THE UNIVERSITY OF MAINE

Strategic Implementation Plan for Enhancement of Research, Scholarship and Creative Activity

An Integral Part of the UMAINE/UMS and State MSTAC Strategic Plans, Which Collectively Address Broader Academic Initiatives

University Research Council
December 9, 2005

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The University Research Council (URC) 2005

The members of the University Research Council are shown below, and those who are also members of the URC Research Strategic Plan Subcommittee are shown with an asterisk following their name.

URC Member	Unit	URC Member	Unit
Lavon Bartel	Cooperative Extension	John Mahon	Provost, Interim
Kate Beard-Tisdale	Spatial Information Science and Technology	Shannon Martin	Communication and Journalism
Amy Blackstone*	Sociology	Paul Mayewski	Climate Change Institute
Bill Bray	Mathematics and Statistics	Karen Merritt	Ph.D. Student in Civil Engineering
Habib Dagher**	AEWC	Mick Peterson	Mechanical Engineering
Liz Depoy*	School of Social Work	Jonathan Rubin*	Margaret Chase Smith Center
Susan Erich	Plant Soil & Environmental Sciences	Joyce Rumery*	Fogler Library
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Bob Lad	LASST	Roy Turner*	Computer Science
Deirdre Mageean	Assoc. Vice President for Research	Jake Ward*	Research and Economic Development

* Also member of URC Research Strategic Plan Subcommittee ** URC Strategic Plan Subcommittee Chair

Introduction and Objectives

This Strategic Implementation Plan for Enhancement of Research, Scholarship and Creative Activity is part of the University of Maine's (UMaine) and the University of Maine System's (UMS) Strategic Plans, which collectively address broader academic initiatives. While this plan focuses on research and creative activity, it will be integrated into UMaine's overall Strategic Implementation Plan, so that all aspects of UMaine's mission, teaching, research and public service are enhanced.

The UMS Strategic Direction 8 calls for "clarifying the missions" of each campus, and states UMaine's mission as follows:

> *"Support a land-grant/sea-grant research university with State-wide and national responsibilities, including primary responsibility as Maine's graduate-level, research, and public service outreach institution"*

In a parallel statement, the UMS Plan, Strategic Direction 5 further calls for:

> *"Strengthening and expand university-based research activity and capacity to enhance Maine's economy.*
>
> - *Seek additional State investment in the Maine Economic Improvement Fund (MEIF), with a goal of increasing the annual funding level by $13 million by FY09 to a total of $25 million.*
> - *Increase graduate fellowships across the System*
> - *Increase incentives for faculty research, scholarship, and creative expression"*

The objective of this implementation document is to realize Maine's research mission as outlined above in the UMS Strategic Plan. **In this context, research is defined as the wide range of intellectual, scholarly and creative activities, which generate new knowledge.**[1] While this document is inspired by UMaine's unique role as described in the UMS Strategic Plan, it represents the aspirations of UMaine's faculty to enhance our research mission; therefore this document's implementation will proceed forward as a UMaine initiative.

As with all other states in the nation, Maine's economic and social prosperity will increasingly depend on the degree to which it can compete in an innovation-driven economy. Competitive states invest heavily in their research universities owing to the crucial role these institutions play in the development of a sustainable and vibrant economy. Research universities act as economic engines, fueling creativity and innovation, and providing the human capital that underlies prosperity. They are so effective at this role that they received more than 26 billion dollars from federal funding sources for science and engineering research in 2004.[2] Through a continuous flow of creative discovery, and the production of highly skilled and educated workers, research universities are essential contributors to the creation of jobs and new companies. They are also essential contributors to community well being, typically providing the most advanced training grounds for the nation's biomedical and psychosocial workers. In addition, by virtue of their academic programs and high quality faculty, research universities provide some of the finest undergraduate liberal arts educations in the nation, adding richness to the human experience. Thus, investment in the University of Maine - the State's only research university - is vital for the future of Maine and its citizens.

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[1] *For additional information please see Scholarship Measures Committee Report, Dr. Shannon Martin (Chair), Univ. of Maine Research Council (2005)*

[2] *http://www.nsf.gov/statistics/nsf05307/htmstart.htm*

A Shared Strategy for Maine's Future

UMaine faculty have demonstrated that a relatively small State investment in research can return immense benefits to our state and our students, with a direct dollar return on investment of 5 to 1. Since 1998, when the State of Maine made its first targeted investments through the Maine Economic Improvement Fund (MEIF), UMaine has grown its external grants and contracts by 63%, increased its patent portfolio by a factor of 10, and increased spin-off businesses from 2 to 22. Through improvements to its research infrastructure, UMaine has also increased its ability to compete for federal grants and contracts and its capacity to serve its students, business and industry. In this plan, UMaine will accelerate its successful invigoration of research activities, while doing significantly more to strengthen research, scholarship, and creative activities across all disciplines on campus.

UMaine's ability to strengthen its research mission while enhancing its teaching and public service missions as called for in the UMS Strategic Plan, is increasingly challenged by the continuing reductions in state funding and increases in health care and other operating costs. In the upcoming academic year, state appropriations will represent 39.9% of the UMS budget, down from 67.5% in 1990. Next year marks the first time that UMS tuition income will exceed state appropriations. The increased teaching burden on many departments due to potential further reductions in staffing will affect their ability to continue to accelerate growth in research, scholarly and creative activities. Therefore the main premise of this implementation plan is the following:

Enhancing UMaine's research mission as called for by the UMS Strategic Plan will require new, significant and sustained investments.

Both nationally and internationally, whether in North Carolina or in Ireland, substantial long-term investment in research universities has proven to be crucial to economic, social, and cultural prosperity. Investment in research and development is vital to the overall investment in an educated community that can compete and thrive-that can be leaders in an innovation-driven economy. While our recommendations quite properly center on research-and in particular on research that contributes to economic prosperity for the people of Maine-it is important to emphasize that investments in research must be part of a larger, long-term investment in higher education that will enable Maine people to create a prosperous and sustainable economic, social and cultural future for themselves and for their children. As Maine's research university, the University of Maine is committed to making such a future, in all its dimensions, a reality.

The following plan is built around actively raising this new investment and the plan's implementation will depend on how fast the investment will be raised. The new investment will be raised from public sources as well as private giving and foundations. The plan also ensures that the new investment can support all aspects of research, scholarship, and creative activity on campus. The document does not however create an entitlement program: new resources will be carefully invested, and additional resources will be tied to performance, so as to maximize the benefits to the State and to UMaine's students.

Over the past year, the State of Maine has been faced with significant financial difficulties, including major budget deficits, requirements for significant borrowing and bonding to pay the state's past expenses, downgrading of the State's bond ratings, and most recently Federal base closures. So where will the new public investments come from? The bond houses, in down-grading our State's bond ratings, cited the "lack of a long-term strategy" and "using short-term borrowing options" that do not solve long-term problems but exacerbate them. This document offers the following proven long-term strategy for Maine that has worked and continues to work for many other states and other countries:

The State of Maine will make significant, sustained and long-term investments in Research and Development as a cornerstone of a long-term strategy to ensure Maine's future economic vitality.

