 are made to support research and development of new products and services that lead to the market. Eligible projects include prototype development and testing, patent applications, and manufacturing pilots.
- Cluster Enhancement Awards - Awards of up to $200,000 per project are made on a competitive basis to seed efforts that will stimulate and support the formation and growth of technology businesses.
- Accelerated Commercialization Fund - This is a program to help some companies bridge the financing gap between R&D and sales. This program can help MTI Development Award recipients move toward the market by providing capital to match other investor's capital.
- Marine Research Fund - MTI administers the Marine Research Fund. Awards from $25,000 up to $500,000 are available to Maine's non-profit organizations, laboratories, state governmental and quasi-governmental agencies and academic institutions to fund infrastructure and equipment needed to conduct high-quality, scientifically rigorous marine research programs that will have a positive economic impact on the state of Maine. Private Maine companies can collaborate with these institutions as partners in proposed projects.
- Maine Biomedical Research Fund - MTI has contracted with the Maine Biomedical Research Board to provide support in the administration of this fund. Grants are available to eligible Maine institutions that conduct competitive, scientific biomedical research related to the biology, causes, diagnosis, treatment, control and prevention of physical and mental diseases or impairments afflicting humans.
- SBIR/STTR Programs - Under the federal SBIR program, eleven federal agencies are required to reserve a portion of their annual research and development budgets for awards to small businesses. Similar to SBIR, the STTR Program requires collaboration with a non-profit research institution to transfer innovation from the research environment to the commercial marketplace. Five federal agencies accept STTR proposals. MTI offers technical assistance and support to encourage entrepreneurs and small businesses to participate in the SBIR/STTR programs.

C. Maine Economic Improvement Fund (MEIF): MEIF was created to focus on the seven targeted technologies. The state appropriates MEIF funds to the University of Maine

System which then allocates funds to the University of Maine (UMaine) and the University of Southern Maine (USM). MEIF funds are used to support faculty and staff involved in research and development, to support needed infrastructure, to purchase research equipment, to provide the required matching funds to leverage grants and contracts, and to acquire and maintain the physical space for conducting research. Through use of these funds, the University of Maine System contributes to the state's economic development as demonstrated by the following information for FY2005[19]:

- Using MEIF funds as leverage, UMaine and USM attracted an additional $41.9 million in external grants and contracts for research related to the seven targeted technology sectors.
- UMaine used $10.4 million in state funds to generate a total of $40 million in federal and private-sector grants and contracts for total funds of $50 million. USM used $2.3 million in state funds to leverage another $1.9 million in federal and private-sector research grants and contracts.
- Overall, a total of $54.6 million (41.9 million in external grants and contracts and $12.7 million in MEIF funds) was invested in university-based research and development in the seven targeted technology sectors.

D. Maine Experimental Program to Stimulate Competitive Research (EPSCoR): Maine EPSCoR[20] is a partnership effort between the federal government and state government administered by the Office of Innovation, the University of Maine System and the EPSCoR Steering Committee. EPSCoR is designed to strengthen the State's science and engineering infrastructure by supporting research with funds from the National Science Foundation and the Department of Energy. The Maine EPSCoR Capacity Fund is established within the Office of Innovation to provide the matching funds that are required by several federal agencies in their EPSCoR activities.

E. Applied Technology Development Centers:[21] Seven state-coordinated Applied Technology Development Centers serve as business incubators to assist in the early-stage development of technology-based companies. These incubators provide physical space, access to equipment and meeting space, hands-on management assistance and access to important business and technology support services.

F. Small Enterprise Growth Fund: The Small Enterprise Growth Fund was established by the Legislature in 1996. The Fund, which is overseen by the Small Enterprise Growth Board, is a patient source of investment capital for small businesses that demonstrate the potential for high growth and public benefit. The Fund provides risk capital to companies that have the potential to become significant contributors to the state's future economic health. The Fund's capital has come from three one-time investments by the State: $5 million from bond issue proceeds in 1997, $3 million from a one-time direct appropriation in 2000, and $1 million from the 2005 economic development bond. Since its inception, the Fund has invested $8.6 million in

[19] Maine Economic Improvement Fund Annual Report, December 2005.
[20] 5 MRSA §13124-B
[21] 5 MRSA §15321.

thirty Maine companies. This financing, combined with funds from co-investors, has brought over $55 million in private industry investment to Maine companies.

G. Center for Law and Innovation and the Maine Patent Program: The Center for Law and Innovation at the University of Maine School of Law supports Maine's investments in science and technology by studying and teaching about the role of intellectual property law in economic development. The Center, through the Maine Patent Program, supports the commercialization and manufacturing of innovations by providing education and assistance with the patent process to companies, inventors and entrepreneurs in the State.[22]

H. Tax Incentives: Maine has a number of tax programs that are designed to encourage research and development in the State including the Research Expense Tax Credit, the Super Research Expense Tax Credit, the Seed Capital Investment Tax Credit and the High-technology Investment Tax Credit. State sales tax exemptions are also available for research centers[23] and machinery and equipment for research.[24]

IV. RECOMMENDATIONS

The Joint Select Committee on Research, Economic Development and the Innovation Economy unanimously supports the following recommendations:

1. The Committee recommends that the important work and leadership of the Governor's Maine Science and Technology Advisory Council be continued as a permanent advisory board that will be responsible for developing the State's roadmap for research and development activity and cultivating Maine's innovation economy. The Committee recommends that this council be established in statute as an advisory board, with the new title "*The Maine Innovation Economy Advisory Board.*" The Committee recommends that this board be responsible for developing the State's innovation economy action plan, the *Innovation Economy Action Plan*, as well as assisting State and federal policymakers advance research and development capacity initiatives in Maine and advocating for the State's research and development sector and interests. The Committee also recommends that the board serve as the EPSCoR committee for the State and evaluate proposals made to the EPSCoR and related programs. The board shall submit an annual innovation economy action plan to the Maine Economic Growth Council, the joint standing committee of the Legislature having jurisdiction over business, research and economic development and to the Governor by the first Wednesday in March of each year, beginning in 2008. (Draft legislation to implement this recommendation is included in Appendix D.)

