CONNECTION

NEW ENGLAND'S JOURNAL

OF HIGHER EDUCATION AND ECONOMIC DEVELOPMENT

University to the terms

VOLUME XII, NUMBER 1

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Essays on Federal
Higher Education Policy
and New England
Workforce Development

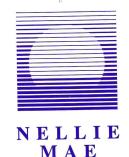
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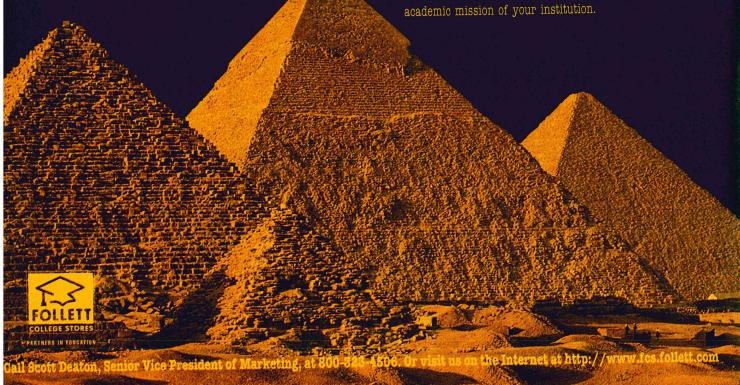
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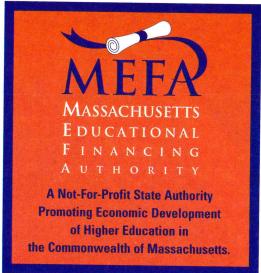
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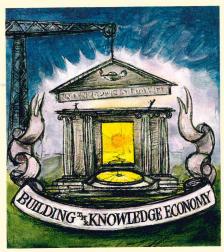


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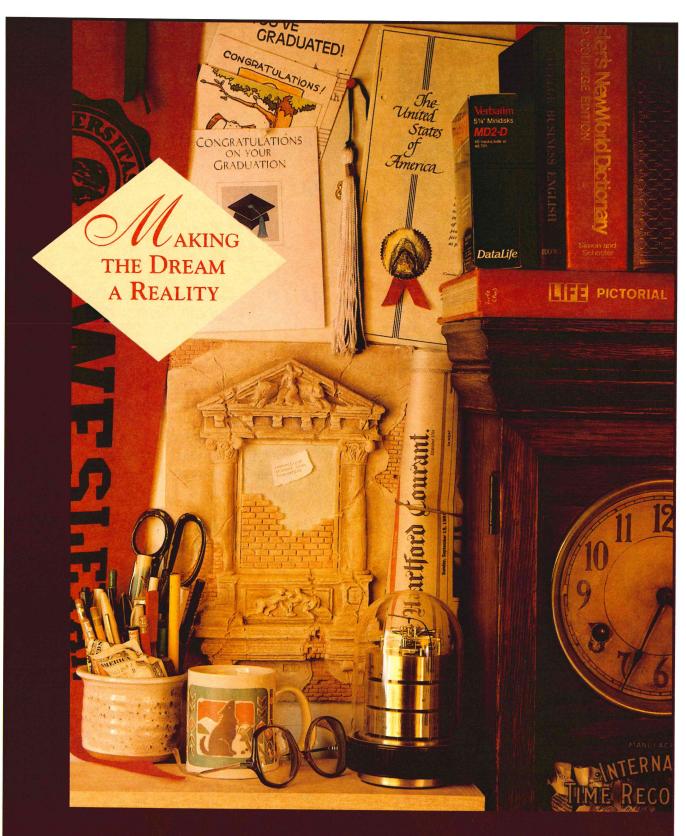
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The New England Board of Higher Education is a nonprofit, congressionally authorized, interstate agency whose mission is to foster cooperation and the efficient use of resources among New England's approximately 260 colleges and universities. NEBHE was established by the New England Higher Education Compact, a 1955 agreement among the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

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EDITOR'S MEMO

Ever since the lead story in Connection's Spring 1986 debut issue declared New England "the most knowledge-intensive region in the world," the journal has remained remarkably faithful to that premise, consistently featuring current thinking on higher education policy, technological capacity, workforce development and the regional economy. We have stayed *on message*, as communications strategists like to say.

Still, as Connection begins this 12th year of publication with a fresh look at the region's "knowledge economy," it may be useful to revisit the definition of that somewhat worn term.

Noted New England economist Jim Howell — who proclaimed the region's knowledge-based competitive edge in the New England Board of Higher Education's benchmark 1982 report, *A Threat to Excellence* — has more recently described knowledge economies as those combining:

- highly skilled, specialized workforces with large numbers of engineers, scientists, managers, technicians and other professionals;
- an "intellectual infrastructure" of world-class research and educational institutions such as hospitals and universities that train and employ skilled workers and entrepreneurs;
- technology transfer from these institutions to new entrepreneurial companies;
- an indigenous venture capital industry, aggressive commercial banking network and high-quality business and professional services to finance and serve new enterprises;
- an efficient, up-to-date transportation and communications infrastructure;
- superior environmental and cultural quality in commercial, residential and recreational areas, maintained by good public services; and
- diverse economic activities highlighted by clusters of rival and related firms and industries that compete vigorously and exchange information and ideas as well as goods and services.

Clearly, New England has developed and nurtured these qualities with varying degrees of success. Moreover, we trust that our distinguished authors have added to Howell's list — and we urge readers to do so — for surely another characteristic of knowledge economies is that they must be continually *redefined*.

* * * *

The knowledge economy is also an information economy. In keeping with this transformation, NEBHE and Connection increasingly offer New England students, faculty, policymakers and others vital information on-line at http://www.nebhe.org.

Our Web-surfing readers may also be interested to know that I have begun contributing a monthly op-ed column on higher education and economic issues to *BusinessToday.com*, a new on-line business news service owned by a subsidiary of the *Boston Herald*. Each column is accompanied by a "hot link" connecting readers directly to NEBHE's Web site.

We do hope you will visit.

John O. Harney is executive editor of CONNECTION.

Losing R&D

New England's share of all research and development *expenditures* by U.S. universities slid from 10.1 percent in 1983 to 8.6 percent in 1994, according to a New England Board of Higher Education analysis of new National Science Foundation data.

At the same time, NEBHE warned that New England's lack of representation on key science committees in Congress could further damage the region's science prospects.

To be sure, New England remains an R&D powerhouse. The region's universities performed \$1.8 billion in R&D in 1994, the latest year for which data are available. And New England colleges and universities have captured 12 percent of the patents awarded to higher education institutions in the United States during the past three years.

But the region's relative edge in R&D is eroding. Though R&D expenditures at New England universities have more than doubled since 1983, the region's share of all U.S. university R&D has declined by 15 percent — representing hundreds of millions of dollars lost to New England's research enterprise.

Similarly, federal R&D obligations to New England — research funds awarded by federal agencies such as the Defense Department, National Science Foundation, NASA and the National Institutes of Health to be spent over a period of years — more than doubled between 1984 and 1994. But the region's share of federal R&D obligations dropped from 12.2 percent in 1984 to 9.5 percent in 1994 — a 22 percent plunge.

Still, Washington provides 67 cents of every dollar the region's universities spend on research, compared with 60 cents nationally. This heavy dependence on the federal government for research funds could further hurt the region, as congressional budget-balancers target science funding for cuts.

Not a single New Englander sits on the 46-member U.S. House Committee on Science, which recommends science funding levels. Eight committee members are from Texas; five are from California; four are from Pennsylvania; and four more are from Michigan. U.S. Sens. John F. Kerry (D-Mass.) and Olympia Snowe (R-Maine), meanwhile, are the only New Englanders serving on either of the two key science committees in the Senate.

Tuition's Slow Rise

Some New England institutions continue to hold the line on tuition and other charges for the 1997-98 academic year.

The University of Massachusetts announced its second consecutive 5 percent *cut* in tuition, knocking \$105 off last year's undergraduate rate of \$2,109 for state residents attending UMass-Amherst. But mandatory fees, which now exceed tuition at many UMass campuses, rose by \$24 for in-state undergraduates at Amherst and more at other campuses. And trustees approved raising tuition and mandatory fees for out-of-state undergraduates at Amherst by 1.3 percent to \$12,342.

Pine Manor College, which last year became the first *private* college in Massachusetts to offer reduced tuition to state residents, froze its total charges for 1997-98 at \$10,000 for state residents and \$16,000 for out-of-state students. Pine Manor slashed its part-time tuition rates by as much as 60 percent to \$800 per course.

Harvard and Yale universities announced their smallest percentage increases in tuition in nearly 30 years. Yale announced a 3.7 percent hike in total charges, with tuition and mandatory fees rising to \$23,100 and room and board to \$6,850, for a total of \$29,950. Harvard increased total charges by 4.1 percent, with tuition rising to \$20,600 and total charges to \$30,080.

Wesleyan University announced a 4.5 percent hike in charges, bringing tuition and mandatory fees to \$22,980 and room and board to \$6,210, for a total of \$29,190.

There has been some backsliding. Boston University announced a nearly 7 percent hike in charges for 1997-98, bringing tuition to \$21,970 and room and board to \$7,570, for a total of \$29,540.

Dropping By

A little-mentioned provision of the 1992 amendments to the federal Higher Education Act requires regional accrediting agencies to make "unannounced inspections" of certain vocational and technical colleges, beginning in 1997 — just as Congress gets set to consider reauthorization of the sweeping higher education legislation.

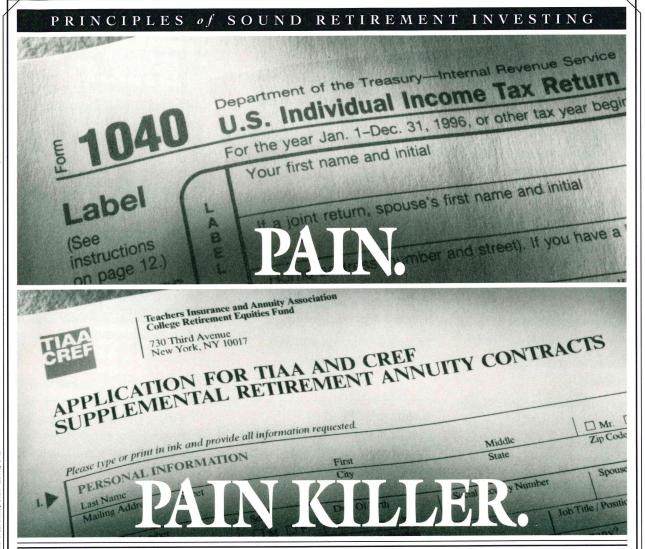
Specifically, the law applies to institutions that offer pre-bachelor's certificate or degree programs "designed to prepare individuals with the skills and training required for a specific trade, occupation or profession related to the instructional program."

During the winter, Charles M. Cook, the head of the Commission on Institutions of Higher Education at the New England

Study Abroad

About 84,000 U.S. college students studied in foreign countries in academic year 1994-95. Which New England campuses sent the most students abroad? The following is a New England Board of Higher Education analysis of data from the Institute of International Education in New York City:

5,516	671	12%
29,025	655	2%
24,125	490	2%
1,790	301	17%
14,440	275	2%
2,016	261	13%
1,599	258	16%
12,414	249	2%
2,700	234	9%
2,171	186	9%
	Enrollment5,516	Total Enrollment Students Abroad



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Association of Schools and Colleges, sent a memo to college presidents outlining how the inspections would be conducted and assuring them that the Commission "has little enthusiasm for this new mandate."

Lecture Series

Spring commencement season brings the best and brightest to New England's colleges and universities for what is, in effect, a peerless lecture series. A sampling of Spring 1997 speakers:

U.S. Supreme Court Justice Ruth Bader Ginsburg and her husband, Georgetown University law professor Martin Ginsburg, Wheaton College;

U.S. Secretary of State Madeleine K. Albright, *Boston College* and *Harvard University*;

U.S. Attorney General Janet Reno, *Boston College*;

Former U.S. Labor Secretary Robert B. Reich, *University of New Hampshire*;

U.S. Ambassador to the United Nations Bill Richardson, *Tufts University*;

Former U.S. Ambassador to the United Nations Jeane J. Kirkpatrick, *Quinnipiac College*;

U.S. Sen. Edward M. Kennedy,
New England Conservatory of Music;

U.S. Sen. John Kerry and former Irish Prime Minister Albert Reynolds, *Suffolk University*;

U.S. Rep. John E. Baldacci of Maine, *Maine Maritime Academy*;

United Nations Secretary General Kofi Annan, Massachusetts Institute of Technology;

Former Israeli Prime Minister Shimon Peres and former Costa Rican President Oscar Arias, *Brandeis University*;

Nobel Peace laureate and Holocaust survivor Elie Wiesel, *University of Rhode Island*;

Hong Kong's Democratic Party Chairman Martin Lee, *College of the Holy Cross*;

Filmmaker Spike Lee, Emerson College;

Boston Globe columnist Mike Barnicle, University of Massachusetts at Amherst; Talk show host Oprah Winfrey, Wellesley College;

ABC news correspondent Lynn Sherr, University of Massachusetts at Boston;

Harvard Law School Professor Alan Dershowitz, Fitchburg State College;

Phoenix Home Life Mutual Insurance Co. CEO Robert W. Fiondella and Nobel physicist David M. Lee, *University of Connecticut*;

United Technologies Corp. CEO George David, *University of Hartford;*

Actress Whoopi Goldberg, University of Vermont;

Vermont Adjutant General Martha Rainville, the first woman to lead a state national guard unit, *Saint Michael's College*; and

Outgoing Bunting Institute Director Florence Ladd, *Regis College*.

A Woman's Place

Even in this, the land of Ella Grasso and Madeline Kunin, the 1996 election stands out for gains by New England women. When the last votes were counted, New Hampshire had elected its first woman governor, and women held one in every three of the region's more than 1,100 state legislative seats, including the powerful House speaker posts in both New Hampshire and Maine.

Women occupy 22 percent of state legislative seats nationally, but 32 percent in the Vermont, 31 percent in New Hampshire, 29 percent in Connecticut, 26 percent in Maine and Rhode Island, and 23 percent in Massachusetts, according to data from the Rutgers University Eagleton Institute of Politics.

In Hartford, women hold the posts of lieutenant governor, House majority leader and House minority leader. In Augusta, women serve as Senate majority leader, Senate minority leader and House majority leader.

The most prominent among last fall's women winners: Jeanne Shaheen, the Missouri native who captured 60 percent of the vote on the way to becoming the Granite State's first woman chief executive — and just the 14th woman governor in the nation's history.

Shaheen, a Democrat, earned degrees from

Shippensburg University in Pennsylvania and the University of Mississippi. She moved to New Hampshire in the 1970s and was elected to the state Senate in 1990. As a state senator, Shaheen championed health care reform, competition in the electric utility industry and public education. She vowed to eliminate New Hampshire's distinction as the only state that



N.H. Gov. Jeanne Shaheen (left) with Speaker Donna Sytek.

doesn't offer public kindergarten to all 5-yearolds — and immediately set to doing so.

Working with Shaheen in Concord is New Hampshire's first female House speaker, Republican Donna Sytek. A Massachusetts native and Regis College graduate, Sytek also moved to New Hampshire in the '70s. Now in her 11th consecutive two-year term in the House, Sytek has chaired key House committees and authored an amendment to the state constitution dedicating sweepstakes revenues to education.

Maine also elected its first House speaker in Elizabeth "Libby" Mitchell. A Democrat, Mitchell entered the Maine House in 1974 and was reelected to five consecutive terms before an unsuccessful 1984 bid to unseat former Republican U.S. Sen. William Cohen. (Both of Maine's U.S. Senate seats are now held by Republican women: Olympia Snowe and Susan Collins.) A resident of Vassalboro, Mitchell served as director and chair of the Maine State Housing Authority from 1986 to 1990, when she returned to the Legislature. Mitchell, a former teacher, guided Maine's landmark 1984 education reforms through the Legislature and chaired the Joint Committee on Education from 1992 to 1994.

Massachusetts has lagged. But in March, the *Boston Globe* reported that three well-

The surprising facts about the cost of student loans.*

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\$5,000	\$7,359	\$7,359	\$6,967
10,000	14,718	14,718	13,852
50,000	73,592	73,592	67,645

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here has been a good deal of confusion about the relative cost of student loans.

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customer service representatives are available 24 hours a day, seven days a week to help borrowers understand the options available.

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Sallie Mae has been helping make education possible with cost-effective student loans for many years. Our commitment is to continue to provide students the lowest cost loans with the highest level of service and to make the job of FAAs as hassle-free as is humanly possible. To find out which lenders offer the lowest cost loans nationally available, call 1-800-891-1406.

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known Bay State women, including former Senate Ways and Means Chair Patricia McGovern of Lawrence, were readying campaigns for statewide office.

Pilarims

Plymouth, Mass., is not exactly a college town. But it may soon be a hotbed of higher education cooperation.

No fewer than five colleges offer classes in scattered locations around Plymouth. Quincy and Fisher colleges have their own campuses in town, while Curry, Anna Maria and Eastern Nazarene colleges offer courses in rented facilities.

Town development director Michael Gallerani has developed a master list of local college courses as a first step toward creating a central Plymouth campus to be shared by several colleges.

Officials from the five colleges with a presence in town and others have been meeting regularly to discuss cooperation. Plymouth state Rep. Joseph Gallitano has filed legislation to help fund the project. And talks are underway about securing the site of an old county jail for the multicampus facility.

Native Americans

A Dartmouth College professor of history and Native American Studies is using a prestigious appointment to help faculty in other Dartmouth departments incorporate information about Native Americans into their courses.

Colin Calloway, who was born in England, will use the time and money provided by his fiveyear appointment as John Sloan Dickey Third Century Professor of the Social Sciences to help other Dartmouth faculty see how Native American issues fit in their syllabi — and to change the perception that Native American studies is only taught by and for Native Americans.

.....

Biotech Brewing

New England's biotech infrastructure is coming together.

The Biomedical Engineering Alliance of Central Connecticut, a consortium of the University of Hartford, Trinity College, the University of Connecticut and the UConn Health Center as well as hospitals and private companies, was recently awarded \$1 million by the Whitaker Foundation to support opportunities for students interested in biomedical engineering. And with \$750,000 from Whitaker, Yale University announced it would offer a bachelor's degree program in biomedical engineering, beginning in fall 1997.

Comings and Goings

Leo I. Higdon Jr., dean of the University of Virginia's Darden Graduate School of Business Administration and former vice chairman of Salomon Brothers, was named president of Babson College, effective July 1997. **Robert Freeman**, former director of the Eastman School of Music in Rochester, N.Y., became president of the New England Conservatory of Music. **Theodore C. Landsmark**, former director of the city of Boston's Office of Community Partnerships and dean of graduate and continuing education at the Massachusetts College of Art, was named president of the Boston Architectural Center.

Anthony S. Caprio, former provost at Oglethorpe University in Georgia, became president of Western New England College. Robert R. Rose, former vice president and dean of instruction at Galveston College in Texas, was named president of Massasoit Community College. Charles F. Monahan Jr., a Worcester, Mass., pharmacist and chair of the Massachusetts College of Pharmacy and Allied Health Sciences, became president of the college; Horace C. Moses III became chair.

John W. Raimo, art dealer and former associate vice chancellor for university advancement at the University of Massachusetts, became president of Montserrat College after serving as interim president. **Charles M. Lyons** became president of the University of Maine at Fort Kent after serving as interim president.

Brown University President **Vartan Gregorian** announced he would leave the post by July 1997 to become president of the Carnegie Corp. of New York, one of the nation's largest grantmaking foundations. Southern Vermont College President **William A. Glasser** announced his retirement, effective July 1997.

