

A Report to the People of Massachusetts from the  
Massachusetts Department of Higher Education

October 2013

# WITHIN OUR SIGHTS



the **Vision**  
Project

Inside Campus Efforts to  
**Achieve National Leadership  
in Public Higher Education**

# WITHIN OUR SIGHTS

Second Annual Report on the Vision Project  
to the People of Massachusetts from the  
Massachusetts Department of Higher Education  
October 2013

## THE VISION THAT DRIVES

We will produce the best-educated  
citizenry and workforce in the nation.

We will be national leaders in research  
that drives economic development.

### MASSACHUSETTS PUBLIC HIGHER EDUCATION

- 29 CAMPUSES
  - 15 COMMUNITY COLLEGES
  - 9 STATE UNIVERSITIES
  - 5 UNIVERSITY OF MASSACHUSETTS CAMPUSES
- 300,000 STUDENTS
- 40,000 FACULTY AND STAFF
- \$600 MILLION IN ANNUAL RESEARCH EXPENDITURES

**On the Cover**  
The gatehouse at  
MassBay Community College



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This section provides a detailed summary of Massachusetts public higher education’s standing, with national comparisons and trends where available, in the key outcome areas of the Vision Project.

**MORE DATA AT  
[WWW.MASS.EDU/VPREPORT](http://WWW.MASS.EDU/VPREPORT)**



## LETTER FROM THE COMMISSIONER

### 2013 was an exceptional year for Massachusetts public higher education.

Governor Deval Patrick and the Massachusetts Legislature heeded the calls of students and families, business and industry leaders, and the higher education community, all of whom made the case for increased investment in our system. Public colleges and universities now educate two-thirds of Massachusetts high school graduates who attend college in this state, where 72 percent of jobs will soon require some post-secondary education.

This fiscal year, Massachusetts ranks among the top five states in the nation in the increase of state appropriation for public higher education over the previous year, a remarkable shift from budget reductions seen in the recent past.

The bold leadership shown by Governor Patrick and the Massachusetts Legislature was in response to two developments: concern about rising college costs and a new sense of urgency about the need for excellence in Massachusetts public higher education. The presidents of our community colleges demonstrated an impressive response to calls from the Patrick Administration and Legislature for more focus on workforce needs and educational accountability. The president of the University of Massachusetts, Robert Caret, played a leading role in advocating for increased revenue through a groundbreaking 50-50 funding proposal linked to institutional commitments to freeze fees. At the same time, state and business leaders showed a compelling awareness of the role that our public campuses play in educating the state's future citizenry and workforce.

Two decades ago, it would have been unthinkable for Massachusetts public higher education to aim for national leadership. These colleges and universities were considered junior partners to private institutions in the state's higher education community.

Today our public campuses are being called upon to play the leading role in educating the state's future citizenry and workforce. In the words of Governor Patrick, "We need all of Massachusetts' educational assets firing on all cylinders."

To achieve the goal of becoming a national leader in public higher education, the Legislature tied much of the increased FY2014 appropriation to performance, with a new funding model for community colleges and competitive grants to reward campuses with funding for projects that advance Vision Project goals. Through this strategic agenda approved by the Board of Higher Education in 2010, the campuses of the public system have engaged in a unified effort to strengthen academic performance in both educational achievement and research—while also holding themselves accountable to the public for results.



### **A Banner Year**

Winners of FY14 Vision Project Performance Incentive Fund grants celebrate at Roxbury Community College. From left: UMass Boston Chancellor Keith Motley; Madison Park High School headmaster Diane Ross Gary; Madison Park student Beza Tadess; UMass Boston Vice Provost Joan Becker; and Roxbury Community College President Valerie Roberson, along with Massachusetts Education Secretary Matthew Malone and Commissioner Freeland.

Our drive for increased accountability also extends to our work to achieve cost savings across our campuses. In 2012, the nine state universities and 15 community colleges formed the Partnership to Advance Collaboration and Efficiency (PACE). To date, PACE has promoted cost savings and best practices that have already generated significant savings in auditing services, banking fees, membership fees, and procurement. This year the campuses are partnering with the Department of Higher Education on a systemwide effort to achieve efficiencies in the area of information technology.

Last fall's *Time to Lead: The Need for Excellence in Public Higher Education* was the first in a series of annual Vision Project reports which will provide "a full accounting of where public higher education stands in comparison with other states." Although it is still too early to see major movement in system-wide data, this year's report contains powerful examples of campus-level work to drive real change through innovations in teaching and learning, successes that we intend to bring to scale.

This second annual report documents the current standing of Massachusetts community colleges, state universities and UMass campuses with regard to key academic and research-related outcomes and does not shy away from detailing areas where improvement is needed.