On May 14, 2003, Governor Baldacci established by executive order the Maine Science and Technology Advisory Board ("MSTAC"). The board was established out of a need to accelerate the State's public and private investments in research and development and focus efforts on developing the tools for Maine to become a leading participant in the innovation

[22] 10 MRSA §1921.
[23] 36 MRSA §1760.16
[24] 36 MRSA §1760.32

economy. The MSTAC is responsible for coordinating the State's research and development activities and fostering collaboration among higher educational and nonprofit research institutions and the business community. A significant amount of the MSTAC's work has been to work in coordination with the Director of the Office of Innovation, within the Department of Economic and Community Development, to develop the *State's Science and Technology Action Plan*. This plan details the specific strategies and collaborative initiatives for the advancement of scientific, technological and entrepreneurial development in the State and the strengthening of Maine's research and development infrastructure to stimulate sustainable and competitive economic growth in Maine.

Due to the complexity of its mission, the membership of the MSTAC consists of a broad cross section of industry and technology sectors covering an array of research and development activities from basic research to commercialization of new products and services. The Committee finds that the MSTAC has been a valuable resource in guiding the State's research and development initiatives and promoting scientific and technological development in Maine. Accordingly, the Committee recommends that this group become an integral, permanent part of the State's research and development efforts and that it take on the important responsibility of developing the *State's Innovation Economy Action Plan* (currently entitled the *State's Science and Technology Action Plan*).

2. The Committee recommends that the Maine Economic Growth Council expand its leadership role in strategic planning for research and development by requiring the council to develop specific annual budgetary recommendations to support the Innovation Economy Action Plan's vision and goals, with input from the Office of Innovation and the Maine Innovation Economy Advisory Board. The Committee recommends that the council be responsible for providing recommendations for any necessary bonding and general fund appropriations that will be essential for advancement of the vision and goals outlined in the innovation economy action plan. The council shall be required to submit its recommendations, along with an annual accountability update that summarizes the State's commitment to research and development investments in the prior year, annually to the Governor, the Legislature and the Joint Standing Committee having jurisdiction over business, research and economic development issues, beginning June 1, 2008. In addition, the Committee recommends that the council's membership be amended to include one member of the Maine Innovation Economy Advisory Board. (Draft legislation to implement this recommendation is included in Appendix D.)

The Committee finds that in order to ensure that Maine succeeds in a global economy it must have a bold, long-term strategic vision for state investment in research and development and it must accelerate its efforts to become a leader in the innovation economy. To make certain that Maine will have a sustained commitment to investment in research and development that will extend beyond legislative and gubernatorial terms, the Committee supports expanding the leadership role of the Maine Economic Growth Council ("the Growth Council") as an independent, nonpartisan leader and advisor for the State that will help chart the course for the State's investments in research and development. Under current law, the Growth Council is

charged with "develop[ing], maintain[ing] and evaluat[ing] a long-term economic plan for the State."[25]

The Committee supports the addition of statutory language that will require the Growth Council to take a leadership role in charting the course for the State as it transitions to an innovation-driven economy. The Committee recommends that the Growth Council support research and development initiatives by reviewing the Innovation Economy Action Plan, presented by the Innovation Economy Advisory Board, and developing specific annual budgetary recommendations to support the plan's vision and goals, with input from the Office of Innovation and the Maine Innovation Economy Advisory Board. This budget must include recommendations for any necessary bonding and general fund appropriations that will advance the vision and goals of the plan.

In addition, the Committee recommends that the Growth Council submit its recommendations, along with an accountability update that summarizes the State's commitment to research and development investments in the prior biennium, annually to the Governor, the Legislature and the Joint Standing Committee having jurisdiction over business, research and economic development issues, beginning June 1, 2008.

The Growth Council is currently comprised of 19 members, jointly appointed by the Governor, the President of the Senate and the Speaker of the House. The Committee supports the amendment of its membership to include a member of the Maine Innovation Economy Advisory Board to encourage collaboration and the free flowing exchange of ideas between these two entities.

3. The Committee finds that the Office of Innovation's comprehensive research and development evaluation, statutorily required to be performed by independent reviewers every 5 years, is a useful tool for the Legislature in assessing the competitiveness of the technology sectors and the impact of the State's research and development activities on economic growth. Accordingly, the Committee recommends that the statute be amended to formally require the office and the independent reviewers to submit to the Governor and the Legislature an annual progress report on the status of the evaluation beginning on February 1, 2008 and on February 1st every year thereafter. (Draft legislation to implement this recommendation is included in Appendix D.)

4. The Committee recommends that a joint order be passed directing the Taxation Committee to study the issue of tax reform, specifically as it relates to research and development entrepreneurs and businesses and encourages the committee to consider the creation of new tax policies and incentives that will boldly support the growth of research and development and the innovation economy in Maine. (A draft joint order to implement this recommendation is included in Appendix E.)

