SYMPOSIUM

Higher Education: Whose Investment?
College Debt and the New England Family
Middlebury's Novel Goal: Growth
Public Institutions Raising Private Funds
Finding a Place in the Knowledge Economy
Are Think Tanks Reinventing New England?
How One State Is Boosting Technology
Can Universities Cooperate?
B-School Redux

See inside for details ...
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One delegate to the New England Board of Higher Education noted half-jokingly at the board’s recent semi-annual meeting that adequate public investment in higher education should fit squarely in the conservative agenda. “You may not want to give poor children breakfast,” outgoing Rhode Island Higher Education Commissioner Americo Petrocelli told the group, “But any self-respecting conservative should want to give children the means of earning their own breakfast. And higher education is the means.”

In reality, the Republican-controlled Congress has proposed gutting a variety of grant and fellowship programs, while paring federal loan programs and reducing federal spending on civilian research and development by one-third over the next seven years. The New England states, meanwhile, have been notoriously thrifty in their state appropriations for public higher education and student scholarships.

Even Petrocelli’s argument that higher education allows people to pull themselves up by their bootstraps has been perverted. If a college education offers individuals such a remarkable return on investment, the reasoning goes, then it should be up to individuals to pay for it. A growing body of data shows that one result of that logic has been exploding student loan debt. New England students borrowed about $1.8 billion in 1994 alone. To what extent students and families have simply been scammed off by the price of a college education is harder to quantify.

In any case, the notion that college — being such a good investment — should be financed with the same sort of long-term, individual sacrifice as, say, a home, doesn’t do much good for families who are already paying a mortgage. Indeed, you might think homebuilders, car dealers and a host of other retailers would be pressing for stepped-up public investment in student aid, since students buried in loan debt will presumably buy fewer big-ticket items. But don’t hold your breath.

So who will stand up for higher education?

College students — 815,000 strong in New England — might be expected to form the first line of defense, right? Not necessarily. Even as students’ futures are clouded by political decisions, their interest in the political process is plummeting. A significant 19 percent of U.S. college freshmen aren’t sure they will have enough money to complete college, according to the national survey of freshman attitudes conducted annually by the University of California, Los Angeles. Meanwhile, the share of freshmen who consider “keeping up to date with political affairs” important has dropped to just 29 percent, down from 58 percent in 1966.

The sad fact is that by cutting so close to the bone on programs for children, the elderly and disadvantaged, budget-slashers in Washington and elsewhere could make it difficult for even higher education’s most eloquent defenders in the academic, business and government communities to make the case for greater investment.

This edition of CONNECTION explores the sorry state of public investment in higher education and some of the innovative approaches colleges, universities and others are forging in response to and in spite of it. As always, we thank our contributors for clarifying the issues.

We tend to consider our commitment to regionalism unquestionable, so we were a bit embarrassed by a recent letter from Arvin R. Anderson, a guidance counselor at North Country Union High School in Newport, Vt., regarding the cover of CONNECTION’s special FACTS 1996 directory issue. “I notice the cavalier manner in which southwestern Connecticut and Grand Isle County, Vermont, including one half of Lake Champlain (Vermont waters) were cut from your cover map of the region,” Anderson protested, adding, “There arose within me a certain ire when the Massachusetts islands were dutifully noted in the middle of the blackness.” Our apologies, of course.

John O. Harney is the editor of CONNECTION.
Wiring Higher Education

The electronic networking of higher education continues. Many colleges have set up home pages on the World Wide Web, primarily for admissions and financial aid, and students can stay put for virtual campus tours. Among other developments:

- Champlain College entered into an agreement with the Israeli School of Education to offer bachelor’s degrees in professional studies via the Internet to Israeli students who already have earned a three-year diploma in engineering.
- Cambridge, Mass.-based Bolt Beranek and Newman Inc. and the Corporation for Research in Educational Networking entered into an agreement to provide traveling faculty and students and geographically dispersed alumni of participating institutions with dial-up access to the Internet from more than 100 U.S. cities.
- Harvard University’s John F. Kennedy School of Government established an Internet site geared to journalists, complete with an extensive list of events, publications, announcements and transcripts of presentations by newsmakers, as well as a hypertext directory of faculty.
- Marlboro College began downloading student loan information from the Vermont Student Assistance Corp. directly into the college’s student accounts via the Internet. In the past, the loan administrator would transfer a lump sum from its bank account into Marlboro’s, then the funds were distributed to individual student accounts.

Seaweeding

Could nori pick up where minicomputers left off? With $1.2 million from the National Oceanic and Atmospheric Administration, researchers from the universities of Connecticut, Maine and New Hampshire and Northeastern University are teaming up with a Maine company to develop a farm cultivating the highly nutritious, red seaweed that could be used in treating stomach cancer and ulcers.

The three-year project is the first step in developing what sponsors say could be an important New England industry employing out-of-work fishermen. Researchers will begin by evaluating the nori, also called porphyra, found along the New England coast to see which types are best suited for commercial cultivation. Researchers will farm the nori in a 120-acre nursery leased from the state of Maine by Coastal Plantations International Inc., which operates the nation’s only seaweed farm.

UConn officials note that though nori farming is a $2 billion industry in Japan, it is practically unheard of in America.

Serving in New England

While President Clinton’s national service program was getting whacked in Washington, the community service idea was getting a boost in New England.

In Rhode Island, the Feinstein Foundation awarded $1 million grants to four institutions to establish community service programs as parts of their curricula. Under initiatives at the University of Rhode Island and Johnson & Wales and Salve Regina universities, all undergraduates will be required to complete a course with an intensive community service enrichment component. The New England Institute of Technology will offer technological consulting for the community and computer literacy efforts.

Meanwhile, former Massachusetts Gov. Michael Dukakis donated more than $300,000 from his presidential campaign fund to establish public service internships programs at Northeastern University as well as University of Massachusetts campuses at Boston and Dartmouth. The program will provide stipends of up to $3,000 for full-time undergraduate or graduate students to spend three to nine months as interns in government agencies.

Science and Immigration

Congress is considering new laws restricting the number of immigrants allowed into the United States for employment reasons. Most of the immigrants who enter the country each year are foreign citizens with family in the United States or refugee status. But 130,000 slots are allocated for skilled workers and 10,000 for unskilled workers. (An additional 65,000 temporary slots are available for work purposes.)

One Senate bill introduced in 1995 would have cut the skilled slots to 90,000 and discouraged hiring of skilled immigrants by establishing English proficiency standards and requiring employers to pay a special fee when hiring immigrants. A House proposal would have eliminated the provision allowing admission of unskilled workers, but raised the quota for skilled workers to 135,000.

Some high-tech employers say the allowance for skilled workers is needed to make up for a shortage of U.S.-born scientists and engineers. Immigrants and foreign-born scientists hold 10 percent of bachelor’s degrees in science and engineering and 23 percent of doctorates in the fields, according to the National Science Foundation.

In a bylined editorial in the Boston Globe, Massachusetts Gov. William F. Weld and his wife Susan, an expert on Asia, noted, “If we start telling MIT Ph.D.s that their employment future in the United States is uncertain, we’re not improving the economy for the native-born, we’re sending badly needed talent straight to our global competitors... we’re shrinking opportunities for everyone.”

THE EQUAL OPPORTUNITY ACADEMY

Two decades before the administration and students of the all-male Citadel thumped their chests over the enrollment and premature departure of Shannon Faulkner and the similarly single-sex Virginia Military Institute was hailed before the U.S. Supreme Court, Norwich University quietly began admitting women into its military Corps of Cadets.

In the past two years, enrollment of women in the Corps has jumped nearly 50 percent. But perhaps the surest sign yet that the coed strategy has paid off for the nation’s only private military institution came in December, when senior Tracey Jones, a first lieutenant in the Corps, became the first Norwich student ever to win a Rhodes Scholarship.
But critics say the provision has allowed high-tech firms to hire immigrant scientists on the cheap, while unemployment among new recipients of Ph.D.s in physics, math and chemistry has soared to 14 percent or more.

**A New England Mayors' Conference?**

Boston Mayor Thomas M. Menino proposed that mayors of New England's major cities work as a group with the help of the New England Council, the region's oldest business organization. Menino's predecessor, Raymond L. Flynn, similarly convened New England city leaders several years ago, but no regular meetings followed.

**A MedTech Council?**

Massachusetts businesses are forever forming councils. There's a software council, a high-tech council, a telecommunications council, a biotech council, ... and now, Mass High Tech, a weekly newspaper, says it's time for a medical technology council to foster collaboration and keep the industry strong in the Bay State.

Medical technology companies employ thousands of Massachusetts workers developing products such as artificial hearts and medical lasers. But, argues Editor Patrick Porter, "the medical technology cluster suffers from inattention and lax organization."

Porter, the editor, cites research by Michael Porter, the Harvard Business School professor, showing that Minnesota medical technology firms and state government officials have built well-developed networks and introduced special education and financing programs to boost growth of the industry in Minnesota.

**Comings and Goings**

Former Minnesota State University System Chancellor Terrence MacTaggart was appointed chancellor of the University of Maine System. ... Former Massachusetts Senate President William M. Bulger was named president of the University of Massachusetts. ... Boston University President John R. Silber became chair of the Massachusetts state Board of Education.

... Former city of Chelsea receiver and state Secretary of Transportation James Carlin became chair of the state's Higher Education Coordinating Council.

William P. Leahy, SJ, executive vice president of Marquette University, was named president of Boston College; President J. Donald Monan will stay on as BC chancellor. ... Former U.S. Rep. Ronald K. Machtel of Rhode Island was named president of Bryant College. ... Springfield College English professor Paul J. LeBlanc was named president of Marlboro College.

Olivia Kidney, former president of the Regional Community of the Sisters of Mercy of New Hampshire, became president of Castle College. ... David B. House, former academic dean of Bellarmine College in Kentucky, became president of Saint Joseph's College. ... Edward A. Parrish, former dean of Vanderbilt University's School of Engineering, became president of Worcester Polytechnic Institute. ... Marc A. VanderHeyden, vice president for academic affairs at Marist College in New York, was named president of Saint Michael's College. ... Sarah Barrett, academic dean at Aquinas College of Milton, was appointed acting president of the college.

Jeffrey E. Garten, former U.S. undersecretary of commerce for international trade and former managing director of Shearson Lehman Brothers, became dean of Yale University's School of Management. ... Helen Greenwood retired as dean of the University of Southern Maine's Lewiston-Auburn College.

Northeastern University President John A. Curley announced he would retire in June 1996. ... University of Maine at Fort Kent President Richard G. DuMont announced he would retire in July 1996. ... Housatonic Community-Technical College President Vincent S. Darnowski announced he would retire in July 1996. ... New England Conservatory of Music President Laurence Lesser announced he would retire in December 1996. ... Catherine W. Ingold resigned as president of Curry College.

Judith H. Kidd, former vice president of City Year Inc., was named assistant dean for public service at Harvard College. ... Roger Benjamin, director of RAND's Institute of Education and Training, was designated president of the New York City-based Council for Aid to Education, under a plan in which the council becomes an independent subsidiary of RAND, the California-based research institution.

Nathan Gantcher, president and co-CEO of Oppenheimer & Co., a New York securities firm, became chair of the Tufts University board of trustees. ... Roger Lynch, a limited partner with Goldman Sachs and Co., was elected chair of the Fairfield University board. ... Dan A. Gwadosky, speaker of the Maine House of Representatives, was elected to the Thomas College board. ... Kenneth M. Curtis, former governor of Maine and president of Maine Maritime Academy, was elected to the University of New England board. ... Luci Baines Johnson, daughter of President Lyndon Johnson and chair of a Texas, investment holding company, was among six new members appointed to Boston University's board.
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Median earnings of White full-time workers with bachelor's degrees, 1993: $41,090
Median earnings of Black full-time workers with bachelor's degrees, 1993: $32,360
Minority students as a share of total college enrollment in Connecticut: 16%
Minority students as a share of total Connecticut enrollment 10 years ago: 8%
Median earnings of Massachusetts women with bachelor's degrees as a percentage of median earnings of Massachusetts men with bachelor's degrees, 1993: 67%
Percentage of U.S. companies that have Internet sites or plan to within the next two years: 77%
Number of New England-based companies among the top 50 U.S. exporters: 7
Percentage of Thomas College students who have at least one parent who speaks French: 25%
Approximate amount of money that could be added to New Hampshire's economy annually from the export of wood chips: $11,000,000
Annual fee for a six-seat "skybox" at the University of New Hampshire's new Recreation and Sports Center: $15,000
Value of New England Patriots quarterback Drew Bledsoe's 1995 salary and signing bonus: $13,200,000
Percentage of Providence, R.I., children under age 6 who live in poverty: 37%
Percentage of Scituate, R.I., children under age 6 who live in poverty: 2%
Approximate PAC contributions to House incumbents in the 1994 general election: $100,000,000
Approximate PAC contributions to challengers in the 1994 election: $10,600,000
Contributions to congressional candidates by communications and media PACs, 1985-1994: $37,994,112
Approximate number of workers laid off by telephone companies from 1993-1996: 140,000
Value of bonuses planned for chief executives of Lockheed and Martin-Marietta for completing merger: $92,000,000
Number of workers laid off as a result of that merger: 19,000
Percentage of workers at Fortune 1000 companies who are heavily involved in business management: 10%
Percentage of executives who say they spend two minutes or less reviewing an applicant's resume: 70%
Number of Forbes 200 Best Small Companies in America (in terms of return on equity, sales, profits and market value) whose CEOs earned one or more college degrees in New England: 27
Percentage of full- and part-time college and university faculty who have tenure: 36%
Cost of 150+ page report on The College Market from Packaged Facts, a New York City-based market studies firm: $1,950
Harvard and Radcliffe Colleges rank among all U.S. institutions in 1995 freshman Merit Scholars: 1
College students as a percentage of Boston's population: 15%
College students as a percentage of the population in the city's Fenway/Kenmore neighborhood: 63%
Percentage of U.S. public school teachers who say they have considerable influence over selecting textbooks: 55%
Percentage of Vermont teachers who say they do: 87%
Number of prisoners who have graduated since 1991 from a University of Massachusetts at Dartmouth program in which convicted felons are sentenced to read novels: 200

Sources: 1, 2 U.S. Bureau of the Census; 3, 4 Connecticut Department of Higher Education; 5 University of Massachusetts at Boston; 6 Straightline International Inc.; 7 NEHBE analysis of Fortune data; 8 Thomas College; 9, 10 University of New Hampshire; 11 Forbes magazine; 12, 13 Rhode Island Public Expenditure Council; 14, 15, 16 Common Cause; 17 U.S. News & World Report; 18, 19 (Bernie) Sanders for Congress; 20 Association for Quality and Participation; 21 Accountemps; 22 NEHBE analysis of Forbes data; 23 National Education Association; 24 Packaged Facts; 25 Chronicle of Higher Education; 26, 27 Boston Redevelopment Authority; 28, 29 U.S. Department of Education; 30 University of Massachusetts at Dartmouth.
A Regional Economy Under Attack

John C. Hoy

Measured with standard economic yardsticks, New England’s academy
appears remarkably healthy to most observers. Collectively, the region’s
higher education institutions offer an excellent product to a growing
market. The value of higher education is rising, and so is the price during this period of low
inflation. Investment in physical plants is expanding, while an understanding and dedicated
workforce can expect modest wage increases.

Yet, the story of New England higher
education today is a tale of growth and
decline.

As Williams College Faculty Dean
Michael S. McPherson wrote about a year
ago in CONNECTION: “Institutions with the
resources to innovate are tempted by complacency, precisely because of the advantage
conferred by their resources, while institutions that need to innovate have trouble
following through because of a lack of resources. Getting past this paradox will
require imaginative leadership.”

Middlebury and Bowdoin colleges are
exhibiting this kind of leadership now as
they pursue plans to grow. They have
measured the downside risk to growth and
found it wanting. Both institutions occup
commanding positions in the selective
college market for promising undergraduates. Their endowment growth is impres
sive by national standards, and their alumni and benefactors understand the
decision to grow. Moreover, parents are
willing to make financial sacrifices to provide their 18- to 22-year-olds with a
Middlebury or Bowdoin education.

The destiny of each is fully self-deter
mined and based on prudent management,
as well as limited reliance upon unpre
dictable federal and state dollars. Similar
agendas are being pursued across New
England by independent colleges with
strong endowments and missions focused primarily on undergraduate education.

Meanwhile, a significant number of
the region’s public campuses and tuition
dependent independent institutions are
attempting to “downsize,” or worse, try
ing to ride out the new environment.

But the story is more complex even than
when McPherson wrote in CONNECTION.
A steady shift of federal largesse — and
population — from the Northeast to the
South and West, coupled more recently
with a plan to slash federal funding of civil
ian R&D by one-third over the next seven
years and redefine federal student aid poli
cy, has put New England’s revered research
universities in another category altogether.
The world-renowned institutions are bat
tening down the hatches.

The federal government has been the
single largest investor in New England’s
academic R&D enterprise, providing
nearly $1.2 billion or 68 percent of all
R&D funds at the region’s research uni
versities. By contrast, the New England
states provide only 2.7 percent of total
R&D funding at the region’s universities,
compared with 7.8 percent nationally.

The prognosis for new federal invest
ment in R&D is poor. “For vote-seeking
politicians, there’s no political profit in
research issues, since they’re beneath the
threshold of press and public attention
and the scientific establishment dauntily
refrains from political activity,” notes
Daniel S. Greenberg, editor and publish
er of Science & Government Report, a
Washington science newsletter.

For New England’s research universi
ties, this political problem will fast
become a financial problem. This is bad
news for a region whose reputation rests
heavily upon its graduate and profes
sional schools and the R&D process.

“We cannot maintain our leadership
position without a reliable federal invest
ment in the future of our universities and
research institutions,” warns Charles
Vest, the president of the Massachusetts
Institute of Technology.

Clearly, New England will also have to
step up efforts to diversify support of
research or lose its already-slipping pre
eminence in the creation and application
of knowledge.

Indeed, a report prepared by the Eco
nomic Resources Group for the Mas
sachusetts Technology Collaborative noted
that in a worst-case scenario, a 34 percent
real cut in federal R&D funding through the
year 2002 could cost between 23,000
and 50,000 jobs in Massachusetts alone.

Long before these latest threats, the New
England Board of Higher Education and
others were extolling the virtues of a
renewed partnership between higher edu
cation, business and the states in research,
workforce development, improvement of
public schools and a host of other endea
vors that are prerequisites for economic
vitality in New England.

As Gary Sasse of the Rhode Island Pub
lic Expenditure Council noted recently, a
university can develop a new technology,
but only the private sector can commer
cialize it. Colleges and universities can
provide education and training for work
ers, but such training provides a benefit
only if the skills can be used somewhere
— if there are jobs available.

That’s a big “if.” Fleet Financial Group
Chief Economist Gary Ciminiero recently
observed, “It’s really tough to make the Field
of Dreams argument in education. The
argument is that if you build the brains,
someone will come in and employ them.
Well, that’s not at all clear. The economy is
not supporting the product we are creating.”

Perhaps most disturbingly, the assault
on higher education and research is anoth
er sign that New England as a region is
losing its power. Already, defense cuts
have delivered a disproportionately heavy
blow to New England. By one reliable
estimate, more than half the net job loss in
New England since the recession of the late
1980s is related to defense cuts.

Now, with Congress targeting R&D,
Medicare, environmental programs and
education and training, New England is
once again uniquely positioned to take it on
the chin. As U.S. Rep. Joseph Kennedy of
Massachusetts recently told a meeting of
the Greater Boston Chamber of Commerce,
“Ladies and gentlemen, this region’s econo
my is under direct attack in Washington.”

The region must mount a more imagi
native response to these newer threats
before the dollars, the jobs and the skills
have headed elsewhere.

