

# CONNECTION

THE JOURNAL OF THE NEW ENGLAND BOARD OF HIGHER EDUCATION



VOLUME XVIII  
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***Inside:***

- Human Capital Dilemmas Cloud New England Outlook
- Foreign Immigration, Interstate Migration and the Labor Market
- Why Merit Aid Won't Attract the Best and the Brightest
- Outdoor Education Programs Try to Prove their Worth

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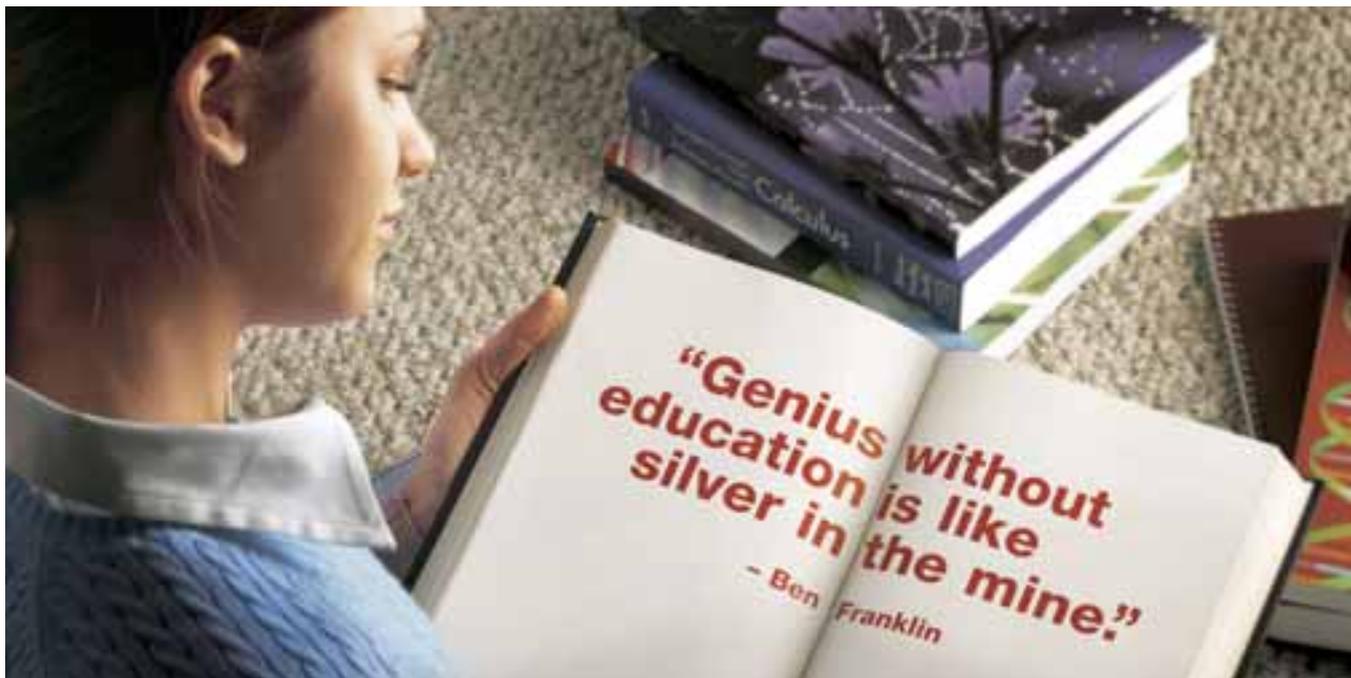
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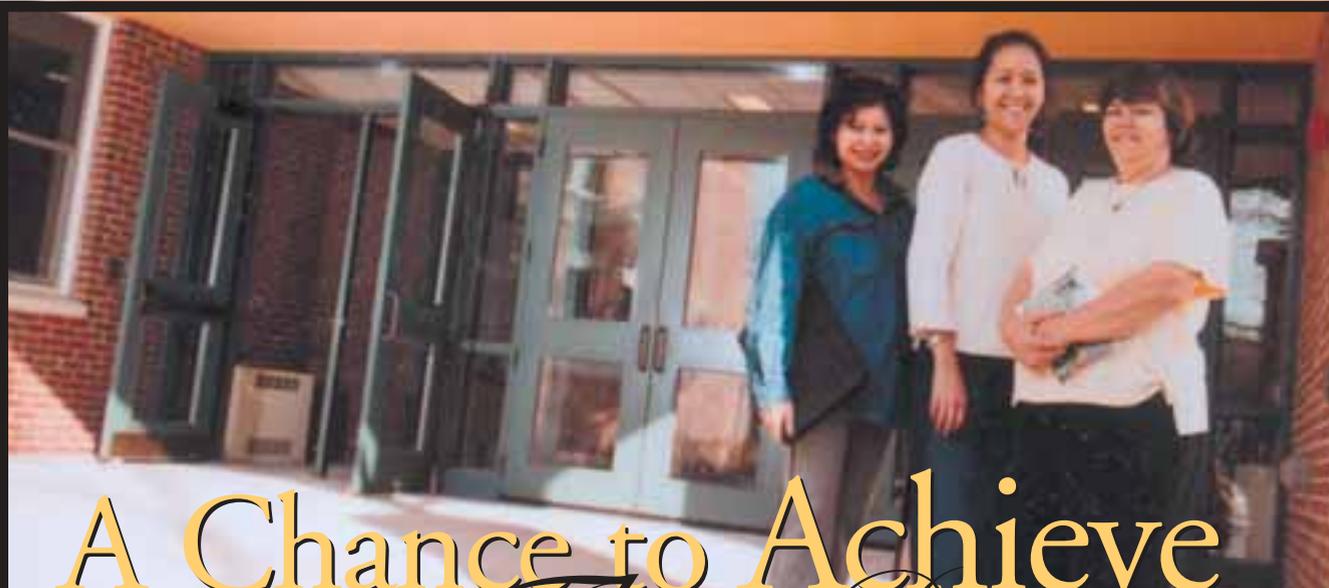
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By linking Adult Basic Education to post-secondary education, the New England ABE-to College Transition Project gives non-traditional adult learners a chance to enrich their own and their families' lives.

To learn more, contact Jessica Spohn, Project Director, New England Literacy Resource Center, at (617) 482-9485, ext. 513, or through e-mail at [jspohn@worlded.org](mailto:jspohn@worlded.org). (The Project is funded by the Nellie Mae Education Foundation through the LiFELiNE initiative.)



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# CONNECTION

THE JOURNAL OF THE NEW ENGLAND BOARD OF HIGHER EDUCATION

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The New England Board of Higher Education is a nonprofit, congressionally authorized, interstate agency whose mission is to promote greater educational opportunities and services for the residents of New England.

NEBHE was established by the New England Higher Education Compact, a 1955 agreement among the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

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## EDITOR'S MEMO

### Growing Our Own

Maybe it's a good thing that the hundreds of thousands of New Englanders who are out of work, out of school and underprepared for today's job market, don't monitor the stream of economic prescriptions coming out of the region's business groups and think tanks. They would be appalled by the frequent suggestion that the slow-growing region's future economic success depends upon recruiting talented people from elsewhere.

A human capital strategy growing out of a year's worth of New England Board of Higher Education (NEBHE) conferences on workforce development could offer a refreshing change. The economists, business leaders and educators convened by the board have begun piecing together a strategy to "grow our own," so to speak—to make sure all New England's residents, native-born and immigrant alike, have a place in the new economy.

The experts agree that the only way New England can thrive economically is on the *quality* of its workforce. They also agree generally on ways to get there. Get more kids interested in college, especially in majors leading to higher-paying science, engineering and information technology occupations. Invest more in, but also demand more accountability from, community colleges. Beef up adult basic education programs. Prepare more and better math teachers. Integrate internships and other work experiences with schoolwork. And ensure "universal success" in Algebra I as a sort of prerequisite for critical thinking.

None of this will be easy. Increasing minority participation in science and technology occupations begins with improving poor elementary and secondary schools. That, in turn, will require experiments with "differential pay" to help schools compete with industry for the best teachers, and innovative programs to bring unemployed or semi-retired scientists into the classroom as "coaches," if not full-fledged teachers. But they can't just be geniuses; they need to know how to teach too. And memorization and standardized testing won't suffice. It's planting the pea seed in the paper cup that makes kids care about science.

Moreover, improving schools won't mean much if the pathway to, and through, college is paved with obstacles, the most obvious being rising tuition prices. Nearly nine in 10 Massachusetts parents surveyed by the Boston think tank MassINC want the state to make higher education more affordable. But whether cash-strapped states will increase need-based student aid in proportion to tuition hikes is doubtful.

Watch CONNECTION for more on a New England human capital strategy. NEBHE plans to further hone the workforce recommendations over the coming month and present them to New England's governors for consideration.

\* \* \* \*

Growing our own doesn't mean slamming the door on everyone else. While a group of Sudanese dancers performed at Rhode Island College in an effort to promote tolerance and inclusion, Massachusetts House Minority Leader Rep. Bradley Jones of North Reading was filing legislation banning people from Sudan and six other countries recognized as sponsors of terrorism from attending public colleges in Massachusetts. The American Civil Liberties Union called the plan "a foolish overreaction."

\* \* \* \*

Former University of Maine System Chancellor Robert L. Woodbury's Spring 2003 CONNECTION article on "How to Make Your College No. 1 in *U.S. News & World Report* ... and Lose Your Integrity in the Process" was reprinted on the op-ed page of the *Providence Journal* and excerpted in the Magazines & Journals section of the *Chronicle of Higher Education* online. The coverage precipitated a flood of requests for the Spring issue ... lots of praise and a few protests from highly rated colleges who insist they don't do any of those things!

*John O. Harney is executive editor of CONNECTION.*



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## Impacted

When the going gets tough, colleges ... publish economic impact reports? With states slashing higher education budgets and revenue-starved local communities eyeing colleges' precious tax-exemptions, institutions are going to great lengths to remind policymakers of their economic vitality. A sampling:

Greater Boston's eight research universities injected \$7.4 billion into the regional economy in 2000, according to a study done for the institutions by Applesseed, a New York economics firm. The eight are Boston University, Boston College, Brandeis, Harvard, Massachusetts Institute of Technology, Northeastern, Tufts and the University of Massachusetts Boston.

Between 2000 and 2002, as employment in the region declined, the universities actually added 2,000 jobs, bringing their total combined workforce to 50,750. The study suggests that the multiplier effect of the group's spending in 2000 supported an additional 37,000 local jobs.

The eight universities spent more than \$1.5 billion, mostly federal funds, on research and development in 2000. They bought \$1.3 billion worth of goods and services, and planned to spend an average \$850 million a year for the next four years on construction. In addition, the institutions in 2000 received 264 patents, signed 250 commercial licensing agreements and helped form 41 startup companies.

\* \* \* \*

Springfield Technical Community College's seven-year-old Technology Park has created more than 800 jobs for Springfield, Mass., according to a report by the UMass Amherst Center for Economic Development and Mullin Associates. Community college students intern in the park, while tenant companies tap the expertise of college faculty.

The college created the park in 1996 on a 15-acre site abandoned by Digital Equipment Corp. The first such park in the country associated

with a community college now claims 18 tenants, including the Springfield Enterprise Center, an "incubator" for high-tech startups.

Applying a multiplier that assumes every job at the park creates 1.42 additional jobs elsewhere in the Springfield area, college officials suggest the park's presence accounts for more than 2,000 area jobs.

The report also notes that property taxes generated by the park exceed the cost of municipal services by more than \$170,000 annually.

Most importantly, local boosters say, the park has nurtured Greater Springfield's technology sector, particularly the once-booming telecommunications industry.

\* \* \* \*

The New Hampshire Forum on Higher Education reports that New Hampshire colleges and universities spent \$1.5 billion in 2002 for an economic impact of more than \$3 billion—more than double their estimated

\$1.4 billion impact in 1992.

Beyond traditional economic contributions, the Forum notes that New Hampshire college students and faculty performed \$6 million worth of volunteer work, while 147,032 community residents attended campus cultural events.

\* \* \* \*

Middlebury College brings \$125 million into Vermont's Addison County each year, according to a study by Arthur Wolf and Richard Heaps of Northern Economic Consulting. Middlebury employs 1,253 workers and creates an additional 736 jobs in Addison County, the report says.

Secretary of the College Eric Davis commented at a press conference: "Because the college has been relatively less affected by the current economic downturn than other sectors of the economy (manufacturing and technology), Addison County has weathered these economic storms

## Snippets

### Sunshine Laws?

"Senators would adopt a budget rider codifying Pasadena's climate if they could. But they're just state senators. So they concentrated on the cost of living thing as they went through their budget this week."

—*Massachusetts State House News Service reporter Craig Sandler's weekly news roundup of May 30. Earlier in the week, the Boston think tank MassINC reported that a quarter of Bay State residents would move if they could, half of those either because of the weather or the cost of living.*

### Or Is He Green?

"The 'Old, Rich White Man,' the result of days of heated discussion by a specially appointed panel of administrators, trustees and students, will be formally introduced as the new Dartmouth mascot at an unveiling ceremony scheduled for next week."

—*Tongue-in-cheek editorial in May 28, 2003 issue of The Dartmouth Online by staff columnist Hemant Joshi on the decades-long controversy surrounding Dartmouth College's mascot. The college dropped the Indian as a mascot in 1970 and has since adopted the mascotless phrase Big Green.*

### Horse Sense

Hoof Care for the New Millennium

—*Title of May 2003 continuing education course offered at Tufts University School of Veterinary Medicine.*

with relatively less damage than other parts of Vermont.” He cited Chittenden County, where IBM has laid off 1,000 workers.

The study suggests that students spend \$2.7 million per year in town, while their visitors spend \$2 million on hotel rooms, restaurants and other purchases. That’s down from 1996 because of the changing nature of local businesses and Internet purchasing.

\* \* \* \*

Stretching economic impact is part of the game. One model developed for community colleges by Idaho-based CCbenefits Inc., counts earnings not only from college operations, but also from “past instruction” of students, and places dollar savings on the reduced crime, better health and other social benefits associated with all college-going.

Still, a CCbenefits report showing that Connecticut’s Housatonic Community College accounts for \$60 million in annual earnings in Greater Bridgeport and provides taxpayers with a 13 percent return on their investment has generated positive editorial page coverage and won legislative allies in a year when the state’s community colleges have been cut by \$700,000 and more cuts loom, according to college public relations director Anson Smith.