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[25] 10 MRSA § 929-A

The Committee finds that Maine's high state and local tax burden have increased the cost of doing business in Maine and therefore the issue of tax reform must be an integral part of Maine's efforts to prosper and succeed in the future economy. The Committee strongly recommends that the Joint Standing Committee on Taxation address the issue of tax reform, specifically as it relates to Maine's research and development entrepreneurs and businesses. Maine's leadership in this area will be critical to fostering innovation and technology initiatives in this state and establishing Maine as a place that encourages entrepreneurial innovation with an improved business-friendly climate.

5. The Committee recommends a steady increase in on-going general fund support of research and development over the next ten years. Accordingly, beginning in fiscal year 2008-09, the Committee recommends that the Governor, when submitting the budget to the Legislature, be required to submit a funding level recommendation for research and development that is the equivalent of not less than 1% of total actual General Fund revenue of the previous fiscal year. For each successive year for the next ten fiscal years, the Governor shall increase the funding level recommendations by at least two-tenths of 1% and by fiscal year 2018-19 shall submit legislation setting forth appropriations for research and development that are the equivalent of not less than 3% of total actual General Fund revenue of the previous fiscal year. If the Governor's budget sets forth recommendations for research and development that differ from the above, the Governor shall simultaneously submit a report to the joint standing committees of the Legislature having jurisdiction over appropriations and financial affairs and research and development matters explaining the funding difference. (Draft legislation to implement this recommendation is included in Appendix D.)

The Committee finds that Maine has received significant returns on its financial investments in research and development over the past decade and has built the foundation upon which to increase Maine's economic competitiveness in the innovation economy. However, it is clear that the State can not afford to continue a downward trend in its financial commitment to research and development initiatives, for fear that it will lose the moderate gains it has strived so hard to achieve. It is imperative that the State commit to fully funding research and development initiatives over the long-term to ensure that Maine can build on this momentum and continue to reap the benefits of sustainable economic growth.

Therefore, the Committee recommends that the Governor be required to submit a competitive funding proposal for research and development initiatives to the Legislature of not less than one percent of total actual General Fund revenue of the previous fiscal year, with a ramp up over at least two-tenths of one percent for the next ten fiscal years, with the goal of reaching in fiscal year 2018-19 the equivalent of not less than three percent of total actual General Fund revenue of the previous fiscal year. In the event that the Governor is unable to provide a funding recommendation that meets these requirements for research and development, the Committee recommends that the Governor be required to simultaneously submit a report to the joint standing committees of the Legislature having jurisdiction over appropriations and financial affairs and research and development matters explaining the funding difference.

6. The Committee supports bonding as a piece of the State's overall research and development investment portfolio, provided these investments are fiscally responsible and

they continue Maine's tradition of demonstrated accountability for all investments. Accordingly, the Committee recommends a bond issue of up to $50 million for each of the next 5 years totaling up to $250 million for competitive grants administered by the Maine Technology Institute to stimulate economic growth and job creation through investments in research and development and commercialization, in anticipation of an additional $250,000,000 in federal and private funding. (Draft legislation to implement this recommendation is included in Appendix F.)

The Committee finds that the Maine Technology Institute has been highly effective in administering grants on a competitive basis for research and development activities in the targeted technology sectors, and that it has maintained a high level of accountability and integrity in its programs and policies.

The Committee recommends that the Maine Technology Institute be responsible for allocating the bond funds using a competitive process to Maine-based public and private institutions and current and emerging targeted technology sector coalitions, as defined by 5 MRSA § 15301, sub- § 2, that are engaged in research and technology development and commercialization. The funds must be awarded to leverage federal and private matching funds on at least a one-to-one basis.

APPENDIX A

Authorizing Joint Order

1. Establishment. The Joint Select Committee on Research, Economic Development and the Innovation Economy, referred to in this order as "the committee," is established.

2. Membership. The committee consists of 14 members of the Legislature: 4 Senators appointed by the President of the Senate and 10 members of the House of Representatives appointed by the Speaker of the House. The 14 members must include at least one member from each of the following joint standing committees: the Joint Standing Committee on Agriculture, Conservation and Forestry; the Joint Standing Committee on Appropriations and Financial Affairs; the Joint Standing Committee on Business, Research and Economic Development; the Joint Standing Committee on Education and Cultural Affairs; the Joint Standing Committee on Marine Resources; the Joint Standing Committee on Natural Resources; the Joint Standing Committee on Taxation; and the Joint Standing Committee on Transportation.

3. Duties. The committee shall:

A. Review the current status of state efforts to address research and economic development, including:

(1) The final report of the Joint Select Committee on Research and Development from the 118th Legislature;

(2) The State's science and technology plan; and

(3) The preliminary findings of the 5-year "Evaluation of Maine's Public Investment in Research and Development" by Michael Luger, E. Brent Lane, Irwin Feller and Catherine S. Renault of the Kenan Institute of Private Enterprise; and

B. Develop recommendations for future legislative action to expand research and economic development activities in this State. These recommendations may include the following:

(1) The role of research and development in the economic development strategy of the State;

(2) The relative role of educational institutions, governmental agencies, private research facilities and businesses within the State's research and economic development strategy;

(3) The level of bonding for capital investments in support of research and economic development and the manner in which such funds should be expended; and

(4) The level of ongoing appropriations in support of research and economic development and the manner in which such funds should be expended.

4. Meetings. In conducting its duties, the committee may meet with any individuals, departments, organizations or institutions it considers appropriate.

5. Appointments. All appointments must be made no later than 30 days following the adjournment of the Second Regular Session of the 122nd Legislature. The first-named members appointed from each body are cochairs of the committee.