John C. Hoy is the president of NEBHE and
publisher of CONNECTION.
Higher Investment? Education

A select group of 25 or so higher education leaders and student loan officials were huddling in Durham, N.H., one wintry February afternoon to discuss snowballing student loan debt, when something unusual happened: new ideas began to emerge. Perhaps businesses could be persuaded through tax incentives to include student loan repayment among fringe benefits offered to employees, one of the lenders suggested. Might America’s vast pension assets be tapped to pay for college education now, wondered the longtime financial aid director of an elite private institution. What if some of the public investment in higher education were allocated to colleges based on the number of Pell Grant recipients they graduate or the number of disadvantaged students they enroll, rather than directed to students who are entrusted with spending the money wisely, asked a noted scholar of higher education. How about tax incentives for individuals to sock money away for a child’s education?

JOHN O. HARNEY
The Durham powwow had been arranged by the New England Board of Higher Education in the wake of reports detailing an explosion in student borrowing. Most notably, a study by The Education Resources Institute (TERI) of Boston and the Washington, D.C.-based Institute for Higher Education Policy found that students, spurred on by loosened federal loan eligibility and higher loan limits, have borrowed $100 billion in the first half of the 1990s — as much as was borrowed in the 1960s, '70s and '80s combined.

But this bomb’s fuse has been burning for a long time, and many meetings have produced few new ideas. Ironically, the spark has been fanned by the remarkable success higher education’s friends have had in arguing that a college education offers an unparalleled return on investment for individuals. The average bachelor’s degree holder, as the argument typically goes, can expect to earn about $600,000 more over a lifetime than the average high school graduate. That message has resonated a bit too well. As Lyndon State College President Peggy Williams told the group, “By arguing that a college education leads to better jobs and higher incomes, we’ve fueled the idea that higher education is an individual benefit, and therefore paying for it should be an individual responsibility.”

The responsibility is too much for most individuals and families. From the 1980s through the early '90s, college costs rose twice as fast as family income. At the University of Massachusetts at Amherst, for example, tuition and ballooning “mandatory fees” have grown from 5 percent of a typical Bay State’s family income to more than 12 percent. In addition, people are living longer and finding new demands on savings that once might have helped pay for the college education of a grandchild.

Still, the notion of higher education as individual investment couldn’t have taken hold at a better time for federal and state policymakers grappling with sluggish economies, anti-tax fervor and occasional anti-intellectualism. They have gradually shifted the burden of higher education financing to students and families.

By 1995, the federal government provided $35 billion in student aid. But, in keeping with the tilt toward individual responsibility, the federal aid portfolio shifted steadily away from outright grants and toward loans. Guaranteed student loans shot from about 25 percent of all federal aid in the mid-1970s to 75 percent today, according to the College Board. What grants remain have lost purchasing power. The maximum federal Pell Grant now covers a mere 10 percent of costs at private universities, down from 20 percent a decade ago.

The shift from grants to loans has far-reaching implications. Many educators and lenders agree that student loan debt is already affecting career choices — for example, a medical school graduate with $100,000 in debt may be induced to choose a high-paying specialty over family practice — and “lifestyle” choices ranging from having children to making major purchases and donating to alumni funds.

### STATE SUPPORT OF HIGHER EDUCATION

**Appropriations of State Tax Funds for Higher Education Operating Expenses: Fiscal 1996**

<table>
<thead>
<tr>
<th>State</th>
<th>Appropriations</th>
<th>1-Year % Change</th>
<th>2-Year % Change</th>
<th>10-Year % Change</th>
<th>Appropriations Per Capita</th>
<th>Appropriations Per $1,000 of Personal Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>$501,942,000</td>
<td>-0.1%</td>
<td>0.8%</td>
<td>52.1%</td>
<td>$153.17</td>
<td>$5.45</td>
</tr>
<tr>
<td>Maine</td>
<td>179,883,000</td>
<td>3.1%</td>
<td>4.3%</td>
<td>78.1%</td>
<td>145.18</td>
<td>7.68</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>912,525,000</td>
<td>1.9%</td>
<td>10.3%</td>
<td>28.3%</td>
<td>151.78</td>
<td>6.18</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>83,185,000</td>
<td>-2.5%</td>
<td>3.4%</td>
<td>65.5%</td>
<td>73.94</td>
<td>3.26</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>128,092,000</td>
<td>2.4%</td>
<td>13.6%</td>
<td>25.2%</td>
<td>128.09</td>
<td>6.07</td>
</tr>
<tr>
<td>Vermont</td>
<td>55,711,000</td>
<td>4.7%</td>
<td>5.2%</td>
<td>26.5%</td>
<td>96.72</td>
<td>4.97</td>
</tr>
<tr>
<td>New England</td>
<td>1,861,338,000</td>
<td>1.4%</td>
<td>6.8%</td>
<td>39.1%</td>
<td>140.69</td>
<td>$5.80</td>
</tr>
<tr>
<td>U.S.</td>
<td>44,354,550,000</td>
<td>3.2%</td>
<td>8.1%</td>
<td>42.5%</td>
<td>171.98</td>
<td>8.26</td>
</tr>
</tbody>
</table>

*Note: Massachusetts appropriations data for the past three years are not comparable to data for other states, or to earlier Massachusetts data, because the newer figures include certain tuition revenue. 1993 population figures were used to calculate per-capita appropriations. 1993 personal income information was used to calculate appropriations per $1,000 of personal income.*

*Source: Center for Higher Education at Illinois State University, U.S. Department of Commerce*
Not surprisingly, the retreat from grant aid has been particularly hard on low-income families. In 1979, a student from the top one-fifth 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-based higher education consultant Thomas G. Mortenson. By 1994, the student from the top fifth was 10 times more likely.

For the lowest-income families, even the most innovative tuition prepayment or loan repayment plans advanced in Durham seemed to offer little consolation, prompting Connecticut Higher Education Commissioner Andrew G. De Rocco to ask: "Is there no option in any of our strategies for the impoverished?"

By most accounts, the federal picture will only get bleaker. The Republican-controlled Congress has proposed cutting a variety of grant and fellowship programs, while paring $10.4 billion from federal loan programs over the next seven years to help balance the budget and deliver tax cuts. A variety of open-ended matching grants would be replaced with block grants funded at levels too low to maintain current services. And for New England's renowned research universities, which count on Washington for nearly 70 percent of their $1.7 billion in research and development funds, the small government forces have another grenade to throw: a plan to slash federal funding of civilian R&D by one-third over the next seven years.

Notably, the TERI report found that student loan debt among undergraduates at four-year private institutions rose by a modest 2 percent from 1990 to 1993, while debt among undergraduates at public four-year colleges jumped by 13 percent. That disparity will come as little surprise to anyone who has watched the disinvestment in New England public higher education during the first half of the '90s.

Even during the 1980s, when New England was hailed as the prototypical knowledge-intensive region, state support of higher education as a share of tax revenues rarely approached the national average. Since those "miracle" years, the region has been wracked by recurrent state budget crises. Under such conditions, higher education has two strikes against it. It's not an entitlement and it has access to another source of revenue: tuition-paying students.

Higher education's share of state budgets is declining, while the share devoted to corrections, Medicaid and K-12 is growing (though the public benefits of higher education include less criminal behavior, health care advances and school improvement partnerships). Today, New Englanders direct an average of $5.80 for every $1,000 of personal income toward state tax support of higher education, compared with $8.26 nationally.

The term "state-supported" has given way to "state-assisted" in describing New England's public institutions. At the University of Rhode Island, for example, state funding has shrunk from about 60 percent of the budget in 1989 to just over 40 percent. It's no coincidence that during the same period, URI's tuition and mandatory fees soared from $2,518 to $4,404 for state residents and from $6,624 to $12,096 for out-of-state students.

Vermont state appropriations now account for a paltry 18 percent of the Vermont State Colleges budget. Between 1989 and 1995, tuition and mandatory fees at Lyndon State shot from $2,838 to $4,036 for state residents and from $5,886 to $8,548 for out-of-state students. "Lyndon State College's costs have not gone up, but our prices have because our legislative appropriations have declined," says Williams.

Vermont and several other states have bought into the so-called high tuition/high aid model, designed to ease the burden of rising prices for needy students, while eliminating what amounted to a major government subsidy for students whose families may well be making more than $100,000 a year. But in reality, says Williams, Vermont is a "high tuition/low aid" state.

### Need-Based State Scholarships and Grants to Undergraduates

<table>
<thead>
<tr>
<th>Average Awards</th>
<th>1989</th>
<th>1991</th>
<th>1993</th>
<th>1994</th>
<th>1-Year % Change</th>
<th>3-Year % Change</th>
<th>5-Year % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>$1,209</td>
<td>$1,315</td>
<td>$1,131</td>
<td>$1,122</td>
<td>-0.8</td>
<td>-14.7</td>
<td>-7.2</td>
</tr>
<tr>
<td>Maine</td>
<td>423</td>
<td>621</td>
<td>555</td>
<td>544</td>
<td>-2.0</td>
<td>-12.4</td>
<td>28.6</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1,326</td>
<td>1,353</td>
<td>986</td>
<td>986</td>
<td>0.0</td>
<td>-27.1</td>
<td>-25.6</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>552</td>
<td>519</td>
<td>439</td>
<td>708</td>
<td>61.3</td>
<td>36.4</td>
<td>28.3</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>934</td>
<td>1,047</td>
<td>657</td>
<td>474</td>
<td>-27.9</td>
<td>-54.7</td>
<td>-49.3</td>
</tr>
<tr>
<td>Vermont</td>
<td>894</td>
<td>929</td>
<td>859</td>
<td>826</td>
<td>-3.8</td>
<td>-11.1</td>
<td>-7.6</td>
</tr>
<tr>
<td>New England</td>
<td>1,163</td>
<td>1,162</td>
<td>907</td>
<td>876</td>
<td>-3.4</td>
<td>-24.6</td>
<td>-24.7</td>
</tr>
<tr>
<td>United States</td>
<td>1,092</td>
<td>1,198</td>
<td>1,297</td>
<td>1,382</td>
<td>6.6</td>
<td>15.4</td>
<td>26.6</td>
</tr>
</tbody>
</table>

Source: National Association of State Scholarship and Grant Programs
Indeed, though a relatively high proportion of state higher education support in Vermont comes in the form of student grants, the average state grant has declined recently to $826.

Regionwide, total state grant aid has eroded by 18 percent, and the average state grant has dropped in value by 25 percent during the first half of the '90s. Rhode Island’s state scholarship program covered 25 percent of the unmet need of eligible students in 1990, but only 9 percent today, according to Robert J. McKenna, chairman of the Rhode Island Higher Education Assistance Authority.

Sadly, the high aid side of the high tuition/high aid model is vulnerable precisely because it is "portable"—that is, students can use their grants at colleges in other states—and because it is aimed at a needy, but politically weak, constituency. As University System of New Hampshire Chancellor William Farrell observes: "The high tuition/high aid model has lost favorability in New Hampshire, because the high aid goes out of state and it benefits those in need, while those who aren’t in need are the ones who vote.”

A vicious circle emerges. Public colleges and universities raise their tuitions and mandatory fees to make up for flat or declining state support of operating expenses. Flat or declining grant programs leave students and their families with fewer resources to cover rising costs. Increased student financial need drives colleges to pump up institutional aid funds, which in turn, adds pressure to raise tuition—and more pressure for families to go into debt.

Or just go. Last year, nearly 75 percent of Maine’s college-bound students selected out-of-state institutions, up from 48 percent two decades ago, according to data from the University of Southern Maine.

Talented professors leave too. University of Massachusetts at Amherst Chancellor David Scott told faculty in September that from 1988 to 1994, the university’s operating budget increased annually by an average of only 2.9 percent, and 750 faculty members left the flagship campus.

There will be little fiscal relief from the statehouses in the near future. In Rhode Island, where new budget crises have erupted this year, fast-changing demographics make secondary education a clear funding priority over higher education, according to George Graboys, chairman and interim chancellor of the Rhode Island Board of Governors for Higher Education. Even in Massachusetts, where the economy has rebounded, the governor’s proposed fiscal 1997 budget would cut public higher education by as much as $30 million. To make matters worse, funding cuts at the federal level will almost surely have to be made up by states or, as in the case of R&D, hardly made up at all.

On the plus side, the severity of the situation appears to have forced an overdue spirit of cooperation between the region’s public and private institutions. The two have historically squared off during state budget battles, with the publics seeking more institutional support and the privates zealously protecting state grants, which can be used at public and private institutions alike.

Late last year, in an effort to head off deep cuts in public higher education, Brown University President Vartan Gregorian and seven other private college chiefs in Rhode Island issued a statement noting, "Public and independent institutions of higher learning are interdependent in their mission and service to our nation. ... If one sector is diminished, the other suffers as well." Dartmouth College President James O. Freedman used the op-ed page of the Boston Globe to call for a renewed commitment to public higher education. "As the disparities in family income widen," Freedman wrote, "the United States is in special need of a healthy system of public and private institutions — academically strong and economically affordable.”

The student debt issue that brought educators and lenders to Durham is a function of the price of a college education. And New England’s colleges and universities, both public and private, are the priciest anywhere. Tuition and mandatory fees for state residents attending New England four-year public colleges and universities averaged $3,720 in academic year 1995-96, about $900 above the national average. Average tuition and fees for out-of-state students stood at $8,629, more than $1,200 above the comparable national figure. At the University of Vermont, the nation’s most expensive public university, tuition and mandatory fees reached $6,909 for state residents and $16,605 for out-of-state students.

Tuition at New England’s private four-year colleges, meanwhile, averaged $13,641 for academic year 1995-96. And more than a dozen elite New England colleges from Bowdoin to Yale have pierced the $20,000 annual tuition mark.

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**1995-96 Tuition and Mandatory Fees at Public Institutions (Excluding Room and Board)**

<table>
<thead>
<tr>
<th>State</th>
<th>Residents</th>
<th>Out-of-State</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Connecticut</td>
<td>$4,810</td>
<td>$12,800</td>
</tr>
<tr>
<td>University of Maine</td>
<td>$3,920</td>
<td>$10,070</td>
</tr>
<tr>
<td>University of Massachusetts Amherst</td>
<td>$5,514</td>
<td>$11,860</td>
</tr>
<tr>
<td>University of New Hampshire</td>
<td>$5,041</td>
<td>$13,711</td>
</tr>
<tr>
<td>University of Rhode Island</td>
<td>$4,404</td>
<td>$12,096</td>
</tr>
<tr>
<td>University of Vermont</td>
<td>$6,909</td>
<td>$16,605</td>
</tr>
</tbody>
</table>

Source: New England Board of Higher Education
But the tuition surge is over — at least temporarily. Last year’s hikes averaged less than 3 percent at New England public colleges and universities and about 5 percent at private institutions, according to data collected through the New England Board of Higher Education’s annual FACTS survey of colleges and universities.

Early this year, the Massachusetts Higher Education Coordinating Council, under its new chairman, former city of Chelsea receiver and state Secretary of Transportation James Carlin, adopted a plan to cut tuition at state colleges each year until the cost approaches the national average, despite concern from administrators that the loss of $9 million in tuition revenue, along with cuts in state appropriations, will hurt quality. In fall 1996, Massachusetts will reduce tuition by 10 percent at 13 community colleges and by 5 percent at two other community colleges and nine four-year state colleges. The council has urged UMass, which is outside its jurisdiction, to do the same.

On the private side, New England institutions may not follow the much-publicized lead of Ohio’s Muskingum College, which recently slashed tuition by nearly 30 percent in an effort to boost enrollment. But as Bentley College President Joseph M. Cronin told the group in Durham, “New England’s private colleges should plead temporary insanity and stop tuition increases now, so we can get that issue of rising costs off the table.”

In fact, the region’s private rates ratcheted down tuition increases. Dartmouth trustees announced a 5 percent hike in undergraduate tuition for academic year 1996–97 — the lowest percentage increase in three decades. Bradford College in Massachusetts planned to limit its hike to 2 percent. And borrowing from the publics’ approach, the private Pine Manor College unveiled a special “in-state” tuition rate, offering Massachusetts residents a $6,000 discount off full cost. Middlebury and Albertus Magnus colleges, meanwhile, are among pioneers in offering three-year bachelor’s degree programs, saving graduates a year of tuition charges.

To be sure, New England’s elite private institutions may temper the loss of tuition income with another revenue stream that the public institutions are only now developing: private gifts from loyal alumni, corporations and foundations. Last year, a whopping 63 percent of Amherst College alumni made gifts to their alma mater. Dartmouth’s “Will to Excel Campaign” met its $425 million target early, so the goal was quickly extended to $500 million. New England’s public institutions are slowly getting in on the act, cultivating their generally younger alumni in an effort to bolster endowments. URI, for example, is in the midst of a $50 million campaign, and the university’s endowment nearly doubled from just over $12 million in 1991 to about $23 million in 1995.

But for most New England institutions, even the most richly endowed private universities, new revenue alone will not be enough to solve budget problems. And the discussion of student debt, tuition and public disinvestment is also a discussion about cutting costs.

William H. Danforth, chairman of the board of Washington University in St. Louis, wrote recently in Science magazine: “The skills universities need to do well with limited resources have atrophied from disuse.” But those skills are now being honed, as colleges and universities, both public and private, confront daunting demographics — the number of New England 17- and 18-year-olds is only now recovering after nearly a decade of decline; growing competition from new kinds of education providers.

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**WHAT’S THE DAMAGE?**

**U.S. PUBLIC COLLEGE PRESIDENTS ASSESS THE DAMAGE CAUSED BY FUNDING EROSION IN VARIOUS AREAS**

(Figures indicate percentages of respondents who assessed the damage done at a particular level.)

<table>
<thead>
<tr>
<th></th>
<th>Highest Damage</th>
<th>Second Highest</th>
<th>Third Highest</th>
<th>Affected</th>
<th>Not Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>24.5%</td>
<td>13.2%</td>
<td>3.8%</td>
<td>15.1%</td>
<td>43.4%</td>
</tr>
<tr>
<td>Faculty recruitment</td>
<td>22.6%</td>
<td>9.4%</td>
<td>20.8%</td>
<td>15.7%</td>
<td>32.1%</td>
</tr>
<tr>
<td>Building maintenance</td>
<td>20.8%</td>
<td>15.1%</td>
<td>22.6%</td>
<td>11.3%</td>
<td>30.2%</td>
</tr>
<tr>
<td>Program offerings</td>
<td>13.2%</td>
<td>26.4%</td>
<td>22.6%</td>
<td>15.5%</td>
<td>22.6%</td>
</tr>
<tr>
<td>Time to completion</td>
<td>7.5%</td>
<td>7.5%</td>
<td>13.2%</td>
<td>17.0%</td>
<td>54.7%</td>
</tr>
<tr>
<td>Senior administrator recruitment</td>
<td>3.8%</td>
<td>5.7%</td>
<td>7.7%</td>
<td>18.9%</td>
<td>66.0%</td>
</tr>
<tr>
<td>Grounds maintenance</td>
<td>1.9%</td>
<td>9.4%</td>
<td>1.9%</td>
<td>28.3%</td>
<td>58.5%</td>
</tr>
<tr>
<td>Staff turnover</td>
<td>0</td>
<td>1.9%</td>
<td>3.8%</td>
<td>26.4%</td>
<td>67.9%</td>
</tr>
</tbody>
</table>

*Source: American Association of State Colleges and Universities*
such as "virtual" colleges; and a barrage of criticism from champions of corporate downsizing.

As Cronin warned his colleagues in Durham, "There's an idea that corporations have cut, hospitals have cut, and you guys are next."