\* \* \* \*

Greenfield Community College officials can relate. Targeted for merger under Massachusetts Gov. Mitt Romney’s higher education reorganization plan, Greenfield reports it spends \$15 million in Massachusetts each year and generates almost \$38 million in spending—which college officials note is four times the college’s state appropriation of \$9.3 million.

**After School**

With only 20 percent of a young person’s time spent in school, even the most innovative school reforms can have limited impact. What happens during the remaining 80 percent of the time—especially from 3 p.m. to 6 p.m. when a lot of unattended kids



Photo courtesy of University of New Hampshire News Bureau.

**UNH faculty at the New Hampshire International Speedway, which regularly employs university interns.**

**Showing Off**

In May, University of New Hampshire President Ann Weaver Hart led a three-day bus tour of the Granite State to show nearly two dozen faculty members and administrators how the university’s teaching, research and outreach benefit the state.

By bringing the new profs from the Seacoast and the Great North Woods to the Lakes Region, says Hart, “we hope to inspire them to expand our mission of public service to the state in new and creative ways.”

The first stop was the New Castle Coast Guard Pier, where zoologist Hunt Howell discussed the background of the pier and its importance to UNH research, and Pingguo He, a UNH specialist on fishing gear technology, talked about the university’s involvement in Portsmouth’s fishing industry.

Next stop, Prescott Park in Portsmouth, where UNH operates greenhouses. Then the bus rolled on to UNH-Manchester, where historian Robert Macieski discussed the city’s mills. That was followed by a stop at the *Union Leader* newspaper, which employs several UNH alumni, and the N.H. International Speedway in Loudon, which employs UNH interns.

The final stop of the day was Patrick’s Pub in Gilford where tour participants learned how the UNH Cooperative Extension’s food safety program had helped the pub and its staff.

Among other stops: the Lakes Region Correctional Facility in Laconia, where nearly 100 inmates are involved in a UNH partnership to help the families of inmates, and the Balsams Resort in Dixville Notch, where UNH scientists have all but banished the black flies that once scared off both guests and employees.

get into life-changing trouble—has profound implications for student learning. Not surprisingly then, afterschool programs are viewed as promising tools for increasing student engagement and improving academic performance.

Importantly, afterschool programs can build “prerequisites” to learning such as communication skills, relationship-building with adults, anger management, critical thinking and problem-solving, according to *Critical Hours, Afterschool Programs*

and *Educational Success*, a new review of research on afterschool programs by Beth M. Miller, an independent consultant and senior research advisor to the National Institute of Out of School Time at the Wellesley College Center for Research on Women.

The report, commissioned by the Nellie Mae Education Foundation, focuses on the middle school years, a time when many students become disengaged from school. One study referenced by Miller found that students who spent three or more hours home

alone during out-of-school time were significantly more likely to use drugs and alcohol, experience high levels of stress, anger, depression and behavior problems, and exhibit low self-esteem and poorer academic performance.

Miller concludes that students engaged in high-quality out-of-school programs have improved attitudes toward school, higher educational aspirations and get better grades. For example, 83 percent of the 18,000 students enrolled in LA's Best, an after-school program sponsored by the City of Los Angeles, L.A. schools and private companies, indicated that they liked school more, and after their second year in the program, they boosted their grade point averages by as much as 32 percent.

"We believe the report will help afterschool providers improve out-of-school programs and support their conviction that what they do helps young people develop skills that are essential for success in today's world," says foundation President Blenda J. Wilson. For a copy of *Critical Hours*, visit the foundation website at <http://www.nmefdn.org>.

### Goodbye Mr. Chips

When Northeastern University decided recently to convert from a quarterly academic calendar to a semester system, the change had to be reflected in a revised faculty handbook, which opened a new can of worms. One subject for debate was how long a Northeastern prof could be AWOL before being terminated. More than a dozen years ago, two Northeastern professors disappeared from their positions. Since then, "abandonment" has been a concept in need of strict definition.

Current Northeastern policy states that a faculty position is officially abandoned when a professor is out of contact for two weeks. In April, the Faculty Senate considered expanding the allowable period to four weeks. Physics Professor Robert Lowndes objected, according to an account in the student newspaper. "If somebody's gone and they have teaching obligations ... two weeks is

generous, the paper quotes Lowndes as saying, "Unless you are in a coma and you can't notify anybody, two weeks seems quite reasonable."

### Workforce Grant

The University of Massachusetts Boston and partners were awarded a four-year, \$3 million grant by the National Science Foundation to establish a regional consortium for technology education. The Boston Advanced Technology Education Connections program aims to attract students from diverse backgrounds to information technology (IT) fields and create internships and other "pathways" between educational institutions and IT employers. The program is a partnership between UMass Boston, Bunker Hill, Middlesex and Roxbury community colleges; TechBoston, a technology program in the Boston Public Schools; and the Metropolitan School to Career Partnership, an IT training initiative encompassing 10 Boston-area secondary schools.

### Apps Up, But So Are Vacancies

Two-thirds of New England colleges and universities had not filled their freshman classes for fall 2003 as of the traditional May 1 admissions deadline, despite a surge in applications, according to the New England Board of Higher Education (NEBHE) 2003 *New England Student Vacancy Survey*.

NEBHE asked 214 New England colleges how many applications they received as of May 1 and whether they would consider additional applications; 151 campuses reported fall openings.

The vacancies were reported even as New England colleges fielded 580,000 freshman applications—up 12 percent over last year. Admissions officers attributed the paradox to rising admissions standards.

The big increase in applications follows a 4 percent increase in freshman applications in 2002 and a 3 percent increase in 2001, according to NEBHE.

One reason applications have been rising is that the number of tradition-

al college-age New Englanders has grown steadily, though slowly, since 1995, when the region emerged from a 15-year downturn in the number of 18-year-olds. New England's high schools are expected to graduate more than 130,000 seniors this spring, up 3 percent over last year.

Another reason for the increase in total applications may be that each student is applying to more institutions, perhaps encouraged by online application processes now in place at 75 percent of the region's colleges.

Notably, college programs in nursing and allied health fields, where New England is experiencing labor shortages, were generally full to capacity by May 1 and closed to new applicants.

### Comings and Goings

**Anthony W. Marx**, a professor and director of undergraduate studies in political science at Columbia University, was named president of Amherst College, succeeding **Tom Gerety**, who stepped down after nine years in charge. Marx has written books on nation-building, particularly in South Africa, and is the founder of the Columbia Urban Educators Program, a teacher recruitment and training partnership. Gerety became executive director of New York University Law School's Brennan Center for Justice. ... Former Marlboro College President **Paul J. LeBlanc** was named president of Southern New Hampshire University, succeeding **Richard A. Gustafson**, who stepped down after 16 years at the helm of the institution, formerly called New Hampshire College. ... Former Massachusetts Education Commissioner **Robert V. Antonucci** was named president of Fitchburg State College. Antonucci was the founding president of the now-defunct Harcourt Higher Education online college and more recently, headed, an educational software firm in Cambridge, Mass. ... **Dale Rogers Marshall** announced she will resign as Wheaton College president in June 2004, after 12 years in charge.



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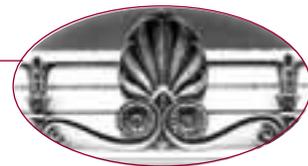
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## Practicing What We Preach: A Collaborative Strategy

ROBERT A. WEYGAND

**F**or nearly 20 years, readers have found in the pages of CONNECTION: THE JOURNAL OF THE NEW ENGLAND BOARD OF HIGHER EDUCATION engaging accounts of best practices in New England education as well as vital analysis and commentary that has helped shape and improve higher education policy and practice. The journal has highlighted programs and initiatives that have blazed new trails to improve quality, access and affordability in higher education. Our readers have consistently praised this work and urged us to continue providing them with such crucial information.

**We have embarked on a quest to find partners who share our mission to improve educational opportunities.**

Above all, CONNECTION has encouraged collaboration and resource-sharing to improve educational opportunities for New England residents—the very principles upon which the New England Board of Higher Education (NEBHE) was founded nearly half a century ago. So when someone asked us “What new partnerships are you developing for CONNECTION?” it gave us cause to look at our own shop and begin to practice what we preach. Thus, we have embarked on a quest to find partners who share our mission to improve educational opportunities. Our goal was

to establish new relationships for CONNECTION that would continually improve the substance and reach of the journal without compromising the editorial integrity that our readers have come to expect. We have found that strategic collaboration in a trusted friend, the Nellie Mae Education Foundation.

With this issue, the Nellie Mae Education Foundation and the New England Board of Higher Education are pleased to announce a new partnership in publishing CONNECTION.

The Nellie Mae Education Foundation is New England’s largest philanthropy devoted exclusively to improving educational attainment and access for underserved populations. The foundation promotes accessibility, quality and effectiveness of education in the six New England states. The foundation works with education institutions and associations, community organizations, foundations, government agencies and others to encourage, establish and maintain programs and services that promote education.

Over the years, NEBHE has collaborated with the foundation on diversity initiatives, conferences, reports and policy development. It seemed like a natural fit for the two organizations to collaborate on CONNECTION.

**So what changes are in store for this publication?** Well to begin with, CONNECTION will still be the JOURNAL OF THE NEW ENGLAND BOARD OF HIGHER EDUCATION. You will not see any reduction of the substantive discussions and opinions to which you are accustomed. In fact, you will see an increase in the

breadth and scope of coverage of K–20 issues, under-represented populations, data and reports on education and the economy and a more holistic approach to the staggering complexities of today’s education arena.

**The Nellie Mae Education Foundation and the New England Board of Higher Education are pleased to announce a new partnership in publishing CONNECTION.**

The foundation will provide valuable input, reports and opinions on the critical issues facing underserved populations and vital commentary and analysis on higher education attainment. Our focus will still be higher education, but clearly if we are to truly understand how to improve educational outcomes, we must consider the context of the education continuum, not just the years of college and beyond.

This is a strong start in redoubling the New England Board of Higher Education’s efforts to provide you with the best discussions, information and opinions on New England higher education.

---

*Robert A. Weygand is president and CEO of the New England Board of Higher Education and publisher of CONNECTION.*



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# Bright Futures?



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NEAL R. PEIRCE AND CURTIS JOHNSON

**S**urvey the world scene in the early 21st century, seeking out the region with the best credentials for higher learning, and what place on earth emerges?

New England, of course.

But is New England really well positioned to build on its cachet, its genius as the region devoted to the “industry of the mind”? Can it protect its advantages with globally famed universities and research preeminence in fields from nanotechnology to biotechnology?

More specifically, can a region that relies on private higher education, that’s slow to invest in public universities, that’s not distinguished for its community college programs, adapt to the new realities of training people for 21st century work? Is the region ready to meet multiple challenges in a global climate that punishes the slow and the timid, and is merciless toward those who try to cruise along on past successes?

Last year, we conducted a six-state reconnaissance of strategic regional issues for the New England Council, the region’s oldest business group. Immediately, we were struck by New England’s abundance of great research and teaching universities, medical centers, Ph.D.s, inventors, patents, management consulting, computer and biotechnology firms, venture capital and amazing lead in federal research contracts. All this represents, cumulatively, a true global treasure.

But the more we’ve probed, the more perils we’ve discovered.

As Frank Newman, the distinguished higher education scholar and former college president who now

heads the Futures Project at Brown University points out, New England takes comfort in how many students enroll at its colleges, even though less than half of students from New England’s own working-class families get past high school. If this trend persists, will major employers remain willing and able to fill jobs by recruiting talented people into an increasingly high cost-of-living environment?

Additionally, says Newman, college enrollment numbers always look good in New England, but graduation rates are another story. About half of students at New England’s private colleges and universities and more than 60 percent at the region’s four-year public institutions fail to earn bachelor’s degrees within six years of starting. “It’s a ton of young people showing up and a trickle leaving with the right training,” says Newman.

The implications for the region’s future labor supply are especially serious. New England already tends to experience labor shortages in a range of occupations between the scientists at the high end of the labor market and the service jobs filled largely by high school dropouts at the low end. And the region is not producing sufficient numbers of graduates to fill those middle-range jobs. During the 1990s, the number of bachelor’s degrees granted rose by 18 percent nationally, but by just 2 percent in New England. The number of associate degrees granted rose by nearly 25 percent nationally, but actually *fell* 7 percent in New England.

## A plan?

Northeastern University President Richard Freeland is among those suggesting that New England needs a comprehensive education and skills training system

targeting young adults who would otherwise disappear from the productive economy. There are some isolated programs that attempt to fill the gap. The Boston Private Industry Council helps school-aged children acquire on-site job skills in such areas as health care and banking. And kids involved in programs that connect school and work are more likely to attend school each day, do well and go on to college. Surely the program is a factor in the 65 percent college-going rates the Boston Foundation tracked for Boston Public Schools in its recent Indicators Report. Meanwhile, programs such as Rhode Island's "Times Squared" try to inspire minority students with opportunities in math and science.

Still, such efforts won't matter much until they're distributed far and wide across the six states.

The problem is equally serious among adults who've never walked through any institution's admissions doors. Some fall below literacy levels required for the most basic types of jobs. As skill level demands on workers continue to escalate, so does this problem. Foreign immigration accounts for more than 80 percent of New England's 1990s population growth, clearly raising the stakes on literacy. But in Rhode Island, for example, which currently spends a little over \$1 million a year on literacy programs, 20 years would go by while those waiting in today's line got served. And the line gets longer every day.

### What Do You Think?

The CitiStates Group ([www.citistates.com](http://www.citistates.com)) is currently conducting interviews on strategic issues facing the Boston metropolitan area, to be included in a report to The Boston Foundation and the Barr Foundation and be made available to the *Boston Globe* and other media in the fall of 2003. The authors hope to mount a similar effort for all six New England states in 2004. Responses to this article may be emailed to the authors at: [npeirce@citistates.com](mailto:npeirce@citistates.com) and [cjohnson@citistates.com](mailto:cjohnson@citistates.com).

In some American regions, population growth pushes these issues into the background. Not here. In most New England states, there was a clear pattern of people moving out in the 1990s. Only the influx of immigrants avoided a net loss of population.