6. Staff assistance. The Office of Policy and Legal Analysis shall provide staffing and clerical assistance to the committee and may, within existing resources, obtain technical assistance from appropriate sources.

7. Compensation. Members of the committee are entitled to receive the legislative per diem as defined in the Maine Revised Statutes, Title 3, section 2 and reimbursement for travel for attendance at meetings of the committee.

8. Report. The committee shall submit its findings and recommendations, along with any necessary implementing legislation, to the First Regular Session of the 123rd Legislature by December 6, 2006.

9. Extension. If the committee requires a limited extension of time to complete its study and make its report, it may apply to the Legislative Council, which may grant an extension.

10. Budget. The chairs of the committee, with assistance from the committee staff, shall administer the committee's budget. Within 10 days after its first meeting, the committee shall present a work plan and proposed budget to the Legislative Council for its approval. The committee may not incur expenses that would result in the committee's exceeding its approved budget. Upon request from the committee, the Executive Director of the Legislative Council shall promptly provide the committee chairs and staff with a status report on the committee budget, expenditures incurred and paid and available funds.

Expressions of Legislative Sentiment recognizing:

(4-2) Nicholas D. Alden, of Oakland, a senior at Messalonskee High School, who was named a state finalist in the Poetry Out Loud National Recitation Contest. Sponsored by the Maine Arts Commission and the Maine Alliance for Arts Education in partnership with the National Endowment for the Arts, the contest is part of a national program that encourages high school students to learn about great poetry through memorization, performance and competition. We extend our congratulations to Nicholas on his accomplishment and send him our best wishes;

SLS 1068

Sponsored by Senator GAGNON of Kennebec.
Cosponsored by Representative: NUTTING of Oakland.

(4-3) Amy Bureau, of Waterville, a senior at Waterville High School, who was named a state finalist in the Poetry Out Loud National Recitation Contest. Sponsored by the Maine Arts Commission and the Maine Alliance for Arts Education in partnership with the National Endowment for the Arts, the contest is part of a national program that encourages high school students to learn about great poetry through memorization, performance and competition. We extend our congratulations to Amy on her accomplishment and send her our best wishes;

SLS 1069

Sponsored by Senator GAGNON of Kennebec.
Cosponsored by Representatives: CANAVAN of Waterville, MARRACHÉ of Waterville.

APPENDIX B

Membership list, Joint Select Committee on Research, Economic Development and the Innovation Economy

Joint Select Committee on Research, Economic Development and the Innovation Economy

Joint Order, SP 847

Tuesday, December 12, 2006

Appointment(s) by the President

Sen. Dennis Damon
256 Oak Point Road
Trenton, ME 04605
207 667-9629

Senate Member

Sen. Dana L. Dow
30 Kalers Pond Road
Waldoboro, ME 04572
207 832-4658

Senate Member

Sen. Lynn Bromley
102 Mitchell Road
So. Portland, ME 04106
207 799-2065

Senate Member

Appointment(s) by the Speaker

Rep. Walter E. Ash Jr.
36 Searsport Avenue
Belfast, ME 04915
207 338-3485

House Member

Rep. William P. Browne
793 Webber Pond Road
Vassalboro, ME 04989
207 622-3096

House Member

Rep. Emily Ann Cain
103 Forest Avenue
Orono, ME 04473
207 866-3282

House Member

Rep. Jeremy Fischer
6C Third Street
Presque Isle, ME 04769
207 551-3097

House Member

Rep. Patrick S. Flood
56 Wedgewood Drive
Winthrop, ME 04364
207 395-4915

House Members

Rep. Christopher Rector
30 Knox Street
Thomastone, ME 04861
207 354-6571

House Member

Rep. Kimberley C. Rosen
P.O. Box 877
Bucksport, ME 04416
207 469-3779

House Member

Rep. Nancy E. Smith
259 Tillson Road
Monmouth, ME 04259
207 933-2707

House Member

Rep. Judd D. Thompson
36 Sunrise Drive
South China, ME 04358
207 445-4549

House Member

Rep. Thomas R. Watson
1565 Washington Street
Bath, ME 04530
207 442-7493

House Member

Staff:

Natalie Haynes 287-1670
OPLA

Susan Johannesman 287-1670
OPLA

APPENDIX C

The Executive Summary of the Final Report of the Joint Select Committee on Research and Development December 1998

EXECUTIVE SUMMARY

The Joint Select Committee on Research and Development was created by the 118th Maine Legislature to review legislation relating to research and development and report its finding and recommendations to the Legislature.

Research and development will play a vital role in Maine's economic future, but the State currently lags far behind where it needs to be in funding research and development. Investment in research and development is now a threshold requirement for the economic well-being of the State and it is crucial that state government make a long-term commitment to significant and steady funding for research and development through the state budget. Such a commitment will require leadership and vision on the part of the Legislature, the Governor and the research community. The State will achieve the most success from its investment by focusing on 7 target technology areas:

- biotechnology;
- marine sciences and aquaculture;
- composite materials engineering;
- environmental sciences and technology;
- advanced technologies for forestry and agriculture;
- information sciences and technology; and
- precision manufacturing technologies.

In developing its recommendations, the committee focused on three broad areas of need that must be addressed in order to attract and retain research and development activity in the State: a need for research and development infrastructure; a need for an educated and technically skilled workforce; and a need for business assistance. Based on these needs and the current programs and initiatives in place to support research and development in Maine, the committee supports the following 21 recommendations.