Actually, some degree of cutting and restructuring has been underway for five years or more at both public and private institutions throughout New England. In a few high-profile cases: Northeastern University since 1992 has dramatically shrunk its enrollment, consolidated departments and eliminated administrative and faculty positions. Last year, Bennington College implemented a sweeping restructuring aimed at bringing costs down. More recently, Brandeis University approved a plan to cut faculty by up to 10 percent through attrition and introduce revenue-generating continuing education programs in an effort to avert a $10 million budget shortfall by 1999.

Last fall, the University of Rhode Island suspended admissions to 19 undergraduate and 79 graduate programs with low enrollment or high costs, with an eye toward strengthening the university's liberal arts core and focusing on key areas such as marine and environmental sciences and enterprise and technology. UMass campuses also planned to close a range of less popular majors and graduate programs. (A Boston Globe reporter noted the irony of announcing the closure of the Slavic languages and literature department at UMass-Amherst the same week that U.S. troops were shipping off to Bosnia.) And the University of Maine System, which has suffered a six-year slide in state appropriations, launched an initiative to cut costs and raise productivity.

The rise of the Internet, meanwhile, has led many institutions to cancel subscriptions to specialized academic journals that can cost several thousand dollars annually.

A more profound indicator of higher education's downsizing: in Greater Boston alone, higher education shed more than 4,700 jobs between 1990 and 1993 and only half have been recovered, according to data presented recently in a Greater Boston Chamber of Commerce report calling higher education one of four "economic drivers."

The downsizing and tuition slowdown will take time to benefit tapped-out New England students and their families. In the meantime, the educators and lenders gathered in Durham were drawing up a battle plan for the 1997 congressional reau-

**STATE REMEDIES**

**PERCENTAGE OF STATE LAWMAKERS WHO THINK THEIR LEGISLATURE WILL TAKE ACTION OVER THE NEXT THREE TO FIVE YEARS TO...**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charge out-of-state students higher tuition</td>
<td>73%</td>
</tr>
<tr>
<td>Charge in-state students higher tuition</td>
<td>56%</td>
</tr>
<tr>
<td>Link funding to statewide priorities</td>
<td>52%</td>
</tr>
<tr>
<td>Adopt a new funding formula</td>
<td>45%</td>
</tr>
<tr>
<td>Link funding to institutional or student performance</td>
<td>44%</td>
</tr>
<tr>
<td>Link tuition increases to inflation measures</td>
<td>30%</td>
</tr>
<tr>
<td>Adopt a high tuition/high aid plan</td>
<td>23%</td>
</tr>
<tr>
<td>Increase other sources of funding (lottery proceeds or bond issues)</td>
<td>21%</td>
</tr>
<tr>
<td>Shift from institutional support to student financial aid</td>
<td>15%</td>
</tr>
<tr>
<td>Increase state taxes</td>
<td>9%</td>
</tr>
</tbody>
</table>

*Source: National Education Association*

...thorization of the federal Higher Education Act, which governs most federal aid programs.

Among other strategies, the region would push for increased funding of the federal College Work-Study program, which enjoys bipartisan support but hasn't grown in nearly a decade. (President Clinton proposed expanding College Work-Study from 700,000 students to 1 million.) Clinton proposal which would not aid the neediest students — namely a proposed federal merit scholarship program providing $1,000 to students in the top 5 percent of their high school graduating classes and tax deductions up to $10,000 for college tuition expenses — would not be high on the agenda.

Perhaps most importantly, the leaders agreed, New England should press for limits on certain federal loans and funding of the Pell Grant program, which has not been funded at its authorized level in 15 years, as a step toward halting the relentless shift from grants to loans, and indeed, from public responsibility to individual responsibility.

And why not?

Higher education powers New England's knowledge-intensive economy. The region's academic research creates new discoveries, new products, sometimes life-saving products, and jobs. Colleges and universities increasingly are called upon to solve a range of public policy dilemmas such as improving ailing public schools. In short, New England higher education provides an extraordinary return on investment not only to individuals — as the earlier argument overemphasized — but to the region as a whole. Higher education is a public good and paying for it, most of those gathered in Durham agreed, should be a public responsibility. Now to craft the new argument.

*John O. Harney is the editor of *Connection.*
College Debt and the New England Family

The region’s students borrowed $1.8 billion in 1994 – and the debt burden is growing.

Credit Card Debt Up 47% in Last Two Years, screamed a Dec. 28, 1995 headline in the New York Times. “The sheer pace of this growth,” the article noted, “raises the question of whether credit card lending is following in the checkered tradition of loans to Third World countries and speculative real estate developers.”

Unfortunately, much the same can be said about college lending. For more than two decades, borrowing by students and parents has been one of the most commonly discussed and debated issues of national and New England higher education policy. But in just the past three years, borrowing to pay for college has reached a new plateau that in some ways dwarfs the current credit card dilemma.

Since 1990, American college students have borrowed as much as the amount borrowed in the 1960s, ‘70s and ‘80s combined. College students have borrowed nearly $100 billion in just six years, with the majority of the increase taking place between 1992 and 1994, when total borrowing grew by 50 percent.

Equally troubling, student borrowing increased nearly three times as fast as college costs and four times as fast as personal incomes. Between 1991 and 1994, borrowing grew by an average of 24 percent annually. During the same period, total students charges (tuition, fees, room and board) grew annually by an average of 7 percent at public institutions and 9 percent at private institutions. Per-capita disposable personal income grew by only 4 percent each year during the period.

Education borrowing by students from New England grew by an average of 28 percent annually during this period to $1.8 billion in 1994. Borrowing by students from Maine, New Hampshire and Rhode Island increased the fastest. Indeed, Rhode Island experienced an alarming 50 percent annual growth in borrowing over three years. Borrowing in Massachusetts and Vermont was near average. Among the New England states, only Connecticut experienced a relatively modest increase — borrowing there grew by 7 percent.

In 1995, students and parents are expected to borrow almost $23 billion in loans under the Federal Family Education Loan Program (FFELP), including subsidized and unsubsidized Stafford Loans and Parent Loans for Undergraduate Students or PLUS loans, as well as an additional $2 billion in other federal student loans.

The national loan explosion can be seen clearly in Massachusetts, which accounts for more than half of all student loan borrowing in New England. The Bay State saw its FFELP borrowing levels mushroom from less than $600 million in 1991 to $1.1 billion in 1994. These figures do not take into account the growing levels of privately capitalized, nongovernment loans being made to students and families throughout New England.

What is the impetus for this dramatic surge in borrowing? Much of it is the result of new borrowing by students through the unsubsidized Stafford Loan component of the FFELP, which allows all students to borrow regardless of need.

Part of the explosive growth in student loan levels also may be attributed to the expanded loan limits authorized as part of the 1992 reauthorization of the federal Higher Education Act. The amended law allows aggregate borrowing of $23,000 for dependent undergraduate students and $46,000 for independent undergraduates. The aggregate limit for graduate and professional students became $138,500, including loans made at the

---

**Average Annual Growth in Borrowing, College Costs and Personal Income 1991-1994**

<table>
<thead>
<tr>
<th></th>
<th>Disposable Personal Income Per Capita</th>
<th>Cost of College Public/Private</th>
<th>Borrowing for College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>3%</td>
<td>11%/7%</td>
<td>7%</td>
</tr>
<tr>
<td>Maine</td>
<td>4%</td>
<td>8%/9%</td>
<td>42%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4%</td>
<td>11%/6%</td>
<td>28%</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>4%</td>
<td>6%/6%</td>
<td>44%</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>4%</td>
<td>10%/9%</td>
<td>50%</td>
</tr>
<tr>
<td>Vermont</td>
<td>4%</td>
<td>8%/10%</td>
<td>29%</td>
</tr>
<tr>
<td>New England</td>
<td>4%</td>
<td></td>
<td>28%</td>
</tr>
<tr>
<td>United States</td>
<td>4%</td>
<td>7%/9%</td>
<td>24%</td>
</tr>
</tbody>
</table>

*Sources: U.S. Department of Commerce, U.S. Department of Education*
undergraduate level. These aggregate maximums are 33 percent higher for dependent undergraduates than pre-1992 authorized levels, 23 percent higher for independent undergraduates and 85 percent higher for graduate and professional students.

Borrowing by parents also has spiraled upward, a trend most likely related to the elimination of loan limits under the federal PLUS program. Nationally, PLUS borrowing grew from less than $1.1 billion in 1991 to more than $1.7 billion in 1994 — a 60 percent rise. In New England, with its high proportion of dependent students and students attending higher-priced institutions, the trend was even more startling. Total PLUS borrowing in New England shot from $66 million in 1991 to $153 million in 1994 — a whopping 130 percent increase.

The implications of this explosion in college borrowing are significant.

First, students who have the most financial need — including older students, part-timers, independent students and minorities — are increasing their debt levels faster than other students. From 1990 to 1993, full-time undergraduates saw their borrowing increase by an average 8 percent. Part-time students experienced a much higher 17 percent jump during the same period. Traditional college-age students — 18- to 24-year-olds — saw their debt levels rise by 4 percent, while 25- to 34-year-olds experienced a 20 percent increase, and 35- to 44-year-olds a 29 percent jump. Debts for White students rose by 9 percent between 1990 and 1993, while climbing 19 percent for non-White students.

Second, the rising cost of college combined with additional loan debt obviously could cause hardships for students and their families. An overwhelming 87 percent of respondents to a 1995 survey by The Education Resources Institute agreed that the cost of college is rising at a rate that will soon put a college education out of the reach of most people. Fifty-two percent agreed that “any additional debt or major expense in the near future would pose a serious financial risk for my household.” And 55 percent of the respondents indicated that an additional student loan would make their debt burden more of a hardship.

Third, growing evidence suggests that student loan debt is a major problem for a significant group of students and families. Nineteen percent of respondents indicated that student loans do or will represent the highest portion of their household debt, and 12 percent estimated that student loans account for more than 75 percent of their household debt. Seventeen percent indicated that student loan payments are higher than their monthly payments for a mortgage or rent. Twenty percent agreed that the prospect of increased debt has caused students to consider leaving school, while 17 percent indicated that the prospect of increased debt has led them to consider reducing their counselload.

If there is any good news in these data it is that the economic value of higher education remains a strong motivating factor for students and their families. Indeed, 83 percent of respondents agreed that a good job was likely to come of a college education. And 67 percent cited a good job as the single greatest outcome of a college education.

But economic motivation notwithstanding, the pace of borrowing to pay for college cannot continue. Based on the experience of loan borrowers in the 1990s, if current trends continue, total student loan borrowing will jump from about $23 billion in 1995 to almost $50 billion by the year 2000.

The social and economic consequences of continued escalation in borrowing and declining government support for student grant programs could be severe. The failure to address the serious over-reliance on loans to finance higher education might make the handwringing over credit card debt seem almost quaint by comparison.

Jamie P. Merizotis is president of the Institute for Higher Education Policy in Washington, D.C. Thomas D. Parker is president of Boston Systems Resources Inc., a subsidiary of The Education Resources Institute in Boston, and a lecturer in education at Boston University.
Middlebury's Plan for Growth:
A Case Study

For higher education, as for most American institutions, the 1990s bear little resemblance to the 1980s.

During the 1980s, students and their families demanded — and were willing to pay for — an ever-more broadly defined, premium residential liberal arts college experience. That experience would comprise not only superior teaching and academic facilities (measured against the facilities of peer institutions), but also quality athletic and social spaces, more varied and accommodating residential and dining services and new or increased levels of institutional support for services such as psychological counseling, career placement and off-campus internships.

Though the idea of the student as "customer" had not yet migrated from the business world to academia, prospective students and their families wanted more from higher education. And there was little agreement over where to draw the line demarcating the limits of what a college might reasonably be expected to offer.

In those days, the temptation to add programs and services was hard to resist. For even as students and their families were demanding more, the pool of traditional college-age men and women was shrinking. And even when the number of 17- and 18-year-olds ultimately recovered, according to the conventional wisdom of the time, institutions like Middlebury College would find it difficult to compete for the very strongest students. Thus, Middlebury was driven by an instinct for self-preservation to strengthen itself for more competitive days to come.

During the 1980s, the size and quality of Middlebury's applicant pool increased; the college committed itself to an admissions policy that sought able students regardless of their ability to pay and promised to meet their full financial need; the size of the faculty and support staff — and their compensation — grew substantially, as Middlebury tried to recover ground lost to the high inflation of the preceding decade; a new residence hall and arts center were built; and many other college facilities were renovated.

Not surprisingly, Middlebury's costs grew dramatically during this period, and revenues increased to meet the costs. The college's "comprehensive fee," covering tuition, room and board, grew from $7,800 in 1980 to $19,000 in 1990. A successful capital campaign raised $80 million. And the college's endowment, reflecting the decade's boom, grew from $62 million in 1980 to $227 million in 1990.

Despite some minor objections to the escalation in price, a sense of stature and accomplishment pervaded the campus. Middlebury at the end of the '80s was demonstrably better and stronger than before.

As the 1990s began, the objections to Middlebury's price became louder, in part because Middlebury, as a labor-intensive enterprise, saw its costs continue to rise even amid declining inflation, and in part, because the college had finally dared to propose that the hitherto vague lines of demarcation now needed to be clarified.

Like disgruntled taxpayers, Middlebury's fee-paying students and their families expected no reduction in the college's programs and services, especially given what they considered to be high charges. (Actually, the comprehensive fee covered only two-thirds of the college's actual cost, the rest coming from endowment income, gifts and grants.) They rightly expected a quality faculty and the continuation of Middlebury's policy of meeting the full financial need of students. But when the administration argued that funding these two priorities would require level-funding or cuts in other budget items, these customers suggested that the college find efficiencies elsewhere. Proposals to pare back student services and decisions not to approve a new club or varsity sport were greeted coolly.

At the same time, the U.S. secretary of education asserted that colleges were "ripping off" the public, and the Justice Department, perhaps acting on the same impulse, launched a protracted and ultimately fruitless inquiry into higher education's pricing structure and financial aid policies.

Curiously, the line at Middlebury's admissions office grew. Still, having been warned that the '90s would not be like the '80s, the college began to trim its sails.

In 1991, 17 employees were let go as part of a well-publicized and poorly executed involuntary staff separation plan which cut some costs in the short term but at great pain. Though Middlebury's fee increase that year was quite modest, not a single parent expressed appreciation, and the public saw the college as a callous institution that had lost its human touch.

And so Middlebury began to plan carefully, thoroughly and strategically. By 1992, the administration
had developed an elaborate set of 10-year academic goals and financial projections. The college reduced the number of students allowed to live off campus. A very successful — this time, not publicized — voluntary separation was initiated, trimming the staff by 41.

Middlebury set its course for "steady state" and began to reduce the annual increase in its comprehensive fee from 8 percent in academic year 1992-93 to 4.9 percent in academic year 1995-96. Middlebury came to recognize the need to educate and proactively involve its various constituents in the college's finances and, in particular, to demonstrate the imprudence of succumbing to every desire of every customer. The college created a student committee to study finances and make a recommendation to the board of trustees regarding the comprehensive fee. For each of the last three years, the committee's recommendation has been virtually identical to the administration's.

The administration also began to poll every student's household, asking 20 simple questions to measure satisfaction with the Middlebury experience. As a result, the college enjoys a much more authoritative position in speaking about what its families really want.

Among other initiatives, Middlebury filled several vacant positions on its board of trustees with parents, providing a two-way conduit of information. The college also developed a three-year bachelor's program in international studies, taking advantage of the college's calendar and areas of strength, acknowledging that not all subjects are best studied at the same pace, and offering significant financial savings to students.

It is noteworthy, however, that Middlebury's 1992 plan succeeded because of the continued decline in inflation, an ability to provide the same services at lower cost and the remarkable growth of the college's endowment. Absent any of these factors, the plan would have failed. Moreover, in continued defiance of the conventional wisdom, Middlebury's applicant pool continued to grow and strengthen. By fall 1994, the college had wrung out as much on the expense side as it could and might well have finished the decade in relative security and satisfaction.

But downsizing is not an end in itself; and to stand still is to risk falling behind.

By 1994, Middlebury was once again engaged in a spirited discussion about the future of the college, based on a set of propositions advanced by the administration:

- First, though it must continue to pursue general excellence in the liberal arts, Middlebury should aspire to "peaks" of "conspicuous excellence" (language, literature, international studies, environmental studies with a strong science core and opportunities for applied experiences in the liberal arts) and this aspiration should shape academic priorities and inform institutional decision-making.
- Second, the nature of the college's applicant pool strongly suggested the feasibility of increasing enrollment from 1,900 to 2,350 gradually over 10 years.
- Third, Middlebury must continue to contain its costs and restrain its price.

- Finally, the college should measure success in terms of its ability to increase the "yield" of matriculants from that group of students now being accepted at Middlebury but choosing instead to attend one of four other institutions: Amherst, Williams, Dartmouth or Princeton.

After much debate, the plan won the support of Middlebury faculty, the student newspaper, and ultimately, the college's trustees. In May 1995, the trustees unanimously adopted a resolution, committing to carefully planned and managed growth over the next 10 years.

Specifically, the plan would: expand faculty by up to 30 full-time equivalents; expand and renew the physical plant to meet the infrastructure requirements of a larger student body; before enrollment actually increased; gradually increase enrollment over 10 years to 2,350, while enhancing the quality of the student body; and expand the support staff to provide necessary services to students and faculty.

In setting out to achieve these goals, the board assumed: continued reduction in the rate of annual increase in the comprehensive fee, with the fee eventually tracking the annual inflation rate; a successful capital campaign; and continued prudent management of Middlebury's endowment.

Bringing the rate of increase in Middlebury's comprehensive fee in line with general inflation may be the greatest challenge. But the college has already cut the rate of increase in half. Learning to live within such means is more than half the battle.

Middlebury is also counting on an ambitious capital campaign to bring in new money. The college hopes to slow the rate of fee growth and hold down endowment spending so that once enrollment stabilizes, Middlebury — having seen its endowment grow and new funds raised — will be less dependent than before on fee revenue and better able to maintain a student body and faculty of a particular size, while continuing to meet the financial need of accepted students.

Middlebury is also exploring other potential sources of revenue and has developed a business plan for the development and marketing of teaching materials in languages.

Having adopted a contrarian strategy, Middlebury recognizes that the challenges have only begun. The college will not simply grow every sector by 15 percent over the next 10 years. To do that would be to miss the opportunities growth poses. Disciplined use of resources — difficult enough in normal times — requires extra effort in times of growth. The college will approach the decisions posed by growth in the same way it developed its plans for growth: by consulting the broader community, by requiring "the way we've always done it" to bear the burden of proof, by remembering that the institutions most apt to prosper are those that are true to their own traditions, cultures and ideals, and finally by keeping in mind Samuel Butler's observation that, "it takes only ordinary intelligence to survive adversity; it takes real genius to survive prosperity."

John M. McCardell Jr. is president of Middlebury College.
Support Your Local College

Faced with declining state support, public institutions are stepping up private fundraising.

Everyone talks about the weather but no one does anything about it. In New England higher education, there is a similar well-worn truth. Year in and year out, critics complain about the failure of the region’s public colleges and universities to raise significant enough private funds to compensate for comparatively low state support and build meaningful endowments — the dowries that have given other institutions their character, strength and, indeed, their very existence. Yet, the situation never seems to change much. New England’s community colleges and public four-year institutions wear tattered homespun, while the region’s private colleges indulge in varying degrees of sartorial splendor.

Consider the numbers. New England colleges and universities garnered some $1.2 billion in private gifts in academic year 1993-94, according to data released last year by the New York City-based Council for Aid to Education (CAFE). But of that total, just $77 million went to the region’s public institutions or systems. Meanwhile, a survey published in 1994 by the New England Board of Higher Education found that the endowments of New England’s public land-grant universities averaged just $2,404 per student in 1992, compared with nearly $100,000 per student at the region’s major private universities.