Does that matter? Absolutely. While we've found no one wishing to trade places with fast-growth Las Vegas or Atlanta, a stagnant population pattern drags down investment. If New England is such a great place, business investors may ask, why isn't it growing? While the Mountain states showed robust labor force growth of 30 percent in the 1990s, and the whole nation managed 12 percent growth, New England saw only 2 percent growth, and that thanks entirely to foreign immigration. Connecticut's labor force actually shrank. Says

Northeastern University economist Paul Harrington, "The danger is that New England is becoming France," with high taxation and extended public employment to address slow growth.

And there's at least one predictable aspect to stagnant population growth: labor shortages will intensify in critical high-skill fields where New England hopes to, indeed *must*, prosper in the years ahead.

## If New England is such a great place, business investors may ask, why isn't it growing?

By the late 1990s, double-digit vacancy rates appeared in some New England professional occupations. Some firms, we've been told, decided to expand outside New England because of such skill shortages. Some highly professional technical work was jobbed out, eventually, to such countries as India, Ireland and Israel—places with strong supplies of technically trained university graduates.

New England's treasured hospitals and health care research facilities were hit especially hard. They continue to be impacted seriously by labor shortages. To date, we hear, one of 10 jobs in health care in New England is vacant. And educators can hardly claim the problem is outside their purview: the number of associate and bachelor's degrees awarded in health care fields in New England declined by 18 percent between the mid-1980s and 2000.

It seems that where the jobs are, students are not. The national and regional economies may still be stumbling, with many workers left unemployed. But some New England employers say they're desperate to find skilled workers. The shortages are in the very fields where SAT data show declining student interest—in the health care field, interest is down by a third. The gap between industry's demand for students graduating in technologies and the number showing up as new freshmen gets wider every year.

Kip Bergstrom, executive director of the Rhode Island Economic Policy Council, points to focus group efforts to find out why students run from math and science courses. Those focus groups revealed that by ninth grade, kids saw science as too hard or insufferably boring and disconnected from real life—or just something for geeks. Result: most students weren't even getting through Algebra I, which Bergstrom calls "essential weight training for the brain."

One would think there would be some very vocal worrying over this. But instead the usual public comment takes comfort in the record of recruiting talent from India or Ireland or anywhere where young people actually study math and science. If there is a trend worth watch-

ing now, it's companies deciding that it's just as effective and a lot less expensive to simply let the engineers stay in Bangalore and outsource the work to them.

### Growing our own

New England has to grow its own skilled workforce. But how is it doing now holding on to the annual harvest of college graduates?

Data collected for a year 2000 report by the public policy group Mass Insight suggest that at least some New England colleges are attracting talent to the region for the long haul. The data, for example, reveal that 22 percent of Harvard graduates were residing in Massachusetts, though only 14 percent were originally state residents. For MIT, 21 percent lived in Massachusetts after graduation, though only 9 percent were originally from the state. At Boston College, 44 percent of graduates lived in the state, while 24 percent originated there.

## If there is a trend worth watching now, it's companies deciding that it's just as effective and a lot less expensive to simply let the engineers stay in Bangalore and outsource the work to them.

"Not so fast," says Harrington, who warns that surveys like that can be misleading. "Look," he says, "we grabbed one of 15 new U.S. jobs in the 1980s, and fell to one in 53 in the 1990s. There's something really systemic going on here and we'd better pay attention."

One explanation: high housing costs are pushing young people out of New England. We don't have hard numbers, but in a few months of interviewing people we've heard plenty of stories. One business executive told us his son stayed in Arizona after going to graduate school there because the housing prices were so much lower than in New England. We heard about a medical school graduate taking her elite New England credentials to Birmingham, Ala., and a job that paid the same as one in New England but also paid off her school loans. Are these stories harbingers of tough times to come, or just colorful exceptions to a stable comparative New England advantage?

A final thought about the New England future: is the region marketing its scientific and technical skills sufficiently to keep it on the curve of economic development in the United States and the world in the early 21st century?

We have our doubts. Despite a number of admirable but small efforts, the region has no counterpart to the strategic—and state-funded—alliances with businesses that such states as New York and California are now fostering. New York, with its many private institutions,

## By ninth grade, kids saw science as too hard or insufferably boring and disconnected from real life—or just something for geeks.

is a little like New England. But in New York, a series of "centers of regional excellence" are being formed with roots running into both the public State University of New York (SUNY) system and the state's private universities. The state is pouring tens of millions of dollars into a new Center of Excellence in Environmental Systems based at the private Syracuse University. With \$37 million in up-front state investment followed by corporate and philanthropic contributions, the project is expected to secure \$170 million in early funding. The partners include 11 Central New York universities and research institutions, more than 30 corporations and local government arms.

Why did IBM make its largest grant ever—\$100 million—to SUNY Albany for a microchip research center, when Massachusetts alone boasts that almost 20 percent of its workforce is made up of scientists and engineers? Because, according to Mass Insight President William Guenther, the Bay State has "no long-term technology vision or strategy."

Competitor states—California, Texas and New York—are raising the stakes in capital investment in technology, even as they grapple with operating deficits just as severe, if not more severe, than those in New England. University of Texas system Chancellor

## High housing costs are pushing young people out of New England.

Mark Yudof told us this spring that the SUNY maneuver set off a bit of shock-and-awe in Texas circles; it had them scrambling to nail down their own technology advantages. It sounds like the Texans will do just that. In this higher-stakes game, that old attitude sometimes attributed to premier New England institutions—"We're good, send money"—won't cut it anymore.

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# Imported Talent

## Foreign Immigration and the New England Labor Market

ANDREW SUM, MYKHAYLO TRUBS'KYY  
AND NEETA P. FOGG

**W**orkforce development policymaking and program planning at the state and local level is dependent on the availability of information on changes in the quantity and quality of the available labor supply. The 1990s witnessed powerful demographic shifts in the composition of the U.S. population and labor force. Foreign immigration into the United States during the decade reached new historical highs and contributed a substantial share of the growth in the nation's population. Between 1990 and 2000, 41 percent of the nation's population growth was generated by new foreign immigrants, and about half the increase in the nation's civilian labor force between 1990 and 2001 was attributable to this New Great Wave of foreign immigrants from an array of nations.

The impacts of foreign immigration on population and labor force growth during the 1990s varied widely across geographic regions, divisions and states. New England was far more dependent than nearly all other regions on the new wave of foreign immigrants to achieve its population growth and labor force growth during the past decade. In fact, New England's labor force would have experienced no net growth whatsoever in the absence of these new immigrants.

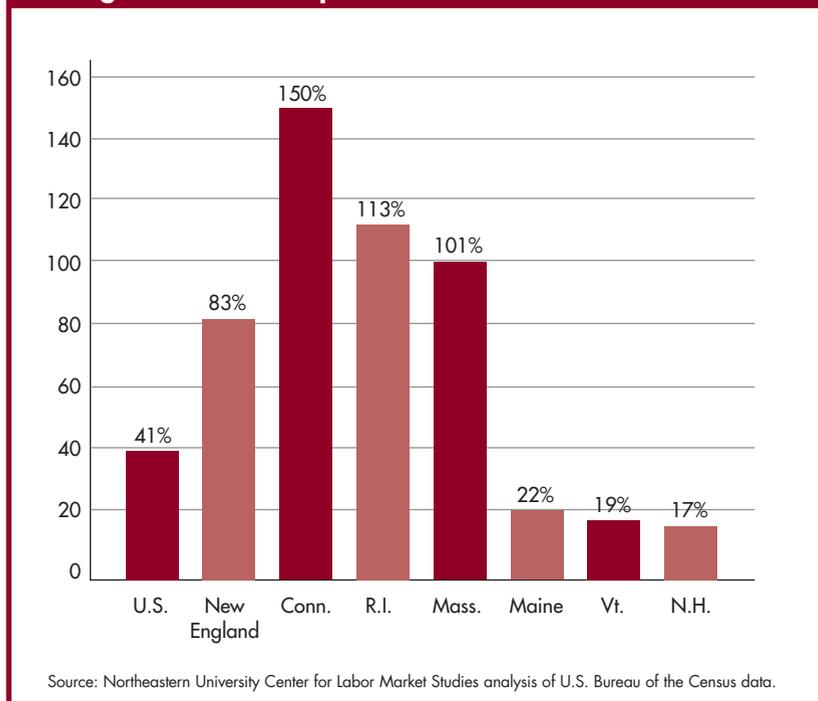
### Immigrant contributions

The 2000 census reveals that the population of New England increased from 13.2 million in 1990

to 13.9 million in 2000, an increase of 716,000 or 5.4 percent. New England's population growth rate over the 1990s was well below the national rate of 13 percent, and the region ranked last among the nine U.S. census divisions. An analysis of the sources of population growth and decline during the past decade reveals that new foreign immigration played a crucial role in generating New England's population growth.

Slightly more than 595,000 new immigrants who came into the United States from 1990 onward were residing in New England at the time of the 2000 census. These new foreign immigrants generated 83 percent of the region's population growth over the decade, twice as high a contribution as that for the nation and the second highest among the nine geographic divisions. (See Figure 1.) Within New England, new foreign immigrants accounted for all the population

**Figure 1: New Foreign Immigrants as a Percent of the Change in Resident Population between 1990 and 2000**



growth in the three southern New England states of Connecticut, Massachusetts and Rhode Island, but only one-fifth of the population growth in the northern tier of New England states.

### Labor force growth

More than 80 percent of these new immigrants were of working age, and immigrant males were strongly “attached” to the labor force as measured by their high rate of labor force participation. As a consequence of the high inflow of foreign-born, working-age adults and the high level of out-migration of native born adults from New England, foreign immigration played an even more critical role in generating the modest growth in the region’s civilian labor force during the 1990s. All of New England’s civilian labor force growth between 1990 and 2001 was attributable to new foreign immigration. Nearly 375,000 new foreign immigrants were either working or actively looking for work in 2001, while the region’s entire labor force is estimated to have grown by only 103,000. (See Figure 2.)

No other geographic division in the country was as dependent on foreign immigration for labor force growth as New England was. All labor force growth in the three southern New England states was generated by new immigrants. The native-born labor force in these three states declined considerably over the decade. In the three northern New England states, only 10 percent to 20 percent of labor force growth was the consequence of new foreign immigration.

During the 1990s, the number of males in New England’s labor force actually declined, primarily as a result of reduced labor force attachment by men over the decade. While the total number of male labor force participants fell by 30,000 between 1990 and 2001, the number of new male immigrants increased by 219,000. (See Figure 3.) These findings together imply that the number of native-born workers and established immigrants in New England must have declined by close to 250,000 over this 11-year period.

No serious attention has been paid to this steep decline in New England’s male native-born labor force, though it is surely a critical workforce development issue for the

region. This trend should be carefully analyzed by regional and state economic policymakers, and workforce development strategies should be forged to boost the growth of the male native-born labor force in the coming decade.

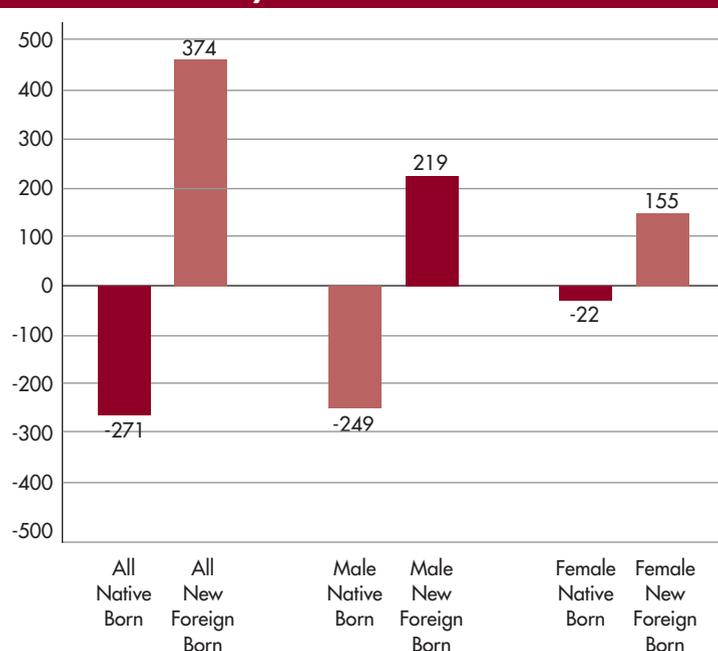
New England’s female labor force grew by 133,000 or 4 percent between 1990 and 2001. Yet, immigrants accounted for *all* the net growth in the region’s female labor force over this period. During 2001, an estimated 155,000 female immigrants who had arrived in the United States between 1990 and 2001 were in New England’s labor force. All of the growth—116 percent—in the region’s female labor force was attributable to foreign immigration. The number of native-born, female workers declined by 22,000 over the

**Figure 2: Growth in the Total Civilian Labor Force and Number of New Foreign Immigrants in the Labor Force of New England between 1990 and 2001**

	Change in Labor Force, 1990–2001	New Immigrants in Labor Force	Percent of Labor Force Growth Due to Immigrants
New England	103,000	374,000	363%
Connecticut	-132,000	81,000	NA
Maine	63,000	4,000	7%
Massachusetts	80,000	249,000	312%
New Hampshire	67,000	13,000	19%
Rhode Island	-9,000	24,000	NA
Vermont	34,000	3,000	9%

Note: Ratios cannot be calculated for Connecticut and Rhode Island due to negative denominator.  
Source: Northeastern University Center for Labor Market Studies analysis of U.S. Bureau of the Census Current Population Survey data.

**Figure 3: Growth of New England’s Civilian Labor Force by Gender and Nativity Status between 1990 and 2001**



Source: Northeastern University Center for Labor Market Studies analysis of U.S. Bureau of the Census Current Population Survey data.

decade, primarily as a consequence of high levels of out-migration from the region during the decade.

### **New immigrant workforce**

Males made up 58 percent of the new immigrant labor force, compared with 52 percent of the native-born labor force. This reflects the greater gender gaps in participation ratios among newer immigrants, cultural factors for some immigrant groups and greater assimilation difficulties for immigrant women with limited English-speaking skills. The newer immigrants also were younger than their native-born labor force counterparts. Nearly 60 percent of them were under age 35, compared with only 35 percent of the native-born. The educational backgrounds of the region's new immigrants also were quite diverse. About 25 percent lacked a high school diploma or GED certificate, compared with only 9 percent of the native-born. At the same time, 31 percent of the new immigrant workers held a bachelor's degree or higher, only slightly below the native-born share of 34 percent.