Research and Development Infrastructure

- The committee recommends increasing the University of Maine System's base funding for research and development by appropriating $10 million per year during the next biennium and eventually $20 million per year to the Maine Economic Improvement Fund.

- The committee recommends making a significant and steady investment at a level of $15 million per year for capital construction at the University of Maine System to renovate and construct research facilities.

- The committee recommends that Fogler Library at the University of Maine be designated the State Research Library for Business, Science and Technology. The committee further recommends appropriating approximately $5 million per year for

the purchase of information resources and the negotiation of statewide licenses for on-line databases, for the equipment to house the databases and for staff support to interpret the databases.

- The committee recommends creating and funding a Center for Advanced Law and Management at the University of Southern Maine with an appropriation of $200,000 per year.

- The committee recommends supporting the expansion of the Center for Technology-Based Business Development at the University of Maine.

- The committee recommends supporting the development and maintenance of the University of Maine's Internet 2 system to create a high-speed research network.

- The committee strongly supports investing $15 million per year in a program to support applied research, development and commercialization in target technology areas. The committee recommends that the Targeted Industries Committee and other interested parties develop advisory recommendations on implementing such a program and provide these to the Joint Select Committee on Research and Development in January 1999. The committee further recommends that the Joint Select Committee report out legislation to the First Regular Session of the 119th Legislature.

Educated and Technically Skilled Workforce

- The committee recommends appropriating $1 million per year to the Maine Technical College System for the initial capitalization of new or expanded catalog programs to meet the employment needs of growing high tech companies.

- The committee recommends appropriating $100,000 per year for 3 years to support expansion of the Department of Education's partnership with the National Aeronautic and Space Administration (NASA).

- The committee recommends appropriating $2 million per year for 5 years for professional development and curricular development programs to ensure that students in the K-12 system derive the maximum benefit from school-based technology.

- The committee recommends appropriating $100,000 to the Foundation for Blood Research's ScienceWorks program to provide adequate laboratory equipment in Maine high schools.

- The committee recommends appropriating $150,000 to the Maine Science and Technology Foundation for the MERITS program (Maine Research Internships for

Teachers and Students) to provide expanded internship opportunities in the public and private sectors for science and mathematics teachers and students.

- The committee recommends appropriating $750,000 per year for 3 years to the University of Maine System to provide increased opportunities for Maine high school students to learn about and experience success in post secondary math, science and engineering programs.

- The committee recommends funding the Governor's Marine Studies Fellowship Program with an annual appropriation of $50,000 to connect Maine students with Maine researchers.

- The committee recommends that the Legislature carefully consider the recommendations of the Finance Authority of Maine with regard to financial aid repayment programs for students who choose to remain in Maine and obtain employment in one of the technology target areas.

- The committee tentatively supports appropriating $50,0000 per year to support the Maine Science and Technology Foundation's education initiative.

Business Assistance

- The committee recommends that the Legislature carefully consider the recommendations of the Finance Authority of Maine with regard to increasing access to capital and assisting fledgling businesses in locating and obtaining capital.

- The committee tentatively supports appropriating $55,000 for the Maine Science and Technology Foundation (MSTF) to identify new opportunities for innovation in Maine's businesses and to convene stakeholders to identify an implementation strategy for delivering training efforts.

- The committee tentatively supports appropriating funds for commercialization initiatives, including training for SBIR service providers and grants through the Maine SBIR (Small Business Innovation Research) Assistance Program, and development of a web-based commercialization network.

- The committee tentatively supports appropriating $50,000 per year to MSTF to expand its role in identifying science and technology strategies for Maine, convene stakeholder groups to discuss implementation strategies and make recommendations to the Legislature.

Other

The committee recommends that the 119th Legislature establish a Joint Select Committee on Research and Development.

APPENDIX D

Draft legislation: An Act to Implement the Recommendations of the Joint Select Committee on Research, Economic Dev't and the Innovation Economy

Sponsor: JSC on Research, Development and the Innovation Economy
Drafter: NLH
LR: 732
Date: December 5, 2006
File Name: G:\STUDIES-2006\R&D\Legislation\LR 732.doc

Title: An Act to Implement the Recommendations of the Joint Select Committee on Research, Economic Dev't and the Innovation Economy

Be it enacted by the People of Maine as follows:

Sec. 1. 5 MRSA § 1664, sub-§3-A is enacted to read:

3-A. Funding for research and development

Beginning in fiscal year 2008-09, the Governor, when submitting the budget document to the Legislature pursuant to section 1666, shall submit a funding level recommendation for research and development. The recommendation must be transmitted to the Legislature within the time schedules set forth in section 1666. The Governor shall submit legislation setting forth appropriations for applied research and development that are the equivalent of not less than 1% of total actual General Fund revenue of the previous fiscal year. For each successive year for the next ten fiscal years, the Governor shall increase the funding level recommendations by at least two-tenths of 1% and by fiscal year 2018-19 shall submit legislation setting forth appropriations for research and development that are the equivalent of not less than 3% of total actual General Fund revenue of the previous fiscal year. If the Governor's budget sets forth recommendations for research and development that differ from the levels described in this sub-section, the Governor shall simultaneously submit a report to the joint standing committees of the Legislature having jurisdiction over appropriations and financial affairs and research and development matters explaining the funding difference.