Northmark Bank President **Jane Walsh** became the first woman to chair Merrimack College's board of trustees. Advertising and marketing executive **Richard Doucette** was named chair of the Art Institute of Boston's board of trustees. **Pasquale Abbate**, a Hamden, Conn., businessman, was elected chair of Quinnipiac College's board.

Former U.S. Secretary of Labor **Robert B. Reich** accepted a tenured appointment as university professor at Brandeis University and professor of social and economic policy at the university's Heller Graduate School for Advanced Studies in Social Welfare. **Dr. David A. Kessler**, commissioner of the U.S. Food and Drug Administration under presidents Bush and Clinton, was named dean of Yale University's School of Medicine, effective July 1997. **Sheila Burke**, chief of staff to former U.S. Senate Majority Leader Bob Dole, became executive dean of Harvard University's Kennedy School of Government.

Bernard A. Margolis, former director of the Pikes Peak Library District in Colorado, became president of the Boston Public Library. **Phil Zarlengo**, former assistant superintendent of the Providence Public Schools and Rhode Island state education official, became executive director of the Northeast and Islands Regional Educational Laboratory at Brown University, one of 10 federally funded education research labs. **Laura Barrett**, former executive director of the Tax Equity Alliance for Massachusetts Education Fund, became executive director of the Cambridge, Mass.-based National Center for Fair & Open Testing.

Margaret Miller, chief academic officer with Virginia's state higher education agency and former University of Massachusetts at Dartmouth administrator, was named president of the American Association for Higher Education, succeeding **Russell Edgerton**, who joined The Pew Charitable Trusts. **Judith Eaton**, chancellor of the Minnesota State Colleges and Universities and former president of the Council for Aid to Education, was named the first president of the national Council for Higher Education Accreditation.

Rhode Island Gov. **Lincoln C. Almond** was elected 1997 chair of the New England Governors' Conference.

Sally C. Hoople, former professor of humanities and communications at Maine Maritime Academy, was appointed chair of the National Council of Teachers of English Committee on Public Doublespeak, which raises awareness of deceptive use of language.

D A T A C O N N E C T I O N

- Number of the 25 largest office buildings in Greater Boston that were built in the 1980s: 9
- Number built in the 1990s: 1
- Chance a New England family lives in poverty: 1 in 12
- Chance a New England family headed by an African-American lives in poverty: 1 in 3
- Number of U.S. institutions that offer doctoral programs in African-American studies: 3
- Minority students enrolled at New England colleges and universities in 1980: 45,901
- In 1994: **104,874**
- Percentage of U.S. executives who think Spanish is the most valuable second language in business: 63%
- Percentage who think Japanese is: 16%
- Percentage of students at public, two-year colleges who earn associate degrees within three years: 36%
- Percentage of students at public, four-year colleges who earn bachelor's degrees within five years: 45%
- Percentage of students at private, four-year colleges who earn bachelor's degrees within five years: 57%
- Percentage of first-year students at Maine's seven technical colleges who had some prior college experience before enrolling in fall 1996: 41%
- Percentage of 1990 entering class who had some prior college experience: 25%
- Percentage of first-year students at Washington County Technical College in Calais, Maine, who receive some form of financial aid: 95%
- Percentage change in total college enrollment in Connecticut, fall 1995 to fall 1996: -1.3%
- Percentage change in total college enrollment in Rhode Island: -2.3%
- Percentage change in New Hampshire: +10.3%
- Number of applicants offered admission to Harvard's Class of 2001: 2,040
- Number of high school valedictorians who applied: 2,672
- Percentage of molecular biologists who believe the public does not appreciate the value of their research: 73%
- Percentage of 1992 science or medical journal articles by Massachusetts scientists in which the lead author had a financial interest in the research, including a patent on subject of the article: **34%**
- Increase in number of science majors at Connecticut College, 1990 to 1995: 40%
- Registration fee, not counting accommodations, for the two-day 1997 MIT Research Directors Conference, designed to preview Massachusetts Institute of Technology research and critical R&D trends: \$1,250
- Rank of education among most important quality of life issues to senior executives making business location decisions: 1
- Rank of taxes: 9

Sources: 1,2 NEBHE analysis of Boston Business Journal data; 3,4 Federal Reserve Bank of Boston; 5 University of Massachusetts at Amherst (The three are UMass-Amherst, Temple University and the University of California at Berkeley.); 6,7 U.S. Department of Education; 8,9 Accountemps; 10,11,12 ACT; 13,14,15 Maine Technical College System; 16,17,18 American Council on Education; 19,20 Harvard University; 21 Pharmacia Biotech; 22 Sheldon Krimsky, Tufts University; 23 Connecticut College; 24 Massachusetts Institute of Technology; 25,26 Arthur Andersen

New Economy Demands New Creativity in Washington and in the States

JOHN C. HOY

oday's knowledge-intensive New England economy has evolved over the past half century in no small measure as a beneficiary of federal initiatives focused on higher education and scientific research.

In 1947, as America emerged from two decades of depression and war, the most significant baby boom of the century was underway, and so was a higher education boom. As veterans took advantage of G.I. tuition stipends and government living allowances, New England campuses saw enrollments double. The G.I. Bill was transforming the landscape.

But even in that era of postwar optimism, Harvard President James B. Conant warned: "Anyone familiar with education knows that for a very considerable portion of the population, it is the family financial status which places a ceiling on the educational ambitions of even the brilliant youth. The oft-repeated statement in certain smug circles that 'any boy who has what it takes can get all the education he wants in the USA' just isn't so; it is contrary to the facts."

Nonetheless, the G.I. Bill changed the college aspirations of Americans forever.

Around the same time, a bill to create the National Science Foundation (NSF) was moving through Congress at the urging of Conant's colleague, Carnegie Institution President Vannevar Bush. Said the former MIT engineering dean of the bill: "It can go a long way toward providing that quality of higher education opportunity which we need to superimpose upon our educational system as a whole in order to adapt it for our true purposes in this world of threats."

President Truman signed the law creating the NSF in 1950. Within the decade, the escalating Cold War confirmed Vannevar Bush's fears and provided impetus for increased federal support of education and science. Perhaps sensing the global nature of the economy to come, Truman also approved the Marshall Plan and creation of the Fulbright program, which would become the nation's foremost international exchange program.

After retiring from Harvard, Conant in 1957 undertook a two-year study of the American public high school at the request of Carnegie Corporation President John Gardner. The insights that emerged helped ensure passage of the National Defense Education Act, signed by President Eisenhower in 1958, creating the federal government's first low-interest student loans — known then as National Defense Student Loans, later called National Direct Student Loans and more recently renamed Perkins Loans.

Five years later, the complex political process initiated by President Kennedy led ultimately to Lyndon Johnson's full-court press for passage of the Elementary and Secondary Education Act, the Economic Opportunity Act and the landmark Higher Education Act of 1965.

In 1972, under President Nixon, Congress authorized Basic Educational Opportunity Grants, later renamed for Democratic U.S. Sen. Claiborne Pell of Rhode Island. Pell Grants quickly became the mainstay of America's commitment to higher education for the lowestincome students. But the grants have failed miserably to keep pace with rising college costs.

Under Presidents Ford and Carter, Washington increasingly viewed education as a priority issue, which culminated in the creation of the U.S. Department of Education under Carter. But also during the Carter years, a significant shift began taking place in the federal student aid portfolio.

Indeed, Carter and Congress accepted rising student debt as the new price of educational access. Various assaults on aid during the Reagan administration, followed by higher education policy drift during the Bush administration and more recent expansions in loan eligibility have dramatically tilted the balance away from grants and toward loans. In the mid-1970s, grants accounted for about 80 percent of all federal student aid; today, loans account for 80 percent.

Despite Conant's warning, access to higher education has become increasingly dependent upon family wealth or the ability to repay loans. One result: in 1979, a student from the top onefifth of family income was about four times more likely than a student from the bottom fifth to earn a bachelor's degree by age 24, according to an analysis by Iowa higher education consultant Thomas G. Mortenson. By 1994, the student from the top fifth was 10 times more likely.

Which bring us to the current deliberations in Washington encompassing President Clinton's education-related tax and budget proposals, the reauthorization of the Higher Education Act, the fate of scientific research in the post-Cold War era, and recollections of the G.I. Bill.

The way these issues are hammered out in the 105th Congress will have a profound impact on New England's 260 colleges and universities and their 800,000-plus students — and certainly on the region's evolving knowledge economy.

Of course, the region's fate does not rest entirely in Washington. Long before devolution was in fashion, states were partners with the federal government in the provision of student financial assistance. Yet the nation's most affluent region is also the stingiest in this respect. New England's state legislatures allocated just \$7.63 per capita in student scholarships and grants last fiscal year, compared with \$11.70 nationally.

Conant's concerns of 50 years ago ring true today. But the numbers have changed — dramatically. Harvard's tuition back then was \$500; the University of Connecticut's was \$100. Today, the figures are \$20,000 and \$4,000, respectively. A half century after the nation heeded Vannevar Bush's dire warnings about our technological capacity, science funding is in jeopardy. And as President Clinton traveled to Europe to mark the 50th anniversary of the Marshall Plan, the Fulbright program faced budget cuts.

Clearly, New England's knowledge economy, if it is to thrive, requires a stepped-up commitment to education — in Washington and in the states.

John C. Hoy is president of NEBHE and publisher of CONNECTION.

BUILDING THE KNOWLEDGE ECONOMY

JOHN O. HARNEY

here New England's hightech giants once churned out clunky minicomputers, a new breed of entrepreneurs is designing the next-generation Internet, road-testing clean electric cars and brewing cancer-fighting drugs. The clang of the machine shop has subsided; the new economy marches to the squeal of the modem. Brainy college graduates are in demand; brawny high school graduates are not.

With its critical mass of cutting-edge research enterprises and skilled labor as a foundation, New England has weathered a severe recession and resumed the task of building a "Knowledge Economy." But it is very much a work in progress, contingent upon continuous rejuvenation and reinvention. CONNECTION'S Cover Stories explore a few of the issues that are shaping the next phase of construction.

- Without an educated workforce, there can be no knowledge economy. Terry W. Hartle, vice president of the American Council on Education and former education staff director of the U.S. Senate Committee on Labor and Human Resources, examines how looming changes in federal higher education policies present the nation's most higher education-intensive region with benefits - and risks. Page 14
- Workforce training programs alone offer no guarantee that New England's inner-city and rural populations will have access to the education and job opportunities of the new economy. University of Southern Maine Professor Charles S. Colgan explores the balance between "people prosperity" and "place prosperity." Page 19
- The knowledge economy is thriving in "edge cities" and along "connective corridors." Salem State College President Nancy D. Harrington describes how one state college is building technological capacity on Boston's North Shore — and laying the

groundwork for corridor growth between Boston and southern New Hampshire.

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■ The knowledge economy demands innovative policies to move New Englanders from declining industries like defense to growing industries such as software. Yolanda K. Kodrzycki, senior economist at the Federal Reserve Bank of Boston, analyzes the impact of retraining on the New England labor market.

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- New England's knowledge businesses need topnotch schools. But business people with the school reform bug sometimes get stung. Susan K. Moulton, vice president of the Massachusetts Biotechnology Research Institute, reflects on the search for collaboration among businesses and schools. Page 26
- The demographic profile of college students has changed dramatically. And so has the job market they will enter upon graduation. University of Massachusetts at Boston Chancellor Sherry H. Penney explains why higher education had better change too.

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Washington Gets into the Higher Education Act

TERRY W. HARTLE

id to higher education will be a central policy issue in the nation's capital during the next two years — and New Englanders will be watching carefully. Both President Clinton and congressional Republicans have introduced tax proposals to help middle-class families pay

college tuition. And the impending reauthorization of the Higher Education Act, the omnibus legislation that has governed federal higher education policy since 1965, will bring more attention to the issue.

It is hard to anticipate the twists and turns the debate over these proposals will take. Clearly, however, the discussion will be shaped by the recent history of federal student aid policy and by several specific issues policymakers have already identified.

Where we've been

When Congress began the last reauthorization of the Higher Education Act in 1991, lawmakers were pursuing four overarching goals.

First, they wanted to address the so-called grant-loan imbalance by reducing the growing reliance on student loans and increasing the use of grants for the financially neediest college students. The most widely discussed proposal to accomplish this was to turn the federal Pell Grant program into an entitlement, so low-income students would no longer be at the mercy of Washington's annual appropriations process.

Second, Congress wanted to increase the aid available to the middle class, partly because lawmakers assumed that doing so would boost political support for student assistance in general and make it easier to secure big funding increases for the programs that help low-income students.

Third, Congress hoped to simplify the process of applying for student aid so students and families would find it a less daunting task.

Finally, Congress desperately wanted to reduce student loan defaults. Several consecutive years of default costs exceeding \$2 billion had ignited controversy on Capitol Hill and produced a series of hearings strongly critical of the U.S. Department of Education. Failure to take aggressive action, many observers believed, would threaten the future of the entire federal student loan program.

As often happens when Congress tackles an ambitious and complicated task, the results were mixed: some problems were fixed; others got worse. Congress did increase the amount of student aid going to the middle class by: expanding eligibility to participate in the student loan program; increasing loan limits; eliminating home and farm equity from calculations of financial need; and introducing a very modest direct lending pilot program, permitting colleges to provide loans directly to students using U.S. Education Department funds.

But these steps created other problems. Expansion of the loan program, combined with the failure to win entitlement status for Pell Grants, actually worsened the grant-loan imbalance. In 1992-93, 34 percent of federal student aid was in the form of grants and 66 percent was in the form of loans. Three years later, the breakdown had slipped to 23 percent grants and 77 percent loans. The cost of correcting this problem is substantial — just restoring the grant-to-loan ratio that existed in 1992 would require \$5 billion a year in additional federal funds.

The process of applying for financial assistance did become much simpler. In 1992, Congress mandated a single, free form to determine eligibility for aid. Colleges can use a supplemental form for the allocation of institutional aid if they wish, but most students now face a far simpler process. In addition, Congress mandated a single student loan application. Until 1992, every state guaranty agency had its own form. Some schools confronted 30 or 40 different applications for the same federal program in the course of a single year. That no longer happens.

Congress also made strides in reducing student loan defaults by tightening institutional eligibility and lowering already existing triggers that made schools with high default rates ineligible to participate. The results were dramatic. In 1990, \$12 billion was borrowed in the federal student loan program and \$2 billion was spent on defaults. By 1995, \$25 billion was borrowed and just \$250 million was spent on defaults.

Clinton's record

Student aid has continued to be on the public policy agenda since the last reauthorization. The AmeriCorps program, for example, was proposed by the Clinton administration as a way to help students pay for college. About 40,000 young people have benefited from this initiative. And in 1993, the direct lending program was sharply expanded, and income-contingent loan repayment introduced, as simple ways to make student loans available and ease the burden of repayment. Currently, more than 1,600 schools participate in the direct lending program.

Student aid will continue to be a central policy issue in the second Clinton administration. Discussion is likely to focus on three initiatives that would represent major departures in student aid policy.

First, the president has called for a \$10,000 tax deduction to help middle-class families — with adjusted gross incomes below \$100,000 — pay college tuition.

Secondly, the president has proposed to give families who do not use the deduction a \$1,500 tax credit to help them pay for the first two years of college, with the second year of the credit contingent upon the student's maintaining a minimum B-minus average. Known as the Hope Scholarship and modeled after an identically named program in Georgia, this plan is designed to give students enough money to cover the cost of a community college education.

Taken together, the president's tax plans would provide an estimated \$35 billion in tax relief over six years.

The president also has proposed a new program that would give \$1,000 merit scholarships to students who graduate in the top 5 percent of their high school classes. This initiative would not require that students demonstrate financial need and would represent the first time that academic achievement alone was the basis for a large scale, widely available federal student aid program.

Higher education analysts have raised reasonable concerns about each of these plans, and all can be improved. Nonetheless, these proposals all represent significant departures from traditional federal student aid programs. Indeed, the range of new ideas emanating from the administration is stunning. The new initiatives to help families pay college bills potentially are as significant as the Morrill Act that laid the groundwork for America's land grant universities in the mid-19th century or the GI Bill that changed the face of higher education by giving veterans the chance to go to college with tuition fully paid.

105th Congress

Finding ways to use the tax code to help students and families meet college costs was a popular issue early in the 105th Congress. In addition to the president's tax proposals, the Republican and Democratic leadership in both the House and Senate proposed education-related tax cuts. Only the Democratic bills include the president's plans, but both parties propose some common strategies: making employer-provided education benefits tax-free for graduate and undergraduate students; letting families use money in Individual Retirement Accounts (IRAs) for college education; and reinstituting the deductibility of student loans. All these

More than 60 percent of current members of Congress were not in office the last time the Higher Education Act was reauthorized.

provisions have extensive support within the higher education community.

Not surprisingly, President Clinton's tax proposals have attracted great attention. At congressional hearings, economists and educators have debated the merits of the plans. The concerns that have been raised include: the desirability of relying on student grade point averages to determine eligibility for a tax benefit; the impact of the tax benefits on students from low-income families; and the possibility that, if the plans are approved, colleges will increase the price of education, and the average family will not realize any benefit.

In an attempt to address the latter concern, higher education officials have pointed out that previous federal aid has not had such an effect, nor has the Hope Scholarship program in Georgia resulted in increases in the cost of higher education.

The Clinton administration's commitment to the plans is very significant. The president has repeatedly cited aid to middle-class families to pay college bills — along with a balanced federal budget and health insurance for low-income children — as a top priority for his second term.

Indeed, the May 1997 agreement between the White House and congressional leaders to balance the federal budget by the year 2002 explicitly includes \$35 billion in "education tax cuts." But not enough money is set aside to fund the president's plans, make the changes that the higher education community would like (such as increasing aid for low-income students and eliminating the B-minus average requirement from the Hope Scholarship program), and enact the education tax proposals (like restoring the deductibility of student loan interest) that are popular on Capitol Hill. So changes and compromise will be inevitable.

Nonetheless, if the balanced budget deal is ultimately approved by Congress, it will include significant provisions to help families and students pay for college.

Notably, proposals that would change the tax code will fall under the jurisdiction of the House Ways and Means and Senate Finance Committees. For the most part, these committees are strangers to the complex world of financing higher education.

Reauthorization of the Higher Education Act, meanwhile, will proceed in the traditional fashion, with the Senate Labor and Human Resources Committee and the House Committee on Education and the Workforce (formerly Education and Labor) conducting extensive hearings before rewriting the legislation. These committees will begin work in the spring and are not likely to finish until next year.

Reauthorization

Unlike the groundbreaking debate likely to occur in the tax committees, the higher education reauthorization seems likely to focus on improving existing policies. There is plenty to do. The size of the federal student aid programs increased sharply in the 1990s, and the advent of direct lending and income-contingent repayment in 1993 have further complicated an already-tangled skein of programs and initiatives. Reviewing the existing programs and rationalizing the federal activities will be a major undertaking.

At present, five issues seem certain to attract congressional attention.

The future of federal student loans will be a central concern. For the past two years, Congress and the White House tangled over direct lending. The election seems to have settled that debate for now — both direct lending and the traditional bank-based program are likely to continue for the foreseeable future since neither the president nor Congress has the political muscle necessary to impose its will. Such a scenario is in the best interest of students and colleges. The competition between direct lending and the banks has resulted in widespread improvements in the administration of student loans.

Congress will probably focus on a set of issues that are

collectively known as the "level playing field." Direct lending and the bank-based program each enjoy some advantages. For example, it is easier to apply for a direct loan, and direct lending gives borrowers the option of income-contingent repayment. The bank-based program, in contrast, gives lenders the option to reduce borrower fees and interest rates. Advocates of both

Clout?

Six of the 16 members of the U.S. Senate Labor and Human Resources Committee are from New England.