Private support of New England public colleges and universities is lagging in two ways: the region’s publics fare poorly not only compared with their private counterparts, but also relative to public institutions elsewhere.

The University of Connecticut’s planned $250 million campaign is, by the standards of New England publics, a blockbuster endeavor. The University of Michigan, on the other hand, is in the midst of a $1 billion campaign. And while four-year public institutions across the country raised the equivalent of $905 per student in 1993-94, New England’s four-year publics raised just $457 per student, CAFE data show. (Community colleges raise even less — about $75 per student.)

Bowdoin College Vice President for Finance Kent Chabotar says New England’s deep tradition of sup-

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port for older private colleges makes the region's public institutions "orphans," Observes Chabotar: "If you look south of Virginia or farther west, you will find that the publics are in a much stronger position."

Of course, even the most ambitious fundraising effort can only do so much. As former CFAE President Judith S. Eaton noted in a 1995 monograph, "Voluntary support to education ($11.2 billion in 1993) is minuscule compared with total higher education expenditures ($200 billion in 1993)." Still, voluntary support can make a big difference for an individual institution by helping to fund long-term programs, supporting state-of-the-art facilities and ensuring quality of education generally.

Moreover, for public colleges and universities, private fundraising has become an important complement to inconsistent state tax appropriations. "Private support is more critical, as state governments are forced to put more money into fighting crime and covering health care costs," says Richard E. McDowell, president of the University of Pittsburgh at Bradford, which has raised millions of dollars and supported a transition from a two-year to a four-year institution.

Examples of state-supported institutions blazing their own paths are legion. The University of Mississippi, for example, raised about $94 million toward a five-year, $110 million campaign goal in just about half the time allotted, and is now ranked among the nation's top 400 charities in terms of private dollars raised.

The University of Maryland, College Park, raised $41 million last year, up from $18 million four years ago. Leonard Raley, the university's assistant vice president for institutional advancement, attributes the success to recognition of the dictum that it takes money to make money. The university experienced a "cultural shift," says Raley, and began building a powerful development operation staffed with recruited fundraising talent. Academic departments at the university gradually recognized the value of investing in development and added their support.

In fairness, New England's public institutions have recorded some successes, too. The University of New Hampshire and Fitchburg and Bridgewater state colleges in Massachusetts posted substantial increases in voluntary support recently. And as UConn prepares for its major capital campaign, the state of Connecticut has pledged to match dollar for dollar any private gifts or pledges of between $25,000 and $2 million. Massachusetts and Vermont have considered similar incentives. Still, the fundraising performance of New England's public institutions has been less than remarkable.

Why have New England's public institutions failed to break into big-time fundraising? Holyoke Community College President David Bartley, the former speaker of the Massachusetts House of Representatives, lays blame on several factors. For one, he says, most New England public institutions are young—a nearly all made the transition from agricultural or teacher-training schools to full-fledged colleges and universities in

### New England’s Leaders...

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Note: The information in these tables is provided by the New York City-based Council for Aid to Education (CFAE), which has surveyed colleges and universities about their voluntary support for more than 40 years. The CFAE's annual Voluntary Support of Education survey is commissioned by the Council for Advancement and Support of Education and the National Association of Independent Schools. For more information, contact: Council for Aid to Education, 342 Madison Avenue, Suite 1532, New York, NY 10173, 212/661-5800.

Source: Council for Aid to Education
the decade or so immediately following World War II. State largesse followed the transition, initiating an era of expansion that petered out only in the 1970s and '80s, leaving the institutions with neither a reliable stream of state support nor the know-how and alumni relationships that make fundraising work at private colleges. Nationally, alumni provided $3.4 billion in gifts to their alma maters in 1993-94, or 28 percent of all voluntary support, according to CFAE.

Public institutions are also dogged by issues of loyalty and identity. The publics enroll and graduate a higher percentage of commuter students who are less likely to develop strong campus ties. And community colleges face a special challenge, Bartley notes, because their alumni often give their ultimate allegiance to another institution — one from which they receive a bachelor's degree.

Even more importantly, adds Bartley, alumni of most public institutions are only now reaching their years of peak wealth and, potentially, peak giving. Students who graduated in the early 1960s are now in their mid-50s, an age when they may be preoccupied with their own career development and helping their children to get through college. For these alums, writing a big check to the old school is by no means a primary impulse.

Bartley observes that his own alma mater, the University of Massachusetts at Amherst, was derisively known as "Mass. Hay and Grain" until 1947 and was "sleepy" even in 1956 when Bartley graduated with about 1,000 others. Similarly, he notes, the first Massachusetts community college didn't come into existence until 1960, and many others across the six states didn't open their doors until the 1970s. Time, he argues, will begin to favor fundraising by public colleges, as alums of these schools develop deeper pockets and even consider making bequests.

New England public institutions have also had a mixed record of corporate support. Corporations contributed about $119 per student to New England's public colleges and universities in 1993-94, according to CFAE, compared with $269 per student at public institutions nationally.

It's not that corporations have been unwilling to support key programs. During the 1980s, companies involved in microwave technology helped support a favorite graduate engineering program at UMass-Amherst. But the corporate-higher education partnership has been inconsistent. Indeed, later in the decade, UMass-Amherst Chancellor Joseph Duffey was roundly criticized for failing to nurture support from business leaders who had stepped forward voluntarily to help the university through a cash crunch.

Elsewhere, corporate connections are growing. The University of Michigan, which will soon receive only about 5 percent of its funds from taxpayers, sold its sports equipment franchise to Nike for a substantial fee. "Now the joke is that they will be changing their school slogan from 'Go Wolverines,' to 'Just Do It,'" says Chabotar.

New England grantmaking organizations may, in fact, be resistant to funding public sector programs because of a perception that the public sector should take care of its own.

Bartley notes that from the 1940s through the 1980s, New England's higher education community honored a tacit agreement: the powerful private higher education establishment wouldn't oppose expanded government support of the publics as long as the publics didn't horn in on private sources of funds. When Holyoke Community College began setting up its fundraising operation, an administrator of one of New England's Ivy League institutions asked Bartley pointedly whether the state wasn't supposed to take care of such funding needs.
But the bias against supporting publics is dissipating, according to Walter Palmer, the director of corporate affairs at Harcourt General Foundation in Massachusetts and former vice president of external affairs at Raytheon Co. "The notion of pure philanthropy began to erode 20 years ago and people [at grantmaking organizations] began to ask, what do I want to support, what outcome do I seek, what is the product I want?" Whether the organization seeking funds was public or private became proportionally less important.

Palmer adds that the publics' programs geared toward economic development increasingly appeal to potential corporate donors. Furthermore, he says, a general professionalization of the development process at the publics is beginning to level the playing field for fundraising in New England.

But getting to yes — and getting more 'yeses' — will continue to present the publics with some special challenges. One is persuading donors that their gifts won't simply give the states an excuse to cut appropriations. Many public colleges such as Norwalk Community-Technical College operate 501(c)(3) foundations with multimillion-dollar reserves to serve as fiscal firewalls between donors and the political winds of the moment.

In Massachusetts, the Bristol Community College Foundation recently raised $310,000, of which $250,000 will be matched 2-to-1 by the U.S. Department of Education. The Norwalk Community-Technical College Foundation Inc. recently netted $450,000 through an annual gala organized to fund scholarships, purchase lab equipment and support a variety of other items not covered by state appropriations.

Former Massachusetts Secretary of Administration and Finance Peter Nessen says publics may need to revisit the tools they use for financial management. Too often, he says, the publics accept the pervasive public-sector logic that makes surpluses and deficits equally suspect. "The only way to get praise is to spend exactly what you were budgeted," he says. That "surplus avoidance" mentality traces along the pursestrings back to the state legislatures where, too often, public institutions that have successfully located additional support have been penalized by having budgets slashed proportionally — the very problem the foundations now attempt to minimize.

Then there is the question of investing in a development operation. In 1994, chief development officers earned median salaries of $82,800 at private, nonreligious institutions and $72,500 at public institutions, according to the Washington, D.C.-based College and University Personnel Association's most recent Administrative Compensation Survey. New Englanders need to take the University of Maryland's lesson seriously: it takes money to make money.

"Whatever problems schools like the University of Connecticut have are their own fault and not due to any external problem," says Kenneth Ashworth, vice president for development at the University of Connecticut Foundation. Ashworth, who previously held similar positions at the University of Oregon argues that there is a "perception in New England that the public universities should be allowed to be second rate." In fact, he says, they are often as good or better than their counterparts nationally. But those counterparts invariably garner more voluntary support from corporations, foundations and alumni.

Furthermore, he says, the argument that there is too much competition from New England's private institutions won't wash. The proximity of University of Pennsylvania and colleges such as Swarthmore and Lehigh didn't stop Penn State from raising $352 million between 1984 and 1990. Neither is the University of Maryland's development effort stymied by prestigious neighbors. Says Ashworth, "It is hard to argue there isn't competition there from Johns Hopkins and other top private schools, yet they have been successful fundraisers."

"What shocked me when I came to Connecticut was the lack of communication over the years with former students," says Ashworth. "They haven't been in touch with alumni and they haven't asked for money. That means it will now be at least a few years before we get ourselves to any kind of respectable alumni fundraising levels."

If and when the region's institutions make those connections with alumni and other funding sources, they may just be able to surprise the doubters.

Alan R. Earls is a writer based in Franklin, Mass. He is the former editor of Industry magazine.
Keep the Flame Alive

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The Rich Get Richer

The following is adapted from "Educational Attainment by Family Income, 1970 to 1994," which appeared in the November 1995 issue of Postsecondary Education Opportunity, a newsletter published monthly by higher education consultants Thomas G. Mortenson of Iowa City, Iowa. Mortenson's data-oriented newsletter is circulated to higher education administrators and selected policymakers.

The disparities in educational attainment for young adults are huge, persistent and growing, according to an analysis of educational attainment by family income among Americans ages 18 to 24 using data from the U.S. Census Bureau's October 1994 Current Population Survey.

By age 24, a person whose family income falls in the top quartile is 10 times more likely to have received a bachelor's degree than is a person whose family income falls in the bottom quartile. In 1979, before the redistribution of higher education opportunity began, the difference was four times.

The gains made in equality of higher education opportunity during the 1970s have been completely erased in the 1980s and 1990s. In fact, we have achieved greater inequality of higher education attainment than has existed at any time in the past 25 years.

In a labor market that reserves its best-paying jobs for those with the highest levels of educational attainment, the redistribution of higher education opportunity since 1979 has also redistributed human wealth. Those from the highest-income families have, since 1979, achieved the greatest success in bachelor's degree attainment. Those from the lowest-income families have achieved the least success in degree attainment.

Whereas higher education provides access to the best paying jobs in the economy, the redistribution of higher education opportunity since 1979 has increasingly limited access to those jobs to students whose family incomes fall in the top quartile of family income distribution — about $68,000 and above in 1994. Higher education opportunity is a double-edged sword. Opportunity provides preparation for high incomes and affluent living standards. But the rationing of opportunity since 1979 has also become a device of socioeconomic stratification, segregation and increasingly desperate impoverishment for those unable to participate and succeed in higher education.

Higher education opportunity is the vehicle for socioeconomic mobility, but has become simultaneously — through neglect — the means by which society is fracturing.

The affluent are clearly succeeding in higher education, and their absolute and relative living standards can be expected to continue to rise as they have since the end of World War II. The poor are clearly failing in higher education, and their absolute and relative living standards can be expected to continue to deteriorate as they have since 1973.

Whereas higher education was clearly thought of as the means to socioeconomic mobility, its rationing since 1979 has also become the means by which the rich become richer and the poor become poorer.

Over the quarter-century between 1970 and 1994, family income has been redistributed: the most affluent families have more of it, and the poorest families have less of it. This growing inequality is reflected in the income data that define family income quartiles used in this analysis.

Median family income remained about flat between 1970 and 1994. Yet, the bottom quartile became significantly poorer during this period, while the top quartile grew significantly more affluent. Of the two middle-income quartiles, the second quartile grew poorer while the third quartile became more affluent.

In 1994, among those from families with incomes of less than $10,000 per year, 25 percent were high school dropouts, compared to less than 2 percent of those from families with incomes greater than $75,000. The college enrollment rate ranged from 23 percent of those from families with incomes of less than $10,000, to 66 percent for those from families with incomes greater than $75,000.

High School Graduation Rates. At the very first hurdle along the path toward a bachelor's degree, the field gets sorted out. In 1994, the high school graduation rate was 67 percent for people in the first quartile of family income, 80 percent for the second, 89 percent for the third and 94 percent for the top quartile. Those from the highest family income levels have the best chance of graduating from high school, while those from the lowest-income backgrounds have the least chance.

Moreover, this basic pattern has persisted without interruption for every one of the last 25 years. Very modest increases in high school graduation rates among those in the bottom quartile of family income have been at least partially offset by modest declines in the graduation rate for those from the second quartile. This lack of significant progress has occurred during a political era in which policymakers profess commitment to equalizing educational opportunities and, more recently, to increasing high school graduation rates.

College Participation Rate Trends. In 1994, the college participation rate was 58 percent for those from the bottom quartile of family income, 68 percent in the second quartile, 77 percent in the third, and 88 percent in the top quartile.

The inequality in high school graduation rates for young adults from different family income backgrounds carries over into college participation. In fact, the disparities are magnified at this second hurdle along the path toward a baccalaureate degree.

Some of the inequality that accumulated after rationing of higher education opportunity was effectively imposed beginning in 1980 was reversed by 1994. College participation rates appear to have declined slightly in the top quartile of family income, remained flat in the third quartile and increased substantially in the two lowest family income quartiles. But since rationing began in 1979, the gains in college participation rates have been least among those from the lowest-income families, and greatest among those from highest-income families.

Enrollment Distribution by Type and Control of Institution. About half of all 18- to 24-year-old dependent college students in 1994 were enrolled in public four-year colleges and universities, with the balance enrolled in either public two-year colleges or private colleges and universities.

But the distribution of college enrollments by institutional type and control also varied by family income levels. Private colleges and universities enrolled just 12 percent of 18-to-24-year-old dependent college students from families with incomes of between $10,000 and $15,000, but as much as 33 percent of those from families with incomes greater than $75,000.

By contrast, public four-year colleges and universities enrolled just 47 percent of those from family incomes below $10,000, and as much as 60 percent of those from families with incomes of between $20,000 and $25,000. Public two-year colleges enrolled as much as 38 percent of those from families with incomes below $10,000 to as little as 13 percent of those from families with incomes of more than $75,000. Moreover, the median fami-
ily income of students ranged from $42,909 for students at public two-year public colleges to $53,046 for students at public four-year colleges, and $63,095 for students at the private colleges.

As the data suggest, the proportion of enrollment of dependent 18- to 24-year-olds in two-year institutions was highest among students from the lowest-income families, and lowest among students from the highest-income family backgrounds. And the proportion of freshmen enrolled in four-year colleges and universities was highest at the highest levels of family income, particularly above $50,000 per year.

**Enrollment by Attendance Status.** In 1994, 85 percent of all dependent 18- to 24-year-old college students were enrolled on a full-time basis. This proportion ranged from 73 percent among those from families with incomes of $10,000 to $15,000 to 90 percent for those from family incomes above $75,000. Those at the extremes of the family income distribution were most likely to be enrolled full-time. Except for the lowest income range — below $10,000 — full-time college enrollment increased with family income.

**College Completion.** At this, the final hurdle along the path to a baccalaureate degree, the very large disparities in educational progression are magnified even further. Of the unmarried 18- to 24-year-olds from the bottom quartile of family income who enrolled in college, 21 percent are estimated to have completed a bachelor’s degree by age 24. This percentage rises to 27 percent in the second quartile, 42 percent in the third quartile and 96 percent in the top quartile of family income.

Once high school graduation, college participation and college completion are all taken into account, just 8 percent of those from the bottom quartile will have earned a bachelor’s degree by age 24. In the second quartile of family income, the proportion earning a bachelor’s degree by age 24 increases to 15 percent. In the third quartile, the proportion increases to 29 percent. And in the top quartile of family income, 79 percent have a bachelor’s degree by age 24.

This measures how far we have fallen short of the goal of equalizing higher education opportunity in the last 15 years.

**Residential Life**

The following is adapted from "Roommates: A Reflection on the Campus as a Residential Community." a convocation address delivered by Amherst College President Tom Gerety for the fall semester of 1995.

What’s so important about roommates? More generally and less metaphorically, what has residential life got to do with a college education? Were we stripping college down to its essentials, and building it up from the bottom, we would start, I take it, with teachers and students, a library, laboratories. Why not stop there? City College in New York joins the tradition of European universities that begin and end with these essentials. By residential life, I mean dormitories, a dining hall, fields and grounds, a gymnasium. Why do we need or want all that? Is it really helpful to us?

The question matters not because the economics of education forces us to consider a round of cutbacks; we’re not at the point of selling off the Campus Center or renting out the Chapel. The question matters because we — and by we, I mean not just Amherst but the family of colleges and universities in our tradition — have lost our way in residential life: we’re no longer sure (if ever we were) of what our ends are in residential life, and less sure still of whether we’re achieving them.

When Amherst was founded, residence halls (and a house for the president) went up immediately. The village was tiny: only about 2,000 people lived here. The residence halls, called South and North, were necessary if more than a handful of students were to enroll in the new college. There was room for 120 students, two to a room, with fireplaces but no other amenities. We had a president and two or three faculty, all residing within a field or two of this chapel. All over the country, colleges were founded with faculties, classrooms, a shelf or two of books, a microscope, a telescope — and residence halls. In a thinly populated country, there was no alternative. Farm boys roomed with farm boys from distances that then seemed immense, though today we might cross them in an hour’s drive or an hour’s flight. Social life seems to have consisted of adolescent pranks and, after 1837, flirtation with young women from the Female Seminary in South Hadley.

"The students of Amherst in those early days," wrote William S. Tyler, an early historian of the College, "were comparatively free from exciting and distracting circumstances. They came here to study, and they had nothing else to do."

Was there an ideal or set of ideals in these residential and dining arrangements? An echo of Oxford or Cambridge, or, more farfetched, of Plato’s Academy and Aristotle’s Lyceum? Not as far as anyone can tell. Monasteries might have seemed the nearest analogy to the fierce religious convictions of most of Amherst’s early faculty — or perhaps Sparta’s training camps for young soldiers.

By 1890, when Calvin Coolidge came down by train from Vermont, Amherst was a well-established college, with graduates in every field and a reputation for intellectual vigor. Coolidge got off at the station on Main Street and went looking for a boarding house, one run by a family friend, in fact. At this time, the first of our dormitories, North and South, were used almost exclusively for classes, laboratories and study halls. Only a handful of students remained in residence on campus. The rest roomed and ate in town, occasionally with professors. Most students would join one of the newly fashionable Greek letter societies. In a wealthier period, before Coolidge was long gone, the fraternities built the great houses that now make up perhaps half of our dormitories.

Coolidge started Amherst twice. The first time, he dropped out on his second or third day. His father came down to retrieve his feverish son after one day of the notorious entrance exams in classics, history and mathematics. His second start, a year later, went better. He took the exams, found a boarding house and began classes. He wrote home that "college life ... more than meets my expectations in the large amount of work required: I recite 16 hours a week besides chapel, lectures and gymnasium. .." As befitted a Puritan and even Calvinist school, Amherst left no room for free choice in its curriculum. Even workouts at the gym were required, with showers or "sprays" part of the discipline.