Sec. 2. 5 MRSA §12004-I, sub§6-G is enacted to read:

Field	Name of Organization	Rate of Compensation	Statutory Reference
6-G. Economic Development	Maine Innovation Economy Advisory Board	Not authorized	10 MRSA c. 107-D

Sec. 3. 5 § 13106, sub- §-1 is amended to read:

5 § 13106. Science and technology plan

The office shall develop and submit the following to the Governor and the Legislature by the first day of the first legislative session of each biennium:

1. Action plan. An action plan for the application of science and technology to improve the State's position in the global economy. The action plan must be based on the State's overall economic development strategy as determined by the commissioner. The action plan must identify specific steps that public and private institutions must implement to improve the State's science and technology infrastructure. The action plan must also identify action steps that could be implemented immediately without new state appropriations and resources and action steps that will require new state appropriations or major reallocation of state appropriations and resources.

The action plan must include numerical objectives, costs and an evaluation protocol. The action plan must also include a provision for assigning and ensuring accountability for those who receive state research and development funds through the office. In the preparation of this action plan, the office shall seek the advice of state agencies, the Maine Economic Growth Council established in Title 10, section 929-A, the University of Maine System and the business, education and research communities~~; and~~ . This subsection is repealed January 1, 2008.

Sec. 4. 5 § 13107 is amended to read:

5 § 13107. Comprehensive research and development evaluation

The office shall develop and submit to the Governor and the Legislature by July 1, 2006 and on July 1st every 5 years thereafter an evaluation of state investments in research and development, as well as an annual progress report from the office and the independent reviewers beginning on February 1, 2008 and on February 1st every year thereafter. The evaluation must:

1. Outcome measures. Establish outcome measures considered appropriate by public and private practitioners inside and outside of the State in the fields of research and development and economic development. Practitioners in this State must include, but are not limited to, a representative from the University of Maine System, a representative of the targeted technology sectors, a representative of the Executive Department, State Planning Office and representatives of other state agencies having economic development responsibility;

2. Independent reviewers. Utilize independent reviewers to assess the competitiveness of technology sectors in this State and the impact of research and development activities in this State on economic development in this State. The independent reviewers must incorporate the goals and objectives described in the State's innovation economy action plan, as described in

Title 10 Chapter 107-D, in their analysis of the success of the State's investments in research and development; and

3. Recommendations. Include recommendations to the Legislature on existing and proposed state-supported research and development programs and activities to affect technology-based economic development in this State.

Sec. 5. 10 MRSA § 929-A, sub-§2, is amended to read:

2. Membership. The council consists of 19 members. The Governor, President of the Senate and Speaker of the House of Representatives shall jointly appoint the following 18 members, 2 of whom shall serve as cochairs of the council:

A. ~~Fourteen~~ Thirteen members having a broad range of expertise in areas including but not limited to: labor, environment, business, and education; ~~and~~

B. Four members of the Legislature with a demonstrated interest in economic development~~.~~ ; and

C. One member from the Maine Innovation Economy Advisory Board.

The Commissioner of Economic and Community Development or the commissioner's designee is a member of the council.

Sec. 6. 10 MRSA § 929-C, sub-§1, is enacted to read:

1. Research and development budgetary recommendations. The council, with input from the Office of Innovation and the Maine Innovation Economy Advisory Council, shall review the State innovation economy action plan, as described in Title 10 Chapter 107-D, and develop specific biennial budgetary recommendations to support the plan's vision and goals. These recommendations must include specific bonding and general fund appropriations investment levels. Before June 1, 2008 of each year, the council shall submit its recommendations, along with an annual accountability update that summarizes the State's commitment to research and development investments in the prior year, annually to the Governor, the Legislature and the Joint Standing Committee having jurisdiction over business, research and economic development issues.

Sec. 7. 10 MRSA c. 107-D, is enacted to read:

Chapter 107-D.
Maine Innovation Economy Advisory Board

§949. The Maine Innovation Economy Advisory Board; establishment. The Maine Innovation Economy Advisory Board, referred to in this chapter as "the advisory board" and established by Title 5, section 12004-I, subsection 6-G, is established to coordinate the State's research and development activities and to foster collaboration among its higher educational and nonprofit research institutions and the business community.

§949-A. Appointment and Composition. The advisory board consists of 19 members. The Governor, President of the Senate and Speaker of the House of Representatives shall each appoint 5 members with demonstrated high level expertise from a broad cross section of industry and technology sectors representing the breadth of research and development activities from basic research to commercialization of new products and services. The board shall also consist of 4 ex officio members including the following: the co-chairs of the Maine Economic Growth Council; the Director of the Maine Technology Institute; and the Director of the Office of Innovation.

§949-B. Terms; vacancies; limits. The term of office for appointed members is 3 years. The terms of the initial appointments are staggered as follows: 5 are one-year terms, 5 are 2-year terms and 5 are 3-year terms. The initial appointments shall be made as follows: of the 5 initial appointments made by the Governor, 1 will be for a 1-year term, 3 for a 2-year term and 1 for a 3-year term; of the 5 initial appointments made by the Speaker of the House of Representatives, 2 will be for a 1-year term, 1 to a 2-year term, and 2 to a 3-year term; and of the 5 initial appointments made by the President of the Senate, 2 will be for a 1-year term, 1 to a 2-year term, and 2 to a 3-year term. When a vacancy occurs, it must be filled by the same appointing authorities and the new member shall serve for the remainder of the term. Members who serve on the board by virtue of their offices serve terms coincident with their terms in office. Members may continue to serve until their replacements are designated. A vacancy in a position held by an ex-officio member, except the co-chairs of the Maine Economic Growth Council, that occurs other than by the expiration of a term must be filled by the Commissioner of the Department of Economic and Community Development for the unexpired term.