The New England members are: Chair James Jeffords (R-Vt.); **Ranking Minority** Member Edward M. Kennedy (D-Mass.); **Christopher Dodd** (D-Conn.); Judd Gregg (R-N.H.); Jack Reed (D-R.I.); and Susan Collins (R-Maine).

programs would like to remove the advantages enjoyed by the other and keep their own. Whether Congress can ever define a truly level playing field is unclear, but it will probably try. The best course of action may well be to recognize the particular strengths of each program and allow schools to continue to choose which program best meets the needs of their students.

A related question is whether federal student loan limits should be increased. One side of this argument holds that federal loans are the cheapest source of capital for students, and increases in federal loans will reduce borrowing from more expensive private sources. The other side of the argument holds that if borrowing limits are increased, students will surely borrow more money than they do now. In an era when some observers believe that many students already borrow too much to finance their education, there is great reluctance to increase the opportunity for casual borrowing.

A second issue on the congressional radar screen is the price of college. Many members of Congress believe that rapidly rising costs threaten to put a college degree out of the reach of all but the wealthiest Americans. While there are few federal policy options in this area, some see this as an area

where widespread public anxiety will generate political attention. One specific issue that is likely to be addressed is the possibility that federal student aid actually increases the cost of college. The analytic evidence is clear and unambiguous: federal student aid does not increase the price of college. Nonetheless, the idea remains an "urban legend" that will not die and, unfortunately, may enjoy renewed attention in the year ahead.

A third concern centers on accountability and student outcomes. Federal policymakers spent a great deal of time during the past decade trying to make certain that only high-quality schools participate in federal student aid programs. So anxious was Congress to address this issue in the last reauthorization that it launched what may well be the least successful policy initiative in the history of federal student aid — the State Postsecondary Review Entities, popularly known, and reviled, as SPREs.

Given the complexity and confusion resulting from the SPRE fiasco, Congress will not breathe new life into these moribund state agencies. Nor will the administration — which vigorously supported SPREs for a while — call for their resurrection. Still, policymakers will not abandon the effort to

National Model?

A Massachusetts proposal to make interest on undergraduate student loans partially taxdeductible may have national implications. Citing the Bay State's poor funding of student aid, state Sen. Cheryl Jacques of Needham filed legislation to extend the tax break to all state residents regardless of where they attend college. Beacon Hill staffers predict other states will follow.

limit loan defaults, and this could lead Congress to consider a greater regulatory role for accrediting agencies and the Education Department itself.

The role played by accrediting agencies in determining institutional eligibility to participate in federal student aid will undoubtedly be examined. As higher education officials see it, the private,

voluntary accreditation agencies were never designed to be gatekeepers for federal benefits and have only a modest role to play. To policymakers, however, the agencies appear to be the only way to protect the public interest short of heavy-handed federal regulation of academic quality. In the 1992 Amendments to the Higher Education Act, a Congress that did not understand these agencies well imposed new responsibilities on them and increased federal oversight. Some of the new assignments — such as monitoring the use of federal student aid funds — go well beyond the expertise of the

accrediting agencies. Whether Congress can draw a better balance in this area in the future remains to be seen.

Congress is also likely to consider support for graduate and professional education. For many years, three programs in Title IX of the Higher Education Act — Graduate Assistance in Areas of National Need, the Harris program and the Javits program — represented a small but significant federal commitment to graduate education. Unpopular with the Republican Congress, the Harris and Javits fellowships have been effectively terminated. Whether Congress can be persuaded to reinstate these or similar programs or to help all graduate students by focusing on the general student aid programs is an open question.

Finally, Congress will consider the role of the campus-based programs — Federal Work-Study, Supplemental Educational Opportunity Grants and Perkins Loans — in helping students meet college costs. While the programs are popular on campus, few federal policymakers understand how they work or appreciate their value. Moreover, the formula used to distribute funds greatly favors colleges that have participated in the programs for many years. Not surprisingly, institutions that joined the programs more recently and receive considerably less money want to change the formula, while those who signed up years ago and benefit substantially from the current formula want to protect the status quo.

Implications for New England

Higher education is a larger part of the New England economy than in any other region. Any major changes in federal student aid will involve both risks and benefits for New England.

The Clinton administration's tax proposals, for example, are designed to help the middle class meet college costs. Since New England's colleges tend to be more expensive than the national average, this will help the region's campuses significantly. But the concern that such plans may increase the price of college will raise touchy questions that higher education is often reluctant to address.

The reauthorization of the Higher Education Act, while perhaps less dramatic than the president's tax proposals, will also be of critical importance. Loans are vitally important to the middle class, and many students could not afford higher education without such assistance, particularly at expensive colleges. How Congress resolves the many student loan issues will be of enormous importance to New England.

Similarly, graduate education is a larger part of higher education in New England than anywhere else and the disappearance of current programs would be felt in the region's universities. And New England's colleges benefit handsomely from the campus-based student aid programs. Changes in

Clinton's "Unprecedented Commitment" to Education

The Clinton administration's fiscal 1998 budget package would:

- · Raise the maximum Pell Grant for lowerincome students from the current \$2,700 to \$3,000 for academic year 1998-99.
- · Cut student loan origination and insurance fees, saving students \$2.6 billion over five years. The fees currently total 4 percent for all borrowers, down from a maximum of 8 percent in 1993.
- Increase Federal Work-Study funds by \$27 million as part of a larger plan to make Work-Study available to 1 million students by the year 2000, while level-funding Supplemental Educational Opportunity Grant and Perkins Loan programs and eliminating funding for the State Student Incentive Grant program.
- Introduce Hope Scholarships, providing a nonrefundable tax credit of up to \$1,500 against tuition payments for fulltime students and \$750 for part-time students during freshman year, with sec-

- ond-year awards contingent on students earning at least a B-minus average and staying off drugs.
- Introduce a \$10,000 annual tax deduction for families to pay for college or training, to be phased in starting at \$5,000.
- · Allow tax-free withdrawals from IRAs for the purpose of education.
- · Restore the tax-free status of employerprovided education benefits (Section 127) through the year 2000.

Clinton has made an "unprecedented commitment to higher education" according to C. Peter Magrath, president of the Washington, D.C.-based National Association of State Universities and Land-Grant Colleges.

An official of the Council of Graduate Schools added: "We may be entering one of those curious periods in which both parties are competing to provide additional support and or tax benefits for education.'

But some observers in and out of Congress warn that the proposed tax deductions aimed at middle-class families signal a retreat from Clinton's earlier goals of expanding access to higher education for lower-income students - and could give states an incentive to tighten up on appropriations for higher education.

Critics also note that the financial benefit for families in tax savings comes long after tuition bills are due. And some say that the proposed Hope Scholarship's provision that students maintain a B-minus average would be difficult to administer and could lead to grade inflation.

Still others worry that more federal aid will fire up tuition hikes, as colleges chase the newly available funds. To the contrary, higher education lobbyists in Washington contend, tuition increases have been fueled largely by the need to increase institutional aid funds for needy students.

the formula used to distribute these funds would have a particularly negative impact in New England.

The region will start with important assets in these discussions. New Englanders are well positioned on several key committees where these issues will be debated — especially the Senate Labor and Human Resources Committee, which counts among its members one senator from each state in New England. Moreover, the long and distinguished history of higher education in New England and the fact that many alumni of New England colleges and universities are in key positions in the federal government — the president and vice president come to mind — give the region another important resource.

But the public policy world has changed dramatically since Congress last looked at federal support for student aid. A different political party controls both houses of Congress and new committee chairmen are already asking hard questions. And many new members have been elected; more than 60 percent of current members of Congress were not in office the last time the Higher Education Act was reauthorized. Furthermore, the overarching goal of balancing the budget means that cutting spending will remain the central policy goal of the federal government. Expansions in one federal policy arena will mean cuts somewhere else. When one pro-

gram is expanded, another will be reduced. Such tradeoffs can create unexpected problems: Would New England higher education trade an increase in student aid if it meant less federal money for research and development?

The public policy freeway is always under construction and predictions about where it's heading are hazardous. Who, for example, would have forecast that the "Republican Revolution" following the 1994 elections would result in sharp increases in federal spending for both student aid and research two years later? Thus, while it is possible to define the issues that will attract attention in the years ahead, it is impossible to speculate about what the highway will look like when the engineers are finished at the conclusion of this Congress.

If the policy debates can be maddeningly complex, the political process is ultimately straightforward. The public, by its actions, determines the outcome. Those parts of the public that organize themselves, educate the individuals who represent them and monitor developments are much more likely to be successful than those who sit on the sidelines and observe. You can't win if you don't play.

Terry W. Hartle is vice president of the American Council on Education.



People and Places: Geography of Workforce Development in New England

CHARLES S. COLGAN

he increasing attention being paid to workforce development — education, training and retraining — is the product of two factors. One is the rapid economic change created by the interplay between technology development and competitive forces such as deregulation, globalization and economic growth. The other is concern about the growing economic disparities between well-educated, trained workers and those with little education or outmoded skills.

For New England, the imperative of having a first-class job training system in place is obvious. Just as New England innovations in textile production and shipbuilding were keys to the region's preeminence in the 19th century, the regional economy today depends upon technological innovations particularly in fields such as electronics and more recently, biotechnology. This has created demand for a highly educated and skilled workforce that is second to none.

But renewed interest in workforce development raises old questions about the conflict between people prosperity and *place prosperity.* The problem is that economic development strategies such as lowering taxes or subsidizing investment may make a region appear better off without really benefiting the people who live there. For example, by luring textile manufacturers from the North with tax breaks and subsidized financing, Southern states made their economies seem better off, but many mill workers would disagree. Workforce development promises to resolve this conflict. As highly skilled workers contribute more to the economy, the places where they live will benefit.

This view has much evidence to recommend it. But the workforce development model cannot be considered a sufficient strategy for certain areas where the interaction between economic and geographic mobility is complex.

Consider, for example, a case where economic and geo-

graphic mobility are both low. In 1996, two apparel plants closed in rural Maine: one in Corinna, in southwestern Penobscot County; the other in Fort Kent, at the northern end of Aroostook County. Both were major employers in their communities. The more than 700 employees laid off by the two plants are typical of the workers for whom job training is believed to be most critical: middle-aged workers who had been employed in the mills for years and had little contact with or training in modern technology, and thus no economic mobility when these jobs disappeared.

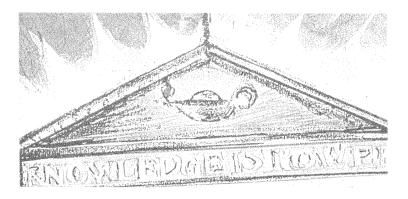
The evidence pointing to the importance of an educated and skilled workforce to any region's economy is so overwhelming that it cannot be ignored. But New Englander. should not assume that workforce development efforts are enough to ensur that both people and places prosper

These workers also have low geographic mobility. They have no easy access to workforce development sites. Corinna is located 30 miles from Bangor and Waterville, the nearest cities. While Fort Kent hosts the smallest University of Maine campus, it is 64 miles from the nearest city, Presque Isle.

Even if they were retrained, these workers probably would face a lack of local jobs for which their new skills would be applicable, because the mills were the chief manufacturing facilities in the vicinity. Finally, community ties, kinship, culture and the investment already made in housing tether people to locations and limit their mobility. As the jobs disappear, housing prices decline, making it even more difficult to move to higherpriced housing markets where jobs are more plentiful.

Now consider the situation where geographic mobility is high, but economic mobility is low. This occurs at the opposite geographic pole from Corinna or Fort Kent, Maine, in the middle of most of New England's urban areas. In the midst of every urban center are concentrations of poverty where a combination of racial, ethnic and linguistic minorities live in what amounts to an island of economic stagnation in a larger sea of economic growth. Geographically, there are few barriers between the two. But the cultural barriers may be enormous.

Finally, there are instances where economic and geographic mobility are both high — perhaps as a result of successful workforce development efforts — but the results from a "place" perspective are not entirely desirable.



The economic justification for public investment in workforce development is that private companies are likely to underinvest in this endeavor, fearing that a worker they spend time and money training may just pack up and leave for another company. People in rural areas of New England often apply similar logic to education expenditures. Why educate people for jobs that aren't there? Why spend a lot on education when educated people will just move away?

For rural areas, the result of greatly increased economic mobility could be a significant decline in population. If the population loss were large enough, it would create a selfreinforcing downward spiral for whole sections of rural New England. Similarly, in urban areas of concentrated poverty, people with the greatest economic mobility leave in search of rewards for their increased skills, leaving behind a population increasingly characterized by a lack of both economic and geographic mobility.

Importantly, it is not only the labor market within New England that reveals this complexity. A number of key skill areas are competitive nationally. Boeing Corp., for example, recently bought time on Boston radio stations to advertise for engineers. These job openings were not for a new branch of the company in New England, but for the company's operations in and around Seattle.

Increased labor mobility will have its most visible and immediate effects in the economies of inner cities and rural areas, but could influence the entire New England economy.

The evidence pointing to the importance of an educated and skilled workforce to any region's economy is so overwhelming that it cannot be ignored. And workforce development should be a priority. But New Englanders should not assume that workforce development efforts are enough to ensure that both people and places prosper.

Workforce development cannot be divorced from — or substituted for — efforts to improve the access of those in rural areas to the education and job opportunities that characterize the modern economy. One way to improve access is to expand efforts to upgrade the telecommunications infrastructure in rural areas so that delivery of training and education can be expanded and the jobs that depend upon rapid, high-quality communications — which increasingly describes most jobs — can have a place in rural areas.

The ability of telecommunications to cut distance, however, is a two-edged sword. This dynamic creates some opportunities, but also makes possible the transfer to urban areas of a number of services — such as health care — that currently must be provided in rural areas. Indeed, telemedicine will save some rural health care jobs by increasing skill level needs, while allowing others to be transferred to urban medical centers as part of health care cost-cutting.

Nor can workforce development be separated from or substituted for community development efforts in urban areas. In those settings, a combination of efforts to develop job opportunities, improve housing, prevent crime and foster a sense of community can integrate the poor into the larger society and transform areas of concentrated poverty.

In the end, of course, "places" are not prosperous; people are. The challenge facing workforce development efforts aimed at increasing opportunities for people prosperity is to make sure that the places in which people live reinforce and expand those opportunities rather than counteracting and diminishing them.

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Salem's New Lot?

A Former Teachers College, Salem State Looks to Boost Technology on Boston's North Shore

NANCY D. HARRINGTON

n the late 1970s and early 1980s, high-tech businesses on Boston's North Shore — among them, Analogic Corp. in Peabody, Bostick Inc. in Middleton and Eaton Corp. in Beverly — demanded an increasingly sophisticated and highly trained workforce. In response, Salem State College, the area's largest higher education institution, began to broaden its mission beyond pure teacher education to match emerging workplace needs.

In the early '80s, the college developed state-of-the-art programs in geographic information systems, geology, management information systems and graphic design. At the same time, part-time older students, often seeking advanced degrees, accounted for an ever-growing part of Salem State's enrollment. Indeed, graduate enrollment more than tripled from around 400 in 1986 to nearly 1,300 in 1996.

In addition, Salem State has launched a variety of initiatives to support a growing local economy. For example, on nearby Cape Ann, college faculty members are working with state and community leaders to develop aquaculture as an alternative to the traditional fishing industry, which has been battered by overfishing. The Small Business Development Center at Salem State provides no-fee counseling and support services to people interested in running businesses on the North Shore, many of them minorities. And geology and biology faculty and students are working with local and state officials to clean up Chebacco Lake in nearby Hamilton.

But now, the changes at Salem State are speeding up dramatically. This spring, with the help of a special \$4.5 million state appropriation, the college plans to finalize its purchase of the 37.5-acre former GTE/Sylvania manufacturing site in this historic seacoast city of roughly 40,000 people. The availability of approximately 400,000 square feet of high-quality industrial space in close proximity to the campus provides an opportunity to rethink the college's traditional relationship to the business community.

Changing role

Last year, Salem State asked noted New England economist James M. Howell to help define the college's role in a North Shore economy characterized by technology-based growth, particularly in light of the planned acquisition of the GTE/Sylvania property.

As part of this process, it became clear that Salem State does not have a strong tradition of engineering and basic scientific research. Nor does the college aspire to become a major research institution. But it does need to develop increased technological capacity to adapt to the new realities of the labor market, the career needs of students and the economic aspirations of Salem and the North Shore. The college learned, for example, that regional makers of computer components — unable to find sufficient numbers of trained electronic specialists — recruit talent in Newport News, Va., where Navy-trained specialists are in ample supply.

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Reflecting the labor market mismatch, Salem State has adopted a strategy that takes into account the industrial growth emerging along the corridor stretching from metropolitan Boston to southern New Hampshire and focuses not on basic scientific research, but on technological "capacity-building."

It should be noted that during the past three decades, as much as three-quarters of U.S. economic growth has occurred along "connective corridors," which, in turn, have spurred the growth of "edge cities." Burlington, Mass., for example,

emerged as an edge city in the corridor along Route 3, connecting the Boston-Cambridge growth pole with the Nashua, N.H., growth pole. Salem's future growth may be marked by more easterly corridor-filling between Boston and southern New Hampshire along routes 1 and 95 as well as 128.

The development of an applied technology capacity at the college will not only encourage development and expansion of technology-driven companies on the North Shore, but also will create fresh educational demand from nontraditional student populations and provide new revenue sources for the college, as well as expanded opportunities to form linkages with the business community.

How will Salem State build its technological capacity? First, the college is transforming itself into a truly regional institution. The new Salem State College Assistance Corp. formed to develop the GTE/Sylvania site includes the mayors of Salem and Beverly as well as representation from the Salem Chamber of Commerce and business leaders around the North Shore.

Second, a new Technology Liaison Office will report to the president of the college. The appointment of a technology liaison officer with a scientific or technical background and experience working with startup companies is the first step in



the process of technological capacity-building. This officer will serve as a link to technology companies on the North Shore, helping define educational needs and developing college programs in response. Notably, the technology liaison officer will also work with regional venture capital firms to identify startup companies that could benefit from the GTE/Sylvania site's low cost research space and convenient access to Salem State faculty and other college resources.

Third, the college will develop advanced certificate programs to meet the needs of area companies. Specialized training programs will be designed to address regional labor market bottlenecks in significant North Shore industries such as tool and die manufacturing and medical devices. The skilled professionals who teach the certificate programs will form the initial core of a technologically skilled resource base for the college.

Fourth, the college will offer a series of industry seminars with nationally known speakers addressing key issues in selected industries. Based on Salem State's successful national speakers program, which has attracted George Bush, Colin Powell and Ann Richards, this industry series will become an important resource for companies on the North Shore and in southern New Hampshire in much the same way that the Boston College Citizens Seminars have become a focal point for discussion of civic issues in the Boston area.

Finally, Salem State is exploring the possibility of introducing technology-related degree programs in fields such as engineering processing. The core of these specialized degree programs would be taught by Salem State faculty. More advanced industry-related training could be provided perhaps by academic partners drawn from research universities in Boston.

During the past three decades, manufacturing employment in Salem has declined by 45 percent. Meanwhile, nonmanufacturing employment has grown by just 64 percent in the city, compared with 105 percent growth statewide and 142 percent nationally, despite the presence in Salem of revered museums, the courts, a significant medical complex and the college. Of all these venerable institutions, Salem State College alone has the ability to stimulate technology-based growth and to propel Salem and the North Shore into the knowledge-based economy of the future. The college's technological capacity-building strategy is designed to do just that.

Nancy D. Harrington is president of Salem State College.



Retraining and the New England Labor Market

YOLANDA K. KODRZYCKI

raining has been seen as a vital part of the adjustment process for laid-off workers.