This long-term investment must be made on a bipartisan basis, and written into State law, so that it will survive changing administrations and changing legislatures. Billions of dollars invested over fifty years created the prestigious Research Triangle in rural, resource-based North Carolina. Likewise, Ireland and Finland used strategic investment plans to turn their economies around. Similarly, Maine's investment must be at least comparable to the investments being made by other states in competing research areas. While the majority of the investment must be focused, the higher-education part of this investment must also foster research across all academic disciplines, to insure a vibrant research university that will create a highly educated work force, able to tackle the challenges of the future.

How does Maine Compare with Other States in University-Based Research?

To provide one measure for enhancing research activity at UMaine, a peer group of Land Grant universities was identified on the basis of state population (less than 1.5 million) and number of undergraduate students (about 10,000). The nine US universities, including UMaine, who fit these criteria, are listed in Table 1. The Table provides information on R&D expenditures collected through a 2002 National Science Foundation (NSF) survey (col. 5), per capita collective R&D expenditures for all universities in the State (col. 6) and for the individual peer universities (col. 7), the NSF's overall State rankings for university-based R&D (col. 8), and the number of full-time faculty at each university (col. 9). The last column in the Table (col. 10) provides the 2002 R&D expenditures per full-time faculty in each institution, calculated using the NSF data and the number of full-time faculty obtained from the Integrated Postsecondary Education Data System (IPEDS) .

Table 1: Comparative Land-Grant Universities[1] - (2002 Data)

Peer Sate	Peer Land Grant University (single campus) (2)	Population (3)	Undergrad students[4] (4)	R&D expendit. in S&E[2] x 1,000 (5)	All univ. in the state R&D $/capita[3] (6)	Peer State rank for. univ R&D[3] (7)	Peer univ. R&D $/capita (8)	Full-time fac. (9)	R&D $ generated per full-time faculty[4] (10)
NH	U. of New Hamp.	1,299,500	11,516	$93,222	173	4	$72	917	$101,660
VT	U. of Vermont	621,394	9,234	88,602	144	15	143	775	114,325
MT	Montana State U.	926,865	10,750	78,211	129	20	84	735	106,410
ID	University of Idaho	1,393,262	9,607	76,758	69	44	55	759	101,130
ND	N. Dakota State U.	634,366	10,148	72,105	167	5	114	803	89,795
ME	U. of Maine	1,317,253	8,972	62,149	47	50	47	543	114,455
RI	U. of Rhode Island	1,080,632	11,298	53,347	153	13	49	673	79,267
WY	U. of Wyoming	506,529	9,385	41,632	82	40	82	907	45,901
SD	S. Dakota State U.	770,883	9,208	20,000	50	48	26	545	36,697

[1] Peer universities with approximately 10,000 undergraduate students in a state of less than 1.5M people
[2] National Science Foundation, Research and Development Expenditures at Universities and Colleges, S&E, Fiscal Year 2002. NSF 04-330 The data reported includes all Science of Engineering R&D expenditures from all sources, including federal, state and private/foundations. The values shown are for the University listed in Column (2). http://www.nsf.gov/statistics/nsf04330/secta.htm.
[3] Using total value of research conducted per capita by ALL Universities in the State based on NSF Report 04-330, not only the funding for the Univ. in column (2). http://www.nsf.gov/statistics/nsf04330/secta.htm
[4] Using 2002 IPEDS count of full-time faculty for the University in Col.(2), part-time faculty are not included. Namely, values in Col (5) divided the number of full-time faculty. http://nces.ed.gov/ipeds

While Table 1 is by no means the only measure of research, it provides readily available objective and unbiased data used as one measure of research activity by the National Science Foundation. In Reference to the data in Table 1, the following important observations are made:

1. The State of Maine ranks 50th in the US in overall University-based research per capita (see col. 7 in Table 1). This number represents the sum of all annual S&E research expenditures at all universities in the state divided by the state population, $47/person/year in Maine in 2002.
2. UMaine ranks first in its peer group of nine institutions in mean research funding generated by full-time faculty members. This number is $114,455/full-time faculty at UMaine as shown in Table 1, Column 10. This is even more remarkable since UMaine has the smallest number of full-time faculty in its peer group (543), 41% less than Univ. of New Hampshire's 917 full-time faculty (col. 9).

These two observations show that UMaine faculty are working hard and leading the faculty of the nine peer institutions in attracting research funding, while Maine as a whole still ranks 50th in overall university-based research funding.

Therefore, while Maine has begun to invest in research and development since 1998, other states have made larger investments in the same period so that the State of Maine as a whole still ranks 50th in overall University R&D. Strategic Direction 1 in this plan addresses this situation by recommending that Maine increase its university research investment to $60M a year by 2010. This is consistent with the Maine Science and Technology Advisory Council State R&D plan (issued Nov. 2005).

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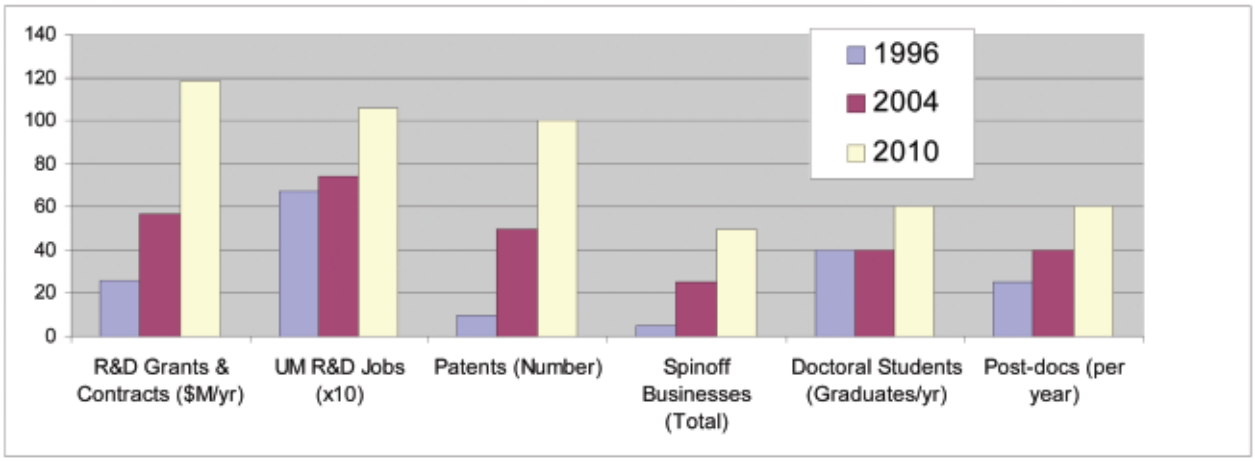
[3] Integrated Postsecondary Education Data System (IPEDS) is the core postsecondary education data collection program for the National Center for Education Statistics (NCES) http://nces.ed.gov/ipeds/

Vision Statement

The University of Maine will become the leading Land-Grant and Sea-Grant research university in its comparison group within five years. In this context, research is defined as a wide range of intellectual, scholarly and creative activities, which generate new knowledge. Emphasizing its role as Maine's comprehensive research university, UMaine will build excellence and national and international recognition in its academic programs, research and scholarly achievements, technological and intellectual resources, and public and private financial support in areas particularly relevant to a sustainable economy for Maine.