§949-C. Chair, election of officers. The members of the advisory board shall annually elect one of its members as chair and one of its members as vice-chair to set the agenda and schedule meetings of the advisory board. The advisory board may elect other officers and designate their duties.

§949-D. Voting rights. Each member of the advisory board shall have a vote.

§949-E. Meetings. The advisory board shall hold quarterly meetings each year. Additional meetings may be held as necessary to conduct the business of the advisory board.

§949-F. Compensation. Members of the advisory board are not entitled to compensation.

§949-G. Adoption of bylaws. The advisory board shall adopt bylaws consistent with this section for the governance of its affairs and to address the resolution of conflicts of interest that may arise.

§949-H. Quorum. A majority of the voting members constitutes a quorum.

§949-I. Staff Support. The Office of Innovation shall provide staff support to fulfill the requirements for carrying out the purposes of this section.

§949-J. Powers and duties. The powers and duties of the advisory board include the following:

A. **Innovation economy action plan.** The advisory board shall develop an innovation economy action plan for the application of science and technology to improve the State's position in the global economy. It shall identify specific steps that public and private research institutions must implement to improve the State's science and technology infrastructure, goals for encouraging collaborative initiatives among public and private research institutions, steps that can be implemented immediately without new state funding and resources, and steps that will require new state appropriations or major reallocation of state appropriations and resources. The plan must include numerical objectives, costs and an evaluation protocol, as well as a provision for assigning and ensuring accountability for those who receive state research and development funds from the State.

B. **Strategic planning and education.** The advisory board shall perform the following duties: assist State and federal policymakers advance research and development capacity initiatives in Maine and develop corresponding funding strategies; provide input on economic planning and the commercial application of the State's research and development efforts; facilitate research opportunities that create sustained, inter-institutional, collaborative, multidisciplinary centers-based research projects; advocate for the State's research and development sector and interests; disseminate information about its work throughout the state; serve as the EPSCoR committee, as defined in 5 MRSA §13110, for the State and evaluate proposals made to the EPSCoR and related programs.

§949-K. Annual report. The advisory board shall submit an annual innovation economy action plan to Maine Economic Growth Council by the first Wednesday in March of each year, beginning in 2008. The advisory board shall also recommend its

innovation economy action plan to the joint standing committee of the Legislature having jurisdiction over business, research and economic development and to the Governor by the first Wednesday in March of each year, beginning in 2008.

SUMMARY

This bill implements recommendations of the Joint Select Committee on Research, Economic Development and the Innovation Economy. The bill establishes the Maine Innovation Economy Advisory Board in statute. It amends the membership of the Economic Growth Council to add a member from the Maine Innovation Economy Advisory Board. It requires the Economic Growth Council to develop research and development budgetary recommendations. It sets a minimum recommendation level for research and development for the Governor's proposed budget to the Legislature. It requires an annual progress report relating to the 5 year evaluation of state investments in research and development

APPENDIX E

Draft legislation: Joint Order to Implement the Recommendations of the Joint Standing Committee on Research, Economic Development and the Innovation Economy Regarding Tax Incentives for Research and Development Entrepreneurs and Businesses

Sponsor: JSC on R&D and the Innovation Economy
Drafter: NLH
LR (item):733
Date: December 6, 2006
File Name:G:\STUDIES-2006\R&D\Legislation\733.doc

Title: Joint Order, to Implement the Recommendations of the Joint Standing Committee on Research, Economic Development and the Innovation Economy Regarding Tax Incentives for Research and Development Entrepreneurs and Businesses

ORDERED, the House concurring, that the joint select committee having jurisdiction over taxation matters be directed as follows:

1. **The joint standing committee on taxation; authorized meetings.** The joint standing committee of the Legislature having jurisdiction over taxation matters, referred to in this order as "the Taxation Committee," is directed to hold committee meetings to review the effectiveness of state tax policies directed to stimulate research and development activity including, but not limited to: the current state tax credit programs that provide incentives for taxpayers engaged in research and development activities; the current state income tax rates and their impact on entrepreneurship and research and development activities; and other states' tax incentives and policies that successfully support and encourage the growth of research and development entrepreneurial and business activities. The committee may request Maine's leading businesses in the research and development community, as well the Office of Innovation and the Governor's Maine Science and Technology Advisory Council, for their recommendations as to how the State can amend its tax policies to stimulate the business climate and foster research and development and commercialization activities in Maine. The committee is directed to develop recommendations for changes to the tax code that will strengthen research and development and Maine's innovation economy and enhance the State's advancement in this arena.

2. **Staff assistance.** The Legislative Council shall provide necessary staffing services to the Taxation Committee.

3. **Compensation.** Legislative members of the Taxation Committee are entitled to receive the legislative per diem and reimbursement for travel and other necessary expenses related to their attendance at authorized meetings of the committee.

4. **Report.** No later than April 1, 2007, the Taxation Committee shall report out legislation related to this review to the First Regular Session of the 123rd Legislature.

SUMMARY

This joint order implements a recommendation of the Joint Select Committee on Research, Economic Development and the Innovation Economy. It directs the Taxation Committee to review tax policies and incentives for research and development and recommend changes to the State's tax policies to the Legislature.

APPENDIX F

Draft legislation: An Act to Authorize a General Bond Issue in the Amount of $250,000,000 for Research and Development Equipment and Infrastructure, to be Dispersed over Five Years in Equal Increments

Sponsor: The JSC on Research, Economic Development & the Innovation Economy
Drafter: NLH
LR (item):734
Date: December 6, 2006
File Name:G:\STUDIES-2006\R&D\Legislation\734.doc

Title: An Act to Authorize a General Fund Bond Issue in the Amount of $250,000,000 for Research and Development Equipment and Infrastructure, to be Dispersed over Five Years in Equal Increments.