The newer immigrant workers were employed in all major industries and occupational groups throughout New England in 2001, but they were over-represented in some key job clusters. By industry, new immigrants were substantially over-represented in manufacturing

### **All of New England's civilian labor force growth between 1990 and 2001 was attributable to new foreign immigration.**

and business/repair/personal service industries and under-represented in construction, finance/insurance and the public sector.

New immigrant workers were just as likely as native-born workers to be employed in professional and technical occupations, but were heavily under-represented in management-related, high-level sales and administrative support positions. Immigrants were strongly over-represented in blue-collar production and laborer positions, especially in manufacturing, and in service occupations, especially as cooks, domestics, nursing assistants, health care aides, janitors and security guards.

### **Workforce development implications**

The very limited growth of New England's labor force during the past decade, along with the steep decline in the male, native-born labor force and the region's overwhelming reliance on immigrant workers, have important implications for New England's workforce development.

Restoring growth in the native-born labor force, especially among young men, should be a high priority for the region's economic and education policymakers.

Achieving this goal will require sustained efforts to keep the current larger cohort of young adults ages 16 to 22 in the region as they enter the labor market, to boost the labor force attachment of young male adults with no postsecondary schooling and to maintain the growing cohort of 45- to 64-year-old males (the aging baby boomers) active in the labor force.

### **About 25 percent of New England's new immigrants lacked a high school diploma or GED, compared with only 9 percent of the native-born. At the same time, 31 percent of the new immigrant workers held a bachelor's degree or higher, only slightly below the native-born share of 34 percent.**

At the same time, however, a diverse array of education and training strategies for new immigrants will likely be needed to boost labor market attachment, employability and earnings. National and state labor market studies have consistently revealed that the labor force attachment, labor supply and annual earnings of immigrant workers are strongly linked to their English-speaking proficiencies, literacy and math proficiencies, and their formal educational attainment, especially schooling acquired in the United States.

Given New England's current and likely future dependence on new immigrants for achieving growth in its labor force and employed populations, the region's adult basic education agencies, postsecondary education and training institutions and private and public employers will have to make unified, critical investments in the immigrant workforce if the region is to achieve broad-based prosperity in the first decade of the 20th century. This should include efforts to expand existing English-as-a-Second-Language (ESL) and adult basic education services for adult immigrants, to retain low-income immigrant children in high school, to boost their access to postsecondary training and educational programs and to increase employer training investments in frontline workers, both native- and foreign-born, especially those with no postsecondary education. Importantly, the region also needs to undertake more rigorous evaluations of the effectiveness of such programs in boosting immigrant workers' labor market success.

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# REFORM IMMIGRATION!

*How can New England ensure that its foreign immigration translates into economic success? The following is excerpted from Northeastern University President Richard Freeland's remarks at a March 2003 New England Board of Higher Education conference on building human capital. Freeland's remarks draw upon data from Northeastern's Center for Labor Market Studies.*

It is virtually impossible to conceive of a thriving New England economy without continued immigration, especially at the high end of the skills hierarchy.

Now, I recognize that this is a sensitive issue, and that serious and legitimate questions have been raised about the continued growth in immigration, as unemployment levels increase and national security and homeland defense concerns have arisen after the terrorists attacks of Sept. 11, 2001. It is true that some displacement of native-born workers has taken place as labor market conditions deteriorated over the 2000 to 2002 period, largely among those with fewer years of schooling. But it is important to keep our eyes fixed on the longer view.

New England's immigrants [who arrived in the 1990s] generally had higher levels of educational attainment than those in other regions, and they were generally more likely to work in the college labor market. They were especially concentrated in science, engineering and information technology (SEIT) fields. In Connecticut, Massachusetts and Rhode Island, one-fourth of all technical professionals age 35 and under are foreign immigrants. As the aging baby-boom scientists and engineers begin to withdraw from the economy, it is clear that growth in the supply of SEIT workers will be increasingly dependent on foreign-born workers who possess these highly valued skills. ...

The overwhelming majority of foreign-born immigrants who end up as SEIT professionals have completed a degree program in a technical field at an American college or university. The technical professional pipeline for immigrants leads directly through the nation's higher education system.

Moreover, dependence on foreign workers as a source of new technical labor supply is especially acute at the graduate level. In 1990, 26 percent of master's degrees and 37 percent of doctoral degrees in the technical fields awarded

in New England were granted to foreign nationals matriculating under a student visa. By 2000, these proportions had increased to 37 percent and 46 percent, respectively.

This suggests that the size of our advanced-degree programs and the tremendous research and development capacity they provide the region would be between one-third to one-half as large as they currently are in the absence of foreign students. Finally, follow-up studies of foreign SEIT graduates of advanced-degree programs suggest that an overwhelming proportion become employed in the United States after graduation.

New England clearly has a strong interest in growing a highly skilled, well-educated immigrant population. Yet we are moving into a period in which increased federal controls

on international students may well inhibit the flow of talent into our region. All of us need to monitor this situation carefully, fully supporting and implementing the requirements of the Patriot Act while working with federal officials to maintain a proper balance between heightened security and maintenance of opportunity.

One step we should consider in this connection is linking the nation's immigration policy more directly with our labor-market policy. I believe, in fact, that a strong case can be made that the temporary work-visa programs for foreign-born graduates of U.S. schools should be scrapped. In their place, foreign students

who pass muster in terms of the Patriot Act and who excel at, and graduate from, an accredited four-year college or university in a professional field of study might better be placed on the track to obtain a green card. After a year or two of solid work experience, they should be granted a green card and placed on track for full citizenship.

Since the early 1980s, virtually all the growth in the regional economy has been in the college labor market. When the recovery from the current recession gets under way in the region, it will be industries based on scientific and engineering innovation that lead the way. Our congressional delegation must insure that the nation develops an immigration policy that rewards those who invest in themselves, develop the skills and abilities that are in greatest demand and who as educated persons are most likely to share our common values of democracy and freedom.

Photo by Len Rubenstein.



Northeastern University President  
Richard Freeland.



## Migration Patterns among New England's College Freshmen

MICHAEL K. THOMAS

**D**espite increased competition from other states, New England remains a very popular education destination for both undergraduate and graduate students. As with commerce, New England has a “balance of trade,” with students flowing in and out of the region. Given the size of New England (nearly 14 million people in an area roughly equivalent to Missouri), the region’s plethora of higher education institutions and the approximately 100,000 prospective freshmen who graduate from the six state’s high schools each year, it is no surprise that New England also sees significant *intra*regional migration.

The New England Board of Higher Education’s Office of Policy and Research recently analyzed statistics on New England’s student migration as part of a forthcoming policy report. The data, the most complete and recent available, were drawn from the U.S. Department of Education’s 2000 IPEDS Survey. The data focus on first-time freshmen who graduated from high school in the 12 months prior to the survey and who enrolled in degree-granting institutions that participate in federal financial aid programs.

Admittedly, these statistics tell only part of the total migration story. For example, large numbers of students also migrate to and from New England for graduate study. Significant migration also occurs after students earn their degrees. Yet, the migration patterns of first-time freshmen are important to New England and its institutions. They tell us something about the preferences and decision-making of traditional college-age students and their parents in terms of cost, geography and types of institutions.

This balance of trade has implications beyond the enrollment management concerns of New England’s

colleges and universities. Every in-migrating student brings a significant amount of money in tuition and expenses along with him or her; every out-migrating student takes money out of state and often out of the region. Moreover, studies suggest that students who attend college in the same state where they graduated from high school are far more likely to stay and work in that state after college than those who left the state for college are to come back. So, the extent of migration also has implications for the return on a home state’s investment in primary and secondary education.

### Net migration

As a region, New England enjoys a notable “positive” net migration of first-year college students. That is, far more freshmen travel to New England for college each year than leave the region. The net inflow grew by 14 percent between 1992 and 2000. There are, however, notable differences among the six states, differences that have persisted over time. For example, four New England states—Massachusetts, Rhode Island, Vermont and New Hampshire—have positive net inflows. Maine and Connecticut, in contrast, have negative net migration flows.

States’ net migration rates also vary over time. Connecticut’s region-leading net loss of 3,199 in 2000 reflects a 30 percent improvement over 1992, when 4,625 freshmen left the state. Maine’s net loss of 945 students in 2000 was down from 1,391 two years earlier, but up from 859 in 1992.

### Out-migration

The six New England states rank among the top 12 nationally in terms of the percentage of first-time, first-year freshmen leaving their home state for college. Nationally, on average, 24 percent of first-time freshmen leave their state of residence.

Vermont ranks second in the nation, with 60 percent

of freshmen leaving, up notably from 47 percent in 1992. New Hampshire ranks third in the nation, with 53 percent leaving, up from 44 percent in 1992. Connecticut ranks fifth, with 48 percent leaving. This represents a slight improvement over 1994, when 53 percent of freshmen left the state. Maine ranked 6th, with 43 percent of freshmen leaving. Rhode Island ranked 9th, with 37 percent leaving and Massachusetts ranked 12th with 31 percent leaving. (See Figure 1.)

Another way to depict the outflow of first-time freshmen is by using the ratio of students staying to those leaving. Nationally, an average of 4.5 freshmen attend college in their home states for every one who leaves. By this measure, the New England states rank at the bottom. Vermont ranks 50th (only the District of Columbia is lower) with 0.68 students staying, followed by New Hampshire at 49th, with 0.89 students. Similarly, Connecticut (47th) has 1.08 and Maine (46th) has 1.34, with Rhode Island (43rd) and Massachusetts (40th) slightly higher at 1.71 and 2.20, respectively. (See Figure 2.)

These findings are troublesome for some New England states. The number of Vermont residents, for example, who report they intend to pursue a college education outside Vermont has increased by 15 percent over the past 10 years from 44 percent to nearly 60 percent. A recent survey of Vermont high school seniors by the Vermont Student Assistance Corp. finds the most important reason for leaving was to “experience a different environment.” Anecdotal evidence suggests a similar wanderlust among young people in the relatively rural states of Maine and New Hampshire.

Reasons for Connecticut’s significant out-migration may include its proximity to New York and other northeastern states (notably Pennsylvania), where reputable higher education institutions abound, as well as its relatively high number of high school graduates from well-educated, high-income families.

### Where do New Englanders go? Where do New England’s first-time freshmen go?

NEBHE found that 52 percent of the freshmen leaving their states of residence end up in one of the five other New England states, while 48 percent leave the region entirely. Of the nearly 19,000 students who cross into another New England

state for college, 13,511 or 71 percent attend private colleges. This holds true regardless of which New England states one considers: the vast majority leave their home state to attend private institutions. For example, 76 percent of the 5,027 freshmen from Connecticut who enrolled elsewhere in New England attended private institutions. Massachusetts had the lowest percentage, but still 68 percent of the 6,925 freshmen who left the Bay State to enroll elsewhere in New England went to private institutions.

The story is the same for freshmen who leave New England entirely. Nearly half of the 17,500 students leaving New England for college go to either New York (6,191) or Pennsylvania (2,233), followed by Virginia, the District of Columbia, Florida, North Carolina, Maryland and Ohio.

About 13,000 or 73 percent of them enter private institutions. The most popular are Rochester Institute of Technology, Syracuse University, George Washington University, Ithaca College, Rensselaer Polytechnic Institute, New York University and Cornell University. An interesting exception to the privates-first pattern is Virginia, where nearly three-quarters of in-migrating New England students attend public institutions.

**Figure 1: Migration of First-Time, First-Year Freshmen To and From New England, 2000**

	<b>% Who Leave</b>	<b>% of Total Enrollment Due to Incoming Freshmen</b>
Connecticut	48%	40%
Maine	43%	35%
Massachusetts	31%	42%
New Hampshire	53%	56%
Rhode Island	37%	65%
Vermont	60%	72%
New England	40%	46%
National Average	24%	26%

Note: Includes first-time, first-year students who graduated high school in the previous 12 months who are enrolled in Title IV participating, degree-granting institutions.

Source: New England Board of Higher Education analysis of U.S. Department of Education data.

**Figure 2: First-Time, First-Year Freshmen Staying In and Leaving New England**

	<b>1st-Time Freshmen Staying</b>	<b>1st-Time Freshmen Leaving</b>	<b>Ratio: Freshmen Staying to Leaving</b>
Connecticut	11,824	10,988	1.08
Maine	4,407	3,296	1.34
Massachusetts	29,689	13,518	2.2
New Hampshire	3,805	4,289	0.89
Rhode Island	4,106	2,407	1.71
Vermont	1,455	2,146	0.68
New England	55,286	36,644	1.51
National Average			4.5

Note: Includes first-time, first-year students who graduated high school in the previous 12 months who are enrolled in Title IV participating, degree-granting institutions.

Source: New England Board of Higher Education analysis of U.S. Department of Education data.

## In-migration

Outflow is only half the freshman migration equation. New England remains a popular destination for freshmen from around the United States (and the globe), and posts a net gain in migration of college freshmen.

But levels of in-migration vary from state to state. For example, three of the six New England states rank among the top 15 in the nation in attracting migrating freshmen. Massachusetts ranks third in the nation, with over 21,400 traveling there for college in 2000. Connecticut ranks 12th, receiving 7,800 freshmen, while Rhode Island ranks 13th, receiving 7,700.

In fact, New England depends heavily on this inflow of students. All six states rank in the top 10 nationally in terms of in-migrating students as a percentage of all first-year freshmen. Vermont ranks second in the nation by this measure, with 72 percent of its total freshman enrollment due to in-migration. This reflects a steady increase from 64 percent in 1992. Rhode Island ranks 3rd with 65 percent, while New Hampshire ranks 4th with 56 percent. Massachusetts ranks 6th with 42 percent of freshman enrollment due to in-migration, while Connecticut ranks 7th with 40 percent, and Maine, 10th, with 35 percent.