Accordingly, the Clinton administration in 1994 proposed extended unemployment insurance benefits for displaced workers who were making satisfactory progress in training or education programs approved by an authorized state agency. And bills to create enhanced training opportunities continue to circulate on Capitol Hill. But many in the Republicancontrolled Congress are not so sure the investment in training is worthwhile. And last spring, a review of government-sponsored training programs in *The Economist* magazine noted that "there is remarkably meager support for the hypothesis that such programs are effective."

So how effective are training programs for displaced workers?

The experiences of roughly 20,000 displaced Massachusetts workers offer some answers. These workers lost their jobs in a variety of industries from 1991 through 1994, in most cases through mass layoffs or plant closures. They all availed themselves of services under the displaced worker amendment to Title III of the federal Job Training and Partnership Act (JTPA).

Under the JTPA, worker assistance centers offer such basic services as counseling and job market information to all displaced workers. Additionally, some workers — about 40 percent of the sample — receive funding to enroll in education or job training programs in local community colleges, universities and specialized training facilities. These programs range from high school completion to college-level courses in writing, math or basic computer skills. They also include preparation for specific occupations such as classes in computer programming, equipment or machinery repair, accounting, culinary arts, truck driving and health sciences.

The average displaced worker in the sample was 41 years

old, had been in his or her old job for almost eight years and was earning \$27,000 a year. The sample was split evenly between men and women. About half had been employed in manufacturing.

Landing new jobs

Displaced workers who found new jobs typically spent about 10 months out of work. Nearly a quarter of them stopped using the worker assistance centers altogether.

The condition of the regional economy obviously has an impact on how long it takes to find a new job. It is now much easier to find a job in most parts of New England than it was five or six years ago. In 1991, the regional unemployment rate stood around 8 percent, compared with 5 percent today. But the improving economy has not had much impact on the *quality* of new jobs obtained by laid-off workers. Displaced workers who found jobs through worker assistance centers suffered real pay cuts of 12.7 percent on average, and about one-quarter of these new jobs did not offer group health insurance.

Being laid off in mid-career is tough for anyone. But the structural changes in the New England economy are creating better opportunities for some categories of workers than others. Not surprisingly, people who worked in declining industries fare especially poorly. Indeed, the average pay cut for former manufacturing workers was twice that experienced by nonmanufacturing workers. And workers laid off by defense contractors took pay cuts averaging 22 percent.

Moreover, the new labor market is not neutral with respect to education, age and experience. For example, laid-off workers in the sample who were under age 35, had been in their jobs less than 10 years and had at least a college degree ended up in new jobs that paid within 1 percent of their old jobs. In contrast, those who were age 45 or older, had more than 10 years experience at their previous jobs and

held only a high school diploma — or not even a diploma suffered a 24 percent pay cut on average.

The problem is not that New England's economy is generating too many bad jobs, but that the good jobs in today's growth sectors increasingly are white-collar jobs. Workers who got ahead in the past because they had physical strength, manual dexterity or simple loyalty, face an economy where those attributes do not ensure success. "Learning by doing" is no longer good enough. Businesses want people who are educated, who can function well with new technologies and new ways of organizing the workplace and who are motivated by the company's bottom line. Though much has been said about white-collar job instability, young highly educated professionals generally are able to land on their feet. It's older, less-educated workers from declining industries who face the toughest circumstances.

Train in vain?

Most intriguing, there was no significant difference in starting pay between those in the sample who trained and those who did not. The 60 percent of displaced workers who received job search assistance such as help writing resumes and access to job listings, but no education or training programs, experienced average pay cuts of 12.6 percent. For the 40 percent who received training, the average pay cut was 12.8 percent. This is important because training is expensive. It can cost the government about \$6,000 to send a displaced worker to a semester-long training program. So those who argue that funding for training should be increased are up against a tough cost-benefit calculus.

Why has training appeared to have so little impact on these Massachusetts workers? Several explanations have been offered.

One hypothesis is that Massachusetts — and the other New England states — do a lousy job training displaced workers. But as it turns out, researchers examining other parts of the country have also found that displaced workers who go through training programs take jobs with very similar starting pay as those who do not.

Another hypothesis is that the displaced workers who go through training programs tend to start out more disadvantaged than their peers, and only through training do they overcome their initial disadvantages and end up with similar starting pay. This may hold true for workers who seek remedial education, but it's hard to argue that occupational training attracts the most disadvantaged of the displaced workers. In fact, this vocational training attracted relatively few of those Massachusetts workers who would be considered most disadvantaged, namely, high school dropouts and older workers. One might even argue that occupational training programs skim off the displaced workers with the best job prospects.

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A third hypothesis is that training programs have little effect because they are so short. How much benefit can be expected when displaced workers typically spend only four to six months in training? This argument may be sound, but the policy consequences are unclear. Would workers be willing to spend longer periods in training programs? Doubtful. Less-educated workers actually return to work more quickly than their more educated peers. It's not that they're accepting great jobs; to the contrary, they tend to hurt themselves by not looking longer and holding out for something better. Perhaps they can't afford to stay out of work longer or don't view training as an investment in the future. In any case, to get displaced workers to train longer, the government would have to provide them with substantial financial incentives beyond just the training funds. And it's unclear whether the benefits would merit these extra expenditures.

Long-term benefits

There may be a silver lining, however. Much of this analysis has focused on starting pay, because it is the clearest measure of the new jobs taken by displaced workers. But training may have long-term benefits that aren't reflected in starting pay.

One potential benefit is that training programs help move people into modern jobs. That is, society has an interest in moving people from declining industries such as defense and declining occupations such as assembly line worker into growing industries like software and growing occupations such as computer technician because that's where the future lies.

Suppose two assembly line workers are laid off. One takes a 15 percent pay cut at another assembly line job. The other also takes a 15 percent pay cut but, through training, finds another type of job. If this second worker's new job is more promising — because it is less likely to be eliminated in the future or because it offers more potential for career advancement — then the training has been useful even if it doesn't yield higher starting pay.

This beneficial effect is particularly evident in occupational training. Trainees are much more likely than non-trainees

to change the nature of the work they do, whether viewed in terms of industry, occupation or skills. Trainees who combine occupational and academic classes — and these tend to be among the most disadvantaged in terms of having little prior education — are able to move into more demanding jobs as measured by the typical educational and training requirements. And they are more likely than non-trainees to shift into jobs that are perceived to be more prestigious.

The research doesn't say whether training is worth the expense, but it does point to the nature of training's benefits. In short, while current training programs don't ensure jobs with comparable starting pay, they do help workers move into more promising lines of work.

Lessons

Research on displaced workers from Massachusetts and throughout New England offers three lessons that are relevant to the debate on training programs, especially at a time when various social welfare responsibilities are being shifted from the federal government to the states.

First, being laid off is tough even in these comparatively good times. Less-educated workers and those who are older are especially likely to suffer losses in pay and benefits. Existing government reemployment assistance has not been able to close the gap even for those workers who have taken advantage of the available programs. And resources devoted to this problem may be further strained as responsibility for training and other programs devolves from the federal government to the states.

While current training programs don't ensure jobs with comparable starting pay, they do help workers move into more promising lines of work.

Secondly, displaced workers who undergo training suffer similar pay cuts upon reemployment as those who receive less expensive forms of job search assistance. So those who argue that current training programs should be expanded face a challenge. To the extent that devolution means that states will be free of federal government strings, however, local providers of training may be able to better respond to the unique needs of their communities and expand on successful experiments.

Finally, training programs for displaced workers have not been a total waste either for workers or society. Indeed, these programs have enabled many people to make changes in their lines of work, which is important in a changing job market. In addition, as a result of training, some disadvantaged trainees have been able to move into more prestigious occupations, which should eventually have a payoff in terms of income, job satisfaction or both.

These kinds of benefits are relevant not only in connection with retraining, but also in connection with education and training generally. The economic argument for education, after all, is not that there is a pot of gold waiting for students as soon as they graduate. It is that education and training provide the skills and flexibility to deal successfully with a changing economy.

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Can Business Really Make a Difference in Schools?

SUSAN K. MOULTON

n recent years, many commentators have called on American business to step up to the plate and make a difference in K-12 education. As the reasoning usually goes: schools have the students, the teachers and the operational infrastructure to teach kids, while business has the content expertise, money, technology and vested interest in ensuring high skills among graduates. Mix the two together and education will improve dramatically.

To be sure, business has a stake in education. As a matter of self-interest, business depends on a pool of graduates who have the requisite knowledge and behavioral skills to be employable. In addition, many companies want to contribute to educational improvement for less selfish reasons; they have a stake in the health of society in general and want to contribute to its development.

But the fact remains that business and education are fundamentally different. They speak different languages, they measure success differently, and they have different reward systems. Business can do some things to help improve education, but its impact will be modest at best.

School power

To create change in education, business must have input in three key components of education that are currently determined primarily by the schools and school systems.

First, schools and education systems such as boards of education decide the content of curriculum. They decide, for example, in which grades students learn U.S. history, and in how much depth.

Secondly, schools and school systems decide who does the teaching. They decide how teachers are certified, who gets hired, how good teachers are rewarded and promoted and how bad teachers are dealt with. These decisions are made

within the constraints of tenure, financial considerations and collective bargaining agreements.

Finally, schools determine how education is delivered. Schools decide, for example, whether to create double sessions for certain subjects, how long the school day runs and whether to upgrade computer equipment or science materials. They decide whether to allow students to leave the building during school hours to work in internships or work-study programs linking classroom learning to the world.

Business can add on in places, but cannot affect what gets taught, who teaches it and how. In short, business is on the outside looking in. And when it peers inside, business sees an unfamiliar culture. If business is to have any effect on education, it must bridge this culture gap.

Culture gap

Elementary and secondary schools are closed systems, with their own procedures, their own ways of doing business and their own cultures. They function well internally, but it is profoundly difficult for outsiders to gain access to schools and affect real change.

At the most basic level, working with schools can be a frustrating experience for business. Schools generally open around 7:30 a.m. and close around 2:30 p.m. — a timeframe that is foreign to most businesses. Teachers are hard to reach. They're in class most of the time, and even when they are not, they don't have their own phones or faxes, let alone administrative assistants to take messages for them. Schools are closed in July and August, and K-12 personnel are distracted in September, when the school year is beginning, and in June, when it ends. For a business person working 12 months a year, nine to five, these basic scheduling differences are a huge obstacle to overcome.

Moreover, schools have highly individualized decision-

making mechanisms. In some schools, talking with the principal can open doors. In other schools, the principal is of little help, and business people must get to know teachers individually. These dynamics vary from school to school, and there is no easy way for an outsider to know how to proceed.

Business runs up against these differences early on when dealing with schools. Business people are accustomed to making big changes quickly and have little tolerance for incremental tinkering. They see a problem and want to fix it, but they soon realize that the world of education is far more complicated than they had imagined. They may come up with solutions that no one buys. They often feel rebuffed. And so they start to demand change based on their own culture. They try to implement systems in which education is treated as a commodity and students as consumers. Based on this idea of students as consumers, many CEOs hail charter schools and even voucher systems to give each student as much choice as possible, though there is little evidence that choice improves the existing public K-12 system. Some CEOs even talk of shutting down the public education system altogether.

There *is* a place for business in education. But schools, not businesses, define the agenda. Business must permit schools to do the asking. And when they do, business should be flexible and ready to respond.

Business input

The education and workforce development agenda will continue to be set by educational institutions. But at the very least, business ought to be able to tell the schools what their industries will look like, when they are likely to grow, when they will have jobs and what skills will be needed. For many industries, this is not easy. The biotechnology industry, for example, can tell schools with great precision what their employment numbers will look like 12 months out, but asked to look three years ahead, biotech leaders waffle. Companies should make a public commitment to make long-term employment projections.

Business can also offer some input into what is taught. The business community can influence the curriculum by providing up-to-date materials and supplies. They can lend out their experts to help in classroom teaching and can sponsor teacher training programs when school is out of session.

Finally, business can help link classroom education with real work. Businesses can establish internship programs and effective school-to-work programs that connect classroom learning with the world of work. They can equip science laboratories or donate to school libraries or music programs. They can establish computer laboratories and even pay for Internet hookups or other technology upgrades.

The role for business in education remains that of the outsider looking in. In time, business may be invited in by schools to become a real player. If and when that happens, business will have to fully appreciate the complexities of education in this country. Until then, business should continue to be engaged, even from the outside. The stakes are high, but the payoff is worth the investment.

Susan K. Moulton is vice president of the Massachusetts Biotechnology Research Institute.





New England's Workforce Future Has Arrived

SHERRY H. PENNEY

he ethnic and socioeconomic realities of New England communities are changing rapidly. More than 30 languages are spoken at some Boston-area schools — 55 at Cambridge Rindge and Latin High School, according to a recent Boston Globe report. The diversity of today's classrooms creates unfamiliar challenges far beyond the multiplicity of languages and cultures that schoolteachers experienced during earlier waves of immigration.

If New England is to meet these challenges, we must recognize that both demographic realities and workforce demands have changed significantly.

By 2010, minorities will account for 33 percent of new workforce entrants in Massachusetts, up from 13 percent in 1984. The changing nature of New England's population has profound implications for the region's educational institutions and its workforce.

Education is a primary determinant of economic wellbeing on the personal level — as evidenced by the vast difference in earnings between high school graduates and college graduates — and on the macroeconomic level, for no economy prospers long unless its workforce is prepared for the shifting demands of the workplace.

New England's knowledge-intensive economy requires an especially highly trained workforce, with excellent communication, computer and quantitative skills. Fully 96 percent of new jobs projected for Massachusetts by the year 2010 will be in four industries that rank among the top six in terms of percentage of employees with bachelor's degrees or more, according to Bureau of Economic Affairs data analyzed by the Massachusetts Institute for Social and Economic Research (MISER) at the University of Massachusetts. (These industries are: wholesale trade; retail trade; finance, insurance and real estate; and services.)

Demand for workers with less than a high school diploma is projected to decrease by 25 percent in Massachusetts, while demand for more educated workers rises. Demand for workers with graduate or professional degrees will grow by 70 percent. In addition, the fast-changing labor market will put a premium on lifelong learning. Meanwhile, as the children of baby boomers grow up, the working-age population will increase. Clearly, more New Englanders will be seeking highquality education.

Data from the National Science Foundation (NSF) and the National Center for Education Statistics reveal that U.S. schools have a big job ahead. Though the skill requirements of the job market are rising, schools often do not meet current standards. The NSF reported last fall that U.S. students ranked 18th in math and 12th in science in a study comparing student skills in 20 countries. In Massachusetts, the Educational Assessment Program test administered in April 1996 found that just one-quarter of students could interpret facts and use sound reasoning to answer essay questions.

Clearly, elementary and secondary schools must ensure that their immensely varied student populations achieve excellent levels of performance. In the meantime, higher education must provide the high school graduates who come its way with the skills required by the new workplace — even though these students may have passed through a secondary level that did not meet the standards set for it.

New students

The popular image of higher education institutions as residential four-year campuses serving students fresh out of high school is already out of date.

The demographer Bud Hodgkinson recently noted that full-time, residential students between the ages of 18 and 22 now account for only about one-fifth of the nation's 14 million college students. As much as 15 percent of college students are age 35 or older. Fully 46 percent of full-time students also hold jobs, according to a report by the Kellogg Commission.

In short, the traditional idea of a college education no longer applies to the vast majority of new college students. Many have family responsibilities or economic constraints that prevent them from attending college full time and limit the time they can spend preparing for classes and participating in extracurricular activities.

The social nature of the college experience changes too, as more students live off campus and spend much of their time working and pursuing family responsibilities.

Moreover, the nontraditional student population is growing faster than other groups.

Higher education must respond more creatively than in the past, changing its very shape and structure. Otherwise, both our economy and individuals will suffer.

Taking action

The good news is that New England is paying attention to this challenge. The New England Board of Higher Education and Challenge to Leadership are among the many groups that have convened people from education, government, labor and business to explore ways of readying students for the changing workplace. People are talking, and ideas are bubbling to the surface.

Surely, new forms of collaboration will be part of the solution. For example, the time has come for more intense collaboration between elementary and secondary schools on the one hand and colleges and universities on the other. College faculties and K-12 teachers should work together to develop curricula, particularly in math, science and written communication. Joint faculty workshops should be offered to share advances in pedagogy. Joint admissions agreements between high schools and colleges, and between two-year and four-year colleges, should smooth the road between high school and college.

Education begins well before kindergarten and continues through high school, college and beyond. It is a continuum, not a series of isolated experiences. Enhanced cooperation among various levels of education can improve the effectiveness of curricula and help students see where their education is leading in practical terms.

A strong workforce training system is needed for high school students who don't go on to college. This should include apprenticeships or other forms of organized, specialized skills training. School-to-work programs started early in high school have proven to be excellent at socializing kids for the workplace and teaching necessary skills.

Indeed, all students need help in the transition from school to work, not only those who see vocational work on the horizon. In the past, school-to-career assistance was an implicit part of the college experience for the smaller, privileged group that went on to higher education. Now, it must become explicit.

Moreover, new kinds of transitions are becoming commonplace, as New Englanders in all occupations can expect to experience multiple job changes during their lives. School-to-career must expand to include career-to-career programs.

And, of course, the changing demographics only reinforce the importance of adequate financial aid for students with documented need.

If we respond successfully to the educational challenges of the turn of the century, we will find that we have also redefined and rediscovered our sense of community.

Sherry H. Penney is chancellor of the University of Massachusetts at Boston.



Environmental Good Citizens

The following is adapted from remarks delivered by Massachusetts Secretary of Environmental Affairs Trudy Coxe at the New England Board of Higher Education's Fall 1996 meeting in Boston.

oday's students will find medical cures, create business opportunities and invent products that will improve the quality of life. But think of what we might reap from an investment in teaching children how to be good environmental citizens.

Environmental education expert Bora Simmons of Northern Illinois University recently noted that if we prevent pollution, we won't need to deal with it later: no cleanup, no health problems. Now, apply that theory to children: If we teach them to be environmentally literate, they will make good, green decisions to reduce stress on the environment.

We are moving in that direction. Our state advisory group on environmental education has already established benchmarks for environmental education in grades K-12 and is developing benchmarks in higher education. The effort to establish higher education benchmarks, a long-term project just getting underway, aims to develop indicators to help students strengthen their critical thinking, problem-solving ability and capacity to make informed judgments. Meanwhile, the New England Board of Higher Education's examination of the nexus between environmental protection and education has resulted in the creation of environmental internship programs in Vermont and Maine.

The Massachusetts Executive Office of Environmental Affairs has also joined with the state Department of Economic Development and the University of Massachusetts in the Strategic Envirotechnology Partnership, known as STEP. The partnership's goal is to stimulate growth in environmental technology by providing technical, business and regulatory assistance to Massachusetts businesses. The UMass role in the partnership is critical: university researchers verify, monitor and demonstrate the new technology. And the university provides environmental training to Bay State companies.

The payoff? The envirotech market is already worth \$5.5 billion in Massachusetts alone, and \$408 billion globally. And we've just begun to scratch the surface. There are job opportunities here for graduating seniors.

've spent much of my environmental career as an activist. And as an activist, there is always a sense of urgency for tangible results. I was always beating down the doors of local and state

government demanding action. Now that I'm part of the Weld administration, I have a newfound respect for state government. I've learned that state government is the place where the real rubber meets the real road.

The pressures on federal regulators are magnified many times at the state level. State environmental regulators cannot hide. We run into friends — and detractors — whenever we go out to dinner, walk through the halls of state government or innocently pick up the phone only to be confronted by an irate taxpayer. As a result, state policymakers have had to become flexible, creative, imaginative and decisive. We interact with proponents and opponents in a lot of different settings, and we think "out of the box" too in order to maintain credibility.