Be it enacted by the People of Maine as follows:

Preamble. Two thirds of both Houses of the Legislature deeming it necessary in accordance with the Constitution of Maine, Article IX, Section 14 to authorize the issuance of bonds on behalf of the State of Maine to provide funds for research and development equipment and infrastructure.

Be it enacted by the People of the State of Maine as follows:

Sec. 1. Authorization of bonds to provide for research and development equipment and infrastructure. The Treasurer of State is authorized, under the direction of the Governor, to issue bonds in the name and on behalf of the State in an amount not exceeding $250,000,000 to raise funds for research and development equipment and infrastructure as authorized by section 6. No more than $50,000,000 may be issued in the first year and no more than $50,000,000 may be issued in each of the 4 subsequent years. The bonds are a pledge of the full faith and credit of the State. The bonds may not run for a period longer than 20 years from the date of the original issue of the bonds. At the discretion of the Treasurer of State, with the approval of the Governor, any issuance of bonds may contain a call feature.

Sec. 2. Records of bonds issued to be kept by the Treasurer of State. The Treasurer of State shall keep an account of each bond showing the number of the bond , the name of the successful bidder to whom sold, the amount received for the bond, the date of sale and the date when payable.

Sec. 3. Sale; how negotiated; proceeds appropriated. The Treasurer of State may negotiate the sale of the bonds by direction of the Governor, but no bond may be loaned, pledged or hypothecated on behalf of the State. The proceeds of the sale of the bonds, which must be held by the Treasurer of State and paid by the Treasurer of State upon warrants drawn by the State Controller, are appropriated solely for the purposes set forth in this Act. Any unencumbered balances remaining at the completion of the project in section 6 lapse to the debt service account established for the retirement of these bonds.

Sec. 4. Interest and debt retirement. The Treasurer of State shall pay interest due or accruing on any bonds issued under this Act and all sums coming due for payment of bonds at maturity.

Sec. 5. Disbursement of bond proceeds. The proceeds of the bonds must be expended as set out in section 6 under the direction and supervision of the Department of Economic and Community Development.

Sec. 6. Allocations from General Fund bond issue; research and development equipment and infrastructure. The proceeds of the sale of the bonds must be expended as designated in the following schedule.

ECONOMIC AND COMMUNITY DEVELOPMENT, DEPARTMENT OF - MAINE TECHNOLOGY INSTITUTE

Funds to the Maine Technology Institute - $250,000,000 over 5 years

Provides for the use of bond proceeds to be used for capital infrastructure, equipment, and activities as prioritized by the Maine Innovation Economy Action Plan. The funds must be allocated through a competitive process to Maine-based public and private institutions and current and emerging targeted technology sector coalitions (see 5 MRSA § 15301, sub- § 2) engaged in research and technology development and commercialization, and shall be awarded to leverage matching funds on at least a one-to-one basis.

TOTAL ALLOCATIONS $250,000,000

Sec. 7. Contingent upon ratification of bond issue. Sections 1 to 6 do not become effective unless the people of the State have ratified the issuance of the bonds as set forth in this Act.

Sec. 8. Appropriation balances at year-end. At the end of each fiscal year, all unencumbered appropriation balances representing state money carry forward. Bond proceeds that have not been expended within 10 years after the date of the sale of the bonds lapse to General Fund debt service.

Sec. 9. Bonds authorized but not issued. Any bonds authorized but not issued, or for which bond anticipation notes are not issued within 5 years of ratification of this Act, are deauthorized and may not be issued; except that the Legislature may, within 2 years after the expiration of that 5-year period, extend the period for issuing any remaining unissued bonds or bond anticipation notes for an additional amount of time not to exceed 5 years.

Sec. 10. Referendum for ratification; submission at statewide election; form of question; effective date. This Act must be submitted to the legal voters of the State of Maine at a statewide election held on the Tuesday following the first Monday of November following passage of this Act. The municipal officers of this State shall notify the inhabitants of their respective cities, towns and plantations to meet, in the manner prescribed by law for holding a statewide election, to vote on the acceptance or rejection of this Act by voting on the following question:

" Do you favor a bond issue of up to $50 million for each of the next 5 years totaling up to $250 million for competitive grants administered by the Maine Technology Institute to stimulate economic growth and job creation through investments in research and development and commercialization, in anticipation of an additional $250,000,000 in federal and private funding?"

The legal voters of each city, town and plantation shall vote by ballot on this question and designate their choice by a cross or check mark placed within a corresponding square below the word "Yes" or "No." The ballots must be received, sorted, counted and declared in open ward, town and plantation meetings and returns made to the Secretary of State in the same manner as votes for members of the Legislature. The Governor shall review the returns and, if a majority of the legal votes are cast in favor of this Act, the Governor shall proclaim the result without delay, and this Act becomes effective 30 days after the date of the proclamation.

The Secretary of State shall prepare and furnish to each city, town and plantation all ballots, returns and copies of this Act necessary to carry out the purpose of this referendum.

SUMMARY

This bill implements a recommendation of the Joint Select Committee on Research, Economic Development and the Innovation Economy. The bill authorizes a bond issue of up to $50 million per year for each of the next 5 years totaling up to $250 million to be used for competitive grants to stimulate economic growth and job creation through investments in research and development and commercialization.