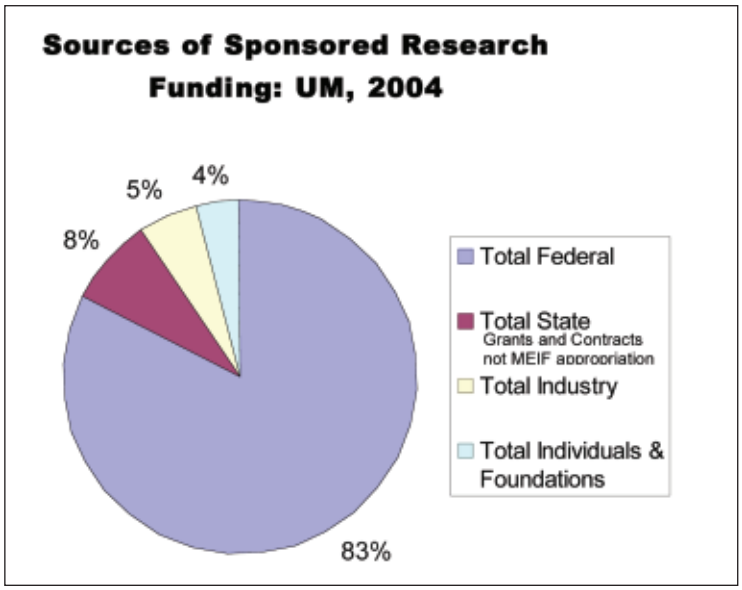
Demonstrated Benefits to the State of Maine

Since 1998, when the State of Maine made its first investments through the Maine Economic Improvement Fund (MEIF) to support research and development at the University of Maine, UMaine has consistently demonstrated its ability to substantially leverage this funding to bring in additional federal and private funding. UMaine also demonstrated this ability with EPSCoR and State match long before MEIF. In the six years since the State invested the first MEIF funds, UMaine has grown its grants and contracts by 63%. Through improvements to its research infrastructure, UMaine has also increased its ability to compete for federal grants and contracts and its capacity to serve business and industry. UMaine's efforts are focused on Maine's priorities - it is the only research institution in the state that conducts research in all of the state's targeted technology sectors, and UMaine has emphasized technology transfer and commercialization as indicated by the rapid growth of its patent portfolio and its recent record of spinning out as many companies as much larger research universities. This activity benefits Maine's citizens through contributing to economic development, educational and cultural advancement, health and welfare, and improvements to our living and working environments. The FY04 performance measures described below demonstrate UMaine's successful growth of research and development.



FY 04: $56.7M in External Grants and Contracts Provide 5 to 1 Direct Return on State Investment

UMaine researchers were awarded $56.7M in overall external grants and contracts in FY04. This includes $50.8M Sponsored Programs, $2.7M Industrial Grants, $0.81M through the Development Office, and $2.3M through USDA Hatch funds. This amount constituted a 13 percent increase over the previous year and produced the highest total in UMaine history. Of that total, $40.5M was linked directly to the strategic use of R&D funding to leverage federal and private research grants and contracts, resulting in a 5:1 return on the State's investment of $8.08M. Research and scholarly activity by UMaine faculty and staff resulted in more than 1,900 publications in FY04. UMaine also experienced a 22 percent increase in R&D contracts with businesses and industries, spurred by UMaine's improved R&D infrastructure and research capacity. Those contracts resulted in $2.7M in FY04.



FY 04: 614 Research Positions Paid from Grants & Contracts

In FY04, 614 full-time equivalent positions at UMaine were created and/or supported as a result of R&D funds and external grants and contracts. In addition a total of 125 positions were directly supported by state MEIF funds, brings the total to 739 equivalent full-time positions supported by R&D funding at UMaine, including full and partially funded faculty positions.

FY 04: 128,000 ft^2 of New Research Facilities Added at UMaine

UMaine continued to expand and develop state-of-the-art research facilities to support the targeted technologies.

- The Institute for Molecular Biophysics (IMB) is a major new research initiative. Initiated with a National Science Foundation EPSCoR grant and matching State-provided R&D funds, the IMB is a partnership with The Jackson Laboratory and the Maine Medical Center Research Institute. The IMB has the potential to become a major research entity as demonstrated by NSF awarding the group more than $1M for a 4Pi microscope-the first of its kind in the U.S. and only the second in the world.

- In 2004, construction was completed on the new 51,000 square-foot Engineering and Science Research Building. Scientists and students from the Laboratory for Surface Science and Technology (LASST) and the Department of Electrical and Computer Engineering began moving into the building in July 2004. The building includes a 3,500 square-foot "class 1000" clean room for research and development in the areas of nanotechnology, microfabrication, sensors, and biotechnology.

- The Advanced Manufacturing Center (AMC) was also completed in 2004. The AMC is a 30,000 square-foot facility that includes a host of machining and manufacturing equipment. The AMC staff is dedicated to assisting Maine industry with manufacturing issues leading toward the development of new and innovative products. Also included in this facility is the Hybrid Structures Laboratory, which recently received a $1M grant from the Office of Naval Research.

- The Advanced Engineered Wood Composites Center completed the laboratory expansion that was funded by the June 2003 Jobs for Economic Growth Bond. The 15,000 square-foot addition increased the world-class lab's size to 48,000 square feet and helped the Center obtain a $6.2M in Army funding awarded in FY05 for development of an Army Center of Excellence in Composite Structures for Force Protection.

- At the Center for Cooperative Aquaculture in Franklin, construction began on a new 24,000 square-foot hatchery building, which was primarily funded by the Economic Development Administration and Maine incubator funding. In addition, construction began on a large portion of the USDA Agriculture Research Service aquaculture center, which is co-located in Franklin. The centers share nearly $3M in infrastructure, including a new state-of-the-art seawater pumping, filtering, and sterilization building; new seawater and freshwater reservoirs; and complete back-up power generation.

- Design work has been completed on the Student Innovation Center, a 5,000-plus square-foot building on campus that will support the creation of innovative businesses by students involved in R&D and the creative economy. In addition, credit and non-credit courses are being developed to encourage entrepreneurship and increased opportunities for graduates to use their education in Maine. Several of the companies started at the Target Technology Incubator have been created by graduate students commercializing their research.
- Purchases of major equipment valued at over $50,000 included 19 pieces of scientific equipment with a total value of $2M. This equipment outfits labs throughout the University.
- Super-computing capabilities received a major boost with the installation of the U.S. Army-funded 256 dual node Apple G5 cluster at the Target Technology Center. Added to the existing Blackbear/Kearney cluster, it enables UMaine capacity to be on par with any educational institution north of Pittsburgh.

FY 04 Technology Transfer and Commercialization: UMaine Patent Portfolio up to 50

UMaine continues to expand its technology transfer and commercialization program. The University's total patent portfolio now contains more than 50 patents, patent applications, and international patents. In FY04, UMaine filed four new patent applications, and six new U.S. Patents were issued. Also in FY 04, UMaine signed license agreements with three Maine companies to commercialize UMaine patents, and UMaine helped start or spin-off four new companies.

Process Used In Developing this Plan and Timeline

This is a dynamic, faculty-generated plan that has been and will be continuously adjusted, as more input is obtained, and as it is implemented (see display across for detailed process and timeline).

The following pages outline eight strategic recommendations, developed through an extensive survey of faculty, staff, and administrators at UMaine, with follow-up deliberations and discussions among the URC R&D Subcommittee members, and further input from many individuals and groups on campus, including the deans, and 13 open sessions for faculty and chairs held in May 2005, two faculty Senate work sessions, and a faculty Union work session in June 2005. Over 600-faculty-hours have been invested between Dec 04 and June 2005 to help formulate this plan. The names of those who contributed ideas and those who attended meetings are listed in Appendix A.