The 3,400 professionals who work on environmental issues for the state can do more to change environmental policy for the good than any single constituent group if they work on the issues that really count and are not distracted by a series of small topics that won't actually yield environmental benefits whether they're solved or not. It's important for government to clearly define the real issues and to attack them with all the resources it can fairly command. We've done this on hazardous waste cleanup, recycling, land protection, permit streamlining and protecting water supplies and air and marine resources.

Hazardous waste clean-up. When I arrived in Massachusetts, there were 6,000 contaminated properties in the state. Cleanup policy was simply to let government do the job. The results were unimpressive. Even at the height of environmental protection activity in the 1980s, as few as 10 sites got cleaned up during some years. At this rate, it would take 600 years to achieve success. Clearly, there was a problem.

Massachusetts took two extraordinary steps. First, we changed our laws. If a property were going to be used for industrial purposes, was it necessary to clean it up to the level of a schoolyard? We concluded it was not. Secondly, we privatized cleanup operations. We assumed that maybe, just maybe, the private sector's cleanup expertise was as strong as the public sector's.

Today, more than 400 private individuals are licensed by the state to take on hazardous waste cleanup responsibilities. In 1995 alone, 550 properties were cleaned up. Quicker cleanup means that bankers, lenders, developers and others are now able to recycle land for new purposes — in particular, urban land — and so are less inclined to buy up open space and farmland for development.

Recycling. In 1991, less than 10 percent of Massachusetts refuse was recycled. Today, we've reached 34 percent, and we're on our way toward the goal of a 46 percent recycling rate by the year 2000. We've achieved this through a combination of public relations and government action that have made recycling an eco-

nomic as well as an environmental boon. Two years ago, we began to publish an annual report card, grading each city and town from A to F on recycling. An A was given to municipalities with a 30 percent or greater recycling rate. Fs went to those with less than 5 percent. This year, Worcester, the second largest city in Massachusetts, recycled at the 55 percent level. If a city with such a highly diversified population as Worcester's — rich, poor, working class, Black and White - can do so well, so can every town in the Commonwealth.

We also put a ban on any new landfill projects until the year 2000, basing our action on the fact that Massachusetts already has a surplus of landfill space. Tearing up more land for landfills doesn't make sense. And we said no to a long-simmering debate over whether to build a 1,500-ton-a-day landfill in central Massachusetts.

A lot of people see recycling strictly as an environmental issue. But we see it also as a jobs issue, and our recycling initiatives have paid off in this regard. Recycling now employs 10,000 Massachusetts residents and brings in \$600 million in revenues annually. Plastic bottles are being made into fabric; old paint is being transformed into new, usable paint; glass is crushed and used again.

Perhaps the most poignant story is about Massachusetts businessman Aaron Feuerstein who became a national hero last year after his Malden Mills plant burned to the ground. Feuerstein continued to pay his workforce and vowed to rebuild. Malden Mills' most successful and lucrative product is Polartec — a fabric made primarily from recycled plastic bottles.

Land Protection. Massachusetts is the third most densely populated state in the nation. Nonetheless, we are imbued with a respect for open space that goes back to the 1600s when our forefathers set aside Boston Common for public use. Ralph Waldo Emerson, Henry David Thoreau, Charles Eliot, Frederick Law Olmsted and Henry Beston have instructed our thinking and respect for nature over the years.

The time-honored tradition of protecting open spaces continues. In the past five years, Massachusetts has protected nearly 72,000 acres of land. We have concentrated our efforts on preserving farmland, adding holdings to Boston's 100-year old string of parkland known as the Emerald Necklace, and protecting watershed lands so that our drinking water can be cleaner than a bottle of Perrier. And we were able to get the Legislature to pass a \$400 million bond bill to continue land protection efforts.

Air. Utilities and manufacturers have been our most cooperative partners in reducing air pollution. Massachusetts was one of the first states to establish an emissions trading program. Through the Ozone Transport Commission, we have agreed that NOx will be reduced by 65 percent by 1999. We have had great support from the business community for this agreement, mainly because business

has already almost reached that goal. The real problem, as we see it, continues to be pollution from automobiles.

We have pushed Detroit to come up with cleaner, gas-powered cars and alternative fuel vehicles. Massachusetts' electric vehicle industry is growing. An example is Solectria. In the latest Tour de Sol race, Solectria's electric vehicle drove 376 miles before needing a recharge. (A Ford Taurus gets 300 miles before its tank must be refilled with gasoline.) A group of 20 students outperformed one of the Big Three automakers. Gov. Weld has also ordered state government to add electric vehicles to its fleet.

Permit streamlining. The pressure on state regulators to make more user-friendly and common-sense rules is felt in state capitals around the country. Massachusetts has reviewed its environmental regulations and concluded that one-third of the regulations should be discarded, one-third reworked, and one-third retained.

Gov. Weld's view is that government owes people quick answers: Give 'em a yes, give 'em a no, but give 'em an answer. For this reason, we've instituted a policy whereby if the government fails to give an answer within a certain period, we're obligated to return the fees paid to have a permit application reviewed. In recent years, our return rate has been less than 1 percent. We are meeting deadlines and, most importantly, this policy has had no adverse impact on how well we do the job of environmental permitting. We say no when it's required.

Our most ambitious streamlining effort involves the dismantling of 10,000 permits for 16,000 companies. The Environmental Results Program (ERP) is a first-in-the-nation initiative to make it simpler and faster for business to comply with strict environmental standards by replacing certain conventional permits with equally stringent industrywide standards.

We are working to eliminate micromanagement so we can focus our resources instead on what comes out of the pipe. As part of the ERP, we have launched a pilot project in which 30 companies are working with the state to determine how to accurately set joint goals on toxic emissions, for example. Each business leader will "certify" that the goals will be met. State government's job is to conduct periodic audits to determine whether self-certification is working. We believe this new approach will free up state resources so that attention can be refocused on the bad actors rather than all the players, many of whom are doing the right thing and do not need to be Big Brothered by government.

Watershed protection. Massachusetts state government has reorganized itself into watershed districts, and all staff work together on issues facing the state's 29 watershed basins. Instead of three agencies doing water quality monitoring, the monitoring is accomplished in a unified manner. Land acquisition efforts are organized by a team of experts from each agency. We're eliminating duplication and enhancing our overall understanding of the key issues to be focused on for each basin.

Too many people are caught up in "judging" environmental protection efforts — and using old models to do so. Doing things the way we *had to* do them in the early 1970s does not guarantee environmental improvement today. The *real* issue is whether our air is fresher, our water cleaner and our quality of life enhanced.

That is why it is so important for the hallowed halls of education to join us in planting the seed of environmental literacy in the minds of our children. This could save all of us billions of dollars on cleaning up harbors and waterways that should never have been polluted in the first place.

A Maine Niche

The following is adapted from "Discovering a Niche Market in Maine," a report by John Joseph, associate professor of finance and economics at Thomas College.

the Loire Atlantique region of France in the fall of 1993. The principal objective of the mission was to evaluate L'Ecole de Gestion et Commerce (the School of Management and Commerce) as a potential foreign exchange program partner for Thomas College. The French school, which is owned and operated by the regional chamber of commerce, specializes in international commerce. This connection with the chamber of commerce provided the opportunity to pursue a second objective: identifying potential economic alliances for Maine.

I observed a world-class system of value-added processing of natural resources, especially but not entirely, in the specialty food sector. The French know how to turn natural resources into the highest-quality consumer products. This strategy seems a natural for Maine, because the state is rich in natural resources and is well-situated on the edge of one of the richest commercial markets in the world.

The similarities between the Loire Atlantique region of France and Maine appeared to provide a foundation for economic exchange and cooperation. These similarities are *cultural* by virtue of the significant Franco-American community in Maine; *biophysical* in that both have significant Atlantic coastal zones and river valley communities, and *economic* due to a strikingly similar mix of industries.

Our initial focus was to attempt to encourage the transfer of French cheese-making technology to Maine to produce a line of French cheeses for the American consumer. This seemed to be a logical approach to economic development and a way to help the

small farm sector in Maine, which has been shrinking at the rate of two farms per month.

I applied for and received a technical assistance grant from the federal Economic Development Administration to study the feasibility of producing fine French cheese such as Camembert.

Public policy has not fostered or supported cheese production in Maine. In fact, the way the federal milk-pricing regulatory system works, the farmers get a *lower* price for milk that goes into cheese. Maine farmers have enjoyed higher than average milk prices because about 85 percent of Maine milk goes to the liquid milk market, which gets the highest price. The only problem is that per-capita milk consumption is flat, thus the decline in the number of farms.

Because the cheese market provides lower prices to farmers, the state and the state university have not been encouraged to provide the technical training and marketing services that can foster this value-added cheese industry. Despite this dilemma, the State of Maine Cheese Co. in Rockland and a number of farmstead cheesemakers are growing and developing niche markets.

In light of these findings, I asked my contacts at the Loire Atlantique chamber of commerce if they could identify companies that might be interested in developing a joint venture with a Maine company to produce fine gourmet cheese. They indicated that while French companies were interested, they were looking for firms with at least 100 employees. I could not find an appropriate Maine partner.

My associates and I stepped back and re-evaluated the situation. As we focused on emerging market niches for cheese and dairy products, it became evident that a promising market exists for organic milk and a range of organic dairy products including cheese. Unlike the conventional milk market, the organic market for both liquid milk and cheese is experiencing rapid growth. This emerging market provides an opportunity for the small and medium-sized farm that has difficulty competing. This development also means cleaner water and land, healthier cows, healthier products and more humane treatment of animals.

One principal result of this project has been to create a strong interest in organic milk development in the Maine dairy farm community. A substantial group of farmers recently attended an informational meeting at Thomas College to discuss the market for organic milk and the requirements for transition. The economic basis of this plan is simple: the organic milk market is growing, the product commands a premium price and the organic system is well-suited to small and medium-sized Maine farms.

While the project did not end up in the exact place we had in mind at the beginning, it has pointed the way to an emerging sustainable development project that can provide lasting jobs and help stabilize Maine's small and medium-sized farms. A significant number of Maine farmers are engaged in the transition to organic milk. And Maine organic dairy farms are forming a regional alliance with the Organic Cow of Vermont, the region's leading player in organic milk farming, to develop an organic dairy system for New England.

Moreover, the potential economic impact of this venture does not end with milk. To give organic milk, cows need organic feed. Indeed, this organic market can also provide an impetus to economically grow organic grain in Aroostook County and help diversify northern Maine's lagging economy, which is traditionally dependent on potatoes.

CAOs Re-emerging

The following is adapted from "The Disappearing Chief Academic Officer," a manuscript authored by four members of the Chief Academic Officers "Think Tank" at the New England Resource Center for Higher Education at the University of Massachusetts at Boston. The authors are: Sandra Elman, executive director of the Northwest Association of Schools and Colleges and former associate director of the New England Association of Schools and Colleges; Gordon Leversee, dean for arts and sciences at Keene State College; James Martin, vice president for academic affairs at Mount Ida College; and Barbara Murphy, president of the Community College of Vermont.

Pen as debates rage over the future shape of New England higher education, many provosts and academic deans—the academic leaders of the region's roughly 260 campuses—have dropped out of sight. High-profile, short-term presidents, activist board members, big-spending alumni and student "consumers" set an agenda colored by "accountability" and "assessment," complete with "focus groups," money-back guarantees for graduates and lifelong access to the career placement office. In the midst of this, some academic officers have formed a variety of educational roundtables to reclaim their influence over campus academic policies.

A chief academic officers "think tank" organized by the New England Resource Center for Higher Education at the University of Massachusetts at Boston, for example, has developed a set of good practices for deans and provosts to address new calls for accountability. These include: articulating an institution's mission, vision and planning goals; providing evidence of student learning; sustaining cost-effectiveness; ensuring the quality of developmental work for students with varying education needs; and involving the outside community on program advisory boards.

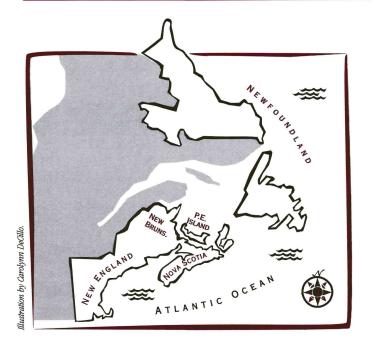
To adopt these good practices, academic deans must create a climate that encourages ongoing assessment and continuous improvement. Yet this is increasingly difficult to do in the pragmatic educational environment now existing on so many New England campuses. In short, academic vice presidents must manage their faculty and curricula more boldly and proactively through institutional task forces, increased support for grantwriting and regularly scheduled professional development programs. They also must coordinate most or all campus constituencies in addressing demands for accountability as regional accrediting associations now expect the comprehensive assessment not only of student learning outcomes, but of all campus operations — with the results to be used in the next year's planning and budget processes.

The reemergence of academic leaders in the ongoing discussion about accountability hinges in large part on increased collaboration and partnership among deans and provosts. For example, academic officers should create regional networks designed to reach consensus on education policies. These networks would encourage ongoing dialogue and collaborative decision-making among academic leaders who often operate in isolation. Academic leaders should also work through regional accreditation agencies to address issues of assessment and accountability.

With campus budgets stretched, some institutions will have difficulty funding necessary academic initiatives like self-paced degree programs for nontraditional learners or alternative advising models for working adults. The creation of an accessible computer network among chief academic officers who can systematically share information regarding their institution's planning and assessment processes should increase the success rate for such initiatives. These campus-to-campus conversations could also explore broader issues such as new approaches to tenure or conflict resolution and ethical decision-making in the classroom.

Finally, the academy still has much to learn from business regarding precise measurement of performance and organizational effectiveness. Competition and profit have spurred the corporate world to develop practices to assess these factors and learn from the results. The more academic leaders become familiar with factors that have contributed to the success of business enterprises such as financial "benchmarking" techniques, "groupware" technologies and total quality management programs, the greater the opportunity to implement them on campus.

Academic managers must rethink how they can best contribute to their institutions' effectiveness and viability. In turn, the academy needs to reconsider how it can enable chief academic officers to lead.



Border Crossing: A Regional Future for New England and Atlantic Canada?

STEPHEN G. TOMBLIN

nterest in U.S.-Canadian state-provincial relations is growing against the backdrop of an assortment of potent forces, including worldwide trends toward globalization, massive debt, national disunity in Canada, continuing government devolution in both countries and NAFTA's promise of a borderless North American continent.

The very idea of regionalism is controversial in **Canada's Atlantic** Provinces.

Yet the future of subnational relations among the six New England states and the Atlantic provinces of New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island is likely to be rife with challenges, especially if Quebec quits Canada, physically cutting off Atlantic Canada from the rest of the country.

Some commentators envision closer state-provincial relations under a restructured North America, in which problems and challenges are addressed by super-regions that cross national as well as subnational boundaries. Tensions remain, however, over how to accommodate the new realities of increased economic interdependence while preserving local political autonomy, and taking into account the future role of the nation-state.

Could new north-south partnerships and associations reconcile political pressures for local control with the realities of continental economic integration?

It won't be easy. The regional idea has been a political grail for generations in Atlantic Canada. But the decentralized nature of Canadian federal politics and lack of national — or for that matter, regional — identity in Canada has made it difficult to reach agreement on the merits of regional integration among the Atlantic provinces, let alone among the provinces and the New England states. Premiers of the provinces have been more concerned with defending their jurisdictional interests than working together to solve common problems.

New England model

Because New England has long been recognized as a distinct region of the United States — and because Americans generally have been willing to cede some state control regional interest groups have been generally effective in institutionalizing cooperation among the six states.

New England business leaders and governors established the New England Council in 1925 in response to a mass exodus of New England textile and shoe manufacturers to the South. Twelve years later, the governors formed the New England Governors' Conference to promote regional economic development.

In 1955, the governors and legislatures formed the New England Board of Higher Education to expand educational opportunities for New England residents and promote regional cooperation and efficient use of resources among the region's colleges and universities. Another wave of formal regional structures emerged in the 1960s and '70s with the formation of the New England Regional Commission, the New England River Basins Commission and the New England Congressional Caucus. Though the latter three were dismantled by the early 1980s, regionalism and interstate cooperation by that time were widely regarded as worthwhile, if underfunded, strategies in New England.

At its historical roots, the debate over regional integration and the call to reduce the authority of provincial governments in Atlantic Canada has been greatly influenced by orthodox economists who were inspired by American market-oriented values and the experiences of the New England Council. These economists in Atlantic Canada, along with certain business interests, saw a need to effectively eliminate borders.

But in Canada, where provinces feature distinct cultures, institutions and experiences, it has been difficult to reach consensus on the need to sacrifice home rule and move toward integration and the free flow of market forces. Some premiers have embraced the regional idea, while others have steadfastly defended provincial interests against outside economic and political forces whether from other parts of Canada or the United States. The struggle over regional integration has been further complicated by ideological conflicts over Canada's redistributive tradition and the future role of government in balancing equity and efficiency considerations.

Impressed with the New England model and under pressure from Ottawa and richer provinces to deal with underdevelopment, the premiers of the Atlantic provinces established the Atlantic Provinces Economic Council in 1953, the Council of Maritime Premiers in 1971, and the Maritime Provinces Higher Education Commission in 1974. In fact, a 1970 study commissioned by the Maritime provinces of Nova Scotia, New Brunswick and Prince Edward Island called for full economic

and political union among the provinces. But the premiers couldn't agree on sacrificing territorial and jurisdictional powers, and Nova Scotia, in particular, resisted the idea.

Indeed, while the concept of Atlantic integration has always had some support in Canada, especially in New Brunswick, it has never enjoyed the widespread support required to challenge the status quo. In fact, the very idea of regionalism is controversial in the Atlantic provinces, for it has come to be seen as an attack on Canada's redistributive culture. which provides federal resources to have-not

Atlantic Canadians often see north-south integration and the erosion of nation-state loyalties as an attack on their independence and the Canadian traditions of equalization and social welfare.

provinces, and on the political autonomy of the eastern provinces.

The perception that regionalism has been imposed on Atlantic Canada by Ottawa and wealthier provinces has further hurt the cause, and the Atlantic premiers have never been willing to go far in cross-border, intergovernmental experiments.

Canadian concerns

There are a variety of reasons regionalism has been particularly hard to come by in Canada.

In the United States, a powerful legislative branch, an intrastate federal system, an integrated national-state party structure, nationally based policy networks and the influence of market-oriented values have helped transcend state boundaries.

In Canada, centrifugal forces make integration more difficult. Under Canada's parliamentary system and confederal party structure, federal and provincial politics operate in different worlds. And a generous inter-province system of fiscal federalism, which tends to concentrate power and autonomy with the executive branch at both levels of government, affords premiers the political resources to defend provincial cultures and institutions even as circumstances change.

Canada's system of governmental relations is often compared to international systems of decision-making. Each province has its own unique perspective on whether it is best to pool sovereignty or fight for local control over resources and the economic development process. Consider Newfoundland. Large numbers of Newfoundland residents regard the decision to enter Canada in 1949 as a grave mistake, for despite her rich natural resources, the province remains poor. Many people in Newfoundland also resist the idea that Atlantic Canada is a region at all. Newfoundland was involved in regional integration discussions with her Maritime neighbors during the 1950s and early '60s, but lost interest in the mid '60s and withdrew for a time before returning to the loop. But the recent collapse of the cod fishery and a long struggle with Quebec over hydroelectricity once again hamper the integration movement.

Meanwhile, Prince Edward Island, with its island geography and rural economy, has voiced similar concerns about losing control to outsiders.