The extent to which the New England states compensate for out-migration with in-migration is illustrated

by the ratio of freshmen coming to freshmen going. Nationally, the average state attracts 1.4 U.S. freshmen for every freshman who leaves. Rhode Island has the 3rd highest ratio in the nation, with 3.21 students migrating in for every one that leaves. Vermont ranks 13th by this measure, with 1.71 students migrating in for every one that leaves. Massachusetts ranks 18th with a 1.58 ratio. (See Figure 3.)

In contrast, New Hampshire's ratio is 1.13, just slightly below the national average. Maine's and Connecticut's are well below the national average, with only 0.71 freshmen coming in for every one that leaves. This underscores the reality faced by both states: significant negative net migration flows.

## Private attraction

Just as private institutions draw freshmen away from New England states, private institutions draw freshmen in. Of the approximately 26,400 freshman students traveling to New England in 2000, about 22,600 or 85 percent of them entered private institutions. New England's top private destinations include: Boston University, Boston College, Harvard, Johnson & Wales, Northeastern, Yale, Brown, Dartmouth and the Massachusetts Institute of Technology.

There are several reasons for the lopsided attraction to private institutions. First, New England has a relatively large number of private institutions—lots of capacity, if you will, to be filled by students from all over the region and the nation. Second, many New England private colleges and universities are in high demand simply because they are among the most prestigious in the country. Third, public institutions have limits on the number of out-of-state students they accept. Fourth, in some instances, the cost of attending a public institution out of state is somewhat comparable to attending a private institution.

**Figure 3: First-Time, First-Year Freshmen Coming to and Leaving New England**

	<b>First-Time Freshmen Coming In</b>	<b>First-Time Freshmen Going Out</b>	<b>Ratio: Freshmen Coming to Going</b>
Connecticut	7,789	10,988	0.71
Maine	2,351	3,296	0.71
Massachusetts	21,404	13,518	1.58
New Hampshire	4,853	4,289	1.13
Rhode Island	7,717	2,407	3.21
Vermont	3,666	2,146	1.71
New England	47,780	36,644	1.3
National Average			1.4

Note: Includes first-time, first-year students who graduated high school in the previous 12 months who are enrolled in Title IV participating, degree-granting institutions.

Source: New England Board of Higher Education analysis of U.S. Department of Education data.

**Figure 4: Out-Migration and the Cost of Public Higher Education in the New England States**

	<b>U.S. Rank: Percentage of Freshmen Leaving State</b>	<b>U.S. Rank: Average In-State Tuition &amp; Fees at Land-Grant University</b>
Connecticut	5th	9th
Maine	6th	14th
Massachusetts	12th	7th
New Hampshire	3rd	3rd
Rhode Island	9th	10th
Vermont	2nd	1st

Note: Migration data are from 2000 and tuition and fee data are from fall 2002. Both reflect the most current data available.

Source: New England Board of Higher Education analysis of U.S. Department of Education and Washington Higher Education Coordinating Board data.

## Implications

Though the vast majority of New England freshmen who remain in their home states attend public colleges and universities, there appears to be a disturbing similarity between where New England states rank nationally in public college tuition and where they rank nationally in the percentage of freshmen who leave the state. (See Figure 4.) In short, public colleges and universities in New England, while less expensive than their private counterparts, may not

seem like a good enough deal to keep many state residents home.

University of Maine economist Philip Trostel, who authored a study of first-time college students leaving Maine, wrote in the *Maine Policy Review*: "Relatively low public support and hence relatively high tuition, is an important part of the reason why many students evidently feel that higher education in Maine is not a good deal. ... The key issue is the cost and quality of our public higher education compared to the alternatives. As with other things that people buy, what matters is the relative cost compared to the relative quality."

But for the luring capacity of private higher education institutions, some New England states might be at a severe economic and social disadvantage due to the large number of students who leave to attend college elsewhere.

The freshmen who leave their home states or the region are often among the best and brightest, as evidenced by the list of institutions they attend. This raises tough questions, particularly for states like Connecticut and Maine, about "brain drain" and those states' apparent inability to keep their own brightest students at home.

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**Michael K. Thomas** is director of policy and research at the New England Board of Higher Education. The complete version of this report, including detailed tables and charts, is available on NEBHE's website at [www.nebhe.org/research.html](http://www.nebhe.org/research.html).

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# Aid Matters



## Merit Aid is the Wrong Tool to Attract the Best and the Brightest

DONALD E. HELLER

**R**egional prosperity requires a well-educated workforce. Developing a workforce that is educated and skilled—which in today's economy means one with some form of postsecondary education—requires focused efforts to ensure that all students who can benefit from a college education have the opportunity to pursue one. This means that public resources have to be expended on increasing college access for those students who are on the margins of postsecondary attendance and who historically have not participated in college at the same rates as more advantaged groups. Yet at least one recent policy trend runs counter to this goal.

Merit-based financial aid has been a growth industry in the United States over the past decade. Much media attention has focused on the use of merit aid by colleges and universities to try to attract academically talented students, the type of students who will help an institution move up in the college rankings guides produced by publications such as *U.S. News & World Report* and *Barron's*.

What has received less attention has been the increase in merit aid provided directly from state funds. In 1992, less than 10 percent of all state grant dollars awarded to undergraduates was provided without consideration of financial need; by the 2001-2002 academic year, this proportion reached 25 percent. Spurred by the creation of the Georgia HOPE Scholarship program in 1993, a dozen states have created broad-based merit aid programs that now award

over \$1.2 billion to undergraduate students.

A recent report I co-edited for the Civil Rights Project at Harvard University analyzed the impact on college access of four of the nation's leading merit aid programs, including three of the four largest programs. Unlike need-based aid, which has a long history of being used to promote access to college for lower-income students—the students who most need the financial assistance in order to be able to enroll in college—the state merit aid programs target their awards to a different population of students. Indeed, merit aid benefits predominantly students from the groups who historically have had the highest college-going rates in the country, including white and upper-income students.

The findings in the Civil Rights Project report are consistent regarding the impact of these programs in Florida, Georgia, Michigan and New Mexico:

- Georgia's HOPE program, which is funded by the state's lottery, is the nation's oldest and largest broad-based merit scholarship program, awarding \$300 million in the form of full-tuition grants during the 2000-2001 academic year. Researchers Christopher Cornwell and David Mustard of the University of Georgia concluded that only 10 percent of the state's expenditures on the HOPE program resulted in increased college access in the state; the remaining 90 percent of the funds subsidized existing college-going behavior of students who likely did not need the assistance to be able to afford college.
- New Mexico's Lottery Success Scholarship program is similar to Georgia's in that it is funded by the state's lottery and provides full tuition grants

to students in public institutions. Melissa Binder, Philip T. Ganderton and Kristin Hutchens of the University of New Mexico found that approximately 80 percent of the recipients of these scholarships were from families earning more than \$40,000 per year, well above the state's median income of approximately \$32,000.

- In both Michigan and Florida, the rate at which scholarships were awarded differed greatly among students from different racial and ethnic groups, and among students from communities of different income levels. For example, while about one-third of white students in both states received scholarships, less than 10 percent of African-American students did. In both states, students in the 20 percent of schools in the wealthiest communities (as measured by the proportion of students on free- or reduced-price lunch in high school) received scholarships at rates more than twice that of students in the poorest communities.

## Merit aid programs do not increase college access for students who would otherwise be unlikely to attend college.

The research reveals that these programs were likely to exacerbate, rather than help eliminate, the gaps in college participation between rich and poor, and between racial majority and minority students. The Civil Rights Project report concludes: "The students least likely to be awarded a merit scholarship come from populations that have traditionally been under-represented in higher education. This hinders the potential to increase college access among minority and low-income students, especially if these scholarship programs continue to overshadow need-based programs."

So what does the trend toward merit aid mean for the development of an educated and skilled workforce? The research has demonstrated that merit aid programs do not increase college access for students who would otherwise be unlikely to attend college. In fact, these programs allocate resources to the very students who are most likely to attend college even without public assistance. Subsidizing existing college-going behavior can do little to help develop a skilled workforce.

Some proponents of merit scholarships argue that they are an effective way of stanching "brain drain," by encouraging a state's "best and brightest" students to attend college in-state, with the hope that they will stay in the state after they graduate and contribute to the local economy. But there is no evidence, even from states such as Georgia that have had merit scholarship programs for a number of years, that these students do stay in the state after graduation.

## Subsidizing existing college-going behavior can do little to help develop a skilled workforce.

The problem with using merit scholarships for this purpose is that the most academically talented students are exactly the students who are most likely to: 1) attend graduate school rather than entering the labor market after attaining a bachelor's degree; or 2) be recruited in regional, if not national, labor markets. Both of these facts open the door for the student to leave the state, taking with her the public investment in her education in the form of both the merit scholarship and the state's subsidy of her education (if she attended a public institution). Rather than chasing after these most able students, states would be better off developing the skills of more marginal students. These are the people who are most likely to stay in the state and contribute to the local economy upon graduation.

The New England states have resisted the temptation to use public scholarship funds for purposes unrelated to increasing college access. The nation's first scholarships for needy students were awarded over three centuries ago by New England institutions that are still in existence today. While the economic downturn has certainly affected the willingness and ability of the states to fund public institutions and financial aid, New England has at least maintained a commitment to awarding the bulk of such aid based on the financial need of the student. Ninety-eight percent of the almost \$200 million in grant dollars provided to undergraduates by the six New England states is awarded based on the financial need of the student and her family. This commitment will ensure that the region maximizes its public investment in developing a skilled workforce for the future.

Other policies, including loan-forgiveness programs for students entering high-need occupations, can also be used to help states develop a skilled workforce. But need-based assistance is the best financial aid tool to increase college access and promote economic prosperity.

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*Donald E. Heller is associate professor and senior research associate at the Center for the Study of Higher Education at The Pennsylvania State University.*



# Jobbers

## New England Campuses Offer Up Some Workforce Development Surprises

JAMES MARTIN AND JAMES E. SAMELS

**A growing group of New England colleges seeks to capitalize on the educational benefits and drawing power of programs that link training to employer needs.**

**A**s the post-9/11 recession drags on across New England, some higher education officials believe they have found light at the end of the tunnel in workforce development. Once the exclusive province of vocational, technical and career schools and institutes, workforce development has become one of the hottest topics on and off campus, capturing the resources and imagination of a new group of higher education institutions that may seem to be unlikely hosts.

Indeed, from a creative Catholic liberal arts college enhancing its brand to a university inside a state office building to a small business college networking its way into Gillette Stadium, a growing group of New England colleges and universities is aggressively seeking to capitalize on the educational benefits and student drawing power of programs that link college training to employer needs.

Here are a few sometimes-overlooked examples of workforce winners:

**Assumption College.** Distinct from more networked Jesuit Catholic institutions, New England's only Assumptionist college is recruiting greater numbers of high-achieving students while it develops effective workforce training via the Assumption Corporate Education Center, the Mary E. Switzer Institute of Social and Rehabilitation Service and the Aaron T. Beck Institute for Cognitive Studies. "Young adults who go to school in

Massachusetts tend to be more likely to stay here for their careers, be more cognizant of regional employers and, if they have benefited from an experiential component in their program, have lower turnover rates," says President Thomas Plough. Besides, Plough adds, many colleges turn out graduates with technical competence, but few ensure ethical insights, common sense and compassion for fair and just treatment of colleagues and customers. "These are explicit objectives of a college like Assumption," he says.

**University of Maine at Augusta.** The University of Maine at Augusta is the primary provider of undergraduate education to Maine state employees through its Capital Campus Program and other locations across that part of the state. The retirement rate among Maine state employees could reach as high as 50 percent over the next five years, according to projections. The Capital Campus Program inaugurated in the fall of 2002 offers certificate programs in the Burton Cross State Office Building to prepare younger workers in areas such as government management, human resource management and liberal arts.

Charles M. Lyons, the university's president and a veteran of the Maine system, offers this overview, "Through our Capital Campus Program, we deliver live classes in the Cross State Office Building, and we use our long experience with distance education by Web and television and with adult learners

to serve the state workforce over the length and breadth of New England's largest state."

**New England College.** New England College now offers master's degrees in management healthcare administration at six health care facilities across New Hampshire. Slightly more than half of the students in the program hold bachelor's degrees in nursing. So this degree has been designed to provide the skills that New England nursing leaders will need to manage the influx of entry-level registered nurses and licensed practical nurses that New England acute care facilities hope to hire between now and 2010. "Workforce development and continuing education can be one and the same, but they can also work to very different purposes," says Director of Graduate Studies Richard Keating. "We recognize that workforce needs can be met effectively by providing tailored, flexible, degree programs on a graduate level."

**Vermont Technical College.** Vermont's only technical institution, in collaboration with the Vermont State College system, has set workforce education and training as one of its highest priorities for the next several years via the Vermont Workforce Education and Training Consortium, according to President Allan Rodgers. Last year, the college's Technology Extension Division provided workforce-related training opportunities to more than 200 companies and 6,000 Vermonters, ranging from apprenticeships for plumbers to leadership training for CEOs.

**Nichols College.** One of the country's few remaining freestanding business colleges, Nichols of Dudley, Mass., was an early convert to providing every student with a notebook computer and teaching via the case study method. "At Nichols, every student creates a learning portfolio, and all have the opportunities to study business etiquette and dressing for success," says President Debra Murphy. Nichols has also claimed an increasing chunk of a very attractive student recruitment vehicle: professional sports internships. Gradually expanding this network every year,

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## Five Attributes of Successful Workforce Development Programs

1. Respect for theory but emphasis on learning by doing and applied programs.
  2. Emphasis on industry-specific, skills-based teaching and learning competencies.
  3. Programs that "follow the money" by targeting unmet labor market needs.
  4. A mission that endorses linking with regional employers for worksite-based training and tuition reimbursement.
  5. Focus on workplace networking to predict what employers will need five years into the future.
- 

the college recently secured professional learning experiences with the New England Patriots, Boston Celtics, New York Knicks, the U.S. Olympic Committee and the Worcester Ice Cats minor league hockey team.

**Springfield Technical Community College.** While most state governments are cutting their higher education budgets, public two-year colleges remain in many ways the frontline in workforce development. And few can claim as much success in this as Springfield Technical Community College (STCC). STCC was selected by Verizon to administer the New England "Next Step" Program, devising customized curricula in telecommunications while serving as the lead institution in coordinating the work of 10 additional colleges to train more than 1,200 Verizon employees across the six states. Building on a 1997 grant from the National Science Foundation to establish a National Center for Telecommunications Technologies, the NCTT has dedicated some of its resources to setting skills standards for telecommunications. Kevin Drumm, vice president of enrollment management, student and public affairs, notes that the college is also moving into the fast-growing biotechnology field.