Social life then was free. You were on your own as a student at college, fending for yourself in housing, meals, and entertainment. "I shall like [Amherst] better as I become better acquainted," Coolidge wrote his father at the outset. But the loneliness was not much disguised in the admission that "I don’t seem to get acquainted very fast. .." He went to everything but participated little. In the fall, there was a "canvass" between the freshman and sophomore classes, a brawl for the possession of a broomstick; Coolidge enjoyed watching his classmates in this struggle. He went to athletic events not only on campus but in Springfield, where Harvard and Yale played before thousands of students.
from around New England. "Tall, thin, somber, usually alone," Coolidge remained for nearly four years an outsider on campus, with very few friends. An Ouden — Greek for "not" or "nothing" — when it came to joining the fraternities, he was one of only a handful not asked to join during freshman year.

I bring up Coolidge not because of his later career but because of the vividness to me of his experience here as a student, and because of his loneliness. I should tell you that he managed before it was over to escape from the worst of the loneliness. His chance came in class when required to give a short speech. He amazed his classmates with the wit of what he had prepared and the confidence with which he spoke. In his senior year, he was chosen to give the Grove Oration and to preside over various toasts at dinners and parties. That year he is said to have shot a college gardener in the seat of his pants with a BB gun. He blossomed senior year and even joined a fraternity.

Many of you who are freshmen today will find college lonely at first. Students here and everywhere complain of the lack of social life. A portion of that is a deeper complaint about how hard it is to connect with others and to make friends. It is hard, and, try as we may, we teachers and administrators cannot be of much help. You will see our residential system with its various services striving, not always successfully, to make college less lonely for you. No one in the 19th century would have seen it quite that way. Doc Hitchcock, who instituted physical education at Amherst, lectured Coolidge and others that "at bottom, each one of us is solitary, alone with God,..." It is a paradox of our age that you are at once much freer than your predecessors and much more fused over; you may also be lonelier. In social life, the college can do little more than set the stage for your own efforts. Two of the most volatile issues in your personal lives — sexuality and the use of alcohol or drugs — are at stake. We on the administration would be awkward tutors in the very personal choices you will make. We can give medical and psychological advice and we can share what we know from our own experiences. Both literature and social science teach the lesson Doc Hitchcock taught. We cannot expel loneliness, and we cannot watch over you from morning till night.

Professor Hugh Hawkins of our faculty, a historian of institutions like ours, believes that the residential system is a remnant, a leftover of our past, and that it serves no particular purpose. At first, we had no place to lodge the students in a small village: dormitories were necessary. Later on, when the village grew, we gave up the dormitories that we had. But then the fraternities stepped in, eventually building houses for most of our students. With the Second World War and later with coeducation, the student body grew again to the point that Amherst needed to build dormitories or return to the age of the boarding house. We built the dormitories we needed, and we have been trying to make sense of them ever since.

To Professor Hawkins and many others, this brief history suggests what he calls an accommodation with our past rather than a coherent set of ideals or purposes for our future. His colleague at Williams College, Professor Frederick Rudolph, argues that "the collegiate ideal" can be a trap for a kind of rustic well-roundedness that often will not abide serious intellectual standards. "The notion," he writes, is that "a curriculum, a library, a faculty and students are not enough to make a college." The "collegiate way" requires sports, dining halls, dormitories and much else. But it is "permeated," he says, "by paternalism," by "handholding and spoonfeeding." It makes a college not so much an intellectual center as a special kind of late-adolescent retreat. As a Wellesley College president once put it: "Merely for good times, for romance, for society, college life offers unequalled opportunities."

The unequaled opportunity that I most remember from my own first months of college was the simple and obvious one of talk, of a particular kind of talk. It was sometimes with one other person, sometimes with three or four, almost never with many more. We were new to our setting and to one another; we were new to the freedoms of college and the peculiar mix of lenience and discipline that our studies permitted, or even required. We stayed up late; we crammed for exams and papers; we ate meals at strange hours; we washed only occasionally. Most of all, we talked. And most of our talk was, I am sure, of ourselves, although politics, novels, sex, science and history all made their way into the conversation — often in the guise of grandiose schemes for our later lives.

As I reflect back on it now, the ideas ingredient in these conversations were nothing to write down for future generations. Like the talk of lovers, what we said enthralled us at the time above all because it was about us, about who we were or more exactly who, briefly, passionately, we yearned to be. The unleashing of those yearnings — their articulation and exploration — was, for many of us, breathtaking, liberating. I suppose we felt liberated from childhood, from the oversight of parents, from the small choices of childhood towards the larger ones of adulthood. There was exaggeration in this, but it was a motivating and even inspiring exaggeration which would gradually draw us on to the balance of choice and acceptance that we all must find in our adult lives.

How can the college foster this sort of conversation? The best of it, for me, was probably after class, as one idea led to another and the themes of the lecture or seminar flowed into the themes and anxieties that were mine and my friends'. But if I had to choose the next most important contribution of the college, it would be the meals. The commons — the tradition, that is, of meals in common — rival the classroom as a setting for conversation. Even without dormitories, the commons would gather the student body together for conversation. Amherst's greatest lack in the time of Coolidge was a commons. And it was a lack that students much less lonely than he felt intensely. We know this not only because they went to great lengths to organize class dinners and picnics, but because they themselves created dining clubs in the fraternities in those years, fragmented and imperfect versions of the commons.

But what of the dorms themselves? They are convenient surely and they gather the students into groups near the library and the classrooms. Would Amherst be much worse off without them — with the students dispersed, as European students typically are, in pensions and apartments around the town and in the nearby countryside? There is a wonderful passage in the writer P. F. Kluge's memoir of a year teaching at Kenyon College, his alma mater, in which he calls the dormitory where he stayed for a semester "the anti-college."

"I'll never again make the mistake of thinking of dormitories as part of the college. They are the anti-college, college refuted, an opposing universe, negative and opposite, a building-beast where animals play golf hockey, swinging golf clubs, using the ball like a hockey puck, racketing at midnight right above my head, a place where animals nest in cages filled with comic books, video games, pizza boxes, unwashed clothing and endless noise."

Kluge found comfort months later in the thought that, bad as it was, his dormitory was a welcome relief after faculty meetings.
The dormitories at their best contribute to the endless seminar that I felt in the first few months of college and that you should feel here. People will tell you, as my father told me, that you will learn more out of class than in class. How do you mean? I remember asking him. “You’ll see,” he said. “It’s not all study. There will be bull sessions, you’ll make friends talking late into the night, over meals.” He said it with all the wistfulness of a Depression kid who had to put himself through night school and boarded with an aunt and uncle.

Amherst student Scott MacMillan of the Class of ’96 says that the good dorms here are not the ones with the best rooms but those with the best hallways: Valentine, over the dining commons, is his favorite. Moore is another dorm with good hallway culture, “with something going on outside your doorway at any given moment of the day or night.” A good dormitory is quiet enough for study yet, like a good city street, active with people and conversation until late at night. Like the college itself, the dormitories should bring students together from around the country and around the world, from backgrounds that differ and occasionally clash. The reason we oppose fraternities so strongly is because they tend to close down this exchange and limit it to like minds from like backgrounds.

We will sometimes preach to you that your roommates or your classmates, in their diversity of backgrounds, will teach you a great deal about the world. ... What you also learn from your roommates is something very particular about yourself: how spoiled you can be, how fussy, how much effort it takes for you to get along at close quarters with someone who is simply different. And different not so much because they grew up thousands of miles away or in a different setting or with different resources, but different because of the most elementary differences: they are not you, they do not react as you do or in harmony with you. Hegel said there is no individual. What he meant was that the self is a self only in relation to others. You will learn from your roommates and hallmates and classmates that it is hard to be neighbors, that it takes work. I hope you will learn as well that it is worth it.

Many of this college’s leaders over the years have emphasized the moral tasks of education. In the earliest years Amherst was a matter of religion. Amherst had a duty to see to the moral and religious formulation of its students. By Coolidge’s time, the pious ardor of our faculty and president burned at a lower temperature. The duty of Amherst was more this-worldly and citizenly. “Character,” said President Stearns in 1872, “is of more consequence than intellect.” Courses, even required courses, could only accomplish so much with respect to the shaping of strong and virtuous characters. The residences, the gymnasium, sports — all these answered to the sense that character was what was really at stake in the rigors of college.

As individuals, we must still put character before intellect. But as a college, we must put intellect first. That is our competence and our institutional purpose. Neither our curriculum nor our residential and extracurricular life will guarantee you a good or strong character. Yet there is an ambiguity in our rejection of the old Amherst of character-building and moral conviction. Implicit in what we do are moral convictions and moral commitments of our own. ... We have put the residential system here in large part so that you can make the most of our curriculum. Not only are your classes and laboratories and the library virtually at your door, but your lives are taken care of — meals served, entertainment provided and friends and acquaintances gathered nearby. It creates a free way of life, free of many of the small duties that clutter life for most of the rest of us most of the time. If you do not quite “fish in the morning and edit in the afternoon,” as Karl Marx once described an imaginary socialism, you do study Japanese in the morning, sociology or psychology at noon, argue politics over lunch, run our hills at dusk and act in a play (or write one) in the evening.

All of this is artifice — a feat of human craft and design, for the college, like a plane or boat, is a structure that we have put together with great thought and at great expense. What does it do, really? What’s it for? The simplest statement I can give is that it helps us to choose — intellectually, of course, but because intellect itself serves larger human ends, it helps us to choose the lives we will lead and the work we will do. In helping us to choose as knowingly and freely as possible it helps us to make the most of our lives, to make them the best lives we can live, for ourselves and for others. This is a moral end, and we should embrace it without any postmodern diffidence or embarrassment.

To room with another person is to be forced to converse about the most basic order of the room and the day. You sleep here and I there. You put your stuff over here. What time shall we set the alarm for and when shall we be quiet? It is to make oneself vulnerable to the other — in one’s person, in one’s goods and, if there is any trust at all, in one’s ideas and ideals. To share the campus with others is not so different. We are not always open to one another; we cannot always trust one another; we cannot always trust ourselves. A hundred identities can rear themselves up to separate us in anger or anxiety: athletes against aesthetes, men against women, poets against scientists, race against race and so on.

I hope that tolerance is only the first lesson you learn by living and working together here at Amherst. I hope that campus life pushes you further than that. I would like to hope that it pushes us all towards the most difficult and elusive form of knowledge, and the one on which, morally, all the others depend: a knowledge of oneself.

Listening to the Leopard

The following is adapted from a statement prepared by Connecticut Higher Education Commissioner and New England Board of Higher Education Chairman Andrew G. De Rocco for the newsletter of the American Association of University Professors.

In the celebrated novel, The Leopard, the leading figure, a patrician landowner of keen intelligence, sensing that his inherited authority was being eroded by social and political change, seeks to influence his peers into a common recognition of their dilemma by observing to them (I paraphrase) “We must change everything in order that nothing changes.”

While our situation may be somewhat less dramatic, it is clearly the case that the world we work in is being strongly affected by forces external to the academy and to which, I suggest, we must respond if we are to continue in something like our present form.

If Connecticut were the only state suffering from decreased support and compelled to raise tuition, seek outside support, rethink resource allocation and re-imagine patterns of governance, then we might take comfort in the prospect that sooner or later, things would get better and we would get back to normal. But our case is not unique.
All across the country, state budgets are being consumed by entitlement programs, by health care costs and corrections. It is not especially comforting for me to attend a meeting of higher education officials only to confirm our predicament. Nor is that predicament likely to change in the near term.

What are some of the forces pressing upon us? In our system of public higher education, there are now some 85,000 undergraduates, of whom only one-third or so are "traditional." Indeed, the "typical" Connecticut college student is nontraditional. Most students use the system for a variety of purposes focused primarily on the connection between knowledge and work. They choose sites based on cost, convenience and a credential. They come in, "stop out," move about and cobble together whatever array of courses fits their particular needs — and they do so with a decreasing degree of identification with place.

This places a challenge before us, especially as outside providers who sense a market opportunity become keen competitors in delivering education. We’ve lived with the National Technological University for some years. Phoenix University — a fully accredited institution — does all of its instruction through distance learning. These virtual universities are unencumbered by a physical plant, a permanent faculty and questions of tenure and governance. In short, they are free of the array of "structural" considerations that have come to dominate the internal dynamics of institutional choice and conduct.

Can we compete? I believe so, but not by standing still. Much of the dynamism alive in the academy today is testimony to the entrepreneurial spirit that built disciplines, cross-disciplinary teaching and research, and more generally, progressive divisions of intellectual labor. Incentives within the system to release a new wave of such imagination are essential if we are to reorder the nature of our work and the nature of the social contract that binds us at once to one another and to the essential elements of the academy.

Our critics suggest that we are ossified and preoccupied with adversative quarrels designed to maintain a convenience at the expense of others. They see it in faculty struggles over resource allocation, in quarrels over contracts, in our reluctance to regulate ourselves and in the failure of accrediting bodies to distinguish between hard choices and collegiality.

The critics say that because of all this, clients will purchase educational services at the best rate available, which they claim, will result in a more dynamic system that is structurally responsive to the needs of clients, rather than to its own needs.

On another front, two related phenomena are conspiring to compel some reorchestration of our work. Knowledge is growing at a heady pace. Discovery depends on discovery, and as the base grows, so also does the boundary. It’s like a sphere: as the radius of our knowledge increases, the surface of our ignorance grows as its square. In any case, what we don’t know grows more rapidly than what we learn.

Management expert Peter Drucker has argued convincingly that the growth of knowledge has irreversibly altered our patterns of work and the organization of our society. (Among his conclusions is the assertion that our new policy cannot look to government for solutions to social and economic problems.) But if knowledge is now the coin of the realm, whoever has a marriage with it stands to influence not only his or her options, but those of others as well. And that brings me to a second point.

Never before has it been possible to store and deliver information as quickly as it can be today — and will be even more so tomorrow. What we call knowledge is now more widely available than ever. It gets from here to there in a flash, and more than we can ever hope to digest is served up on a handful of CD-ROMs. Higher education has lost its monopoly on knowledge, and local libraries notwithstanding, also on the storage of the knowledge upon which discoveries depend. Where does this leave us?

With a need, greater than ever before, to act as a system, not as competing species in an econoniche. Our telecommunication lines must be transparent. We must build a platform that permits access at all points to any point. Our resources must be shared, for only in our collective intellectual and physical capital do we have an opportunity to compete effectively with others for our services — services that add both a context and a critical edge to knowledge.

Courses must be portable and the currency of exchange evaluated equitably. That is, we must put aside value-laden judgments about where knowledge is gotten and act on the outcome, so as to ensure transparency as well in transfer and articulation.

We must ask ourselves how in this new age we are to be situated geographically. Are the circumstances of place appropriate for the new dispensation? Can we, as we sharpen the definitions of mission, continue to cling to satellites that arguably once met a need, but one which in our Information Age can be served better by some other element within the system?

Such a question speaks to resource allocation, and I submit that, in such matters, the competing claims of separate institutions constitute neither sound public policy nor a survival strategy in the face of competition from a growing body of providers unencumbered by a legacy of interneque quarrels. We must devise a plan for the system — a plan fluid enough to respond to the unanticipated but orderly enough to allow for anticipation and development as appropriate for the differentiated missions of our component institutions.

And we must accept the responsibility for assessing our performance. We must learn to self-evaluate and self-regulate, for if we do not, our state assistance will ebb, and the pressures to privatize our funding grow.

Drucker argues that knowledge and work are the marriage partners of the new social order. This does not mean that our institutions become "job shops," but it does suggest a thorough review of what is generic in our beliefs and what is adaptable, that is, what we build upon and what is to be built.

In scale and significance, the academic world has progressed steadily beyond the 17th century ideals of what constituted "an educated man (sic)." But our progress has been more nearly "punctuational" than smooth. The Morrill Act was one such point. The development of research universities that took place a century ago was another. The G.I. Bill was a third, for from it, flowed the belief that access and aid were interdependent.

We are now, I conjecture, at another one of those points. I for one will heed the leopard’s advice.
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Who is eligible? All Maine students (both undergraduate and graduate) are eligible, whether you go to school in Maine or out-of-state. Out-of-state residents going to school in Maine are also eligible.

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Call 800.922.6352
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The surprising facts about the cost of student loans.*

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Sallie Mae lenders offer the lowest cost loans nationally available by as much as 8%.

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

The fact is, while the FFELP and direct lending programs have basically the same terms, Sallie Mae's more than one thousand lenders offer the lowest cost student loans that are nationally available. Sallie Mae programs such as Direct Repay™, Great Returns™ and Great Rewards® offer students significant savings over the direct lending program and standard FFELP loans.

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*All these figures represent total loan cost for loans disclosed at a 8.25% interest rate with a 10 year term and assume the Sallie Mae borrower participates in the Direct Repay™, Great Returns™ and Great Rewards® programs.
Finding a Place for Young People in the Knowledge Economy

DAVID B. KETO

Two long-term trends will fundamentally change higher education over the next 15 years. One is a steady increase in the level of education and skills needed for new jobs. The other is the substantial prospective growth in the number of Americans of traditional high school graduation age — young people who will be seeking postsecondary education and jobs in greater and greater numbers through at least the year 2007.

The intersection of these two trends poses one of the defining challenges for New England and the rest of the United States into the next century. How we build, shape and deploy higher education resources will help determine the opportunities available to young people as well as the future performance of the economy.

That fundamental long-term structural change is occurring in the economy is apparent to almost everyone. Some have misdiagnosed what is going on as the “dumbing down” of the economy. According to this characterization, skilled jobs — particularly in manufacturing — are being squeezed out of the economy and replaced with “burger flipping” service jobs. This misconception may arise from the fact that the transition from reasonably skilled manufacturing jobs to largely unskilled service jobs describes the actual experiences of many individual workers caught in the downsizing waves that have swept through manufacturing for more than a decade. Once laid off in a downsizing or plant closing, these workers find that they lack the skills to fill jobs in other plants that have made the productivity changes necessary to remain competitive. These workers are forced instead to take unskilled, low-paying service jobs. This transition from more skilled to less skilled jobs does not, however, describe what is going on in the economy as a whole.

The economy is not “dumbing down,” it is “skilling up.” In a 1995 national survey conducted by the University of Pennsylvania, 57 percent of more than 3,000 employers drawn from both manufacturing and service businesses indicated that the skills required of their frontline workers had gone up; only 5 percent said skill requirements had gone down. Today, more than 50 percent of all U.S. jobs require use of a computer, according to a 1995 survey by International Data Corp. — and that figure is rising.

These trends are particularly pronounced in New England. Census data analyzed by Harvard Business School Professor Michael Porter for the study, The Competitive Advantage of the Inner City, reveal that in 1990, fully 70 percent of jobs in central Boston required some form of postsecondary education and 44 percent required four or more years of college. Twenty years earlier, according to Porter’s analysis, only 35 percent of jobs in the central city required more than a high school diploma and only 18 percent required four or more years of college. The shift from manufacturing to services — the central economic event of this period in Boston — has result-
ed in much higher, rather than lower, education and skill requirements for workers.

Not surprisingly, the economic consequences of educational differences among individuals are becoming more pronounced. The Federal Reserve Bank of Boston reports that the real earnings gap between young New England workers with high school diplomas only and those with four-year college degrees nearly doubled between 1979 and 1992. Much of the widening gap was due to declining real wages among those with high school diplomas only. Those workers found themselves on a backwards escalator, watching the distance between themselves and their more educated counterparts steadily grow.

There is no indication that these trends have played themselves out. Rather, we appear to be somewhere in the middle of a decades-long structural shift in the economy that will continue into the next century. Indeed, the U.S. Bureau of Labor Statistics has projected that nationwide, the number of jobs requiring a college degree will have grown by 39 percent between 1990 and 2005, while the number of jobs not requiring a degree will have grown by just 16 percent.

Using a set of very conservative assumptions, the Massachusetts Institute of Social and Economic Research (MISER) at the University of Massachusetts has projected that nearly two-thirds of all Massachusetts jobs in 2010 will require some postsecondary education. MISER assumed no changes over the next 15 years in educational requirements within occupations and examined only the effects of projected changes in the Massachusetts industry mix.