Moreover, Canadians — particularly, residents of have-not provinces — tend to have a more positive view of government than Americans do. Accordingly, the call for northsouth approaches to policy challenges plays well in rich provinces like British Columbia and Alberta. But economic development based on north-south trade initiatives, rather than east-west transfers of resources, is often seen as a step toward eliminating Canada's tradition of redistributive policies. The related idea that the federal government should remove itself from establishing and enforcing national standards is perceived as a threat to the have-not provinces of both the West and Atlantic Canada.

In short, Atlantic regionalism tends to be associated with previous efforts to impose market solutions on poor provinces and blame local people for the problem of underdevelopment. Even today, further Atlantic and New England integration is urged mostly in response to the Quebec question or by Canada's Western reformers seeking further cuts in federal transfers. Time and time again, regionalism is thrust upon Atlantic Canada by outsiders with different agendas.

Consequently, the Atlantic premiers approach the concept of regional integration with great caution. They and their constituents are interested in forging new ties, but they are reluctant to cede power over the economic development process to outsiders who care little about local concerns and rural traditions. For example, within the last year, Premier Brian Tobin of Newfoundland has attacked an old contract with Hydro Quebec and gone out of his way to ensure that the province would benefit from mineral development in Labrador and offshore oil development.

Operating within an executive-dominated system of decision-making that provides generous federal transfers with few or no conditions attached, the premiers have used a strategy of conservative defiance to preserve the status quo and defend provincial authority over the economic development process.

North-south partnerships

Regional decision-making has been complicated by broad institutional and cultural differences between the Canadian provinces and the states. Indeed, despite the common interests shared by subnational societies and the realities of increased interdependence, Atlantic Canadians often see north-south integration and the erosion of nation-state loyalties as an attack on their independence and the Canadian traditions of equalization and social welfare.

Regional systems that threaten the interests and cultures of the partners cannot hope to accomplish much. The European Union initiative appears to be successful in part because regional redistribution and concerns over equity have never been ignored or overshadowed by efficiency considerations. From the beginning, participating countries have been committed to helping less favored regions and sectors. By designing the European Union budget to help countries like Greece, Ireland, Portugal and Spain restructure their economies, it has been easier to mobilize support for integration among rich and poor communities.

The North American neighbors, in contrast to Europeans, have made little effort to bridge their differences. While Americans tend to ignore Canada, Canadians often define themselves as not being Americans.

Consider the history of the Conference of

It seems logical that new north-south partnerships will emerge among provinces and states to search for common solutions to transborder problems such as pollution and the challenges of the global economy.

the New England Governors and the Eastern Canadian Premiers. The conference, inspired by New Brunswick Premier Richard Hatfield and Maine Gov. Kenneth M. Curtis, first met in 1973 in Brudenell, P.E.I. For more than two decades, the conference has provided a bridge between the New England states and Atlantic provinces, offering the premiers and governors the opportunity to get to know each other and providing a vehicle to discuss common issues ranging from the energy crisis in the early days of the conference to environmental issues more recently.

But the very different organizing principles and socioeconomic experiences on either side of the border — combined with the absence of a permanent regional institution — have always worked against the project. And in June 1996, the meeting of the premiers and governors scheduled for Prince Edward Island was abruptly canceled, revealing the current low priority placed on efforts to coordinate policies on a transborder basis.

To further complicate matters, as government responsibilities devolve from Ottawa and Washington to the state and provincial capitals, and international trade heats up, states and provinces are forced to compete with one another in more and more endeavors.

Transborder regionalism remains ad hoc, lacking institutional support. And as long as Canada remains united, there will be a built-in incentive to rely on east-west, rather than north-south, approaches to problem-solving.

Nonetheless, conditions are changing. The Quebec question, the devolution movement in both countries and other challenges argue for new forms of political coordination at the regional level. With the dual trends in both Europe and North America toward continental integration on the one hand, and greater autonomy on the other, it seems logical that new north-south partnerships will emerge among provinces and states to search for common solutions to transborder problems such as pollution and the challenges of the global economy.

In the absence of shared experiences and common identifications, support for Atlantic-New England regionalism will ultimately depend on an appeal to self-interest across a range of policy issues such as environmental protection and tourism. The logical starting point is to restore support for the regional agencies and institutions that already exist.

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Talent Flows: A Look at Student Migration in **New England**

JOSEPH ZIKMUND II AND THOMAS D. RINGENBERG

hen a prospective college student decides to enroll at an out-of-state institution rather than locally, a complex of direct personal consequences follows: expenses, travel, new experiences and a loosening of ties to family and friends. Such decisions also create indirect, but profound, consequences for local colleges and universities and for the state and region in which the student resides.

Higher education is a significant New **England** export industry, bringing money — and talent - into the region from outside.

From the institutional perspective, the out-migrating student is a potential local enrollee lost. From a state or regional perspective, the out-migrating student does not draw on the state's or region's tax base. On the other hand, he or she also represents a future educated worker and taxpayer who is likely to take a first job elsewhere.

Where do New England students attend college? How does the six-state region do at attracting students from other places? And what do interstate migration patterns within New England look like?

Regional patterns

Of the 112,513 New England residents who were first-time college freshmen in the fall of 1994, the latest year for which federal data are available, 77,180 or 69 percent attended an institution in their home state. An additional

17,675 or nearly 16 percent enrolled in one of the other five New England states. The remaining 17,658, also about 16 percent, migrated to colleges or universities outside New England.

At the same time, 30,690 new freshmen came to New England from places outside the region. Thus, in 1994, New England could boast of a net new freshmen migration of +13,032.

Beneath this broad picture, however, states have their own patterns. (See Table 1.) Because of its sheer size, Massachusetts had the most first-time freshmen who stayed in state, who migrated within New England and who migrated beyond the region. Massachusetts also led in the percentage of students who chose to attend college in state — 77 percent. At the other end of spectrum, just 57 percent of freshmen from Vermont and Connecticut chose in-state colleges.

New Hampshire led the region in the percentage of first-time freshmen attending colleges in other New England states at nearly 25 percent. Maine followed with 23 percent, and Vermont with 22 percent.

Connecticut and Vermont exported the highest proportions of their freshmen outside New England, sending forth 25 percent and 22 percent, respectively.

Student migration *within* New England is not proportional in all directions. In 1994, Connecticut and Maine were net exporters of students to other New England states. Connecticut sent 2,935 more first-time freshmen to the other five states than it drew from them; Maine sent 861 more than it attracted. Rhode Island, New Hampshire, Vermont and Massachusetts were net importers of New England students. Rhode Island attracted 1,435 more New England freshmen than it sent to other states in the region; New Hampshire attracted 1,184 more; Vermont, 575; and Massachusetts, 420.

Similarly, not all New England states are proportionally successful in attracting firsttime freshmen from outside New England. As with migration within New England. Connecticut and Maine were net exporters to states outside the region. Connecticut sent 1,201 more first-time freshmen outside New England than it attracted from beyond the region, while Maine sent 320 more than it attracted. The other four New England states drew more students from the rest of the country than they sent beyond the six-state region. Net imports of first-time freshmen from outside New England totaled: 9,628 in Massachusetts; 3,252 in Rhode Island; 914 in New Hampshire; and 759 in Vermont.

Connecticut has been a net exporter of students for at least 40 years. Indeed, the five other New England states combined posted a positive "balance of trade" in first-time freshmen with 34 states outside New England in 1994. By contrast, Connecticut recorded positive migration with just 11 non-New England states. (See Table 2.)

The largest net exporters of first-time freshmen to New England were: New Jersey, which sent 3,801 more freshmen to New England than it attracted from the region; New York, which sent 2,989 more; and California, which

sent 1,619 more. On the other side of the ledger, Pennsylvania was the leading net importer of New England students, attracting 651 more freshmen from New England than it sent to the region; North Carolina attracted 607 more; the District of Columbia, 542 more; and Virginia, 464 more.

Pull of institutions

Individual name recognition and reputation play a significant role in attracting out-of-state students. So do institutional policies and practices. Factors such as out-of-state tuition rates, the availability of financial aid, and the geo-

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graphic focus of student recruitment efforts all affect the attractiveness of a college or university to students from distant places. (See Table 3.)

The University of New Hampshire enrolled 809 new out-of-state freshmen from within New England to lead all the region's institutions. Johnson & Wales University ranked second by this measure, attracting 674 freshmen from outside Rhode Island but within New England. The University of Vermont ranked third, drawing 552 out-of-state freshmen from New England.

In terms of freshmen from outside New England: Boston University drew 2,546; Harvard University, 1,304; Boston College 1,299; the University of Rhode Island, 1,125; Yale University, 1,118; Brown University, 1,059; and Johnson & Wales, 1,008.

Meanwhile, the non-New England campuses that enrolled the most first-time freshmen from New England are generally clustered in a few locations. Of the 33 colleges and universities that imported 100 or more New England freshmen in 1994, 16 were in New York, six were in Pennsylvania; and three were in the District of Columbia. The remaining eight were scattered among eight other states.

Of the 33 top importers of New England freshmen, only five — enrolling fewer than 11 percent of the migrating freshmen — were public institutions; the rest were private. Syracuse University in New York was the most successful in recruiting New Englanders, drawing 490 new freshmen from the six states. All told, more than 100 different institutions in 24 states plus the District of Columbia attracted at least 50 first-time freshmen from New England. (See Table 4.)

Import-export

Most New England students stay *at home*. In 1994, more than two-thirds of first-time freshmen attended college in their own states, and 84 percent remained in New England. Despite the short distances, fewer than 16 percent of these new freshmen migrated to another state within the region.

On balance, New England is a net importer of undergraduate students, and in this sense, higher education is a significant New England *export* industry, bringing money — and talent — into the region from outside.

Connecticut's patterns are different from the rest of New England. The data do not reveal to what extent this is attributable to out-migration from Connecticut's southwestern Fairfield County to New York, New Jersey and Pennsylvania. Notably, Connecticut is a net exporter of students to other New England states as well.

Finally, it is important to note that most migrating students are traditional college-age men and women who have just graduated from high school. Older undergraduate students tend to stay closer to home, enrolling at local institutions. That distinction will become increasingly important as New England's population shifts back toward more and more 18- to 24-year-olds and fewer and fewer 25- to 40-year-olds.

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Where Students Are Going...

Table 1 Migration of First-Time Freshmen to and from New England, 1994

	1			Destination St	ate		Total Enrolling	Total Leaving
State of Origin	Conn.	Maine	Mass.	N.H.	R.I.	Vt.	in New England	New England
Connecticut	14,699	221	2,694	616	772	375	19,377	25,661
Maine	159	5,893	977	621	113	242	8,005	9,283
Massachusetts	1,179	601	42,892	1,779	1,815	739	49,005	55,720
New Hampshire	143	235	1,447	5,569	156	308	7,858	9,275
Rhode Island	199	75	957	173	5,524	86	7,014	7,958
Vermont	63	119	458	284	69	2,603	3,596	4,616
Total from New England	16,442	7,114	49,425	9,042	8,449	4,353	94,855	112,513
Total In-Migration	21,525	8,102	65,768	11,373	12,645	6,132	125,545	
	I							

Note: 77,180 New England residents enrolled as first-time freshmen in their home states.

Table 2 New England's Net Student Migration: Balance of Trade with the Remaining States Plus the District of Columbia, Fall 1994

(States with positive numbers were net importers of first-time freshmen from New England; they received more students from New England than they sent to New England. States with negative numbers are net exporters of first-time freshmen to New England.)

Alabama	0	Louisiana	86	Pennsylvania	651
Alaska	-44	Maryland	-421	South Carolina	221
Arizona	84	Michigan	-344	South Dakota	-7
Arkansas	-12	Minnesota	-66	Tennessee	28
California	-1,619	Mississippi	-19	Texas	-482
Colorado	84	Missouri	-66	Utah	51
Delaware	-220	Montana	47	Virginia	464
District of Co	lumbia 542	North Carolina	607	Washington	-266
Florida	93	North Dakota	-7	West Virginia	52
Georgia	113	Nebraska	-29	Wisconsin	-8
Hawaii	-109	Nevada	-10	Wyoming	-7
Idaho	-23	New Jersey	-3,801	Unspecified	-4,866
Illinois	-350	New Mexico	-242		
Indiana	129	New York	-2,989		
Iowa	-30	Ohio	87		
Kansas	-49	Oklahoma	-39		
Kentucky	-33	Oregon	-118		

Where Students Are Going...

TABLE 3

New England Institutions Enrolling the Most Out-of-State
First-Time Freshmen from New England, Fall 1994

	Out-of-State New England Students
University of New Hampshire (N.H.)	809
Johnson & Wales University (R.I.)	674
University of Vermont (Vt.)	552
Northeastern University (Mass.)	482
Providence College (R.I.)	466
University of Massachusetts at Amherst (Mass.)	445
Plymouth State College (N.H.)	406
Boston University (Mass.)	391
Boston College (Mass.)	379
Saint Anselm College (N.H.)	348

TABLE 4
Institutions Outside New England Enrolling
the Most First-Time Freshmen from New England, 1994

Syracuse University (N.Y.)	490	American University (D.C.)	134
Ithaca College (N.Y.)	285	University of Michigan (Mich.)	134
Rensselaer Polytechnic Institute (N.Y.)	268	Tulane University (La.)	133
Cornell University (N.Y.)	264	University of Colorado (Colo.)	125
George Washington University (D.C.)	261	Gettysburg College (Penn.)	125
Marist College (N.Y.)	254	University of Maryland (Md.)	122
Villanova University (Penn.)	224	Arizona State University (Ariz.)	117
University of Pennsylvania (Penn.)	220	University of Delaware (Del.)	117
New York University (N.Y.)	212	Duke University (N.C.)	113
Skidmore College (N.Y.)	211	Hobart William Smith Colleges (N.Y.)	113
Union College (N.Y.)	185	Hamilton College (N.Y.)	111
St. Lawrence University (N.Y.)	178	Princeton University (N.J.)	110
Colgate University (N.Y.)	175	Rochester Institute of Technology (N.Y.)	110
Georgetown University (D.C.)	169	Lafayette College (Penn.)	104
University of Rochester (N.Y.)	148	Clarkson University (N.Y.)	101
Lehigh University (Penn.)	145	Vassar College (N.Y.)	100
Bucknell University (Penn.)	141		



Institutional Independence and Public Oversight: The New Jersey and Maine Experiments

ELEANOR M. McMAHON

A

sked why a university is not run like a good business, former University of Maine System Chancellor Robert Woodbury once quipped: "Why not run a business like a good university?"

The challenge is to provide sufficient autonomy to sustain academic vitality and creativity while ensuring that this energy is directed toward the broad public interest.

The former Maine chancellor, now director of the John W. McCormack Institute of Public Affairs at the University of Massachusetts, wrote in the *Christian Science Monitor* that no American industry has assembled and created so much talent at such low cost. Noting that four-year college graduates earn at least 50 percent more during their lifetimes than high school graduates, Woodbury observed that U.S. higher education is successful because its chief workers — the faculty — manage the enterprise with minimal central control by administration. In short, American higher education owes its success to decentralization.

But if decentralized decision-making appeals to academics and many contemporary management gurus, some political leaders and policymakers are skeptical about its benefits. Who will look after the public interest, they wonder, if public higher education is so decentralized that public universities come to focus entirely on their own interests rather than the economic, social and cultural needs of the community?

Critics of decentralization also fear that increased institutional autonomy will lead to greater preoccupation with specialized research, as well as an overemphasis on graduate study, indifference to the student-customer and little effort to improve productivity. Many would agree with the observation made by Education Commission of the States President Frank Newman in his 1987 book, *Choosing Quality*: "Left totally to its own, the university will evolve toward self-interest rather than public interest."

The challenge is to provide sufficient autonomy to sustain academic vitality and creativity while ensuring that this energy is directed efficiently and purposefully toward the broad public interest. Two states — New Jersey and Maine — are experimenting with different approaches aimed at establishing an effective synergy between freedom and oversight. Both approaches are tailored to the economic, political and social contexts of these states and both offer valuable lessons for policymakers and educators throughout New England and the nation.

Tale of two states

About the only thing Maine and New Jersey share in common is an Atlantic coast, and even here the contrast between the beaches and dunes of the Jersey shore and the rockbound coast of Maine is striking.

New Jersey is the most densely populated state in the country. It has major corporations, large and occasionally troubled cities, an ethnically diverse population and the nation's second highest per-capita personal income. State taxpayers have been generous in funding higher education and student aid. New Jersey's annual investment in public higher education — about \$3 billion — nearly equals Maine's entire state budget!

Maine is a largely rural state, with its 1.25 million people spread across an area as large as the other five New England states combined. Maine's economy is driven by small firms and family-owned enterprises along with an important pulp and paper industry. Ranked 36th nationally in per-capita income, Maine invests about \$180 million annually in *all* of public higher education; New Jersey spends two-thirds of that amount on Rutgers University alone.

In June 1994, New Jersey Gov. Christine Todd Whitman signed landmark legislation to expand institutional autonomy and ensure institutional and system accountability in the Garden State. The restructuring aimed to strike a balance between the flexibility needed by higher education institutions to carry out their individual missions and the statewide planning, coordination and accountability required to meet the diverse needs of the state.

The law reconstituted the state's higher education board as a smaller, nonregulatory Commission on Higher Education, downsized the related central office and created a Council of Presidents through which public and independent institutions would seek creative ways to share resources, use technology, reach out to underserved populations and regions of the state and reduce unnecessary duplication.

In its first two years, New Jersey's experiment with decentralization has posted some important accomplishments.

The Council of Presidents has defined factors to be considered in evaluating whether programs are excessively duplicative or unduly costly and has reviewed academic program proposals, many of which had languished for years under the former regulatory agency's approval process. Also, in some cases, the review process itself has resulted in collaboration and consortial arrangements for new pro-

grams. The Council has also created several task forces bringing together leaders of institutions with different missions such as state universities and county colleges.

The new Commission on Higher Education, working with the Council of Presidents, made fiscal 1996 and 1997 budget recommendations leading to a 10 percent increase in funding for higher education, including a substantial increase in funding for institutions and expanded financial aid for the state's most vulnerable college students. Funding for the central office declined, and tuition increases were held to modest levels.

Furthermore, the Commission, also in cooperation with the Council of Presidents, worked with college presidents and staff to determine the form and content of annual "excellence and accountability" reports required of each institution, public and private, and the *system* as a whole under the restructuring legislation.

The institutional reports, now complete, are distinctive in that they focus on matters of public interest, on information of particular concern to the public such as data on affordability and financial aid and on matters of output such as retention and graduation rates. The Commission on Higher Education draws on the institutional reports to compose a systemwide accountability report, which is released to the governor and legislators, state policymakers and the general public.

Challenges remain

The first accountability report designed to highlight the strengths, weaknesses and unmet needs of the system as a whole was completed in April 1996. That report showed evidence of significant progress toward the goals of affordability and accessibility, institutional excellence and effectiveness in addressing the state's social and economic needs. The report also revealed some continuing challenges.

Though New Jersey ranks among the most generous states in the nation in providing student financial assistance, growing student demand on grant programs raises significant questions about how to distribute limited resources. And while New Jersey's third-semester student retention rates exceeded the U.S. average, the report noted a challenge in par-

laying this freshman-to-sophomore retention into improved graduation rates and reduced time-to-degree.

The report notes other dilemmas as well. While New Jersey's four-year public institutions were relatively successful in enrolling and graduating minority students, the report found definitive data on minority success at the state's community colleges and independent institutions to be lacking. Moreover, significant differences in outcomes between minority students and White students were revealed among all types of institutions, and graduation rates were found to be lower for students from the lowest-income backgrounds. The report also noted that a high proportion of New Jersey residents leave the state to attend college elsewhere, while relatively few out-of-state students attend New Jersey institutions.