**University of Connecticut.** University of Connecticut Chancellor and Provost John Petersen provides two innovative examples of pathbreaking research and development projects spawning high-end workforce development. The Connecticut Global Fuel

Cell Center—a partnership among the state, UConn's School of Engineering and the Connecticut fuel cell industry—has significantly expanded the university's capacity to conduct fuel cell research, design, commercial development and technology transfer. On a parallel track, the university has opened a \$25 million bioscience complex which houses several advanced biotechnology labs, a nationally prominent example of which is the Connecticut Center for Regenerative Biology, which is a leading organization in the development of embryo genetic manipulation techniques—in other words, cloning a cow. These scientific advances are creating cutting-edge workforce training opportunities in pharimatech and renewable energy.

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*James Martin is a professor of English at Mount Ida College.*

*James E. Samels is the president and CEO of The Education Alliance, a national higher education consulting firm based in Framingham, Mass. Their new book, "Presidential Transition in Higher Education: Managing Leadership Change," will be published in 2004 by Johns Hopkins University Press.*



# Local Heroes

How Colleges and Universities Enrich Their Host Communities

JUDITH STEINKAMP

**Tough times encourage colleges and communities to devise creative solutions to the problems they share.**

Colleges and universities are re-aligning academic initiatives to link more closely to community needs. Campus-community alliances increasingly focus on: promoting economic development and revitalizing local neighborhoods; promoting cultural tourism and building new cultural venues and recreational facilities; and developing sustainable communities, with a particular emphasis on affordable housing models.

Difficult economic times force institutions to question the effectiveness of established modes of operation. At the same time, communities face their own challenges, including diminished budgets for basic education and social services. Campuses raise tuition and fees; communities raise taxes. Both consider potential layoffs of personnel. The tough times also encourage colleges and communities to devise creative solutions to the problems they share.

Consider these best practices:

**Trinity College** of Hartford, Conn., is a model for a truly engaged institution. The 16-acre Learning Corridor is an exemplary redevelopment project developed by Trinity and the Southside Institutions Neighborhood Alliance (SINA), a coalition of the Connecticut Children's Medical Center, Connecticut Public Television & Radio, Hartford Hospital and others. The partnership created on a once decrepit tract of land adjacent to Trinity five educational institutions

including: a Montessori Day Care Center (grades pre-K to 5); a magnet middle school; a math and science academy; and an arts academy. The site also includes a Boy's and Girl's Club, a community theater and retail spaces.

Beyond the physical buildings, Trinity has linked its academic initiatives to community needs through a number of programs that go beyond traditional service learning. The Mega-Cities Institute, the Trinity Center for Neighborhoods, the Neighborhood Technical Center's Smart Neighborhood Initiative, the Institute for Living, the HART Job Center and the Aetna Center for Families are all programs that involve Trinity faculty and students with community leaders to improve the economic, physical and social characteristics of the neighborhood.

The **University of Pennsylvania** has been a leader in linking public service to community needs. Under the direction of Ira Harkavy, the Penn Program for Public Service, established in 1989, evolved into the Center for Community Partnerships. Its purpose is to support a university-wide effort to improve the quality of life in the West Philadelphia neighborhood adjacent to the university. Like their brethren at Trinity, Penn officials believe the future of both the institution and the neighborhood are intertwined.

The center engages in a variety of activities including academically based community service, traditional services to the community and community development initiatives.

Examples include: a university-assisted community school, an urban nutrition initiative, a community arts partnership, neighborhood-level planning, education and job training for youth and adults, and minority entrepreneurship training. Ongoing partnerships are developed with community organizations, federal institutions, foundations and other nonprofit groups.

**Virginia Tech University** in Blacksburg, Va., led an unusual initiative to establish an advanced network infrastructure called the Blacksburg Electronic Village (BEV). The BEV wired the community and offered a variety of Internet-based services to Blacksburg-area residents, civic groups and nonprofit organizations from e-mail to an electronic calendar of events and arts websites. From an academic standpoint, the program fosters research in the social, educational, political, economic and technical aspects of networking, as faculty and students evaluate the use and impact of community networking.

The **University of Illinois at Chicago** established the interdisciplinary Great Cities Institute (GCI) to create, disseminate and apply knowledge in community development, metropolitan sustainability, workforce development and professional education. The focus is the city of Chicago, but the institute also is committed to improving quality of life in other metropolitan areas. For example, the institute's Coastal Business and Environment Initiative provides local governments and planning agencies with the academic research support to achieve a more sustainable economic and ecological future. The institute's Chicago Workforce Development Partnership project promotes economic well-being by providing job access and advancement for poor Chicago residents.

**Clark University** in Worcester, Mass., was the forerunner of promoting economic development in adjacent neighborhoods, initially for its own self-interest. The Main-South area of Worcester was run-down and crime-ridden—hardly an appealing extended campus for a renowned university. Clark established the University Park Partnership, a collaboration among

residents, Clark organizations, Worcester Public Schools, government officials, local businesses and churches. The initiative was one of the first funded by the U.S. Department of Housing and Urban Development's Community Outreach Partnership Center program, which supports university-community partnerships. Since the program began in 1995, Clark and its partners have renovated more than 200 residences and built 100 new residences to benefit local residents and attract faculty and staff to the college neighborhood.

Clark has established its own Educational Corridor, including a community school called the University Park Campus, for grades 7 to 12. Originally located on the campus, it is now a block away. Jack Foley, assistant to the president at Clark, says all 31 members of the school's first graduating class will be

**One attraction of living in a college community is the range of cultural venues and recreational opportunities.**



Photo by John Owens.

*University Park Campus School students on a field trip to Clark.*

attending college next year, including up to a dozen who will go to Clark tuition-free as part of the initiative.

One attraction of living in a college community is the range of cultural venues and recreational opportunities that contribute to a vital quality of life. Meanwhile, "cultural tourism" generates about \$6 billion in annual spending in New England, according to the New England Council, whose Creative Economy Initiative has brought together leaders of cultural and education institutions with their counterparts in business and government to strengthen the region's economic competitiveness.

Clark is now a major player in the

Worcester Cultural Corridor, an ambitious renovation and revitalization project spearheaded by an investment in arts and culture. A master plan for the area provides affordable housing for artists and others by renovating mill buildings and vacant properties to create *live/work spaces* for related businesses. A contemporary art center, restaurants, parks, retail and mixed-income housing are all components of the plan to create a strong arts/business district for the city and area colleges to stimulate the local arts economy. Says Foley: "Once you're part of a community partnership, people look to you to be involved."

The **University of Massachusetts Amherst** has embraced the creative economy with establishment of the *Western Massachusetts Arts Alliance*, a partnership linking cultural resources that contribute to the vitality of the four counties of

western Massachusetts. In addition to hosting workshops such as Arts Curriculum Frameworks, Making a Living as an Artist, and a Forum for Funding in the Arts, UMass partnered with members of the Knowledge Corridor to create a Connecticut River Valley Cultural Corridor map. A cultural tourism forum held in May brought together regional leaders, artists and organizations to learn more about the creative economy and the potential economic contributions of arts and culture groups. The next step is development of a regional arts website.

North of Boston, a partnership that began at **Salem State College** is responsible for conceiving

ArtsNorth, an organization linking arts institutions north of Boston. A number of other institutions of higher education including Endicott College, Montserrat College of Art and Gordon College are also involved in promoting and joint marketing of cultural venues in the region.

Recreational venues play an important part in promoting cultural tourism. UMass is currently reviving a Five College Bikeway that will link the university with Amherst, Smith, Hampshire and Mount Holyoke colleges, allowing recreational uses as well as commuting and inter-campus travel by students who take courses among the five colleges.

In their role as community anchors, colleges and universities must support sustainable development practices through teaching, institutional practices and community

students and the community about long-term sustainability and to model the behavior of its' graduates.

In partnership with the town of Amherst, Hampshire received a Livable Communities grant to study how an "ecological and cultural village" might be expanded at the edge of the campus, adjacent to an existing market and residential neighborhood. The college seeks to work with neighbors to expand the Atkins Farm Country Market into a true village center, employing sustainable development guidelines. Says Prince: "Students wanted more connections to the community. It was Hampshire's responsibility to generate intergenerational conversations and to encourage a dialogue with the neighbors." A series of public meetings educated local and college residents about best practices in green architecture,

open space character of the area.

A major factor in sustaining college communities is providing a range of housing options for university affiliates. In recent years, inflated housing prices have inhibited recruitment of new faculty, staff and graduate students. Groups of students renting single-family homes and apartments in the community deprive local residents of affordable housing options. Clark addressed this issue by promoting renovation of housing adjacent to the university through downpayment incentives and low-cost loans to faculty and staff. In other communities, colleges and universities are taking a much greater responsibility for housing their own.

New campuses like Florida Atlantic University, the University of California Merced and Cal State Monterey Bay are creating new communities, much like the Hampshire model, that provide a full range housing for faculty, staff and students, without affecting local housing stock. On the West Coast, the institution typically retains control of the land with the tenant paying for building/home costs only plus a minimal ground lease fee. In more established New England communities, the strategy is different. In Hanover, N.H., Dartmouth College is developing new housing models for faculty and staff by buying land, acting as developers and controlling costs. Still other urban institutions like MIT are employing creative means of gaining additional housing stock by renovating old mill and factory buildings, an excellent model for reuse of existing structures and materials.

By sharing their expertise, becoming engaged in workforce development and practicing sustainable development principles that improve the quality of life for the campus and the community, colleges and universities are enhancing their academic missions while stimulating the economic and cultural vitality of their regions.

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*Judith Steinkamp is director of campus planning & space management for the University of Massachusetts Amherst. She also consults with other institutions to foster campus and community collaborations.*



Photo by Peggy Moskowitz.

*Housing renovated by the Main South Community Development Corp.*

development. This means moving beyond the current focus on "green architecture" to mitigating traffic impacts, managing growth, recycling facilities and integrating principles of sustainability in the curriculum.

**Hampshire College** in Amherst has developed a model approach—a Sustainable Master Plan that outlines goals for academic programs, life-cycle costing, environmental preservation, resource utilization and controlled expansion. Hampshire views the campus community as a *living laboratory* for experimentation, encouraging permeable boundaries with the neighborhood. Hampshire President Gregory Prince believes it is important to educate young people,

climate-friendly buildings, storm-water management, safe pedestrian streetscapes, native landscapes, traffic calming and multimodal transportation. This model plan will provide housing, retail and commercial space arranged around a village green and Main Street configuration with connections to Hampshire College and the local residential areas that include a retirement village.

Working together, the college and the town will examine existing zoning restrictions to develop a plan for greater density that promotes a village identity. Hampshire officials hope the plan can become a prototype for the entire town that promotes smart growth and re-development while preserving the

**In their role as community anchors, colleges and universities must support sustainable development practices.**



# The Great Outdoors

Adventure Education and Recreation Studies Programs Try to Prove Their Worth

MONICA DEADY

**Growing interest in wilderness and outdoor activities has created demand for competent professionals who combine the technical skills to lead a wilderness expedition, the soft social skills to manage a group and the scientific knowledge to be effective teachers.**

**A**dventure recreation ... adventure education ... outdoor education ... These college degree programs don't exactly conjure up images of New England's ivy-covered quadrangles, nor for that matter, of high-demand professional fields. They may even be derided as jock majors, gut courses, academic fluff to be cut loose in a difficult budget climate. Even Thayer Raines, coordinator of the adventure recreation major at Green Mountain College in Vermont, says students might fairly wonder: "Am I getting a license to be a ski bum?"

Not these days.

The National Park System reports an astonishing 421 million visits to its more than 375 sites each year, while 149 million Americans age 16 and older camped, climbed, hiked, kayaked or participated in another outdoor activity in 2001, according to the Outdoor Industry Association. Those enthusiasts spent \$18 billion on "human-powered" outdoor equipment and poured untold amounts into local economies. Meanwhile, organizations that use wilderness adventure to develop traits ranging from self-reliance to teamwork are flourishing; the 40-year-old Outward Bound program, for example, counts half a million alumni.

The growing interest in wilderness and outdoor activities has created demand for highly competent outdoor professionals who combine the hard technical skills to lead a wilderness expedition, the soft social skills to manage a group and the scientific knowledge

to be effective teachers. This demand, in turn, has fueled growth in outdoor education programs at New England's colleges.

Freshman enrollment in the University of New Hampshire's outdoor education concentration, for example, has grown from two to 13 over the past six years, according to Deb Sugerman, director of the undergraduate outdoor education program. At Green Mountain College, adventure recreation is the second most commonly declared major after environmental studies, according to Assistant Dean of Admissions Noka Garrapy. The program enrolled 69 students during the 2002-03 academic year—triple the enrollment of five years ago.

## What do they do?

The outdoor professional is the ultimate programmer of a person's leisure experience, says Raines. To determine what people might enjoy doing, these pros need to understand human behavior and development, psychology, sociology and kinesiology—the study of the anatomy, physiology and mechanics of body movement. To teach effectively, they need a grasp of how the mind relates to the body and how learning styles differ. Besides, says Raines, they need the physical skills for activities such as rock climbing or kayaking. They need scientific knowledge of meteorology, morphology, river formation, geology, astronomy and navigation. And they increasingly need to understand and use global positioning systems.

A grounding in the humanities doesn't hurt either. A guide might be able to tell students where on the infamous summit of Maine's Mount Katahdin, Henry David Thoreau wrote his essay "The Maine Woods," or point out Thoreau Spring. A savvy guide might even suggest, as Thoreau did, "It were as well to be educated in the shadow of a mountain as in more classic shade."

Graduates of college outdoor education programs enter a variety of sectors. They may work as outdoor guides or in specialized outfitting centers, in places that specialize in selling products and leading trips, at resorts, camps or outdoor centers that offer adventure programming, in the newly emerging fields of corporate facilitation and wilderness therapy, or in a school.