Had the analysis included projections of changing educational requirements within occupations, the projected percentage of jobs requiring postsecondary education would probably have been even higher. Increasing educational requirements within occupations have been the trend during the past 15 years as, for example, production workers — once required only to carry out fairly simple manual operations on an assembly line — are increasingly called upon to operate computer-controlled machinery, to function in self-managed teams and to master such subjects as statistical quality control. There is every reason to expect this trend to continue.

For colleges and universities, the impact of increasing demand for higher educational attainment will be compounded by projected growth in the number of young people over the next 15 years. In Massachusetts, for example, the number of 17- to 18-year-olds will increase by nearly 50 percent from just over 60,000 per year in 1994 to just over 90,000 per year in 2007.

The intersection of these two trends — sharply rising need for postsecondary education among workers and significantly greater numbers of young people seeking education and, ultimately, work — will reshape the higher education environment. Clearly, the number of people needing postsecondary education is headed up. Today, a high school diploma, without more, is a one-way ticket to the economic margin.

Is this good news or bad news for higher education? That seems like a rhetorical question insofar as these trends indicate greater demand for what community colleges and four-year colleges and universities have to offer. And one hopes that the higher education sector will respond enthusiastically to meet what is clearly one of society’s most important challenges. But meeting this demand will mean change — in some cases, wrenching change — for the higher education institutions themselves.

This change will be driven by the changing role of higher education in the economy — from offering a distinguishing credential for the economic elite to providing a minimum job requirement for the economic majority. Higher education is being democratized.

Enlarging the pool of those receiving postsecondary education will require that institutions, at least collectively, accommodate a student population that reflects the characteristics of the population as a whole.

A broader student pool will include more students who view education in strictly pragmatic terms — as a vehicle toward greater job opportunity. The enlarged pool will also include more students who cannot afford to take four years off for full-time study at a residential institution, and some who cannot take two years or even one year off. And the pool will include more students who simply cannot afford higher education as traditionally delivered.

Truly meeting the need for postsecondary education over the next 15 years requires adapting to the realities of those in need, not sitting back and serving only those who still fit the traditional mold. Postsecondary education must become more customized and diverse in its offerings, more focused on specific career-related needs, more flexible and convenient — particularly for students who must work while studying — and, above all, cheaper.

Cost concerns will likely turn out to be a threshold issue for colleges and universities. Education is one sector that has not participated for the most part in the productivity improvements that have swept much of the rest of the economy. Consequently, the cost of education has escalated much faster than the costs of most other goods and services. Governments are unlikely to step in with massively increased subsidies to bridge the gaps created by hyperinflation in tuition and fees, a growing number of traditional college-age people and a broadening demand for postsecondary education in the job market. Only by bringing down the costs of delivering instruction through major productivity improvements can institutions hope to address the likely new demand for learning. The stage is set, therefore, for such innovations as distance learning and electronic education to move from being marginal activities to essential vehicles for instructional delivery by faculty — to students on campus, at satellite centers, in the workplace and at home.

It is likely that many traditional, elite private colleges and universities will not see their mission as providing education for the majority. They will continue to be selective and to seek students — from foreign countries if necessary and with long-term financing — who can meet traditional higher education’s extraordinary costs.

The burden of serving an expanding pool of students is likely to fall most heavily on the public institutions. It will be important to see whether public institutions respond to the challenge simply by calling for greater public subsidies or whether they also move convincingly to implement productivity measures to radically reduce the cost of delivering instruction. While public higher education can certainly make a case for more generous subsidies in most New England states, no realistically achievable increase in subsidies will meet the needs of the next generation of workers at current cost levels.

It is likely also that a new breed of private or public higher education institution will emerge — one that is prepared to use the latest technology and instructional methods to deliver education tailored to students’ job-related needs, available on a flexible basis to accommodate employed and older students, and delivered at a cost that students and governments can afford. Indeed, pathbreaking work by the University of Maine System, Rensselaer Polytechnic Institute and the growing number of “virtual universities” delivering education over the Internet demonstrates that early versions of this new breed are already among us.

The hope is that some combination of existing and new institutions will rise to meet the challenges of the knowledge economy and of helping young people find their places in it.

David B. Kato is undersecretary of economic affairs in Massachusetts.
Policy Think Tanks: Reinventing New England?

CHARLES D. CHIEPPO

A
braham Lincoln observed that “with public sentiment, nothing can fail; without it, nothing can succeed. Consequently, he who molds public sentiment goes deeper than he who enacts statutes or pronounces decisions. He makes statutes or decisions possible or impossible to be executed.”

The growth of public policy institutes in New England and across America over the past 10 years seems to confirm the 16th president’s insight. Indeed, many of the institutes or “think tanks” that dot the region’s landscape are not so much the centers of monastic scholarship the term implies as they are communications organizations dedicated to catching the attention of editorial writers and other opinion leaders with a range of books, reports and seminars — and ultimately molding public sentiment.

Not surprisingly, several think tanks in this, the nation’s academic heartland, are affiliated with colleges and universities. Among those associated with the region’s state-supported universities, there are, for example, the John W. McCormack Institute of Public Affairs at the University of Massachusetts at Boston, the Margaret Chase Smith Center for Public Policy at the University of Maine and the Edmund S. Muskie Institute of Public Affairs at the University of Southern Maine. The Beacon Hill Institute at Suffolk University, the Alfred Taubman Center for State and Local Government at Harvard University’s John F. Kennedy School of Government and the Taubman Public Policy Center at Brown University are among the many connected to New England’s private campuses.

But not all New England think tanks have sprung up through ivy. Successful businessman Lovett C. Peters founded the right-leaning Pioneer Institute for Public Policy Research in 1988 with the goal of changing the intellectual climate in Massachusetts.

More recently, Mitchell Kertzman, founder and chief executive of Powersoft, a Concord, Mass., software company, established the more liberal Massachusetts Institute for a New Commonwealth, known as MassINC, which will conduct economic and policy analysis and soon publish a quarterly magazine. In January, MassINC used the occasion of a Greater Boston Chamber of Commerce breakfast to unveil its debut report — a 124-page study on the declining real income of New England’s middle class.

Kertzman’s endeavor notwithstanding, much of the growth in think tanks has had a decidedly conservative or libertarian flavor. As ideas like less intrusive government and the return of power to the states gained currency, conservative business leaders and others saw think tanks as a counterbalance to highly organized liberal constituencies such as unions and academia.

Moreover, the perceived influence of the Heritage Foundation on the Reagan administration during
the 1980s caught the imagination of a new generation looking for non-governmental solutions to public policy problems. In turn, newly elected market-oriented officeholders who ran on platforms of devolution of government power and privatization of government services, often looked to the growing crop of new think tanks for ideas on implementing these concepts.

Their drive to take control back from the federal government has been helped along by the growth of the Internet and other information technologies that give private individuals and think tanks immediate access to data and other information. "Increased access to information has lessened our reliance on government and made it possible to decentralize in a way that couldn't have been done before," says Charles D. Baker Sr., a Northeastern University management professor and Pioneer board member.

Neither the independent think tanks nor campus-based institutes have been shy about jumping into the thick of state policymaking. In 1991, as debate raged over then-Connecticut Gov. Lowell Weicker's proposed state income tax, the independent Yankee Institute of Glastonbury produced a study showing that states enacting income taxes have seen increases in government spending and decreases in personal income. The tax was ultimately enacted, but in the process, Yankee established itself as a resource for state legislators looking for a free-market perspective on issues of the moment in state government.

The Beacon Hill Institute's studies helped beat back a Massachusetts referendum calling for a graduated state income tax. More recently, the institute developed a tax analysis model to test the economic impact of proposed changes in Massachusetts state policy. While the Muskie Institute's main mission is graduate education, the institute has also worked with Maine's state government to implement new approaches to mental health and social services and has gained a national reputation for new ideas in rural health and child and family policy. McCormack Institute fellows have published benchmark reports on issues such as the future of Massachusetts public higher education, while working to maximize the state's stream of reimbursement revenues from the federal government.

Pioneer's 1992 examination of the Boston Public Schools, which included the first call for "entrepreneurial schools," played a key role in the development of Massachusetts charter schools, the first 15 of which opened in 1995. And ideas aired through the institute's five-year-old "Better Government Competition" have resulted in a new management system for the state vehicle fleet, privatization of state-owned pharmacies, elimination of unnecessary second-ary treatment procedures from the Boston Harbor cleanup project, establishment of maternity as a prerequisite for receipt of benefits through the Aid to Families with Dependent Children program and a school-based teen pregnancy prevention program.

Still, Baker says the impact of think tanks on public policy has been erratic, depending on how far public opinion has moved on a particular topic. "Think tanks have had a major impact on areas like education reform and, to a lesser extent, privatization, where people and legislatures were ready to move," says Baker. "This has been less true in areas like welfare reform, where people are ready for change, but don't really know what to do."

Financial supporters of think tanks often seek a quick return on their investment.

Perhaps most importantly, the road between public office and the think tanks carries people as well as ideas. The Yankee Institute got a shot in the arm in 1994 when two institute board members, John Rowland and Christopher Burnham, were elected governor and state treasurer, respectively. Pioneer Institute Co-Director Charles D. Baker Jr., is Massachusetts Gov. William F. Weld's secretary for administration and finance. Former Pioneer Co-director Steven F. Wilson served until recently as special assistant to Weld and authored the governor's recent government downsizing plan. And in 1995, current Pioneer Executive Director Jim Peysner took a four-month leave from the institute to serve as undersecretary of education and oversee the opening of charter schools in Massachusetts.

Muskie Institute Director Richard Barringer and McCormack Institute Director Robert Woodbury, who recently served as chancellor of the University of Maine System, are both former gubernatorial candidates in Maine. Charles D. Baker Sr. of Pioneer served as undersecretary of health and human services in the Reagan administration. McCormack Institute Senior Fellow Robert Wood was secretary of housing and urban development under President Johnson. MassINC chief Tripp Jones was the chief of staff to former Massachusetts state representative and Democratic gubernatorial candidate Mark Roosevelt.

New England think tanks vary not only in outlook, but also in strategy. In 1991, Yankee directors hired former Hartford Courant editorial writer Larry Cohen as executive director, and charged him with raising the institute's profile. Since then, the institute has focused on spreading its free-market philosophy via op-eds, book reviews, PolicyFax (an automated report dissemination service of the Illinois-based Heartland Institute) and cable television, as well as longer, but always narrowly focused, studies.

At Pioneer, Peters began with the premise that academics and politicians in Massachusetts generally were to the left of the populace. He set out to broaden the debate by introducing a market-based approach to public policy issues.

Peters' vision was to run a completely independent shop that was not reliant on research grants or government money and not subject to faculty committees. He believed two concepts were imperative. First, the institute must not limit itself either to a particular type of issue or to the contentious debate of the day, but must instead stay focused on the state's overall intellectual climate. Second, Pioneer publications must meet the highest academic standards and be subject to rigorous peer review — there should be debate about the ideas proposed, but never about the quality of the scholarship.

Pioneer's emphasis on independence, scholarship and the long view can make funding difficult, because financial contributors often seek a quick and measurable return on their investment. But the approach also provides credibility. Think tanks affiliated with public institutions, on the other hand, have enjoyed a fairly steady stream of funds even in an era of shrinking public higher education budgets (and may pay a price in terms of their perceived objectivity). The McCormack Institute receives state money each year and has received two $3 million endowments from the federal government. The Margaret Chase Smith Center's $1 million annual budget includes $300,000 each year from the University of Maine, as well as federal money. At the Muskie Institute, state appropriations sup-
port only teaching in degree programs. The institute’s public policy research is supported by private foundations and public research grants and contracts. (The latter accounted for nearly $10 million in 1995.)

Among think tanks affiliated with private universities, Beacon Hill Institute was started in 1991 with a grant from Ray Shamie, former chairman of the Massachusetts Republican Party and two-time U.S. Senate candidate. The institute pays overhead to Suffolk, and in return, receives use of physical facilities, access to faculty and other university resources. It produces brief, readable reports on Massachusetts economic issues of the moment and aggressively pursues media attention for its findings. "We want to use our academic resources to get reports on issues out in a timely fashion," says Beacon Hill Director David Tuerck. The institute is assembling a board of academic advisors to provide built-in peer review for its studies.

While Harvard’s Taubman Center sponsors some events and supports ongoing educational programs, its focus is on producing original, book-length research. It is funded by an endowment from A. Alfred Taubman and by its own fundraising efforts. Additional funds come from research underwritten by private or public organizations, but sponsored research is complicated by Harvard’s policy of keeping a tight grip on research findings. The Taubman Center sponsors the "Innovations in American Government Awards Program," which is similar to Pioneer’s "Better Government Competition," but limited to existing government programs. The Ford Foundation provides $100,000 grants for each of 15 winners and $20,000 each for 15 runners-up.

The late Antony Fisher, founder of England’s Institute of Economic Affairs, suggested that think tanks might be at least as sound in shaping good government policies as politicians are. "I am not suggesting that those who have the funds should necessarily give up supporting politicians," he said. "I am suggesting that far better government would result if as little as 1 or 2 percent of the amount currently spent on politics were donated to public policy research institutes. Another $5 million spent on politics annually would, I believe, make little difference. Five million dollars spent on 10 more institutes would have a significant impact on policies.”

Lincoln would probably agree.

Charles D. Chieppo is director of policy development at the Pioneer Institute for Public Policy Research in Boston.
For the past decade, the Corporation for Enterprise Development's (CFED's) annual Development Report Card for the States has provided economic benchmarks for state and corporate decision-makers. Each year's Report Card attracts the attention of businesspeople, legislators, economic development officials and others, particularly in Maine, where lackluster grades reflect a grim reality: the state's capacity for growth and prosperity has been undermined by limited investment in technology resources. But that's changing.

The CFED evaluates each state on three indices: "economic performance," "business vitality" and "development capacity."

Development capacity is important because it relates directly to a state's economic performance, according to CFED. The development capacity index is made up of four sub-indices measuring 1) human resources, 2) technology resources, 3) financial resources and 4) infrastructure and amenity resources.

The CFED has observed that technology resources are tools for long-term economic growth. Indeed, CFED national data show a link between strong technology resources and high-quality jobs. Fifteen of the 21 states earning an A or B in technology resources in 1994 also received an A or B in earnings and job quality.

So Maine's recent Fs and Ds in the technology resources sub-index of the Report Card are reason for alarm. The technology resources sub-index for 1995 places Maine: 28th among the states in Ph.D. scientists and engineers in the workforce; 49th in science and engineering graduate students; 39th in patents issued; 50th in university research and development; and 42nd in federal R&D. (The state's 14th rank in Small Business Innovation Research grants was a rare bright spot.)

The good news is that CFED comparisons reveal that development capacity responds favorably to direct policy intervention. State governments cannot control many external variables, but they can make strategic investments in the science and technology infrastructure and overall development capacity to ensure stronger, long-term economic performance. Maine's performance on the 1995 Report Card offers the state's public and private sectors compelling reasons to bolster their investment in science and technology. And indeed, both state government and industry in Maine are beginning to appreciate the importance of technology in the state's economic fabric, and the need to work in partnership.

Why does Maine score so poorly on the Report Card? In short, Maine has never developed a strong research and development infrastructure. A 1995 study undertaken for the Maine Science and Technology Foundation...
(MSTF) by Economic Innovation International identified a number of reasons why. Among them: Maine has only one doctorate-granting university and no medical school to serve as a major engine of R&D and technology commercialization. Maine’s economy has been dominated by natural resource-based industries such as paper and fishing, as well as tourism, which are not R&D-intensive. And the state’s industrial base has been dominated by contract manufacturers and smaller, primarily low-tech firms. (Bath Iron Works, IDEXX Corp. and National Semiconductor are among notable exceptions.)

In addition, Maine’s private, nonprofit R&D laboratories are funded largely by grants and contracts and have not actively sought to expand into commercial markets or spinoff commercial subsidiaries. In 1993, the University of Maine received only $80 in licensing revenues from one license and filed no patent applications, according to the Association of University Technology Managers.

survey of licensing activities. Finally, Maine taxpayers — and their leaders — have never completely committed the full financial and political resources necessary to transform the state’s R&D capacity.

In most states, the university is central to the state’s performance in R&D. The University of Maine in Orono is the state’s land-grant, sea-grant, and primary research university — and its only doctorate-granting institution. Founded in 1865, UMaine’s primary mission was to educate teachers and assist farmers through a federally funded agricultural extension program. Competitive research and graduate programs were not undertaken seriously until the 1960s. The University awarded its first Ph.D. in 1960 and didn’t emphasize competitive sponsored research until 1970. Thus, UMaine was unprepared to take advantage of federal science programs that proliferated in the 1960s. UMaine’s total competitive R&D funding in 1970 was less than $1 million. Many current UMaine faculty were hired in the 1960s and early ‘70s, when the university’s emphasis was on teaching rather than research.

During the past 20 years, total annual R&D expenditures at UMaine have increased steadily from about $4 million in 1975 to more than $27 million in 1995. This dramatic change could be a harbinger of future growth. Nonetheless, with total R&D expenditures of $20.08 per capita, Maine would require a hefty 50 percent increase in R&D spending just to catch up to the next three states: West Virginia, 49th; South Dakota, 48th; and Arkansas, 47th, which all see spending of roughly $30 per capita. (Obviously, Maine is an anomaly among the New England states. The rest of the New England states place in the top 10 nationally, except Vermont which ranks a respectable 13th. Indeed, Maine has relied upon its proximity to other New England universities to provide personnel as well as basic and applied research to Maine companies.)

Maine citizens have been slow to accept graduate education and faculty research as legitimate functions of the university, which has hindered development of nationally competitive research and graduate education programs. Those factors — along with UMaine’s late start as a research university — continue to impact Maine’s standing in the technology resources sub-index of the Report Card and limit the state’s scientific competitiveness.

David Osborne in his book Laboratories of Democracy observes the conditions for economic growth: in today’s economy, rapid growth tends to cluster in areas that have quality universities, top-flight research laboratories and sophisticated networks of investors and entrepreneurs who turn innovative ideas into new or improved products. Maine cannot fit this formula as long as its ranks 50th in per-capita spending on university R&D and 49th in the number of science and engineering graduate students.

There is some basis for optimism. A recent study ranks Maine sixth nationally in federal R&D funds to private, nonprofit laboratories per million residents. These facilities include the Jackson Laboratory in Bar Harbor, the Maine Medical Center Research Institute in Portland and the Bigelow Laboratory for Ocean Sciences in West Boothbay Harbor.

Still, Maine’s health and economic future depends more than ever on strong resourceful and responsive public higher education institutions to provide the intellectual underpinnings, knowledge, ideas and innovations, and train the scientists, engineers and teachers needed for economic prosperity.

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he Development Report Card, appropriately, measures results not efforts, although efforts must precede results. Today, a concerted effort is underway to improve Maine’s standing in technology resources.

In the past decade, Maine has made progress in building its science, technology and research infrastructure. By 1993, the Maine Legislature created the MSTF as a nonprofit public/private partnership to serve as the state’s lead organization for matters of science and technology. The MSTF is designed to encourage and support: R&D of relevance to Maine; technology transfer activities that increase the competitiveness of businesses and public higher education institutions; effective and efficient application of technologies; scientific and technological education and training; and development of new commercial products.

Among major MSTF initiatives are Industry Outreach Centers, the Experimental Program to Stimulate Competitive Research or EPSCoR, the Maine Manufacturing Extension Partnership and the Maine Technology Investment Fund.