PROCESS AND TIMELINE

A dynamic, faculty-generated, and continuously improved R&D Strategic Plan:

1. URC Strategic Plan Subcommittee formed (Dec 04)
2. Faculty Survey (Dec. 04)
3. URC Subcommittee synthesis (Dec 04-Jan 05)
4. Work Session Research Directors
5. URC overall Committee presentations (2)
6. Deans presentations (April 05)
7. Meetings with individual Deans (May 05)
8. 13 Campus-wide Work Sessions (May 05):

a. Chairs

b. Faculty

9. Three Work Sessions with Faculty Senate (June 05)
10. Two Work Sessions with Faculty Union (June 05)
11. Meeting with UMaine Strategic Planning Committee (June 05)
12. Work Session with winners of UMaine Presidential Research and Creative Achievement Award (June 05)
13. Individual discussions with faculty Senate and Union members
14. Coordinate with Maine Science and Technology Advisory Council (Summer/Fall 05)
15. Work Session with Provost John Mahon (June 05). Plan recommended to President.
16. Work Session with President Kennedy (Aug 23 05). Plan recommended to BOV.
17. Work Session with UMaine Board of Visitors (Oct 25 05). Plan unanimously approved.
18. Plan approved by Chancellor Westphal (Nov 17 05)
19. Launch external information-providing campaign (Fall 05)
    a. Campaign Committee (UMaine faculty, administrators, business leaders, legislators)
    b. Identify broad strategic focus & emerging areas
    c. Develop campaign strategy
20. Faculty & Faculty Senate briefings (twice every year)

Strategic Recommendations

1. Increase Investment in UMaine Orono R&D, Scholarship and Creative Activity from $16M/year in 2005 to $60M/year in 2010

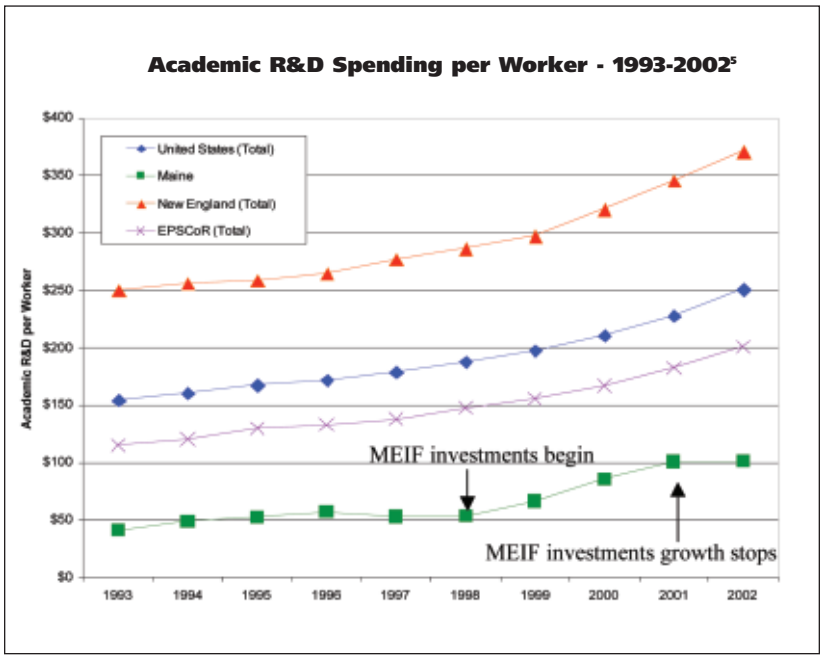
In order to become a leading research university within five years, a significant increase in research investment is necessary. Within the comparison group, the two universities with the highest NSF Expenditures in 2002, New Hampshire and Vermont, are located in states that have invested twice as much in research as Maine.

A prudent and compelling rationale for increasing Research investment should be based on past performance and demonstration of the ability to accelerate achievement of outcome goals. The University of Maine's measures of performance indicate an accelerated growth in research that warrants additional investments to allow it to further benefit the State's ability to attract the best faculty and students, jumpstart the creative economy through vibrant Arts and Humanities programs, new industry, jobs, and better enable its current industries to compete in national and international markets.

The above performance documents with objective measures that UMaine has accelerated its R&D efforts, and to maintain and capitalize on this momentum, it is recommended that the State dramatically increase its investments from $16M in 2005 to $60M by 2010. The proposed increase is consistent with the Maine Science and Technology Action Plan issued in Nov 05 (www.maineinnovation.com/studies_reports/default.asp). Maine's per capita investment in R&D remains the lowest in the U.S. Continued investments at the present rate will not change Maine's standing and will inhibit the State's economy from improving in comparison to other states.

Between 1993 and 1998, prior to MEIF investments in university research, R&D performed by Maine's academic institutions remained relatively constant (see adjoining Figure[6]). In contrast, as the MEIF investments were made in 1998, Maine's growth in academic R&D outpaced the reference groups between 1998 and 2002 (in percent growth but not in absolute dollars). During this period academic R&D in Maine increased 96 percent compared to 41 percent in the U.S., 34 percent in New England, and 39 percent among the EPSCoR[7] states.

In terms of academic R&D per worker, in 2002, Maine's academic institutions combined performed $101 worth of R&D per each worker in the state, compared to $251 for the U.S., $371 for New England states, and $201 for EPSCoR states.[8]



[4]As of this writing, estimated at $12M MEIF and $4M bond
[5]$30M State R&D and $30M bond
[6]Maine Innovation Index, Maine Department of Economic and Community Development (2005).
[7]EPSCoR focuses on those states that have historically received lesser amounts of federal R&D funding and have demonstrated a commitment to develop their research bases and to improve the quality of science and engineering research conducted at their universities and colleges. The program currently operates in 23 states: Alabama, Alaska, Arkansas, Delaware, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Vermont, West Virginia, and Wyoming, as well as the Commonwealth of Puerto Rico and the U.S. Virgin Islands. http://www.ehr.nsf.gov/epscor/start.cfm.
[8]Maine Innovation Index, Maine Department of Economic and Community Development (2005).

The University is poised to partner with the State, and to increase private and foundations fund-raising as described in the bold new initiatives that follow. It is recommended herein that 80% of all new State research funds allocated for this plan be invested within the legislated target technology sectors, while the other 20% is set aside to address other research, scholarship and creative achievement activities necessary to create a vibrant well-rounded research university, e.g., areas impacting Maine's economy, social environment, culture and quality of life.

2. Focus Research and Creative Efforts, and Promote Interdisciplinary and Emerging Research

In research, scholarship and creative activity, critical mass is often necessary to support sustainability and achieve accelerated growth. For example, the University of Wisconsin-Madison Psychology Department is a research leader in the US. The Department's 30 faculty are awarded approximately $30M/year in external research funding (nearly 50% of UMaine's total research funding in 2004), or $1M/faculty/year. The program was built by focusing research activities on brain imaging, hiring magnet faculty, investing in the program over a sustained period, and developing an inter-disciplinary research approach. The question is how many such world-leading programs can UMaine afford to build, and how can this be accomplished while strengthening individual faculty research and strengthening scholarship and creative efforts across all areas on campus?