Todd Miner, executive director of Cornell University's Phillips Outdoor Program Center, says he has seen "incredible growth" in fields such as therapeutic wilderness camps and programs for adjudicated youths, as well as traditional camp, adventure program and youth program jobs. Miner adds that there are approximately 7,500 ropes courses in the United States that need facilitators, all of whom could be graduates of outdoor and adventure education programs. Add to that job opportunities in wilderness programs, hospitals and colleges and, says Miner, "The job market is booming."

While jobs may not be hard to come by, high-paying ones are. A study by Miner published in *The Outdoor Network Newsletter* last spring revealed that the average salary among outdoor professionals was \$32,620. Adventure program directors made slightly more—an average of \$41,553. "No one is going to get rich in this field," says Miner. (See Figure 1.)

### A major question?

Still, the popularity of outdoor education-related majors raises some questions. One is whether pursuing an academic major in the field is necessary at all. Though an increasing number of students pursue degrees in fields such as adventure education,

**Figure 1**

**Most Common Outdoor Education Positions, Average Annual Salaries**

Director	\$41,500
Associate Director	\$33,300
Ropes/Team Director	\$30,100
Program Manager	\$29,900
Teacher/Instructor/Guide	\$28,900
Facilitators	\$28,600
Logistics/Outfitting	\$28,400
Counselors/Therapists	\$27,400

Source: Todd Miner, Cornell University Outdoor Education

adventure recreation or outdoor education and leadership, many outdoor professionals get their experience and training on their own.

For example, the National Outdoor Leadership School (NOLS), a private nonprofit that focuses on experiential education in a wilderness setting, does not require its instructors to hold degrees specifically in outdoor-related fields. Says Admissions Supervisor Joe Austin: "Unfortunately, a lot of people with degrees, even advanced degrees [in an outdoor-related field] don't have experience in the outdoors."

Moreover, some college outdoor programs are better than others.

Miner of Cornell says the best degree programs include hands-on experience in the wilderness. Miner, who also does consulting for schools, recommends at least 100 days of field time in addition to coursework.

Austin says that although theoretical knowledge may be valuable, NOLS wants people with experience. "The whole point is experiential education," he explains, "yet people sit in classrooms learning about it for four years—it's the ultimate irony."

### The curricula

Outdoor education programs and their relatives have image problems. "The traditional academic community holds majors such as adventure management and eco-tourism somewhat suspect in terms of academic rigor," says Massachusetts higher education consultant James E. Samels. People think "eco-tourism and adventure management are code words for academic shallowness," says Samels, adding that program critics "see the field like a river: a mile wide and an inch deep."

Program officials insist, however, that the outdoor curricula are academically rigorous. Strong programs incorporate plenty of reading, researching

## Regional Students Outdoors

The New England Board of Higher Education's Regional Student Program (RSP) offers New England residents a tuition break when they study certain majors at public colleges and universities in another New England state that are not offered at a public institution in their home state.

The RSP offers two options for students interested in outdoor education or an adventure-related field:

Students from Connecticut, Maine, Massachusetts and Rhode Island may pay reduced tuition to pursue a bachelor's degree in outdoor education at Vermont's Johnson State College. The program offers concentrations in adventure education/wilderness leadership and environmental education.

Students from Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island can pay reduced tuition to pursue a bachelor's degree in recreation resource and ski management at Lyndon State College in Vermont. Students may choose a concentration in adventure-based program management, which prepares them to work in organizations that use adventure to teach outdoor skills and enhance individual or group development.

In academic year 2001-02, nearly 7,700 New England students saved an average of \$5,500 each on their annual tuition bills through the RSP, for total savings of more than \$42 million.

and writing, while adhering to the standards of national associations such as the American Canoe Association or American Mountain Guides, defenders of the programs say. These programs aim to strike a balance between technical skills, leadership, theory and even medical training.

At UNH, in fact, students go a level beyond the field standard medical certification of Wilderness First Responder, completing the more advanced Emergency Medical Technician (EMT) and Wilderness EMT courses, Sugerman says. These courses are among the first that the UNH students take. "If they pass that, they go on," adds Sugerman.

Plymouth State College, meanwhile, is revamping its 22-year-old outdoor recreation curriculum, according to Bob Stremba, an associate professor and coordinator of adventure education at the college. "Often, I think the students see the words 'outdoor recreation' and they think it's playing outside and getting college credit for it," he says.

Beginning in the fall of 2003, a new Plymouth State adventure education major will better prepare students to provide outdoor programming with educational value while promoting sustainable outdoor activities. Instead of snowmobiling and ATV use, the focus is on human-powered pursuits like rock climbing and mountaineering. "We are enhancing the curriculum with more instructional skills," says Stremba, adding that the new program will require students to spend a minimum of 60 days instructing or leading in the field and to complete a seven-week internship.

Anne Morse, dean of students at Sterling College in Vermont, sees these programs as rigorous. "I find it very stimulating," she says. At Sterling, she says, the interdisciplinary degree program blends science and hard skills with psychology and sociology. "It brings a lot of fields together, which I think is one of the most stimulating things" about it.

Miner compares earning a degree in an outdoor-related field to a college football player who could make the pros but instead finishes college before

being drafted. "It's about focusing on longer-term goals," he says, "the goal of broadening the mind." Above all, he says, the college experience should be about writing, critical thinking and technology, all of which will benefit the student later on in life.

Raines of Green Mountain College has a theory about why critics continue to think the programs lack rigor: because they're fun.

### Budget concerns

With a national budget crunch affecting colleges and universities, the academic soundness of outdoor programs will be under review.

Miner doesn't think budget cuts will take a toll on the programs, especially since they have been rising in popularity. "Student demand and popularity is a great insurance policy against that," he says. He adds that when higher-ups see the number of students involved in these types of programs, they tend to leave them alone.

Samels remains skeptical. "We need more longitudinal evidence on what they [the students and programs] do," he says. He admits, however, that colleges and universities may keep the adventure majors in the long run "because they need to serve this career market."

Green Mountain's Raines sums up the notion of why leisure activities and programs like these are important. "Leisure is the reason we [as a society] work so hard," he says. The quality of your life is what you do after you leave work. "I've never understood in an academic environment, in higher education, why someone would point at that [an adventure education program] and say, 'That has no value.' It's a central life value."

---

*Monica Deady served as NEBHE/CONNECTION intern during the spring of 2003. She earned a master's degree in journalism from Boston University in May 2003.*

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## YGB

Sylvia Quarles Simmons

*Young, Gifted, and Black: Promoting High Achievement Among African-American Students*, Theresa Perry, Claude Steele and Asa Hilliard III, Beacon Press, 2003, \$25

The experience and achievement of African-Americans in school has been studied and analyzed with differing and often conflicting results. In this collection of complementary, but at times repetitive essays, three scholars from different disciplines and perspectives explore this important subject in new ways, from historical, psychological and educational viewpoints. The reader is invited to make the connections between their presentations and to think about a new kind of national conversation on this subject.

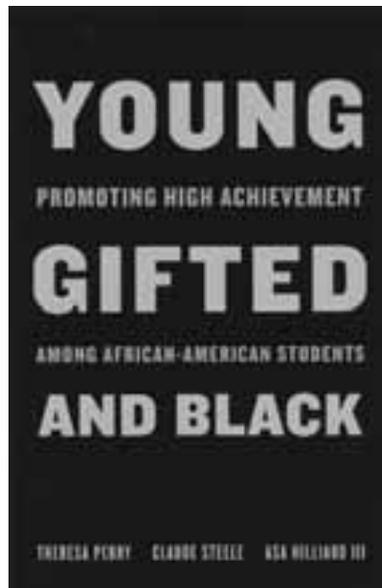
Wheelock College education Professor Theresa Perry's three-part essay fills most of the book's 167 pages of text. The essay moves the reader toward a contemporary theory of achievement based on African-American history, theories of group achievement and contrasts between achievement before and after the civil rights era.

The first part of the essay explores, the experiences that helped shape a theory of knowledge and a philosophy of education in the African-American community. Perry uses seven narratives to answer the question of why African-Americans value achievement in an environment where learning does not necessarily reap rewards. The answers, she finds, are freedom for literacy and literacy for freedom, racial uplift, citizenship and leadership. "The philosophy of freedom for literacy and literacy for freedom linked literacy and education to the social identity of African-Americans, to the very notion of what it meant to be an African-American, and to African-Americans' struggle and yearnings for freedom."

The author tries to use each narrative to demonstrate the indigenous philosophy of education that emerges out of limitations, constraints, struggles for

education and lived experiences. Perry asks whether this philosophy is powerful enough to sustain the desire to achieve among African-Americans across generations. She answers in the affirmative without further analysis. Perry then identifies "dilemmas of achievement" such as the perceived intellectual inferiority of African-Americans, the lack of cultural capital and myths relating to black language and ability.

She concludes that we must figure out how to develop in African-American children, identities of achievement to counter barriers of



intellectual inferiority or deficiencies in cultural capital and competence. She calls for schools that embrace a mission supporting a culture of achievement for all students (as exists in black colleges, Catholic schools, military schools, etc.) and for the establishment of social and cultural groups that offer a range of academic activities and are designed to forge identities of achievement. Her conclusions are not startling nor new, but they offer a comprehensive approach to achievement, create a basis for continued discussion and reaffirm the value of a supportive and positive learning environment.

Perry's essay is complemented by Asa Hilliard's. A professor of urban education at Georgia State University, Hilliard provides examples of individuals, organizations and programs that

have created climates of achievement. He calls them "gap closers," referring to the gap separating the current performance of African-American students and excellence, rather than the verifiable achievement gap between Africans and Europeans (his terms).

Hilliard identifies gap closers as programs that employ good teachers, challenge students, treat them as scholars, respect their culture and differences and instill in them pride in their ancestors and traditions. For models, he points to Project SEED, a national mathematics education program that uses a unique Socratic method to teach kids advanced math, along with the classroom mock trial programs in which students are assigned the roles of individuals involved in imaginary or re-created court trials.

Claude Steele, a professor of social sciences at Stanford University, offers a psychological perspective based on his research with college students. He suggests that a climate of achievement is already in place for African-American students but that academic performance is depressed by other factors. Steele suggests that "stereotype threat"—fear of doing something that would inadvertently confirm a stereotype—has more effect on the achievement of black students than expectations and motives. Steele's remedy for stereotype threat is to create an environment of "identity safety," in which the threat or its relevance is removed. He also would encourage positive relationships with teachers, provide opportunities for students in their living places and programs and discuss the characteristics of a safe and secure environment.

The authors agree on the need for a culture of achievement in a safe environment and provide some tools to accomplish this goal. But will they really get readers to start a new conversation about achievement? Unfortunately, this book makes one think about what is already in place, but does not identify where new research is needed.

Moreover, there are inevitable overlaps in a book of essays on one subject. Both Perry and Hilliard, for example, address the importance of recognizing

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Ebonics in education and the importance of the African-American tradition. Both discuss the climate of pessimism and perceived intellectual inferiority that inhibits achievement among African-American students. The overlaps reinforce some important points, but also leave the reader wishing an editor had intervened.

*Sylvia Quarles Simmons is chair of Regis College and former president of American Student Assistance.*

## Yalie

Andrew G. De Rocco

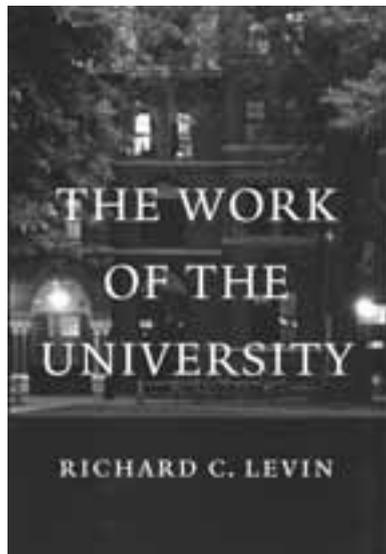
*The Work of the University, Richard C. Levin, Yale University Press, 2003, \$24.95*

Ivy League presidents tend to have relatively long tenures, partly because they are sheltered from vagaries that perturb the serenity of their less well-established counterparts. Richard C. Levin now marks 10 years as president of Yale University, the institution to which he has devoted his entire career (“like the great university presidents of the 19th and early 20th centuries,” the Yale Press publicists remind us).

Ten years at the helm of a powerfully influential university provides a good time to review and reflect. In a sense, that is what this collection of Levin’s writings does, although none was written for just that purpose. Instead, Levin has assembled pieces composed for various audiences and delivered over the decade of his presidency. They are by and large of modest length, well-focused and gracefully written. Yet their content is more suggestive than fully developed. And inevitably, certain favorite locutions—“rhetorical flourishes” in Levin’s words—are repeated in exhortations to incoming and outgoing classes, in references to Yale’s history, in quotations from Levin’s formative authors and in central themes, the virtues of the liberal arts singularly significant among them.

Levin’s dedication to the purposes of civil debate is captured in a concern

for the matter of who to read and why, especially in an age where issues of gender, race and ethnicity play so formidable a role. In his first year as president, Levin told the entering class: “Truly profound works from any cultural tradition can serve to develop and exercise one’s capacities for reflection and critical judgment. Indeed, if these capacities were more thoroughly exercised in thinking about the curriculum of a liberal education, the debate could be guided by the light of reasoned argument rather than the heat of passion.”



It is clear that Levin himself continues to read widely and well. That message alone is crucial for his audiences, for it invites them to stay the course of learning in a self-reflective manner. His readers are invited to engage the works of Harold Bloom and Isaiah Berlin, as well as Adams, Jefferson, Toqueville, Wordsworth and Whitman. The range is broad, the ideas central to the purposes of an engaged academy in the life of the mind and the well-being of society.

The book is conveniently ordered in seven parts, ranging from his inaugural aspirations for Yale to the role of the university in society, in particular noting the significance of university-based research for economic development. There are also reflections on Yale’s future, encomia for much admired colleagues, the exhortations and two substantial works concerned with economic issues.

The concluding two pieces, “Reflections on the American Economy,” are the

most fully developed of this compendium. Here we witness the serious economics scholar at work. These writings, surely professional, are nonetheless eminently readable and generously instructive.

In a talk delivered in Hong Kong to the Asia Society, Levin documents the significant role of university research in fueling economic growth, owing in large measure to the formidable partnership that grew between the U.S. research university and the federal government in the aftermath of World War II. While that arrangement remains strong, it has shown some weaknesses of late and for Levin a retreat from a robust relationship would be detrimental to each party, both short and long term.