- The oldest programs are the Industry Outreach Centers created in the late 1980s as technology partnerships to harness Maine’s best technical talent for the benefit of business. The foundation funds the Maine Aquaculture Innovation Center, the Center for Technology Transfer (specializing in metals and electronics) and the Center for Innovation in Biotechnology. Steered by industry-led boards, these centers are recognized for their responsiveness to the industries they represent, for example, in working with a network of metal products companies to select software for computerizing the shop floor.

- The Outreach program is supported by the Maine Manufacturing Extension Partnership, established in 1995 through a cooperative agreement between the MSTF and the National Institute of Standards and Technology in the U.S. Department of Commerce. The objective of the Manufacturing Extension Partnership is to coordinate the delivery of quality, technology-related modernization services to the state’s 2,400 small and mid-sized manufacturing firms. Working from three locations around the state, program field engineers will visit small firms and identify high-priority improvement projects such as redesigning a shop layout to enhance productivity, and will then link the small firms to existing services that improve engineering, design and manufacturing capabilities, or provide consulting in market research, finance, best business practices, work organization, workforce skills and firm-to-firm relationships.

- The Maine EPSCoR program is a cooperative federal/state initiative designed to help states that have not fared well historically in securing competitive federal R&D funding. Maine has successfully competed for substantial funding from the National Science Foundation and the U.S. Department of Energy EPSCoR Programs, and has been supported by the National Aeronautics and Space Administration, U.S. Department of Defense and the National Institutes of Health. Under Maine’s NSF EPSCoR program, MSTF is working with the UMaine System to initiate a systemwide assessment of research competitiveness, taking into account resource allocation for research, faculty rewards and incentives, and research equipment and facilities.

- How will Maine support an increased level of investment in its technology resources? One answer is the Maine Technology Investment Fund, inspired by a recommendation from the Maine Chamber and Business Alliance, Maine’s statewide organization of business leaders. The investment fund was created by statute in the spring of 1995 to expand and develop the state’s technology resources. The new R&D fund is indeed expected to reach $10 million within five years, with equal funding from the public and private sectors, as envisioned by the Chamber and Business Alliance. Administered by the MSTF, this new mechanism will provide matching funds for certain federal research grants and make direct investment in R&D in target industries. Bridging the gap between basic research and applied science has not received adequate attention in Maine, but it will be the very foundation of this new venture. Investments from the fund will help support development of intellectual property to drive spin-off companies and production of new products.

Gov. Angus S. King Jr. likes to say, “Maine is on the move.” Planning efforts by business leaders, government officials and academia have begun to develop consensus around the need for investment in Maine’s technology resources as one part of the governor’s economic development strategy.

The Maine Economic Growth Council, created by the Legislature in 1993 to develop a long-term plan for the state’s economy, has set the goal of tripling the CFED’s technology resources grade for Maine from 1 to C by the year 2000 and B by 2005. Public/private partnerships have begun to put in place structures that will create a positive environment for growth. The next crucial step is for business, higher education and government to commit to the level of investment necessary to enable Maine to compete effectively in a 21st century economy.

Robert M. Kidd is president of the Maine Science and Technology Foundation.
Amid Competition, Can Universities Cooperate?

Melvin Bernstein

The difficulties facing New England colleges and universities today make now a propitious time to consider new ways to cooperate in creating, integrating and delivering quality educational offerings inside and outside classrooms and across traditional academic boundaries.

Higher education's current plight is analogous to the health care industry's. Health care is marked by overexpansion and duplication, particularly in medical specialties; the replication of high-cost research facilities; rising costs; empty hospital beds; expensive, underused diagnostic facilities; and concerns about the responsiveness of the medical community. Higher education is characterized by ever-increasing student charges; unfilled classrooms and the duplication of expensive analytical instrumentation and high-speed computer facilities.

You'd be hard-pressed to find a university that doesn't proudly attest to the presence of active collaboration within and between its individual schools and with other institutions. Many faculty seek out colleagues with similar or complementary scholarly interests, frequently resulting in mutually beneficial educational programs. Examples include the cross-departmental degree program in international relations at Tufts University and the highly successful Five Colleges program encouraging and facilitating cross-registration and other cooperative programs among Amherst, Hampshire, Mount Holyoke and Smith colleges and the University of Massachusetts at Amherst. And university entrepreneurs enthusiastically pursue multi-institutional, usually government-sponsored, initiatives to assemble competitive grant proposals.

But evidence of sustained collaborative behavior is elusive. Moreover, the steady growth of collaborative efforts, whether based in established disciplinary departments or in newer interdisciplinary areas, does not seem to be changing the inclinations, cultures or strategic positioning of universities. Most believe they can achieve their goals internally, following well-established traditional paths. The current climate of limited resources and stricter assessment and accountability would seem to further encourage this rugged individualism.

So, how can colleges and universities create cooperative arrangements that will result in more productive educational and research environments?

First, higher education administrators and faculty must recognize the educational value of collaboration, while acknowledging that issues of self-interest, institutional independence and some scholarly inflexibility will inhibit effective sustained interactions.

Collaboration must be "sold" as a vehicle to draw on the intellectual and physical resources within and
across institutions to adjust and enhance a range of university-based pedagogical, intellectual and financial models and beliefs — and to do more with less. Yes, reputations, expensive strategic planning exercises and probably a few egos are involved. But there is still more to be gained from cooperation than there is to be lost. Indeed, the educational community needs to discuss frankly not only why it is difficult to cross certain boundaries, but the consequences of not doing so. We need to recognize the parallels between higher education and our health system, now rife with hospital mergers, downsizing and a recent recommendation to decrease the number of medical schools. It is hard to escape the conclusion that higher education should address the issues proactively.

Competition abounds among most colleges and universities. Inasmuch as the common goal is to attract the best and the brightest students, faculty, researchers, staff and administrators, the elements of high-quality facilities, creative and committed teaching, scholarly accomplishments, fiscal stability and resiliency and the acclaim of peers are the sine qua non for continued success.

This market-driven competitiveness can produce a major obstacle to change. Administrators and faculty worry that cooperative activities will put hard-won or hoped-for attributes in jeopardy, putting at risk an institution’s real or imagined competitive advantages.

Yet the willingness to carry out innovative change is where the potential for the greatest payoffs exist. The educational psyche must include the willingness to let down one’s guard and share programs and faculty, to invest resources in other units or even in other institutions, to blur in the minds of some students and faculty — and even in the minds of donors and trustees — whose idea a given initiative was and who should receive credit for it, and to more aggressively encourage innovation in curricula, courses, programs, degrees and research.

How often do we hear that we cannot be all things to all people — and that all universities, regardless of size or reputation, must be prepared to make harder and more selective choices? There should be an addendum to this: we should work with our sister institutions in developing initiatives such as common class scheduling policies to encourage cross-registration; comprehensive and seamless sharing of information and library acquisitions; collaborative sharing of research and internship opportunities for undergraduate and graduate students and a host of other collaborative efforts, many existing, but few truly institutionalized. If such initiatives are undertaken, it seems unavoidable and salutary that broadband information technology will play an increasing role in helping to define new models for learning.

At a minimum, the economies of scale and concomitant financial benefits should be sufficient drivers to encourage administrators and others to vigorously pursue such joint ventures. In short, these arrangements clearly satisfy the fundamental human and institutional characteristic of mutual self-interest.

Traditional disciplines continue to stretch their intellectual boundaries to benefit core scholarly areas and derivative interdisciplinary areas alike. Such developments literally demand the creation of programs at least across departments, but more so across colleges and schools, including graduate and professional programs, and even among universities.

Opportunities for such increased collaboration abound in the Boston area, which offers quality faculty of every stripe, virtually every book that has ever been written, dozens of foreign language programs and a dazzling array of research facilities and programs. How salutary it would be to surpass the existing limited models of cooperation and provide a thoughtful, user-friendly environment for students and faculty.

This is not intended to be an assault on institutional autonomy and distinctiveness, although some additional flexibility appears warranted there. Nor would I recommend that higher education casually apply industry-generated productivity strategies such as total quality management, though there are clear opportunities to use such innovations as technology-based instructional techniques to improve the learning environment and experience. Finally, cooperation should be interpreted not as a leveling of expectations, but as an opportunity to improve academic performance among cooperating institutions.

Of course, if cooperation is to work, commitment and leadership is required not only from the highest levels of academic administration, but from the faculty and students as well. Individual institutions need to make a more serious, organic commitment to cooperation, moving beyond rhetoric to an active set of initiatives designed to take full advantage of strengths, new cross-cutting areas and changing social needs, regardless of sensitivity. Reaching such internal agreement is in some ways more of a challenge than bringing together clusters of institutions with shared values and purposes. But if we fail to do so, how can we honestly portray ourselves as a collegial community, drawing strength from individual and school accomplishments to the full advantage of the entire institution?

Much ado about nothing? Possibly, but as Samuel Butler pointed out, "Learning is like a great house that requires a great charge to keep it in constant repair." The generators and repositories of knowledge are no different. Perhaps the stronger commitment to collaboration will provide a great charge.

Melvin Bernstein is vice president for arts, sciences and technology at Tufts University.

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Walk For Hunger

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**SUNDAY, MAY 5 1996**

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The Summer/Fall 1995 issue of CONNECTION focused on the changing shape of business and management education in New England. Since that issue was published, the pace of change in the region's business schools and management programs has accelerated. Arthur D. Little's Management Education Institute became the first corporate entity to seek accreditation by the American Assembly of Collegiate Schools of Business. ... Babson College's Graduate School of Business received a hefty $30 million gift from the F.W. Olin Foundation to complete building and furnishing a 76,000 square-foot graduate center and support innovation in graduate curriculum, merit-based scholarships and a chair in entrepreneurship. ... Bentley College's Graduate School of Business introduced what is believed to be the nation's first major in business ethics. ... Following are some of the many reactions to the Summer/Fall issue.

The Other B-Schools
WILLIAM R. DILL

There are many things to commend about CONNECTION's issue on business and management education. It is perceptive about accomplishments and challenges, informative about recent developments and on target in reminding us that colleges and universities are competing in an area of education that will increasingly involve nontraditional, nonacademic players like Arthur D. Little.

Were I still at Babson, I would probably say thanks and little more. But from my perspective at Anna Maria College, you've only told part of the story. You have dazzled us with references to all those schools at or near the top of the pile, public and private. But except for glancing mention of Thomas College and Johnson & Wales University, CONNECTION does not speak to the local colleges and universities that award two-thirds of the bachelor's degrees and at least half of the master's degrees that New England institutions confer in business and management fields.

We don't have endowments for public colleges to envy. We seldom take in students who, at age 18 or 25, feel pre-anointed as future captains of industry. Our
students want more modestly to better themselves and widen opportunities. We admire their “grit.” A high proportion of our undergraduates come from families that have not been able to transmit much business or managerial perspective. These students are with us not just to learn business, but to find ways to open doors that are truly new to them. Almost all our MBA students are part-timers who are balancing studies, work, family and, in many cases, civic commitments.

When we ask, “How are we doing?” we aren’t preening about how many applicants we turn down. We do look at grades and test scores to screen applicants, but we unashamedly accept students at modest levels if we sense that they are serious about tackling the challenge of our curriculum. (I keep old twinges of elitism at bay by remembering from studies at several schools how little GMATs, for example, help in predicting even first-year grades and my lack of success in research at Carnegie Mellon University in relating those scores to anything that people accomplished after graduation.)

For us, “How are we doing?” has to get right to the essentials: do we honestly believe we add value — in knowledge, skills, moral sense and opportunity — and do our customers realize a good return on their investment?

Our innovations and experiments have been less grand than those of most of the schools covered in CONNECTION. In the pursuit of markets and financial balance, however, places like Anna Maria College have been among the first to tinker with traditional ways of scheduling classes, to reject the notion (that the great European business schools never accepted in the first place) that a master’s degree program has to be two full years in length, and to take classes to where students live and work, rather than requiring ritual treks to our home campuses.

Lacking the resources to recruit top-of-the-barrel doctoral graduates for our faculties, we have learned lots about how to make forward-looking practitioners into good teachers on both a full-time and adjunct basis. We have been less pure and more venture-some about partnerships with industry. The University of Southern Maine agreed to offer MBA classes for employees of UNUM Corp. on the company’s premises. Anna Maria College has entered into a joint venture with a consulting firm to offer a first-class program in total quality, which is designed and staffed by the firm under our supervision. Smaller colleges have long been more favorably disposed toward internships and practicums.

We have also been more willing to embrace unfashionable themes. Two decades ago, when Babson decided entrepreneurship was worth emphasizing, it was still one of New England’s also-ran schools. Back then, “prestigious” schools like Harvard Business School, New York University and the Wharton School of Business wouldn’t give the idea the time of day.

We get good, sometimes great, results. Recently at Anna Maria, I heard three MBA student teams present strategic management consulting reports on area companies. All were comprehensive efforts that I would have found very useful as a company executive. One was flat-out as good in oral presentation and the thick binder of written backup as any I have heard in years of sitting in on such field project reports at Babson, NYU and Carnegie.

New England is blessed with many of the national leaders of business education. The climb to prominence and wealth by institutions such as Babson, Bentley and Boston colleges enriches this resource. But in terms of numbers of graduates supplied and the kinds of careers they build, the overall contribution of New England higher education to the quality of management in our businesses, our hospitals and our public agencies depends equally on the efforts of lesser-known independent colleges like Anna Maria and secondary campuses in the region’s public systems. We provide the backbone and, in open competition with graduates of more famous schools, often the head for many successful organizations.

The challenges here are different from those I knew at Babson, but equally important. How do we do a better job within the constraints of very small endowments and lower tuition levels? How do we make our adjunct faculty an asset, capable of helping full-time internal faculty understand more about business’s needs and able to work collaboratively with us in program design as well as program delivery? How — when we cannot afford heavy research commitments or high-tech facilities of our own — can we collaborate more easily with some of the better-endowed schools and with private industry? How do we who are committed to operating at lower tuition levels — but who also have less aid to offer — keep business and management education affordable, and in doing so, keep opportunities for enterprise open?

Do we have a special role, given our lower tuition rates, in providing business-based education to people from governmental or nonprofit organizations who have no hope of paying Babson or Harvard rates? How do we make work on part-time degrees more portable from one institution to another, as people change jobs? How do we balance the major conflict in the lives of places like Anna Maria — the need to move imaginatively, quickly and aggressively after new markets — against the truth we teach in strategy courses that no institution can do more than a few things well?

An otherwise sensible senior corporate executive once proposed that we should outdo the French and Japanese by concentrating private and public support for one super “grande ecole” to prepare tomorrow’s CEOs for major U.S. companies. I simply urge that CONNECTION not nurture such elitist illusions.

One marvel of business enterprises is that they recruit from many sources. They beat most other institutions in society in being open to the ambitious and willing to judge and reward on the basis of performance, not credentials. They provide friendlier turf than, say, university faculties for graduates of unknown schools to try to outpace those with tonier credentials. Some corporations still put men and women with MBAs on the same “test track” with holders of undergraduate liberal arts degrees. And there are still folks like one Anna Maria honored recently at a student conference who rise to the top and now recruit at places like Harvard without ever having attended college.
A second marvel of business is that it has led the society-wide revolution in total quality, a movement which underscores the importance of people at all levels of an organization. We don’t run business programs just to award degrees to prospective CEOs. We run them to prepare men and women to excel in a wide range of slots and levels within companies and in entrepreneurial ventures that can range from a local mom and pop store to the next McDonald’s.

A healthy regional matrix of business education requires as much care in developing career office managers and salespersons as in grooming future corporate officers. For the total job, New England needs Thomas, Johnson & Wales and Anna Maria as much as it needs Harvard or Babson; Keene State and Worcester State colleges as much as it needs the University of New Hampshire or the University of Massachusetts at Amherst. The glitter of being associated with some does not diminish the need for understanding and support of the others.

William R. Dill is the interim president of Anna Maria College and former president of Babson College.

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A Shortage of Business Faculty?

JOHN F. BRENNAN

Congratulations on your excellent issue of CONNECTION examining business and management education.

Ominous trends have indeed emerged regarding management education. The sharp decline in students choosing business majors noted in CONNECTION and the now inescapable downward trend in GMAT-takers over the past five years causes us considerable concern about what will happen when these choices begin to be felt in enrollment and budget planning at both the undergraduate and graduate levels.

Yes, foreign students, women and more mature students have replenished the pipeline, but the development of more and better schools in Europe and Asia — and an already-apparent tailoff in interest among women students — may indicate more problems.

Additionally, I’m not sure we at Suffolk University’s Frank Sawyer School of Management would agree with Jack Hoy’s comments regarding “the acute shortage of highly qualified faculty.” Some of the cutbacks in higher education have created a buyer’s market for faculty.

For the first time in at least a decade, we have seen salaries for “new hires” less than salaries for “existing faculty” in several annual surveys, including the one conducted by the American Assembly of Collegiate Schools of Business. In fact, as a result of the current oversupply, many institutions are paying less for starting professors now and getting more and higher quality resumes.

These enrollment and recruiting realities mean a great deal to us here at Suffolk. More than 95 percent of Sawyer School faculty members have doctorates. Our intense dedication to total quality management and continuous improvement in teaching and research has paid off in growing enrollment during this difficult period.

Again, congratulations for taking due note of the “management education industry” in New England — and doing such a good job covering it.

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John F. Brennan is dean of Suffolk University’s Frank Sawyer School of Management.

Speed Up the Reforms

ROBERT E. HOLMES

The changes explored by CONNECTION in “The Changing Shape of Business and Management Education” are important. But unless these well-intentioned reforms for meeting competitive challenges are accelerated — and soon — they will wind up falling short. A few thoughts on how B-schools can meet the challenge:

Prepare for private-sector competition. Business schools, now and in the future, face increased competition from the private sector in both the design and delivery of degree programs and in executive education and training. AT&T University, Motorola University, the Big 6 accounting firms and many other organizations such as Arthur D. Little are all well-positioned to become major competitors of traditional business schools. Increasingly, these organizations will offer degree programs and seek accreditation from regional associations as well as the American Assembly of Collegiate Schools of Business. As a result, B-schools should intensify efforts to ensure that educational programs for students, as well as faculty research and service address more directly the rapidly changing environment confronting business — as the for-profit entities have. Business schools should also consider forming strategic alliances with firms, such as Motorola, Xerox, AT&T, to jointly offer degrees much as they have in executive education.

Forge industry partnerships. Business schools more than ever before need to forge partnerships with private companies. Arrangements that feature domestic and international internships, long-term assignments or mentoring arrangements with companies, consulting projects, classroom visits by business executives or establishment of executive advisory councils encourage an exchange of information, ideas and insights that is essential to the survival and success of today’s business school. The more B-schools know about how business is conducted in the real world, the better students can prepare for successful careers. Babson College, among others, is currently engaged in such strategic alliances with leading organizations through its “Business Mentor Program,” in which MBA students work in year-long consulting assignments in a variety of organizations. Babson and several other leading business schools also provide opportunities for international and domestic internships, which have become integral components of their programs.

Revise curricula to reflect global trends. Companies today are global. Management is less hierarchical, and on-the-job training, if such a thing exists, will be brief. Business schools must do more than keep pace with trends in the marketplace; they must anticipate them as far in advance as possible. Only through foresight can a school prepare students to graduate truly ready to survive and flourish in an environment where yesterday is ancient history. Harvard, Wharton, Duke, Indiana University, the University of Denver, Babson and others have recently overhauled their MBA programs, in many cases restructuring their MBA education into an integrated whole, rather than a piecemeal proposition. The new MBA programs stress interdisciplinary thinking and teamwork, rather than a more narrow functional or specialized individual approach, and emphasize "hands on" experience over theory. But even business schools that have revamped curricula radically should prepare to change again and again.