Furthermore, though New Jersey institutions made progress in garnering research and development funds during the past decade, the Garden State remains below the national average in per-capita research funding. A related conclusion was that given the impact of university-based R&D on economic development, the state should expand its support for matching research grants, which would in turn trigger greater support for research from the private sector.

Progress noted

New Jersey's 1994 restructuring legislation also required the Commission and the Council of Presidents to conduct an interim assessment of the reorganization after two years and a definitive assessment after five years. The interim assessment, based on surveys of institutional administrators, members of the Commission of Higher Education and the Council, members of institutional governing boards, faculty leaders, financial aid directors, union leaders and student leaders and completed in July 1996, revealed that most of the 85 assignments made under the reorganization had been completed or are being implemented, while 18 are in the planning stage.

Though the 1996 assessment clearly yielded more positive responses than negative ones, a related report issued by the Commission and Council of Presidents made recommendations in four areas that received less favorable rat-

ings. That report recommended that the Commission, the Council, the state Office of Student Assistance and the individual institutions' boards of trustees explore ways to strengthen systemwide advocacy for state support, address issues of affordability and examine the program review process and interinstitutional coordination.

Some critics argue that the new Commission and Council have not developed effective ways to make the case for higher education with the governor, the Legislature and the people of New Jersey. Yet, the state posted a larger two-year jump in appropriations for higher education than any state in the Northeast, except Massachusetts. And a reasonable level of harmony prevailed during the fiscal 1996 and 1997 budget request processes, though some observers worry that lobbying for a growing number of "earmarks" or special appropriations to individual institutions may eventually sow dissension. More recently, Gov. Whitman's proposed flat funding of higher education for fiscal 1998 has caused concern among college presidents.

It is not surprising that the chief concerns about the new system focus on two areas in which the newly autonomous institutions need to work together: joint advocacy for higher education and better coordination of efforts. Presidents themselves need to find ways to submerge individual campus interests in order to advance the common good. This is a difficult challenge for leaders whose campus constituencies expect strong advocacy for their own priorities.

Balance in Maine

To some extent, Maine higher education already displayed some of the characteristics of the New Jersey reorganization. Before Whitman's restructuring in 1994, New Jersey had a strong, some would say authoritarian, coordinating board in addition to strict oversight by several state bureaucracies. In contrast, the colleges and universities of Maine have enjoyed substantial independence from state agencies. A 16-member Board of Trustees of the University of Maine System, appointed by the governor, oversees the system's seven universities. A parallel, but smaller system coordinates the state's seven technical colleges. The

other public institution in the state, the Maine Maritime Academy, has its own board.

Maine's higher education institutions use their quasi-independent status to respond to the educational needs — and in the case of the university system, the research and public service needs — of the state. They provide their own legal counsel, internal audit, budget and finance functions, facilities management and information services.

The challenge in Maine, according to Terrence MacTaggart, chancellor of the University of Maine System, is to provide as much independence as possible to the seven universities while taking advantage of the University of Maine System structure to keep administrative costs low and provide leadership in responding to the economic and social challenges facing the state.

"With flat funding since the beginning of the decade," says MacTaggart, "we have to be very canny in encouraging university-based decision-making where that makes sense and exploiting our capacity to work together when coordination will yield better results."

MacTaggart, coauthor of the recent book, Restructuring Higher Education: What Works and What Doesn't, describes this balancing act as the "entrepreneurial universityefficient system" model. He says the model grew out of a combination of his own research, the independence so prized by Mainers, Gov. Angus King's passion for efficiency and the advice of state legislators. The trick, says the chancellor, is to avoid the coercive kind of centralization that stifles creativity and breeds conflict, while being prepared to assert central leadership when the needs of the state and higher education demand it. Eliminating bottlenecks in credit transfer for students and developing a systemwide approach to communications technology are among issues where central leadership has been warranted in Maine.

Campus freedom has two rationales, according to MacTaggart. The first is that faculty must be free to teach, conduct research and disseminate their findings to the public without fear of bureaucratic intrusion. The second is that decisions made close to the action, though not always right, are more apt to be on target than decisions made miles

away. The presidents of Maine's public universities know their institutions best, says MacTaggart, so they need the discretion to make decisions that support their missions.

If the case for independence rests on the historic claims for academic freedom and more contemporary arguments for decentralized management, the case for coordination rests on the need for efficiency.

Were Maine a rich state, MacTaggart muses, it could probably afford to let each university go its own way, develop programs at will and duplicate administrative services seven times over. Indeed, that approach has been proposed over the years and will be debated in the Legislature again this year. But according to a study verified for the University of Maine System by Coopers & Lybrand, redundant administrative systems alone would cost Maine \$4 million a year.

In any case, decentralization is a reality. In the first half of the 1990s, restructuring and downsizing reduced the average size of state higher education agencies by about 17 percent, according to a 1996 State Higher Education Executive Officers report on trends in state higher education coordination and governance.

Last year, the Association of Governing Boards of Universities and Colleges ranked the role of higher education governing boards and systems as one of the top 10 public policy issues facing higher education. This report also anticipated increasingly intense review of public higher education governance, noting that three states have already followed New Jersey's lead: Minnesota merged three college systems into one large multicampus system, while downsizing its higher education central office; South Carolina restructured its state coordinating board; and Illinois abolished two university systems, replacing them with seven campus-level independent boards.

Eleanor M. McMahon is distinguished professor at the Taubman Center for Public Policy and American Institutions at Brown University and chair of the New England Board of Higher Education.



A Cushion: New England College Endowments Top \$26 Billion

JOHN O. HARNEY

he total market value of endowments held by New England colleges and universities exceeded \$26 billion in 1996, but the lion's share of that wealth is controlled by a handful of prestigious institutions, according to a new analysis by the New England Board of Higher Education (NEBHE). Indeed, just five of New England's approximately 260 colleges and universities — Harvard, Yale, the Massachusetts Institute of Technology, Dartmouth and Brown — control nearly 70 percent of all the region's endowment funds, though they account for less than 8 percent of New England's full-time equivalent (FTE) college enrollment.

New England's
endowments have
grown steadily
during the past
two decades due
in part to more
effective campus
fundraising and
strong investment
performance.

Harvard's \$8.8 billion endowment, the nation's largest, translates into nearly half a million dollars per student. And an ongoing capital campaign could swell the fund to more than \$10 billion by the end of 1997. Even Harvard's baseball program has been endowed with a \$2.5 million gift from a successful alum.

Meanwhile, about half of all New England college and university students attend institutions with endowment levels below \$1,000 per student, according to NEBHE estimates.

Moreover, while New England's *private* colleges and universities control an extraordinary 21 percent of all U.S. higher education endowment funds, the region's general-

ly endowment-poor public institutions account for less than 1 percent.

Perpetual revenue

Endowments are generated primarily by investing donations from benefactors. The funds are set apart from annual operating budgets and allowed to increase over time. Colleges use the proceeds from endowment investments as a perpetual source of revenue, but are generally restricted from spending the endowment itself.

Colleges with large endowments have a cushion. By applying a portion of endowment income toward annual operating costs, colleges may reduce reliance on other fund-

New England's Largest Endowments, 1996

Institution	Endowment as of June 1996
Harvard University	\$8,750,000,000
Yale University	\$4,860,600,000
Mass. Institute of Technology	\$2,493,600,000
Dartmouth College	\$1,082,934,170
Brown University	\$795,000,000
Wellesley College	\$604,804,000
Boston College	\$600,000,000
Smith College	\$576,580,000
Williams College	\$571,000,000
Boston University	\$443,700,000
Middlebury College	\$430,522,000
Amherst College	\$413,635,436
Wesleyan University	\$383,600,000
Tufts University	\$298,291,483

Institution	Endowment as of June 1996
Northeastern University	\$279,336,000
Bowdoin College	\$276,486,000
Mount Holyoke College	\$270,193,000
Trinity College	\$236,700,000
Brandeis University	\$232,200,000
College of the Holy Cross	\$228,000,000
Woods Hole Oceanographic Institute	\$179,470,000
Worcester Polytechnic Institute	\$177,537,000
Colby College	\$162,280,000
Radcliffe College	\$149,000,000
University of Vermont	\$128,817,738
Bates College	\$114,050,901
Rhode Island School of Design	\$109,075,645

New England's Largest Endowments Per FTE Student

Institution	Endowment as of June 1996	ENDOWMENT PER FTE STUDENT
Woods Hole		
Oceanographic Institute	\$179,470,000	\$1,212,635
Harvard University	\$8,750,000,000	\$490,485
Yale University	\$4,860,600,000	\$450,702
Hartford Seminary	\$25,741,197	\$330,015
Episcopal Divinity School	\$34,249,570	\$321,592
Forsyth School for	\$32,999,000	\$308,402
Dental Hygienists	\$604,804,000	\$273,049
Wellesley College	\$571,000,000	\$271,323
Williams College	\$413,635,436	\$255,488
Amherst College	\$2,493,600,000	\$254,579
Mass. Institute of Technology	\$1,082,934,170	\$212,569
Dartmouth College	\$576,580,000	\$212,017
Smith College	\$430,522,000	\$208,233
Middlebury College	\$276,486,000	\$181,243
Bowdoin College	\$270,193,000	\$146,287
Mount Holyoke College	\$383,600,000	\$124,586
Wesleyan University	\$236,700,000	\$122,231
Trinity College	\$795,000,000	\$109,913
Brown University	\$162,280,000	\$90,913
Colby College	\$228,000,000	\$81,662
College of the Holy Cross	\$114,050,901	\$69,713
Bates College	\$15,267,000	\$61,437
Westbrook College	\$78,000,000	\$59,565
Wheaton College	\$232,200,000	\$58,349
Brandeis University	\$109,075,645	\$54,895
Rhode Island School of Design	\$177,537,000	\$54,376
Worcester Polytechnic Institute		\$52,246
Connecticut College	\$87,145,785	φ ₀ ∠,246
*FTE based on full-time enrollment plus half o	f part-time enrollment.	

^{*}FTE based on full-time enrollment plus half of part-time enrollment.

ing sources such as tuition and fees, government grants, appropriations, annual giving and auxiliary enterprises.

At Brown, for example, payout is limited to less than 5.5 percent of the three-year average market value of the endowment, and the university has generally drawn less than 4.5 percent per year. Yet, as the total endowment has mushroomed over the past decade, the share of total university revenue derived from endowment has grow from 7 percent to 11 percent.

Fast growers

Totaling less than \$4 billion in 1977, New England's college endowments have grown steadily during the past two decades due in part to more effective campus fundraising and strong investment performance.

Nationally, a bullish stock market pushed the average total return on college endowments to 16 percent in 1995 and 17 percent in 1996, up from a disappointing 3 percent in 1994, according to the most recent national report on endowments by the National Association of College and University Business Officers (NACUBO).

In New England, endowment growth has been particularly notable at Catholic colleges and specialty schools.

A 1994 NEBHE study of 15-year endowment trends at 128 New England campuses with endowments of \$1 million or more revealed that

Boston College led the region's private universities in inflation-adjusted percentage growth during the 15-year period, as its endowment grew 2,159 percent in real terms from \$6.3 million in 1977 to \$355 million in 1992. The College of the Holy Cross led the region's liberal arts colleges, posting real growth of 574 percent from \$7.2 million in 1977 to \$120 million in 1992.

The more recent NEBHE analysis focusing on 64 New England colleges and universities finds that among institutions with endowments worth more than \$25 million, the largest two-year percentage growth occurred at Providence College, a Catholic institution, where the endowment grew by 86 percent from \$30.8 million in 1994 to \$57.4 million in 1996.

Other major gainers in percentage terms include several specialty schools, notably: Babson College, where the endowment grew by 84 percent from \$44.2 million in 1994 to \$81.5 million in 1996; Bryant College, where the endowment grew by 78 percent from \$55.2 million to \$98 million; and Johnson & Wales University, where the endowment grew by 77 percent from \$32.3 million to \$57.2 million.

Some institutions with smaller endowments also saw rapid growth. The endowment at Sacred Heart University grew by 128 percent from \$6.5 million in 1994 to \$14.8 million in 1996. Assumption College's endowment grew by 50 percent to \$18 million, and Bradford College's grew by 39 percent to \$19.9 million.

NEBHE officials cautioned that some of the endowment growth at certain institutions may be the result of new accounting rules.

Publics build endowments

New England's public institutions, meanwhile, have faced intense pressure from legislators and others to step up their private fundraising efforts and build endowments. A Connecticut program offers added incentive by matching large gifts dollar-for-dollar. A Massachusetts program provides a dollar for every two that public institutions raise from private contributions.

Publics appear to be responding. The endowments of the region's six public landgrant universities grew by 39 percent from 1994 to 1996. The University of Rhode Island endowment grew by 64 percent to \$29.4 million. The University of Massachusetts at

New England's Fastest-Growing Endowments, 1994-96

(List reflects only institutions with endowments worth more than \$25 million; public institutions appear in bold.)

Institution	Endowment as of June 1996	1994-1996 % G ROWTH
Providence College	\$57,364,921	86.2%
Babson College	\$81,500,000	84.0%
Bryant College	\$98,000,000	77.5%
Johnson & Wales University	\$57,186,006	76.9%
University of Rhode Island	\$29,351,000	63.5%
College of the Holy Cross	\$228,000,000	50.0%
University of New Hampshire	\$82,242,449	46.4%
Bowdoin College	\$276,486,000	42.6%
Simmons College	\$105,617,000	42.1%
Connecticut College	\$87,145,785	41.5%
Colby College	\$162,280,000	41.4%
Harvard University	\$8,750,000,000	41.1%
Worcester Polytechnic Institute	\$177,537,000	40.3%
Massachusetts Institute of Technology	\$2,493,600,000	40.3%
New England Conservatory of Music	\$34,283,215	40.0%
Clark University	\$92,000,000	37.8%
Springfield College	\$26,122,965	37.6%
Rhode Island School of Design	\$109,075,645	37.5%
Dartmouth College	\$1,082,934,170	37.4%
Yale University	\$4,860,600,000	37.4%
Tufts University	\$298,291,483	37.3%
University of Maine	\$105,200,389	36.8%

Growth in Endowments of New England Land-Grant Universities, 1994-1996

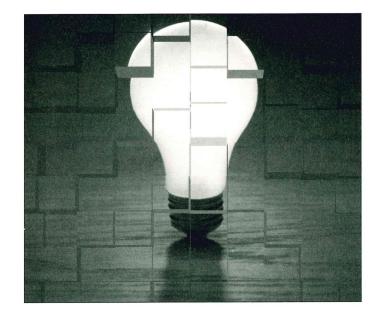
INSTITUTION	ENDOWMENT AS OF JUNE 1996	1994-1996 % GROWTH
University of Vermont	\$128,817,738	32%
University of Maine	\$105,200,389	37%
University of New Hampshire	\$82,242,449	46%
University of Rhode Island	\$29,351,000	64%
University of Massachusetts at Amherst	\$18,948,867	42%
University of Connecticut	\$5,463,641	24%

Amherst's endowment grew by 42 percent to \$18.9 million.

Importantly, while NACUBO and NEBHE studies report similar endowment figures for URI and UVM, NACUBO reports endowments of: \$84.5 million for the University of Massachusetts and Foundation; \$64.7 million for the University of New Hampshire System; \$56.7 million for the University of Connecticut Foundation; and \$40.5 million for the University of Maine Foundation.

In any case, with state appropriations for public higher education institutions growing only modestly, that's not much of a cushion.

John O. Harney is executive editor of CONNECTION.



Power Play: **Energy Deregulation Promises Savings**

ROBERT J. CIOLEK

ew England's electric utility customers pay approximately 50 percent more than the national average for electricity. This has hobbled New England residents and manufacturers, as well as the region's vital nonprofit sector. Indeed, for hospitals, cultural institutions and colleges and universities — already reeling

from dwindling government support and changing demographics — electricity costs are a troubling item. But a nationwide trend to establish competition in the energy market will offer some help.

As electricity markets open to competition, dozens of Massachusetts colleges join forces to get the best deals.

As with the earlier deregulation of the telephone, airline and natural gas industries, the idea is that abolishing monopolies brings increased customer choice, lower prices and new and improved services.

Not surprisingly, the states that have historically suffered the highest utility rates, including the New England states, are among those that are most intensely exploring energy deregulation.

New Hampshire was first, passing a law in April 1996 requiring utilities to submit rate restructuring plans. And now each New England state has taken steps to introduce competition. Conversely, states with low electricity rates - such as South Carolina and Florida — are taking a slower approach.

New England's disadvantage

Many government leaders, economists and business owners believe that New England's high electric power rates have been partly responsible for the decline in the region's manufacturing industries and continue to put the region at a competitive disadvantage.

For years, New England has turned to conservation measures to lower electric bills. But this has not been enough to change the reality or the perception that New England is a high-cost energy region — a drawback in luring new businesses and jobs. In fact, the Massachusetts Legislature's Joint Committee on Electric Utility Restructuring, created to study deregulation, has cited economic development as a driving force behind the debate.

Proponents of deregulation see several economic payoffs. The savings achieved under deregulation will help level the playing field for New England companies vis-a-vis their competitors in other states. Area businesses will be able to parlay their savings to create jobs and reinvest in other companies. Finally, deregulation will act as a catalyst in creating a new breed of energy marketing companies, and during the next five years, new, more efficient and cleaner power plants.

With deregulation looming, some of these effects are already evident. Utilities have launched pilot programs offering some of their biggest customers lower rates in an attempt to stave off competition. And a cottage industry of aggregators — brokers who promise to negotiate the best rates for companies — has emerged. Financial services firms, fiber-optic ventures and utility companies are forming interesting energy alliances. The Boston-based John Hancock Financial Services Co. has already negotiated a contract with Atlanta-based Southern Energy to provide electricity and services to the insurance giant once deregulation takes place.

The experience of telephone deregulation suggests what New Englanders can expect in terms of marketing. Yes, dinners may be interrupted by phone calls pitching certain power marketing companies. And the sales pitches will be confusing, as families are asked to make choices in an area where they never had

to choose before. Yet, the potential for savings is very real — for everyone from major corporations to homeowners to nonprofit groups such as community hospitals, cultural organizations and colleges.

Power pool

In Massachusetts, the target date for deregulation is Jan. 1, 1998. And the Joint Committee on Electric Utility Restructuring in March pub-

For nonprofit institutions,
working together
in a large statewide
power purchasing
pool will produce
greater savings than
going it alone or
in smaller groups.

lished a report and proposed legislation envisioning a guaranteed 10 percent savings off current electric bills.

To ensure that Massachusetts nonprofits are able to capitalize on this opportunity, the

Massachusetts Health and Educational Facilities Authority (HEFA) in the fall of 1996 created PowerOptions, the Massachusetts Nonprofit Energy Purchasers Consortium. The PowerOptions goal is to obtain low-cost, reliable electricity for its membership of approximately 400 nonprofit institutions, including 66 colleges and universities, with annual electricity bills currently totaling \$110 million.

PowerOptions is one of only three consortia formed for this purpose in the United States — and the only one in New England.

PowerOptions works on three assumptions: One, bringing together nonprofit institutions in a large statewide power purchasing pool will produce greater savings than going it alone or in smaller groups. Two, being among the early groups to take advantage of deregulation should enhance the possibility of maximum savings. And three, grafting on to the program HEFA's ability to use tax-exempt financing would add further savings, because nonprofits will have access to low-cost capital in order to fund energy conservation projects.

No one can predict the precise savings likely under deregulation. But estimates from recent electricity purchasing pilot programs suggest potential savings of 14 percent to 23 percent off current bills. Some major national and state electricity marketers have begun competing for PowerOptions business. Participants will begin making their power choices in the summer and fall of 1997, and will realize savings beginning

New England Ponders Energy Deregulation

In February 1997, New England experts on electricity policy converged in Boston for a New England Board of Higher Education conference titled "The Impact of Energy Deregulation on New England Higher Education in the 21st Century." Among their observations:

"The New England utilities went 50 percent nuclear, whereas the country as a whole was around 22 percent. We bet heavier on this technology than anywhere else, as a region. That would have been one thing, but the problem was, we stayed with that bet no matter what information came in to the contrary."