The Strategic Research Investment Program illustrated in Figure 1 will allow UMaine to focus as well as invest in individual UMaine faculty research broadly across all disciplines. New research funds will be concentrated into Six Strategic Focus Areas (50% of new funds), while funds will be invested to create a feeder system of New and Emerging Focus Areas (15% of new funds), and to support Faculty Growth (10% of new funds). The remaining 25% of the funds will be used to carry out other initiatives described in this plan. An inclusive process to allocate funding will be used allowing individual faculty, departments, centers, and colleges to submit proposals. The Strategic Research Investment Program will allow individual faculty or groups of faculty to participate under three categories:

1. Faculty Research Growth ($10k - 50k /year). Invest 10% of new base research funding to individual faculty or smaller groups of faculty to support research and teaming efforts. Some of these individual or teaming efforts will develop into Emerging Focus Areas. It is recognized that in some creative efforts, the model for continued growth may not support clustering or inter-disciplinary activities. In such cases, individual or small groups of faculty with outstanding performance in their first 5 years will be eligible to re-apply for a new 5-year round of funding.

2. New and Emerging Focus Areas ($100k - $300k /year). Invest 15% of new base research funding to create a feeder system of integrated research clusters which can develop the capability to become Strategic Focus Areas within 5 years.

3. Strategic Focus Areas ($1.5M - $3.5M /year). Invest 50% of new base research funding to promote growth in six selected areas. Programs in this category are expected to become world leaders in their fields within 5 years, become largely self-sufficient, and move "out" of the pyramid so that new areas can move in. Following the initial 5 years, the successful programs will be sustained with $300k-500k/year to cover basic operating expenses and new staff salaries.

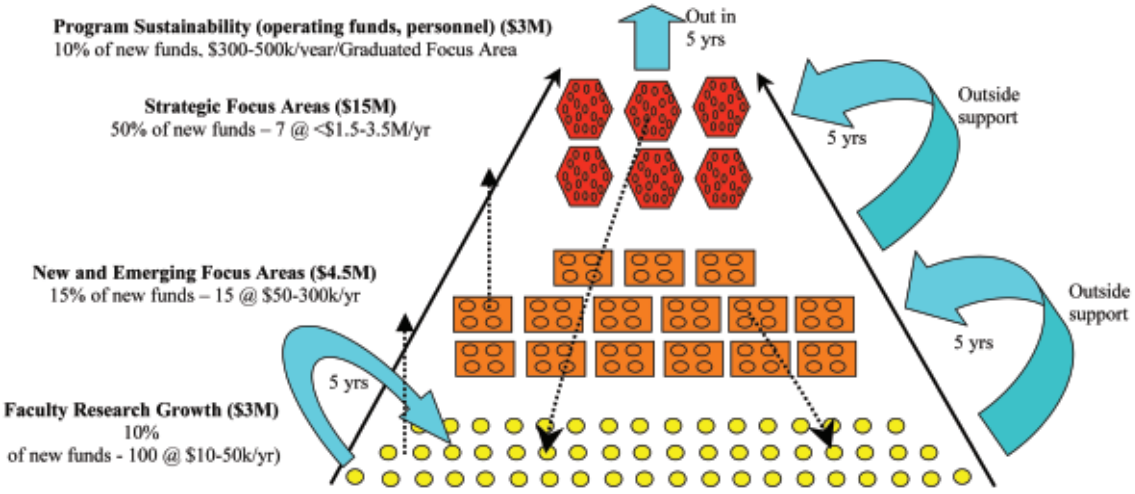


Figure 1. Strategic Research Investment Program
5th Year Snapshot with $25.5M Investment in Strategic Direction 2 of $60M Annual Investment
Remaining $60M - $25.5M = $34.5M investment supports Strategic Directions 3 through 8

Eligible Disciplines. All disciplines at UMaine are eligible for new funding. 80% of the new funding will be invested within the State-mandated MEIF areas, and 20% of the new funding will be set aside for competition in other areas that impact Maine's economy, social environment, culture, and quality of life.

Sustained Funding. Since all funds will not be available at the beginning of the plan, initial investments will be primarily in Strategic Focus Areas, and as more funds are generated, the rest of the pyramid will be filled. Funding in each category will be sustained for 5 years. Accountability will be stressed and a major program review will take place at the end of 5 years. Eligibility for additional funding beyond the first 5 years will depend on success in meeting the goals set out in the proposal, as well as on promise for continued growth. Following the initial 5 years, the Strategic Focus Area programs which have met their 5-year goals will be eligible for Program Sustainability funding of $300k-500k/year to cover basic operating expenses including staff salaries. Thus after the first 5 years, the savings realized from "graduated" programs, as well as potential growth in State research investments, will be used to fund new proposals. This will allow new faculty to enter into and move through and out of the pyramid.

Re-Applying after 5 Years of Funding. It is generally anticipated that Strategic Focus Areas will become largely self-sustaining after 5 years, so that new Strategic Focus Areas may be developed. Similarly, it is anticipated that successful New and Emerging Focus Areas would be ready to submit proposals that would allow them to be considered for Strategic Focus Areas after 5 years. In the same manner, successful individual PIs may be ready to submit proposals to create New and Emerging Focus Areas after the first 5 years of funding. It is recognized that in some creative efforts, the model for continued growth may not support clustering or inter-disciplinary activities. In such cases, individual faculty with outstanding performance in their first 5 years will be eligible to re-apply for a new 5-year round of funding under the Growth of Individual PIs category. Similarly, faculty who have successfully completed a 5-year round under the New and Emerging Focus Area or under a Strategic Focus Area may re-apply under any category. All else being equal, preference will be given to new applicants or groups who have not received any funding in the past.

Selection Process and Eligible Funding. The Vice President for Research office will organize and oversee the Strategic Research Investment Program selection process. Eligible funding requests depend on the specific needs of the researcher(s), and can include one or more of the following: attracting new or magnet faculty, post-doctoral fellows, research staff, doctoral students, MS and undergraduate students, summer salary, travel funds, materials and supplies, publication costs, patent filing costs, commercialization costs, new equipment, physical facilities improvement, external proposal matching funds, etc. Criteria for selection are shown in the Figure 2.

Figure 2. Criteria for Selection - Strategic Research Investment Program

3. Enhance Human Resources, Physical Facilities, and Administrative Procedures

3.1 Enhance Human Resources: Faculty, Soft-Money Research Staff, Graduate Students, and Support Staff

3.1.1. **Faculty Investment Initiative.** Add 10 outstanding magnet faculty/year, including exceptionally promising young hires[9], who have research excellence in Strategic Focus Areas or New and Emerging Areas. These faculty will achieve new national and international prominence for their units. Use new research monies to make some of these hires. In addition to hiring new magnet faculty, increase the support for existing faculty as described in Strategic Direction 2 and illustrated in Figure 1.

3.1.2. **Increase the number of graduating doctoral students[10] to 60 by 2010** (60% in Strategic Focus Areas and 20% in New and Emerging Areas). Internally supplement 2-year grants to allow doctoral student hires, and increase recruitment in new ways, such as delivery of doctoral programs for working professionals throughout the state. Earmark 10% of returned indirect to graduate programs via the VPR office for this activity.