Inevitably, readers will find favorites among these writings. Mine include “Westward Ho!”, an account of the Lewis and Clark expedition, in part revealing Jefferson’s acute sense of the qualities in Lewis that augured well for the adventure. Another entitled “Beginnings” places the correspondence of Adams and Jefferson in the context of their deep friendship and mutual concern for the future of the Republic. In “Controversy,” Levin urges the pursuit of a “better” world even if a “perfect” one will ever be beyond our grasp. But were I to choose a single favorite it would be his remarks given upon the dedication of a newly completed building at the Francis Parker School in Chicago. Given its affiliation with Dewey’s progressive ideals, Levin’s apt title, “An Embryonic Democracy,” provides a welcoming entry into a splendid acknowledgment of the power residing in an environment engaged with ideas.

The writings constitute a fitting reflection on Levin’s presidency, one he began with devoted allegiance to the ideals of liberal education. In an increasingly commodified enterprise, such a devotion is warmly welcomed. If there is a disappointment here it is the absence of Levin’s audacious assault against the policy of early decision. One may hope that at another junction, he will address this and other substantive policy issues.

*Andrew G. De Rocco is former commissioner of higher education in Connecticut.*

## Advice for Governors

*One way states contain public higher education costs in bad times is by shifting scarce funds from weak academic programs to strong programs. But how can governors and others pick academic winners and losers? The following is excerpted from “Containing College Costs: The Case for Reallocation,” an essay by Robert C. Dickeson, the senior vice president for higher education policy, research and evaluation at the Indianapolis-based Lumina Foundation for Education. The essay appears in the 2002 National Governors Association report, titled “Higher Expectations: Influencing the Future of Higher Education.” Dickeson previously served as an aide to former Govs. Bruce Babbitt of Arizona and Roy Romer of Colorado.*

There are 10 criteria to measure both academic and non-academic programs. Governors should know these criteria, request data to buttress collegiate programs in light of these criteria, and then ask the penetrating questions to secure responsible answers. ...

**Criterion 1: History, development and expectations.** Have the expectations for this program changed since it was established? How has the program adapted to changing demographics of the institution’s students (e.g. more part-timers, more nontraditional, less academically prepared, less likely to be motivated to succeed)? *Governor’s key question: Does this program meet today’s changed expectations?*

**Criterion 2: External demand.** Is there evidence that students are attracted to the campus because of the program? Has this demand changed over time? Is the institution required to offer this program? *Governor’s key question: Who wants this program?*

**Criterion 3: Internal demand.** What other programs in the institution rely on this program? What services does the program offer that are expected in other programs at the institution? Is there potential for internal demand because this program has pioneered new approaches (e.g., collaborative learning, uses of technology) other institutional programs may emulate? *Governor’s key question: Is this program required for the success of another program?*

**Criterion 4: Quality of program inputs and processes.** How current is the program’s staff? Would they stack up well against similar staff in comparable or competing institutions? Does the program operate with a quality design? When last was it overhauled? How does the program take advantage of changes in technology? What is the quality of equipment, facilities and other resources? *Governor’s key question: How good are the resources invested in this program?*

**Criterion 5: Quality of program outcomes.** How do students benefit from this program? What measurable objectives were achieved or competencies attained, including employer satisfaction and job placement? Did the program succeed in multiple measures of student development? Do the outcomes mir-

ror the best practices of similar institutions? *Governor’s key question: What are the quality results of this program?*

**Criterion 6: Size, scope and productivity.** How many students—or clients, customers, patrons—are being served? How many staff are committed to this program? What’s the resulting productivity? Is the program of sufficient size and scope to meet critical mass and is it conducted effectively? *Governor’s key question: How many people truly benefit from this program?*

**Criterion 7: Revenue and other resources generated.** What internal subsidy is appropriate to account for the enrollment the program attracts? Are there fees, grants, fundraising or other sources of revenue attributable to this program? Does the program enjoy relationships—external, community, economic—that are valuable to the institution? *Governor’s key question: What does this program bring in financially?*

**Criterion 8: Costs and other expenses.** What are the total costs—direct and indirect—associated with delivering the program? Are there demonstrable efficiencies in delivering the program that benefit the institution? What additional investment is needed to bring the program up to a high level of quality? *Governor’s key question: What’s the real outlay for this program?*

**Criterion 9: Impact, justification and overall essentiality.** How essential is this program to the institution’s mission? Does this program serve people in ways no other program does? Does it respond to a unique societal need the institution values? *Governor’s key question: How is this program linked with the institution’s—or the state’s—overall strategy?*

**Criterion 10: Opportunity analysis.** How might the program capture opportunities not heretofore considered? What external factors can this program seize? Are there opportunities for productivity gains that might save the program? Where is duplication avoidable? What is the relationship between this program and emerging trends in student development? *Governor’s key question: If resources are reinvested in this program, what would be the benefits?* ■



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**ORONO, MAINE**—Researchers at the University of Maine and Cornell University developed a new variety of potato that could be especially valuable to farmers who sell to potato chip processors. The new Monticello potato was developed by plant breeders at Cornell and field-tested in Maine to determine how well it would grow in Maine's soil and climate. Consumer tests were conducted by UMaine's Department of Food Science and Human Nutrition.

**POULTNEY, VT.**—Green Mountain College received a \$50,000 grant from the Educational Foundation of America to charter a new consortium of eight colleges devoted to sustainability in all aspects of college life. The "Eco-8" consortium will collaborate on developing interdisciplinary curricula, student exchange programs, sustainable purchasing practices, distance education and other initiatives. Green Mountain's partners in the consortium are Berea College in Kentucky, College of the Atlantic in Maine, Northland College in Minnesota, Antioch College in Ohio, Warren Wilson College in North Carolina, Alaska Pacific University and Prescott College in Arizona.

**ORONO, MAINE**—Researchers in the University of Maine's Department of Resource Economics and Policy received \$51,037 from the U.S. Forest Service to calculate the economic damage caused by the non-native insect, the hemlock wooly adelgid, which is attacking Eastern hemlock trees. The researchers will explore damages to residential landscapes and forested public lands throughout the eastern United States, emphasizing the pest's impacts on recreational activities.

**BAR HARBOR, MAINE**—College of the Atlantic was awarded a three-year, \$360,000 grant from the U.S. Department of Education's Fund for Improvement of Post Secondary Education (FIPSE) to develop a model for experiential teaching using the watersheds in Hancock County. The model will address the issues of

sprawl, pollution, overcrowding, degradation of water quality and wildlife preservation in the communities around Acadia National Park. Funds will be used to develop a college-community watershed curriculum for regional planning and to support faculty development and enrichment and community education. Community members will also help design courses.

**NORTON, MASS.**—Wheaton College chemist Janina Benoit and Gordon College biologist David H. Shull were awarded a \$77,000 grant by MIT SeaGrant to study how mercury from industrial sources makes its way into inland and coastal waters and is converted to more dangerous methyl mercury through the work of anaerobic bacteria. The grant supports sampling work in Boston Harbor, laboratory equipment and salaries for student researchers. Benoit also received \$30,000 from the Center for Environmental Bioinorganic Chemistry to support the research into methyl mercury, which can exist in high enough concentrations in Massachusetts coastal and inland waters to pose health threats to anyone consuming fish from those areas.

**NEW BRITAIN, CONN.**—Central Connecticut State University received \$1 million from the American Savings Foundation to establish an endowed chair in banking and finance and an Institute for Banking and Finance. The institute will work with faculty, students, and the banking and financial services industry to conduct applied research, curriculum development and other collaborations among academia, the private sector and public schools. The institute will provide students with lectures on trends in banking, business and economic issues, and conduct programs for area business leaders on new venture evaluation and small business management.

**BRATTLEBORO, VT.**—The Persons School of Marlboro College and the Community College of Vermont signed an articulation agreement making it easier for students who earn associate degrees from the public two-year college

to transfer to the private four-year college. Formerly known as the Marlboro College Graduate Center and renamed for founding trustee Henry Persons, the school offers technology degree programs, including an online bachelor's degree program in managing information systems. Under the agreement, the Persons School will accept all associate-level Community College of Vermont credits in computer systems management and network administration.

**WARWICK, R.I.**—New England Institute of Technology introduced a bachelor's degree program in digital recording arts technology to prepare students for work in the electronic media industry. Students will study techniques from multi-track studio recording to graphic design as they learn to conceptualize, budget, schedule and professionally produce broadcast and client-based projects. The institute also introduced a new bachelor's degree program in mechanical engineering technology, focusing on product, tool and machine design, and a new associate degree program in computer-aided design and mechanical technology to prepare students to use design software in industry.

**DURHAM, N.H.**—The University of New Hampshire introduced a master's degree program in the management of technology. In announcing the program, campus officials cited interest in commercializing emerging information technology, nanotechnology and biotechnology. The 18-month program emphasizing interdisciplinary team projects aims to prepare college graduates with engineering and science backgrounds for leadership roles in research and development, design and product engineering and other technology management roles. Industry-sponsored projects and internships are a key part of the program.

**BIDDEFORD, MAINE**—The University of New England announced it would begin offering a doctoral degree program in physical therapy in fall 2004. The three-year program will combine coursework, lab experience and clinical practica to prepare students for direct

patient care as well as scholarship, consultation and administration in physical therapy. The entire physical therapy department will move to the university's Portland campus in 2004, where students in other health professions programs already work collaboratively as part of an integrated health and healing initiative.

**WORCESTER, MASS.**—Clark University was awarded a three-year, \$1 million grant from the U.S. Department of Education to launch teacher-recruitment efforts in collaboration with the Worcester Public Schools and the Worcester Education Partnership. The grant, one of just 20 awarded nationally, will fund full scholarships and stipends for master's degree candidates in a teaching program run jointly by Clark and the Worcester schools. Scholarships will be targeted toward future math and science teachers and minority candidates in all fields.

Recipients must commit to a teaching position in Worcester or another urban setting for at least one year after completing the program.

**FORT KENT, MAINE**—The University of Maine at Fort Kent received approval from the UMaine System trustees to build a 150-bed residence hall to be ready for student occupancy in fall 2004. University leaders have set a goal to increase enrollment to 1,000, with about half the students housed on campus. But the campus currently has just two residence halls with space for a total of 125 students. The new dorm will also feature air conditioning to accommodate expanded summer programming at Fort Kent.

**BOSTON, MASS.**—Simmons College was awarded \$66,240 by the Bill & Melinda Gates Foundation to provide scholarships to students pursuing master's degrees in library science

and careers in public librarianship. The grants will be available to four full-time students at the Simmons Graduate School of Library and Information Science sites in Boston and on the campus of Mount Holyoke College in western Massachusetts.

**LOWELL, MASS.**—The University of Massachusetts Lowell began offering Lowell's fifth- and eighth-grade history teachers a set of three-day seminars, summer institutes, mini-sabbaticals and other professional development initiatives focused on the city's rich industrial history. The collaborative programs are supported by a three-year, \$1 million grant from the U.S. Department of Education to the Lowell Public Schools. The goal is to make sure teachers are up to the task when in 2008, Massachusetts begins requiring students to pass an American history test in order to graduate from high school. In initial testing, 96 percent of Lowell eighth-graders scored short of "proficient."

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- Percentage of females in the Massachusetts high school Class of 2000 who planned to attend college upon graduation: **81%**
- Percentage of males who planned to: **68%**
- Average annual earnings of men with bachelor's degrees: **\$63,354**
- Average annual earnings of women with bachelor's degrees: **\$36,913**
- Average annual earnings of direct care workers in Maine, including certified nursing assistants, personal care attendants and home health aides: **\$18,075**
- Average annual earnings of CEOs of "mature" New England software companies with more than \$5 billion in revenues: **\$1,700,000**
- Average annual earnings of CEOs of "emerging" New England software companies with less than \$50 million in revenues: **\$276,600**
- Approximate number of applicants to Harvard's Class of 2005 who scored a perfect 800 on their SAT math tests: **2,000**
- Approximate number of applicants to Harvard's Class of 2007 who did: **3,000**
- Percentage of students who were accepted to Harvard's Class of 2007 but chose not to enroll in September: **21%**
- Percentage of American teenagers who say they miss needed sleep because of the demands of school and extracurricular activities: **47%**
- Percentage of U.S. executives who say employees are more competitive with their co-workers than they were 10 year ago: **55%**
- Percentage of Massachusetts residents who rank their personal financial situation as either fair or poor: **40%**
- Chance that a Massachusetts worker who died on the job last year was an immigrant: **1 in 4**
- Percent change in master's degrees granted in the United States, 1990-2000: **42%**
- Percent change in master's degrees granted in health sciences: **110%**
- In physical sciences: **-11%**
- Number of joint M.D./M.B.A. programs at U.S. universities in 1993: **6**
- Number in 2001: **33**
- Percentage of Americans who have a great deal of confidence in doctors: **40%**
- Percentage who have a great deal of confidence in large corporations: **6%**
- Percentage who have a great deal of confidence in private four-year colleges and universities: **51%**
- In public four-year colleges and universities: **46%**
- In community colleges: **43%**
- Estimated added value of a seller's good reputation in a retail transaction: **7.6%**
- Respective U.S. ranks of Rhode Island, Massachusetts, Connecticut and New Hampshire in the value of agricultural products sold directly to consumers by individual farms through farmers markets and other local sales: **1,2,3,4**
- Change between 2001 and 2002 in income received by Vermont farmers: **-37%**
- Percentage of Massachusetts cranberry growers who are age 50 or older: **75%**

**Sources:** 1,2 Massachusetts Department of Education; 3,4 *Postsecondary Education Opportunity*; 5 Maine Center for Economic Policy; 6,7 *Mass High Tech Pulse of Technology*; 8,9,10 Harvard University; 11 Gallup Tuesday Briefing; 12 Accountemps; 13 MassINC; 14 Massachusetts AFL-CIO and Massachusetts Coalition for Occupational Safety and Health; 15,16,17 Council of Graduate Schools analysis of federal data; 18,19 Yale University Professor Howard P. Forman, 20,21,22,23,24 *Chronicle of Higher Education*; 25 Harvard University Professor Richard Zeckhauser; 26 Northeast-Midwest Institute; 27 Bureau of Economic Analysis; 28 University of Massachusetts Dartmouth

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