Keep in sync with new technology. Programs delivered via the Internet or satellite will transform graduate management education, but will not replace it. “Distance learning” undoubtedly adds convenience and extensive access to knowledge, but at the expense of the dynamic face-to-face interaction between a professor and student in the classroom. The day-to-day practice of individuals working together in a team to solve problems or doing case studies may not be replaced, but is being significantly modified by the use of information technology. B-schools must update their tech-
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Elementary School
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Deborah M. Armitage
Charleston Elementary School
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Rosemary Ellen Binda
Lubec Middle School
Lubec, Maine
Marilyn Abbott Richardson
Hawthorne Brook Middle School
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Brewster McDaniel Bartlett
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Emery G. Pineo III
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Thank you for teaching New England’s children.

nology and more effectively use the Internet and satellite communication systems to keep alive the dialogue with students both on and off the campus.

Focus on research that pays off: For years, business executives have faulted much of the research that has come out of business schools for its limited practical value. Too much research by today’s business faculty is aimed at narrowly focused specialists. B-schools must continue shifting toward the kind of applied research that addresses real business problems and produces guiding principles that result in business growth, greater efficiency and effectiveness, higher profits and economic expansion.

Improve internal efficiency. Given the current economy, it is imperative that business schools function, in effect, like the very businesses for which they prepare students. B-school administrators must apply to internal operations the same qualities — entrepreneurship and innovation, an understanding of competitive advantage and industry analysis and an action-oriented decision-making style — that business faculty try to instill in students. Higher education is in a financial squeeze that too many institutions are ignoring or, at best, treating as a short-term event. Too many schools are reluctant to change curriculum, organizational structure and the approach they use to deliver educational programs.

Plan strategically. Schools must implement formal strategic planning that reorganizes the institution from scratch — reengineers it, if you will — with an eye toward setting priorities and maintaining high standards in order to deliver an education of real value. Runaway tuition has remained business as usual for many institutions. Nationally, tuition has increased by about 175 percent in the past 10 years — more than triple the 55 percent rise in the Consumer Price Index. In December 1992, Babson made a public commitment to limit tuition increases to no more than 1.5 percent above the CPI. More colleges need to commit to limits on tuition hikes and provide data to assure their constituencies of the value-added of the educational program.

The business schools that have aggressively pursued the kinds of strategies discussed above will be the most vital in the years ahead. Those who fail to transform themselves to meet the challenges of the 21st century may cease to exist. The time for action is now.

Robert E. Holmes is the Murata Dean at Babson College’s F.W. Olin Graduate School.
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BOSTON, MASS. — Emerson College was awarded a three-year, $330,000 grant from the U.S. Department of Education to help children with speech-language problems whose families live below the poverty level. Under the program, graduate students from Emerson’s communications disorders division will work in early intervention programs at Boston City Hospital and other area institutions.

STORRS, CONN. — Two University of Connecticut professors were awarded a three-year, $300,000 National Science Foundation grant to develop an environmentally friendly process for improving the performance and lifetime of flat panel displays and broad area illuminators. The award follows seed money received earlier from the state Department of Economic Development and private industry. The project may provide competitive edge for Connecticut manufacturers of the systems which have applications in laptop computers, television and cellular phones.

N. DARTMOUTH, MASS. — The University of Massachusetts at Dartmouth established the U.S. Center for Portuguese Studies to direct interdisciplinary programs in Portuguese studies and coordinate Portuguese cultural and economic initiatives. The nearby cities of Fall River and New Bedford are home to more than 90,000 residents of Portuguese descent.

RANDOLPH CENTER, VT. — Vermont Technical College announced it would offer an associate degree program in accounting, beginning in fall 1996. College officials expect the program will enroll a significant number of "nontraditional" students, including single parents and older students who are changing careers or re-entering the workforce.

NEW HAVEN, CONN. — Yale University’s School of Forestry and Environmental Studies and the New York Botanical Garden established a joint program to train doctoral students and conduct collaborative environmental research. The joint program will focus on issues such as economic incentives for forest conservation, land-use policies and markets for non-timber forest products such as tropical fruits and raw materials for pharmaceuticals. After satisfying regular doctoral requirements at Yale, students will conduct research in the field and be based at the New York institution.

HAVERHILL, MASS. — Bradford and Merrimack colleges agreed to a cross-registration program allowing Bradford students to enroll in certain secondary teaching certification courses at Merrimack. The initiative is expected to attract Bradford history, English and math majors who want to teach these subjects in secondary schools. Prior to the agreement, Bradford offered students teacher certification at the elementary level only.

PORTLAND, MAINE — The University of Southern Maine’s School of Nursing was awarded a three-year, $507,710 grant from the U.S. Department of Health and Human Services Bureau of Health Professions to expand and revise its master’s program to focus on advanced practice nursing in three clinical concentrations: adult health, family and community health and psychiatric mental health. The initiative is expected to increase access to primary care for high-risk, underserved populations, while preparing nurses for rapid change in the health industry. The school projects total enrollment of about 30 students in the three concentrations and plans increased efforts to recruit minority students from northern New England.

SPRINGFIELD, MASS. — Springfield Technical Community College was awarded a five-year, $1.75 million grant from the U.S. Department of Education to strengthen the college’s academic and administrative operations through state-of-the-art computer technologies. The grant made under the Strengthening Institutions Program is aimed at colleges that enroll significant proportions of low-income students and operate with relatively small budgets. Among other things, the grant will fund a computerized system to provide early warning that a student may need special academic help.

WALTHAM, MASS. — Brandeis University and Harvard Medical School received a five-year, $4.5 million grant from the National Institute of Drug Abuse to study the treatment of drug abuse within managed care systems. The Brandeis/Harvard Research Center for Managed Care and Drug Abuse Treatment, to be housed on the Brandeis campus and at the medical school’s Boston campus, will bring together economists, sociologists, health care practitioners and others.

KINGSTON, R.I. — The University of Rhode Island was awarded $404,618 by the U.S. Commerce Department’s National Institute of Standards and Technology to establish the R.I. Manufacturing Extension Services — a program designed to help small and medium-sized Rhode Island manufacturers increase productivity and compete in a world market. Initially, the program will target assistance to companies that produce electric equipment and instruments and those involved in advanced processes, including chemicals, plastics and metals. Program officials expect eventually to employ eight or more field engineers, who will connect Rhode Island firms with colleges, economic development agencies and other resources.

BOSTON, MASS. — Boston University opened a 10,000 square-foot facility in Boston’s financial district offering graduate courses, professional seminars, certificate programs and hands-on technology training to people working in the city’s downtown.

MEDFORD, MASS. — Tufts University and Ireland’s University College, Cork, established the International Famine Center aimed at helping governments and international agencies respond to and prevent famine around the world. With offices at Tufts and Cork, the center will attempt to increase understanding of famine, offer technical training to governments and agencies and promote creation of a low-cost “early warning” capacity to predict and prevent famine.

BRUNSWICK, MAINE — Bowdoin College was awarded $115,763 by the Clare Boothe Luce Program to establish scholarships for two undergraduate women in the sciences. The scholarships will support women math and science students during their junior and senior years.

AMHERST, MASS. — Five Colleges Inc. — a consortium of Amherst, Hampshire, Mount Holyoke and Smith colleges and the University of Massachusetts at Amherst — was awarded a four-year, $1.1 million grant from the Andrew W. Mellon Foundation to initiate three collaborative projects aimed at developing cost-effective approaches to information systems. One project will train faculty in classroom applications of multimedia materials; another will support groups that develop and disseminate on-line training tools for faculty seeking to use electronic information for research and teaching; and a third will support teams who develop electronic products that make...
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clinical and basic research aspects of medicine. The grant will cover tuition and provide stipends for 40 of the approximately 60 students who take part in the program, which combines clinical work with research in an effort to understand causes and treatment of medical problems.

WORCESTER, MASS. — The College of the Holy Cross was awarded $25,000 by the AT&T Foundation to establish a summer program in academic technology for incoming African-American, Asian-American, Hispanic and Native American students. A two-week residential program taught by Holy Cross faculty will focus on improving the minority students' computer technology skills.

KINGSTON, R.I. — The University of Rhode Island and Roger Williams University Law School began offering a joint degree program in which students earn a law degree from Roger Williams and a master’s degree in community planning from URI. Students will be able to earn both degrees in four years, though the law degree normally takes three years and the master’s degree two more.

AMHERST, MASS. — The University of Massachusetts at Amherst was awarded a three-year, $850,000 grant from the General Electric Fund to provide support during the summer for faculty to redesign the chemical engineering curriculum and for development of a state-of-the-art simulation laboratory.

KEENE, N.H. — Two Keene State College professors were awarded a three-year, $548,260 grant from the National Science Foundation to plan and implement a revised curriculum for the college’s associate degree program in design and manufacturing. The new project-based, rather than course-based, curriculum is expected to help students learn problem-solving skills by working on integrated problems in math, science, technology and business. The program, expected to earn additional support from local companies, will also use the Internet to establish collaborative relationships with other schools and government laboratories.

STORRS, CONN. — The University of Connecticut’s School of Engineering was awarded a three-year, $270,000 grant by Oris Elevator to improve the recruitment and retention of minority engineering students. The program will attempt to improve retention rates with financial incentives and scholarships as well as a clustered living arrangement to encourage teamwork, peer networking and group study. In addition, Oris will provide internships, cooperative education assignments and mentoring.

WORCESTER, MASS. — The College of the Holy Cross announced it would award one renewable, full-tuition scholarship per year to an incoming student from Worcester, beginning in fall 1996.

BOSTON, MASS. — Northeastern University announced it will host an evening technology program established by the Massachusetts Institute of Technology in 1903. Northeastern agreed to take on the Lowell Institute as a division of its School of Engineering Technology shortly after MIT announced it would no longer support the institute, which has provided evening technology classes for Boston-area residents. Beginning in fall 1996, Lowell Institute students may work toward a certificate, associate or bachelor’s degree at Northeastern.

WARWICK, R.I. — New England Institute of Technology introduced a new associate degree program in computer servicing technology to train graduates to install hardware and software in personal computers and networks and troubleshoot problems.

N. DARTMOUTH, MASS. — The University of Massachusetts at Dartmouth established a Family Business Center to provide owners of family businesses with information on succession planning, teamwork and other strategies to keep their business and family relationships healthy. The center will be sponsored by several New England companies, including the Bank of Boston, which pledged $75,000 over three years.

HAVERHILL, MASS. — Bradford College was awarded a three-year, $750,000 endowment grant from the Christian A. Johnson Endeavor Foundation of New York City to implement a comprehensive professional development program for faculty members. Among other things, the program will help Bradford internationalize and integrate new technology into its curriculum.

FARMINGTON, CONN. — Tunxis Community Technical College was awarded a five-year, $1.48 million grant from the U.S. Department of Education to implement its “High Touch-High Tech Student Development Model,” which provides interactive tutoring and a personalized system of tracking and assistance for community college students.

RINDGE, N.H. — Franklin Pierce College built the 72,000-square-foot North Fields Activity Center, believed to be the only air-frame facility on a New England college campus. The rigid structure, made of high-strength material and supported by a pressurized environment, will house a variety of fitness and recreation programs at the school. The air-frame construction was chosen partly for its relatively modest cost of $1.7 million and the speed with which it could be built — in time for the harshest days of winter.

ANDOVER, MASS. — Massachusetts School of Law filed suit in the state courts of Massachusetts against the American Bar Association, the Association of American Law Schools, the New England School of Law and a group of individuals who, the law school charges, committed various fraudulent and deceptive acts in an attempt to “destroy the school.”

WEST HARTFORD, CONN. — The University of Hartford introduced a dual degree program in engineering and management, enabling graduate students to earn both a master of business administration and a master’s degree in engineering. To enroll in the program, students must have earned a bachelor’s degree in engineering, math, physical sciences, computer sciences, computer engineering or chemistry.

LEWISTON, MAINE — The Central Maine Medical Center School of Nursing was awarded $30,000 from the Helene Fuld Health Trust to buy teaching supplies.

NEWTON, MASS. — Lasell College announced plans to introduce an associate degree program to prepare occupational therapist assistants. Graduates of the program would be qualified to work under the supervision of a registered occupational therapist and would be eligible for state licensing and national certification.

NEW HAVEN, CONN. — Yale University’s Child Study Center was awarded $300,000 by the U.S. Department of Justice to replicate its Child Development-Community Policing Program, an initiative that brings Yale mental
health professionals and New Haven police officers together to address the needs of children exposed to violence. The grant will enable organizers to implement the program in four other U.S. cities.

FAIRFIELD, CONN. — Sacred Heart University reported record full-time undergraduate enrollment of 2,129 for the fall semester. That represents a 10 percent increase over the previous year and a 55 percent increase over five years earlier.

BOSTON, MASS. — Harvard Business School received a $10 million gift from alumnus John C. Whitehead, a former co-chairman and senior partner of Goldman Sachs & Co. and deputy U.S. secretary of state. The funds will help support the school’s Initiative on Social Enterprise, a program created in 1993 to involve faculty, students and alumni in the leadership of nonprofit and other social-purpose organizations.

AMHERST, MASS. — The University of Massachusetts Transportation Center was awarded a two-year, $1.6 million contract by the Massachusetts Highway Department to conduct highway research for the state.

BOSTON, MASS. — The University of Massachusetts system received $250,000 from the Davis Educational Foundation to develop distance learning facilities and strategies. The grant will enable the faculties of the Lowell, Dartmouth, and Amherst campuses to produce interactive video courses which, in turn, will enable the Boston campus to offer a full four-year degree in electrical engineering.

PROVIDENCE, R.I. — Brown University awarded a five-year, $24 million contract from the U.S. Department of Education to establish the Northeast and Islands Regional Laboratory at Brown, which will promote education reform in New England, New York, Puerto Rico and the Virgin Islands. The Laboratory at Brown, a consortium of Brown and Hunter College of the City University of New York system, is one of 10 regional centers charged with encouraging school reform. The federally sponsored regional laboratory for the area was previously located in Andover, Mass.

MANCHESTER, N.H. — An assistant professor of psychology at Saint Anselm College was awarded a five-year $349,990 grant by the National Institute of Mental Health to study the cause of schizophrenia and attempt to predict the onset of the severe mental disorder.

NEW HAVEN, CONN. — Yale University and Connecticut Innovations Inc., the state’s technology investment organization, joined together to buy a state-of-the-art crystal reactor used to grow new kinds of semiconductor crystals that could make it possible to transmit electronic data more quickly. The crystal reactor, valued at about $2 million, was purchased for $250,000 from Amoco Research in Illinois. Yale officials say the reactor will draw Yale researchers into a closer working relationship with faculty from the University of Connecticut’s Photonics Research Center.

PLAINFIELD, VT. — Goddard College was awarded a $75,000 grant from the U.S. Department

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of Education to establish a Work College Community Service Program. Eligible students will work a minimum of 10 hours each week for an approved nonprofit organization of their choice.

**BOSTON, MASS.** — Boston University’s School of Management was awarded $723,000 from the General Electric Fund to establish a Center for Team Learning, which will provide advice for student and faculty teams and study the effectiveness of team learning in the classroom and in industry. During the past two years, the school has integrated the concept of team learning throughout the curriculum.

**NEW LONDON, CONN.** — Connecticut College was awarded $20,000 by the National Endowment for the Humanities to involve New London-area children and their families in the National Conversation on American Pluralism and Identity. Under the program, 50 children and their families from diverse backgrounds convene at the college in the spring of 1996 for four morning-long conversations on the themes of intergenerational relationships, work and responsibility, conflict resolution and family traditions. The conversations are coordinated by Connecticut College faculty, staff and students.

**WATERVILLE, MAINE.** — Thomas College introduced a master’s degree program in computer technology education designed to meet the classroom technology needs of teachers.

**FAIRFIELD, CONN.** — Sacred Heart University was awarded $882,000 from the U.S. Department of Education to continue its Upward Bound program aimed at encouraging disadvantaged students from Bridgeport and Stratford to complete high school and go on to college. Sacred Heart was one of six Connecticut colleges to garner Upward Bound funds.

**NEWPORT, R.I.** — Salve Regina University received a $15,000 grant from Prince Charitable Trusts to support and expand the university’s Aquidneck Island Minority Student Scholarship Program. The program provides scholarships to African-Americans, Asian-Americans, Hispanics and Native Americans who are residents of Aquidneck Island.

**N. DARTMOUTH, MASS.** — The University of Massachusetts at Dartmouth was awarded a $100,000 grant from Mobil Oil Co. to build a marine science laboratory aimed at facilitating transfer of marine environmental technology to the marketplace.

**BANGOR, MAINE** — Husson College trustees approved the creation of a new school of science and humanities to take its place beside the Husson schools of business and health.

**NEWTOWN, MASS.** — Lasell College was awarded $250,000 from the Davis Educational Foundation and $25,000 from the George I. Alden Trust to help fund a campus-wide computer and telecommunications network. The network is expected to enhance learning resources and achieve more efficiency in administration.

**DANVERS, MASS.** — North Shore Community College opened a clinic to provide low-cost physical therapy to people whose insurance coverage won’t pay for it, while offering clinical experience to students in the college’s physical therapy assistant program. North Shore officials say a licensed physical therapist, a licensed physical therapist assistant or a community college student under the direction of a licensed professional will treat people with sports injuries, arthritis and other ailments for about $10 per visit, compared with the $65 to $95 fee charged by many clinics.

**BOSTON, MASS.** — Boston University’s School of Theology initiated a Cross-Cultural Comparative Religious Ideas Project with $240,000 from the Henry Luce Foundation and $460,000 from the National Endowment for the Humanities. The project will be led by a six-member team of scholars of religion from BU, Boston College and Brown University.

**LOWELL, MASS.** — An electrical engineering professor at the University of Massachusetts at Lowell was awarded a three-year $160,000 grant from the U.S. Air Force to improve a process for determining the electron density of space. The project will include collaborative work with scientists in the Geophysics Laboratory at nearby Hanscom Air Force Base.

**NEW HAVEN, CONN.** — The Yale University School of Medicine received a five-year, $3.6 million grant from the National Institute of Environmental Health Sciences to study the environmental factors that contribute to the development of asthma in infants and the severity of asthma in children. Yale-New Haven Hospital and hospitals in Bridgeport and Hartford are expected to take part in the study aimed at determining whether certain indoor allergens and air contaminants are associated with asthma in children.

**AMHERST, MASS.** — Amherst College was awarded $450,000 from the Lilly Endowment and $454,000 from the Pew Charitable Trusts to support the African-American History Project, the first comprehensive historical survey of the worldwide sources and origins of religion among African-Americans.

**STORRS, CONN.** — The University of Connecticut School of Social Work’s Institute for Violence Reduction received a two-year, $745,000 grant from the U.S. Department of Education to fund two Neighborhood Learning Centers in Hartford, which will provide alternative education to city youths who are expelled from school. The institute also was awarded a $150,000 grant from the Hartford Foundation for Public Giving to implement a method of establishing and maintaining peace among youth gangs in the city.

**BAR HARBOR, MAINE** — College of the Atlantic was awarded $10,000 by Newman’s Own to provide scholarships for students at the college. The charity established by actor Paul Newman and his family has also supported building projects at the college.

**STORRS, CONN.** — A University of Connecticut psychology professor was awarded a $2.2 million grant from the National Institutes of Mental Health to create AIDS education programs designed to reduce risky sexual behavior by teenagers. Professor Jeffrey Fisher’s AIDS prevention programs will be implemented in 16 high schools in Connecticut and Massachusetts within the next four years. Among other things, the research aims to determine whether students are more receptive to peers or teachers in terms of information about AIDS.

**HENNIKER, N.H.** — New England College established a merit-based scholarship and accelerated degree program for high school graduates from New Hampshire, Maine and Vermont. "Cox Scholars" will receive a renewable award of $7,500 per year and enroll in a three-year degree program, featuring summer internships and honors programs.
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