3.1.3. **Increase the number of research faculty, postdoctorates, and senior research staff, (80% in focus areas).**

3.1.4. **Hire professional research grant programs officers:** Hire > two grant officers who will help faculty identify and write larger research grants (> $1M, particularly interdisciplinary research grants)

3.1.5. **Hire senior professional foundation/grant officers:** Hire > two senior professional foundation/grant officers with a demonstrated track record in attracting investments in Research, scholarship and creative activities.

3.1.6. **Integrate research culture into the undergraduate curriculum** and provide faculty with resources and recognition for this contribution, including support for Honors College undergraduate thesis research

3.2 Enhance Physical Facilities: Library, major equipment, facilities, and IT support

3.2.1 **Increase Library support.** Improvements of our library facilities are necessary so that we can retrieve the latest scholarship in all areas of research ongoing at UMaine and expand into new areas of scholarship.

3.2.2 **Create a competitive Major Equipment and Facilities Fund with state bonds (80% in focus areas).** Solicitations for major equipment and facilities acquisition or upgrade projects will be issued by the Vice President for Research office, using the Strategic Research Investment Program model (see Strategic Direction 1).

3.2.3 **Enhance computational research facilities and IT support**

3.2.4 **Streamline administrative procedures to improve efficiency**

4. Reward Excellence in Research, Scholarship and Creative Activities

4.1 Return of indirect (F&A): Return of indirect costs recognizes sponsored research achievements, provides an incentive for continued research productivity, and permits investment in continued research growth. Create a fixed $ baseline of indirect costs, using FY06 as a base year, above which all indirect costs are returned, using the following formula: 10% of indirect costs to faculty who generate it (allow that to be held over fiscal years ends), 25% to facilities, Library and administration, 8.3% each to the Departments, Centers and the Deans, and retain the remaining 40% to the VPR for investment. Dedicate 10% of those VPR funds to enhance scholarly and creative activities in areas not represented by the focus areas, including travel funds, teaching release, and other basic research support to these academic departments and programs.

4.2 Reward faculty with stipends and professorships: Reward faculty members that contribute to excellence in research, scholarship and creative activities with stipends and endowed professorships, and considering criteria for research excellence established by the VPR Office, and the faculty member's Departmental Peer Committee, Center, and College.

4.3 Incentive award for grants, creative, and scholarly activities: One goal of this strategic plan is to increase research and scholarly activity at UMaine resulting in funded projects. As such, reward successful Principal Investigators with additional compensation determined annually, funded using return of indirect, and calculated using a percentage of externally generated indirect costs recovered by UMaine through the faculty's grants.

4.4 Increase teaching support through more competitive TA stipends, postdoctoral fellows, and course release that can support research and teach classes

4.5 Develop a formalized program, including resources and personnel, to increase visibility of faculty research and creative activities accomplished (see 8.5 as well).

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[9]Magnet faculty are expected to engage in teaching, research, and public service and program development through team building. Use new state R&D funds to hire some of these new faculty.

[10]2005 Coalition Report on Graduate Research, Scholarship and Education, UMaine, Dr. Scott Johnson Committee Chair.

5. Increase Research Commercialization and Technology-Transfer

5.1 Hire at least 2 new patent/commercialization/technology transfer positions

5.2 Provide incentives for faculty to work with industry and the state-funded Maine Technology Institute by recognizing such activities as an integral part of the tenure/promotion criteria

5.3 Create a Commercialization Competitive Fund for proof of concept

5.4 Create a Research Corporation to streamline administrative procedures, and create a reward structure

6. Enhance Communication with External Constituencies

6.1 Invite funding officers to UMaine

6.2 Create distinguished lecturer series (50% of funding in focus areas)

6.3 Increase travel funds for faculty (50% of funding in focus areas)

7. Institutionalize Training, Mentoring, Retention and Support for Researchers

7.1 Create a formalized research mentoring and retention program for faculty, including an internal voluntary training and peer-review program for new proposals, as well as for resubmitting rejected proposals. Also, when a proposal has been declined for funding, provide travel funding for visits to the funding agencies for advice on resubmission of the rejected proposals (see 6.4). Also, provide summer funds for preparation of grant proposals to external agencies.

7.2 Enhance internal communications among researchers

7.3 Encourage active dialogue on funding opportunities among the faculty in the research centers AND those with college connections. Advise that there may be start-up funds or other resources relevant to them working together depending upon the specifics of the work and the faculty involved

7.4 Increase access to child care on campus. On a broader scope, work towards adopting policies such as those consistent with the AAUP May 2001 Statement of Principles on Family Responsibilities and Academic Work http://www.aaup.org/statements/REPORTS/re01fam.htm.

8. Strengthen Research, Scholarship and Creative Activities in Areas Impacting Maine's Economy, Social Environment, Culture, and Quality of Life

Research, scholarship and creative activities in these areas are an integral part of all 7 strategic directions outlined earlier in this plan. Strategic Direction 8 strongly reinforces this fact. UMaine will increasingly promote research that develops a better understanding of what constitutes excellence and essential areas of inquiry within those fields, and how best to generate additional resources to support faculty conducting research in those fields (see Appendix B). For example, research, scholarship and creative activities needed to support a sustainable Creative Economy in Maine will occur in wide-ranging disciplines throughout the University. It is this plan's clear intention to support and encourage individual faculty, departments, colleges and centers across all disciplines to participate in research, scholarship and creative activities (see Strategic Direction 2). It is well known that external research funding is more difficult to obtain in some fields than it is in others. As such, UMaine will increase financial support for faculty conducting research, scholarship and creative activities in these fields by:

8.1 Setting aside 20% of all new funding under Strategic Direction 2 to support faculty in non-MEIF areas.

8.2 Using increased Return of Indirect to the VPR office (Item 4.1) to increase the size and number of competitive research funds in fields not represented by the focus areas .

8.3 Increasing faculty support to obtain funding from Foundations and other funding outlets such as NEA, NEH and SSRC (Strategic Directions 1, 2, 3, 4, 5, 6, 7)

8.4 Obtaining State funding and bonding to support these objectives (Strategic Directions 1 and 2)

8.5 Improving incentives and rewards to faculty who excel in fields other than those represented by the focus areas (Strategic Direction 4)

5-Year Projections

A detailed research investment plan outlining both the proposed state investment and the return on investment over the next 5 years has been developed. The investment plan is detailed for each of the 8 strategic plan recommendations described earlier. 80% of the State investment will be in the State-legislated areas while the other 20% will be set aside to strength research, scholarship and creative activities in other areas. The projections depict a combined growth of state R&D and Bond funding to $60M in 2010 and assumes that the growth will be invested in Focus Areas, New and Emerging Areas, and Growth of Faculty, covering all disciplines on campus (20% set aside for non-MEIF areas). By 2010, the impact of the investment will include:

- Growth of UMaine research grants and contracts to $88M/year ($118 M total including state funds)
- Increased support for research, scholarship and creative activities across all disciplines on campus, including non-MEIF areas. 20% of all new funds, that is $6M/year by 2010 will be set-aside for non-MEIF areas.
- Growth of UMaine jobs funded by Research to 1,055
- Growth of the UMaine patent applications to 12/year and the doubling of the UMaine patent portfolio to 100 within 5 years
- Growth of new business startups to 6/year, and the total of new startups created will be 25
- Personnel growth over the 5 years will include the hiring of:
    - 50 new magnet faculty positions
    - Double research faculty positions funded at 50% of their salaries through State funding growth
    - Double post-doc positions
    - Double technicians and research staff positions
    - 100 new Doctoral students: 20/year, 50%-State-funded positions available to match 1-1 Ph.D. salaries on grants
    - 2 new senior foundations officers hired to invigorate major foundation awards
    - 2 new senior grants officers to assist in assembling major interdisciplinary external grants (min > $1M grant)
- Investment in Library, facilities and major equipment of $128M, 10% of which will support library and IT ($13M)
- Redistribution of indirect costs increase over the amount recovered in the FY 04 base year will result in annual indirect costs reinvestments of $3.5M in 2010 back to faculty, Departments, Centers, Deans, VPR, and the facilities (assumes 11.46% mean indirect recovery rate). The VPR recovered indirect becomes $1.4M annually in 2010 will include: salary stipends for outstanding faculty, faculty promotion resulting in national recognition and awards, and teaching support including granting TAs or course release competitively to selected faculty.