 Michael Best, University Professor of Economics and co-chair, Center for Industrial Competitiveness, University of Massachusetts at Lowell

"If someone is marketing "green power," environmentally sensitive power, what does that mean? Are we going to have a labeling requirement on that? On each electron or on your bill or where? Does green power include nuclear? Does green power include hydro? Everyone would say yes. Well, does it include Hydro Quebec? The caribou might disagree."

— Paul Levy, adjunct professor of environmental policy, Massachusetts Institute of Technology in 1998, presuming the Massachusetts Legislature moves forward in a timely manner.

State plans

Energy deregulation is moving forward at different speeds in the region's statehouses, with much of the debate revolving around "stranded costs" - costs incurred by utilities in building power plants whose output will be too expensive in the newly competitive marketplace or stemming from long-term power contracts entered into during the energy crisis of the 1970s. Utilities argue that these investments, which were required by state regulators, must be recovered. Otherwise, they will not be able to compete with the new independent power companies entering the market with little debt.

In New Hampshire, the law requires full retail competition by Jan. 1, 1998, and authorizes the state Public Utilities Commission to determine the level of stranded costs the utilities may recover.

Rhode Island Gov. Lincoln Almond has signed a law phasing in retail competition in the state by 1998; stranded costs may be collected through a fee of 2.8 cents per kilowatthour for up to 12 years from the date deregulation begins.

In Connecticut, a coalition of business, consumer and environmental groups in August 1996 issued a plan calling for retail competition by July 1, 1998. The so-called

"Connecticut Choice Plan for Electric Industry Restructuring" has been referred to a legislative task force for further review.

The Maine Public Utilities Commission in December 1996 submitted an electricity restructuring plan that would phase in retail choice by 2000 and give utilities "a reasonable opportunity" to recover stranded investments made before March 1995.

The Vermont Public Service Board filed its final electricity order in December 1996, which would phase in retail competition from January 1998 through the year 2000. The order would introduce competition to all state utilities, municipal electric companies and cooperatives in addition to investor-owned utilities. The Vermont plan also calls for separation of generation and transmission functions by investor-owned utilities and recovery of "prudently incurred" stranded costs.

Energy deregulation is not a foregone conclusion — nor certainly are the promised savings. If these are to be realized, nonprofits must make their voices heard in the inevitably heated political debate to come, state legislatures must approve deregulation plans, and businesses, nonprofit groups and homeowners must position themselves to take advantage of the opportunity.

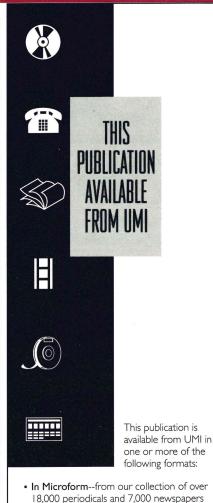
Robert J. Ciolek is executive director of the Massachusetts Health and Educational Facilities Authority.

"First and foremost, consumers want to choose their electric supplier. Most people today in New England are making monthly payments to a company they either don't like or they don't trust, or both. They simply, among other things, want to choose."

— Thomas P. Salmon, former governor of Vermont, chairman of Green Mountain Power Co., and former president of the University of Vermont

"If you think you've really got a great electric utility rate now, chances are you're being cross-subsidized and you're going to be a loser in the next round, if deregulation actually brings market conditions."

> - Richard D. Tabors, consultant and Massachusetts Institute of Technology lecturer



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STORRS, CONN. — The University of Connecticut received \$500,000 from 1953 graduate Robert Cizik to establish an endowed chair of manufacturing and technology management. UConn officials say the gift, matched dollar-fordollar under the state's UConn 2000 initiative, will allow the university's School of Business Administration to recruit leading scholars in the field of technology management and foster joint projects in engineering and business. The endowed chair will be named for Cizik, who recently retired as chief executive officer of Houston-based Cooper Industries, a manufacturer of tools and electrical and automotive products.

BOSTON, MASS. — New **England School of Law** established the New England Center for International Law & Policy. The center will sponsor an annual conference and faculty seminars on international issues, and operate the War Crimes Project, in which students conduct legal research and analysis for the International Criminal Tribunal for the former Yugoslavia. The center will also publish an international law journal available exclusively in electronic form while providing a Boston base for the nonprofit Public International Law and Policy Group, which provides pro bono legal services to foreign governments and international organizations.

CASTINE, MAINE — Maine Maritime Academy announced it would launch New England's first bachelor's degree program in international business and logistics, beginning in fall 1997. The field of logistics focuses on ensuring that products are

available at reasonable cost in the correct quantity, condition and location. The Maine Maritime program will provide students with a practical knowledge of domestic and international commerce, as well as computing, statistics and world politics.

RANDOLPH CENTER, VT. —

Vermont Technical College and the University of Vermont agreed to collaborate on a variety of agricultural programs, including a new "two-plus-two" degree program in farm management. The two-plus-two arrangement provides a seamless transition from an associate-level program at VTC to a bachelor's program at UVM. The two institutions also agreed to launch New Englandwide marketing and recruitment strategies and collaborate on short, non-degree programs for farmers and agricultural workers.

BOSTON, MASS. — Boston University was awarded a grant from the National Science Foundation to establish New England's first connection to the very high-speed Backbone Network Service, the prototype for the next-generation Internet. The vBNS, as the new network is called, operates 10 times faster than the increasingly congested Internet, permitting researchers to connect supercomputers and share advanced research.

STAMFORD, CONN. — The University of Connecticut Board of Trustees approved a new joint bachelor's-master's degree program in physical therapy in anticipation of new national licensure requirements for physical therapists. The five-year program requires students to complete two years of pre-allied health courses and one-and-a-half years of physical therapy courses at the undergraduate level, followed by one-and-a-half years of graduate-level physical therapy courses.

PROVIDENCE, R.I. — Rhode
Island College was awarded
\$33,000 by the Rhode Island
Foundation to support inquirybased science at 52 elementary
schools in the East Bay and at the
Henry Barnard School at the
college. Since 1995, an RIC
partnership with the East Bay
Educational Collaborative has
aimed to replace textbook-based
science programs in elementary
schools with a kit-based, hands-on
science curriculum.

AMHERST, MASS. — The University of Massachusetts forged a sponsored research and exclusive licensing agreement with Advanced Cell Technology Inc. of Waterville, Maine. Under the agreement, UMass receives a two-year, \$578,000 grant to study development of new technologies to genetically modify tissues and organs from cows, chickens and pigs. ACT has the option of exclusive license on any patents UMass obtains as a result of the research.

NEW HAVEN, CONN. — Yale University's School of Medicine received \$345,000 from Vion Pharmaceuticals, a New Haven biopharmaceutical company, to support anti-cancer and anti-viral research. In 1994, Vion obtained exclusive licenses from Yale for several oncology and anti-viral technologies and pledged more than \$1 million to support research at the Yale Cancer Center.

LOWELL, MASS. — A consortium including researchers from the University of Massachusetts at Lowell's Work Environment Program was awarded \$650,000 by the U.S. Department of Energy to evaluate work-related health problems of former workers at agency facilities in Tennessee, Ohio and Kentucky. The Lowell researchers will conduct the study with partners from the Oil,

Chemical and Atomic Workers Union and the Mt. Sinai School of Medicine in New York.

BURLINGTON, VT. —

Champlain College formed a partnership with IDX Systems Corp., to offer continuing education for IDX employees and help prepare Vermonters for high-tech careers with IDX and other firms. Under the agreement supported by the Vermont Department of Employment and Training, Champlain will deliver instruction via Internet, at the college's campus and at IDX facilities throughout the United States. Based in South Burlington, IDX provides information technology to the health care industry.

NORTH DARTMOUTH, MASS. —

Two University of Massachusetts at Dartmouth researchers were awarded \$93,800 by the National Oceanic and Atmospheric Administration to study depletion of red snapper in the Gulf of Mexico. The researchers from the UMass Center for Marine Science and Technology will try to determine whether overfishing or other factors have led to the decline of the fish used in Cajun cooking.

SALEM, MASS. — Salem State College and the Massachusetts Department of Social Services announced plans to launch an Institute of Child Welfare Training and Leadership to offer training programs for the state agency's child welfare staff and adoptive and foster parents throughout the Bay State, beginning in September 1997. The institute, to be funded with a grant from the U.S. Department of Health and Human Services and state support, will offer a special professional leave program for

DSS staff to earn master's degrees in social work, as well as stipends for seniors at public schools of social work who commit to working with DSS upon graduation.

NEW HAVEN, CONN. —

Albertus Magnus College received an unrestricted \$250,000 gift from the Knights of Columbus with the stipulation that the college remain a Catholic institution.

WORCESTER, MASS. — The University of Massachusetts Medical Center launched New England's first nonprofit umbilical cord blood bank. Transplant specialists increasingly use umbilical cord (or placental) blood in pediatric cases where no suitable bone marrow donor can be found. The UMass Medical Center's

American Cord Blood Program. funded by a grant from the National Children's Cancer Society, becomes the eighth such center in the world. The center will collect and store cord blood with advance permission from parents and health care providers, and make blood units available for transplants at UMass Medical Center and other centers around the world.

BENNINGTON, VT. — Southern Vermont College was awarded \$11,000 by the Vermont State Colleges system to develop curriculum for a first-year certificate program for unemployed and under-employed adults who wish to pursue careers in business, child care or specialized environmental fields. The grant, made under the national school-to-work program, will allow college officials to work

with local educators, businesses and community agencies to develop a certificate program. Vermont State Colleges also made school-to-work grants to Castleton, Johnson and Lyndon state colleges, the Community College of Vermont, the University of Vermont, Green Mountain College and the New England Culinary Institute.

FALL RIVER, MASS. — Bristol Community College was awarded \$40,000 by New Jersey-based Johnson & Johnson Professional Inc. to spark interest in health care careers among area middle and high school students. Working with local employment boards, Tech Prep and school-to-work partnerships, the college will schedule speakers on health care careers, provide materials on preparing for health industry jobs and develop a regional

symposium on employment changes in the allied health industry.

LOWELL, MASS. — The University of Massachusetts at Lowell was awarded a three-year, \$399,987 grant from the U.S. Department of Housing and Urban Development to establish a Community Outreach Partnership Center linking university resources with community groups. Under the program, teams of faculty and students will provide free business consulting and other services to community groups as part of internships and research projects. In three years, HUD's community outreach program has funded 55 institutions nationally.

AMHERST, MASS. — The University of Massachusetts at Amherst began providing courses on circuit analysis to students in Africa via satellite. Working through the African Virtual University, UMass and several other U.S. and European institutions provide live and videotaped engineering courses via satellite to students in more than 40 African countries. The initiative is funded by the World Bank.

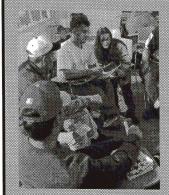
WARWICK, R.I. - New **England Institute of Technology** introduced a new bachelor's degree program in computer telecommunications technology. The program prepares students to install, operate and design telecommunications and computer networks. The institute also introduced an associate degree program to prepare graduates for work as occupational therapy assistants.

HANOVER, N.H. — Dartmouth College received \$18.1 million from the estate of the late Florence B. Moore for

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unrestricted use in undergraduate education. Among other things, the college's largest-ever bequest will establish scholarship funds totaling \$500,000 to aid needy Dartmouth students, with a preference for minorities and students with learning disabilities.

LOWELL, MASS. — The University of Massachusetts at Lowell's Center for Sustainable Production was awarded a two-year, \$125,000 grant to support industry and community partnerships aimed at encouraging new systems of production that are both economically and environmentally sustainable.

WATERVILLE, MAINE -

Thomas College began offering undergraduate, graduate and professional development courses via the Internet.

Students register for class using an on-line form, then receive a password allowing them access to course materials, assignments and instructor-led discussions.

SOUTH ROYALTON, VT. —

Vermont Law School trustees approved design of a \$3.3 million classroom building, which will incorporate state-of-the-art electronic and distance learning technology. The 23,500 square-foot building will include eight classrooms, a courtroom, a student lounge and special rooms configured for interactive video distance learning and computer-assisted teaching.

NORTH DARTMOUTH, MASS. —

The University of Massachusetts at Dartmouth received a \$3 million gift — the largest ever received by any UMass campus — from the Charlton Charitable Trust. The gift will support the university's College

of Business and Industry, which will be named after Earle P. Charlton, a co-founder of the F.W. Woolworth Co., the retail empire with 19th century roots in nearby Fall River.

BRUNSWICK, MAINE — Bowdoin College received \$3.7 million from the estate of Laurence F. Shurtleff to create a \$2 million endowment for a professorship in biology, as well as a fund aimed at enhancing campus landscaping. Inspired by his mother, an avid gardener, the 1926 Bowdoin graduate developed a lifelong interest in plants and landscaping.

WALTHAM, MASS. — Brandeis University was awarded a six-year, \$1.5 million grant by Hadassah, the Women's Zionist Organization of America Inc., to establish an International Research Institute on Jewish Women.

AMHERST, MASS. — Amherst College was awarded a \$2 million challenge grant by the Kresge Foundation to renovate and expand outmoded science labs and improve teaching spaces in various disciplines.

LONGMEADOW, MASS. — Retired businessman Irving Bashevkin of North Adams, Mass., gave Bay Path College \$25,000 to establish a scholarship fund to support financially needy, academically talented students who have completed at least two semesters at the women's college. Bashevkin graduated in 1943 from the former Bay Path Institute, the coed predecessor of Bay Path College.

AMHERST, MASS. — University of Massachusetts at Amherst chemist Scott Auerbach won a three-year, \$300,000 grant from the National Science Foundation to fund research on modeling catalysis, a process in which molecules diffuse through porous



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The Education Resources Institute 330 Stuart Street, Suite 500 Boston, MA 02116 http://www.teri.org molecular sieves and then undergo a chemical reaction that causes their bonds to break at certain temperatures. Auerbach's research focuses on molecular sieves called zeolites, which are used in converting crude oil to gasoline.

FAIRFIELD, CONN.— Fairfield University received a \$2 million gift from former Major League Baseball Commissioner Fay Vincent to create the Alice Lynch Vincent Scholarship in memory of his mother who taught school in Connecticut. The scholarship program will give preference to students from Connecticut.

BAR HARBOR, MAINE -

College of the Atlantic was awarded \$10,000 by actor Paul Newman to support student scholarships.

LOWELL, MASS. — The University of Massachusetts at Lowell reached agreement with three area community colleges to ease transfer among the schools. Under the agreement, North Shore, Middlesex and Northern Essex community colleges as well as UMass-Lowell will develop manuals explaining which course credits can be transferred among the institutions, and the schools will share transfer students' records via computer.

KINGSTON, R.I. — The University of Rhode Island reached agreement with Technische Universitat Braunschweig, a German technical institution, enabling graduate engineering students to pursue dual degrees from the two institutions. Under the agreement, master's-level students complete about half their work at their home institution and the remaining work, including a thesis, at the host institution. The

arrangement grew out of an existing undergraduate exchange program between the two institutions.

CAMBRIDGE, MASS. — Harvard University launched a new university-wide center for teaching and research on nonprofit institutions. The center, funded partly with a \$10 million gift from alumns Rita E. and Gustave M. Hauser of New York City, will be based at Harvard's Kennedy School of Government but will integrate relevant programs in Harvard's schools of business, law and public health. The Kennedy School will offer a master's degree program with a concentration in nonprofit management and policy.

MANCHESTER, N.H. — New Hampshire College announced it would launch a new three-year bachelor's degree program in business administration in fall 1997. The program, developed with a \$208,800 grant from the U.S. Department of Education's Fund for Improvement of Postsecondary Education, is designed to save students a full year of tuition, while providing the same competencies as a traditional four-year program.

MIDDLETOWN, CONN. -

Middlesex Community-Technical College introduced associate and certificate programs in digital multimedia production to prepare students for work in communications, education and other fields that digitally integrate audio, video and computer graphics.

DANVERS, MASS. — North Shore Community College secured \$15 million in state capital funds and a \$10 million loan through the Massachusetts Health and Educational Facilities Authority to construct a new 114,000 squarefoot building that will more than double the size of the college's current Danvers campus. The

building — to be outfitted for state-of-the-art technologies — will house classrooms, library facilities, and faculty and administrative offices.

HARTFORD, CONN. — A neighborhood revitalization project spearheaded by Trinity College was awarded \$1 million by the Aetna Foundation. The grant will fund the Aetna Center for Families, which will provide education and community programs in the Trinity Heights neighborhood.

NEWPORT, R.I. — Salve Regina University and the Roman Catholic Diocese of Providence introduced a two-year certificate program in parish financial administration. The program, open to students who already have bachelor's degrees and business experience, combines spiritual and business aspects of parish financial administration.

WALTHAM, MASS. — Brandeis University announced it would offer a master's degree in software engineering through its new evening continuing education division, beginning in September 1997. Brandeis officials noted that the university's location near Route 128 high-technology firms would attract adult students in the area.

STORRS, CONN. — The University of Connecticut received a \$25,000 gift from the daughter of polling pioneer Archibald M. Crossley to expand its survey research archives. The gift from Helen M. Crossley, to be matched dollar-for-dollar under a state matching gifts program, will create an endowment fund to support UConn archives housing the personal papers of major figures in public opinion polling.

CAMBRIDGE, MASS. — Harvard University's Kennedy School of Government received a \$7 million gift from Hong Kong businesswoman Nina Kung to create a visiting scholars program bringing outstanding students from China to study public policy at the Kennedy School. Kung, who chairs Chinachem Group, Hong Kong's largest privately owned real estate company, last year contributed \$1 million to Harvard for a similar initiative, which has brought Chinese military officers to Cambridge for executive programs.

BOSTON, MASS. — Boston
University's School of Medicine
formed a new clinical affiliation
with Roger Williams Medical
Center, a 220-bed Providence
hospital. Under the
arrangement, BU faculty
positions will be conferred upon
Roger Williams physicians.
Roger Williams had been
affiliated with Brown
University's School of Medicine.

PORTLAND, MAINE — The University of Southern Maine won approval from the University of Maine System trustees to transform the seven-year-old Edmund S. Muskie Institute of Public Affairs into a full-fledged school of public policy. Officials of the new Muskie School of Public Service also announced that two new master's degree programs would be added in September 1997, one in health policy and management, and the other in community planning and development.

WORCESTER, MASS. —

College of the Holy Cross was awarded a \$50,000 grant by the 3M Foundation to establish an environmental studies program. Among other requirements, students will complete either a capstone seminar or capstone project, which may include developing environmental curricula with teachers and students in the Worcester Public Schools.

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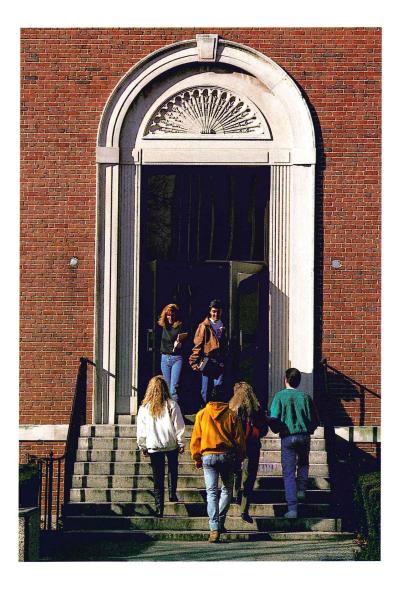
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