Appendix A - List of UMaine Faculty, Staff and Administrators who Contributed to this Report, or Attended Open Forums

The following question was asked of faculty and administrators at UMaine: "In order to increase research activity on Campus, what are your four best ideas - two with new resources, & two without new resources?" The results were synthesized by the URC Strategic Plan Subcommittee into a draft plan. Over 600-faculty-hours have been invested between Dec 04 and June 2005 to help formulate this plan. Input was obtained from Research Directors, Deans, the University Research Council, 13 campus-wide open faculty work sessions, two work sessions organized by the faculty Senate, a work session organized by the faculty Union, individual meetings and discussions with faculty Senate and Union members, and other research-intensive faculty who reviewed or commented on the document, including the following individuals:

Jim Acheson - Prof. of Anthropology & Marine Sciences
Andrei Alyokhin - Asst. Prof., Biological Sciences
Francois Amar, Assoc. Prof., Chemistry
Aria Amirbahman - Assoc. Prof., Civil and Environmental Engineering
Paul Anderson - Director, Sea Grant
Steven Barkan - Chair, Dept. of Sociology
Dan Belknap - Chair, Dept. of Earth Sciences
Lavon Bartel - Dean & Director of Cooperative Extension
David Batuski - Professor and Chair, Department of Physics and Astronomy
Kate Beard-Tisdale - Chair, Spatial Information
Michael Bilodeau - Director, Pulp and Paper Process Development Center
Catherine Billings - Assist. Director for Communications & Development, College of NSFA
Amy Blackstone - Asst. Prof. of Sociology
Joline Blais - Asst. Prof., New Media
Doug Bousfield - Prof. Chemical and Biological Engineering
Michael Boyle - Assoc. Prof. of Mechanical Engineering
Tony Brinkley - Assoc. Chair, English Dept.
Thomas Brann - Prof. of Forest Resources
Bill Bray - Chair Mathematics Dept.
Richard Brucher - Assoc. Prof., English Dept.
Al Bushway - Prof., Food Science and Nutrition
Rod Bushway - Prof. and Chair, Food Science and Nutrition, Lab Director of SECRL
Vincent Caccese - Assoc. Prof. of Mechanical Engineering
Mary Camir - Prof., Food Science and Nutrition
Joe Carr - Director of Public Affairs
Mary Cathcart - State Senator (former), MCS Policy Center
Beth Clark - Assist. Prof. of Nursing
Robert Cobb - Dean College of Education
Alan Cobo-Lewis - Assoc. Prof. of Psychology
Ted Coladarci - Prof. of Education
Barbara Cole - Chair, Prof. of Chemistry
Timothy Cole - Chair, Assoc. Prof. of Political Science
Laura Cowan - Assoc. Prof. of English
Dorothy Croall - Prof., Biochemistry
Chris Cronan - Prof. of Biological Sciences
William Davids - Assoc. Prof. Civil Engineering Dept.
Habib Dagher - Director, AEWC Center & Prof. Civil Engineering Dept.
Eugene Del Vecchio - Prof. and Chair, Modern Languages and Classics
Elizabeth DePoy - Prof. of Social Work, Center of Community Inclusion

Note that this is NOT a list of faculty who endorse the report; it is a list of those who participated in work sessions or provided input.

Darrell Donahue - Assoc. Prof. of Chemical & Biological Engineering
Frank Drummond - Prof., Biological Sciences
Michael Eckardt - Vice President for Research
Merrill Elias - Prof., Psychology
Susan Erich - Chair, Plant Soil and Environmental Sciences
Suzanne Eslter - Assoc. Prof. of Higher Education Leadership
Jim Fastook - Professor, Computer Science/Quaternary
Ivan Fernandez - Professor of Plant, Soil and Environmental Sciences
Raymond Fort - Prof. of Chemistry
Thane Fremouw - Research Assist. Professor, Psychology
Brian Frederick - Assoc Prof., Chemistry, LAAST
Amy Fried - Assoc. Prof., Political Science
Douglas Gardner - Prof. of Wood Science, Forest Management, AEWC Center
Stephen Gilson - Prof. of Social Work. BASW Coordinator
Don Grant - Prof. and Chair, Mechanical Engineering
Max Egenhofer - Director, NCGIA
Kim Goff - Engrg Grants Officer
Barry Goodell - Prof. Wood Science, Forest Management, AEWC Center
Eleanor Groden - Assoc. Prof., Biological Sciences
Jeff Hecker - Prof. and Chair, Psychology
James Horan - Professor of Public Administration
Michael Howard - Professor of Philosophy
Adriaan Van Heiningen - Ober Chair and Prof., Chemical and Biological Engineering
Nancy Hall - Chair, Communication Sciences and Disorders
William A. Halteman - Assoc. Prof. of Mathematics
Walter Harris - Director, Center for Research and Evaluation
Michael Hastings - Director, Research and Sponsored Programs
Marie Hayes - Assoc. Prof. of Psychology
C. T. Hess - Prof., Physics and Astronomy
Jeff Hecker - Prof. and Chair, Psychology
Richard Hollinger - Head, Special Collections, Fogler Library
James Horan - Prof. of Public Administration
Stephen Hornsby - Director, Canadian American Center
Michael Howard - Prof. of Philosophy
Dana Humphrey - Prof. and Chair, Civil Engineering
Keith Hutchison - Professor, Biochemistry, Microbiology and Molecular Biology
Dan Innis - Dean, College of Business Public Policy and Health
George Jacobson - Prof. of Botany & Quaternary Studies
Jody Jellison - Prof., Biological Sciences, Asst. Dir. MAFES
Scott Johnson - Assoc. Prof., Earth Sciences
Peter Jumars - Prof., School of Marine Sciences
Lenard Kaye - Director, Center on Aging, Prof. of Social Work
Renee Kelly - Business & Economic Development Liaison. Office of Research and Economic Development
Roger King - Prof. and Chair, Philosophy Dept.
Renate Klein - Assoc. Prof., Human Development and Family Studies
Barbara Knowles - Co-Director, Institute of Molecular Biophysics
David Kotecki - Assoc. Prof., Electrical and Computer Engineering
Jan Kristo - Prof. - College of Education and Human Development
Robert Lad - Director, LAAST
Jim Linehan - Prof. and Chair, Art
Roberto Lopez-Anido - Assoc. Prof. of Civil Engineering &Environmental Engineering, AEWC Center
Margaret Lukens - Assoc. Prof. and Chair, English Dept.
Deirdre Mageean - Assoc. VP for Research and Dean of the Graduate School

John Mahon - Interim VP for Academic Affairs and Provost; Prof. of Management
Kathleen March - Prof. of Spanish, Modern Languages & Classics
Shanon Martin - Assoc. Prof., Communications and Journalism
Craig Mason - Assoc. Prof., College of Education and Human Development, CCI
Larryl Matthews - Dean of Engineering
Larry Mayer - Prof., School of Marine Sciences
Paul Mayewski - Director, Climate change Institute
Karen Merritt - Ph.D. Candidate, Civil Engineering
Jean MacRae - Assist. Prof., Civil Engineering
Susan McKay - Prof. and Chair, Physics and Astronomy
James McClymer - Assoc. Prof. Physics and Astronomy
Charles Moody - Assoc. Prof. of Biochemistry, Microbiology & Molecular Biology
James Moreira - Director, Maine Folklife Center, Assist. Prof. of Anthropology
Donald B. Mountcastle - Assoc. Prof. of Physics
David Neivandt - Asst. Prof., Chemical and Biological Engineering
Laurie Osher - Assist. Prof. of Plant Soil & Environmental Science
Howard Patterson - Prof. of Chemistry
Hemant Pendse - Chair, Chemical and Biological Engineering
Eric Peterson - Assoc. Prof., Communication & Journalism
Michael Peterson - Prof. of Mechanical Engineering
Steve Reiling - Director, Maine Agriculture Center
Robert Rice - Professor, Forest Management, Wood Science
Liam Riordan - Assoc. Prof., History
Paul Roscoe - Prof. and Chair, Anthropology Dept.
Alan Rosenwasser - Prof. of Psychology
Jonathan Rubin - Interim Director of Margaret Chase Smith Policy Center
Joyce Rumery - Interim Director, Fogler Library
Douglas Ruthven - Prof. and former Chair, Chemical and Biological Engineering
Christa Schwintzer - Prof. of Biological Sciences
Bruce Segee - Assoc. Prof., Electrical and Computer Engineering
Stephen Shaler - Assoc. Director AEWC, Forest Management, Wood Science
Ann Schonberger - Director, Women in the Curriculum, Women Studies
Scott See - Chair and Libra Prof. of History
John Singer - Chair, Dept. of Biochemistry, Microbiology and Molecular Biology
Charles Slavin - Dean, Honors College
Natalie Steiger - Asst. Prof., Maine Business School
Martin Stokes - Chair, Professor of Animal & Veterinary Sciences
Tom Taylor - Professor and Chair, Public Administration
Andrew Thomas - Professor, School of Marine Science
John Thompson - Assist. Prof. of Physics & Astronomy
David Townsend - Director, School of Marine Sciences
Shihfen Tu - Asst. Prof., College of Education and Human Development
Elise Turner - Chair, Computer Science
Roy Turner - Assoc. Prof. of Computer Science
Senthil Vel - Assistant Prof. of Mechanical Engineering
Janet Waldron - Vice President for Administration and Finance
Jake Ward - Exec. Direc. Research and Economic Development
Adrienne White - Assoc. Prof., Food Science and Nutrition
Robert White - Assist. Provost and Dean, Division of Lifelong Learning
Bruce Wiersma - Dean, College of Natural Resources, Forestry and Agriculture
David Wihry - Chair, Assoc. Prof. of Economics
Lucille Zeph - Director, Center for Community Inclusion

Appendix B. Examples of UMaine Research that Enhance Maine's Creative Economy, Social Environment, Culture, and Quality of Life

In addition to sciences and engineering research, UMaine continues to lead in conducting research that enhances Maine's creative economy, social environment, culture, and quality of life. Examples include:

- The Margaret Chase Smith Center for Public Policy is dedicated to improving and promoting the quality of public dialogue about state, regional, and national policy issues. The Center has received a Congressional award to fund the Maine Rural Substance Abuse Partnership. Substance abuse is considered one of the most critical problems facing rural populations in Maine and nationally.
- The Cohen Center in the School of Business cultivates in-depth understanding of international business, foreign competition and global awareness, helping position Maine in the global economy.
- The Center for Community Inclusion & Disabilities Studies is creating opportunities for Maine people with disabilities through research and policy analysis.
- The Center on Aging specializes in aging education, research and community service. It serves the state by maximizing the quality of life of Maine's older citizens and their families.
- The History Department, working with the Canadian-American Center, developed the Maine Atlas which will soon be sold throughout the United States.
- The Canadian-American Center is one of the leading institutes for the study of Canada. It promotes cross-border research, which benefits Maine's culture and economy.
- The Political Science Department's faculty have recently completed a book on the impact of term limits in Maine.
- The Sociology Department is researching the extent, sources, and consequences of domestic violence in Maine and beyond.
- The UMaine Folklife Center is developing concepts for Maine's Creative Economy, including support for the National Folk Festival.
- The Research Collaborative on Violence Against Women generates high quality research that contributes to work for peace and justice in Maine's communities.
- The Psychology Department conducts research in anxiety disorders, infant sleep disorders, stereotyping and prejudice, and creativity, just to name a few. The role of stress in stimulating and sustaining binge eating is one focus of research which could contribute to better psychological treatments for binge eaters.
- The Psychology Department has worked with a local Maine company to secure a phase 2 Small Business Innovation Research grant from NIH to develop and commercialize software for rapid testing of language development in young children. This project brings University research to pre-K educational and medical applications, providing improved tools for identifying and evaluating children at risk for developmental disability.
- The Anthropology Department is researching the Northeastern Borderlands, especially Maine, and its unique historical interface with Québec and the Maritime Provinces of Canada.
- The National Center for Student Aspirations provides research and analysis, and interventions to help Maine schools assess and respond to the perceptions and needs of all students, and improve overall educational environments.
- The School of Social Work is conducting research on Native American children and families, poverty, public child welfare programs, community mental health, as well as disability and diversity.
- World-renowned poets and scholars involved in the creation and study of poetry were at the University of Maine in summer 2004 for one of the largest conferences devoted to the genre. "Poetries of the 1940s, American and International" drew participants from nine countries and the U.S.
- UMaine Spanish students from Modern Languages and Classics are tutoring Spanish-speaking migrant workers Down East. The campus service-learning initiative was funded by the Northeast Regional Campus Compact. A 2005-06 VISTA/AmeriCorps volunteer will link the Hispanic migrant population, poverty in Central America and service-learning projects at UMaine.
- The University of Maine System Libraries have brought online a newly developed, searchable database for public use. The Gateway to Digital Collections provides online access to thousands of selected digitized materials- full text, image, sound, video, and finding aids.

The State R&D Experiment has Worked: UMaine has Delivered

State Investment In University R&D

in 2004

$10 million

New $ Into State, from External Grants and Contracts

in 2004

Leveraged External Grants & Contracts

5 to 1

$57 Million

Create Jobs, Hire People, Build Facilities, Buy Materials

in 2004

739 Jobs supported

128,000 sq. ft. new facilities

Increased Capacity to Serve State's Workers and Companies, New Partnerships with Business and Entrepreneurs

in 2004

160 companies served

New Companies Established and Growing, New Patents, New Products from Maine

1998 through 2004

22 New companies

50 New Patents

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