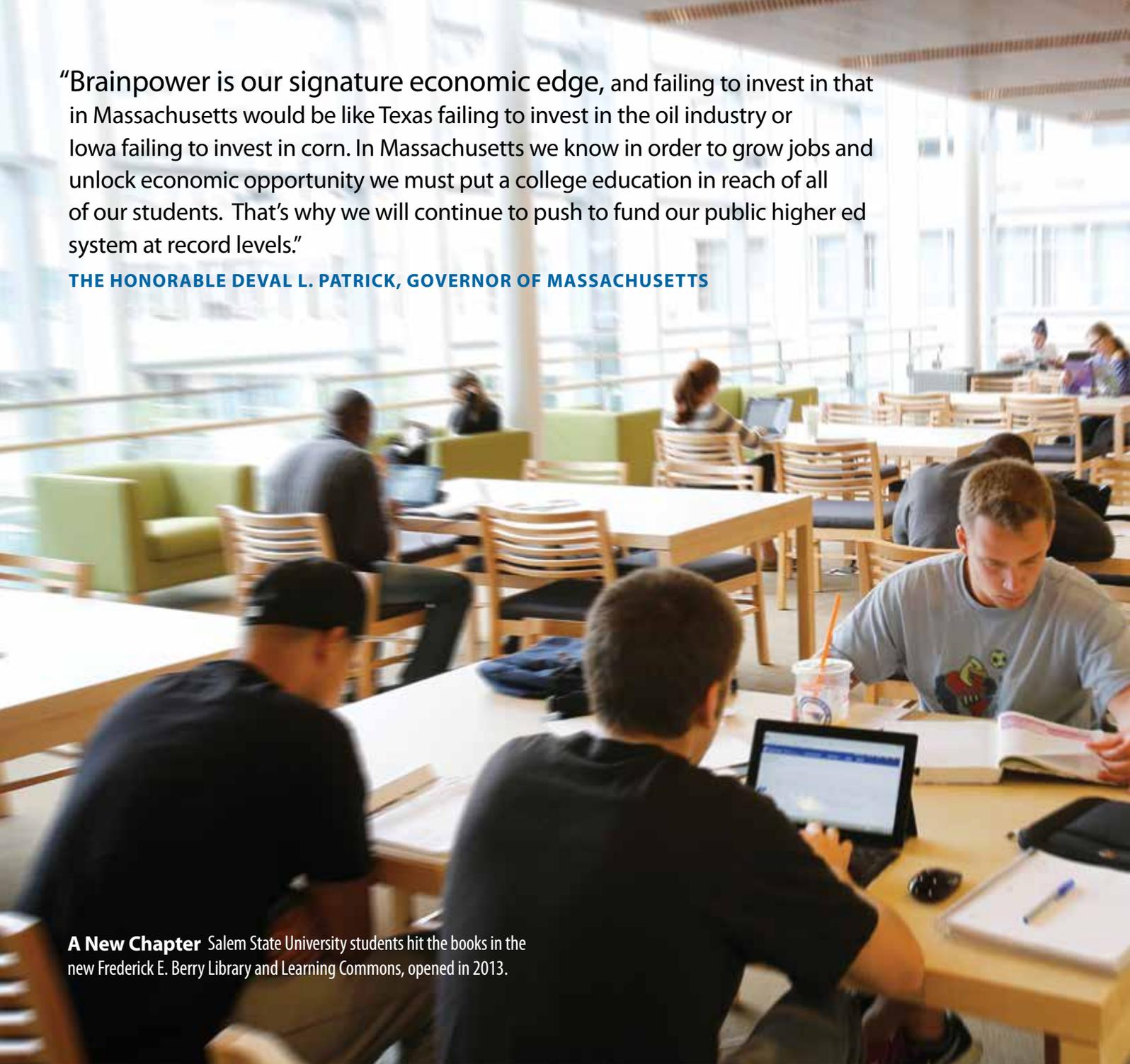
But we believe that the goal of achieving national leadership among state systems of public higher education is within our sights—and that the work highlighted in these pages offers concrete evidence that the system is well on its way to achieving them.

Sincerely,

Richard M. Freeland  
*Commissioner of Higher Education*

“Brainpower is our signature economic edge, and failing to invest in that in Massachusetts would be like Texas failing to invest in the oil industry or Iowa failing to invest in corn. In Massachusetts we know in order to grow jobs and unlock economic opportunity we must put a college education in reach of all of our students. That’s why we will continue to push to fund our public higher ed system at record levels.”

**THE HONORABLE DEVAL L. PATRICK, GOVERNOR OF MASSACHUSETTS**



**A New Chapter** Salem State University students hit the books in the new Frederick E. Berry Library and Learning Commons, opened in 2013.

## VISION PROJECT TIMELINE 2010–2013

Key events and partnerships to date on our road to national leadership

### MAY 2010

Massachusetts Board of Higher Education (BHE) approves Vision Project performance agenda for community colleges, state universities & UMass



### SEPTEMBER 2010

200 faculty and administrators attend Vision Project launch conference supported by Nellie Mae Education Foundation

# A Focus on

# RESULTS

Massachusetts needs to be a national leader in public higher education. To reach this goal, the system needs a way to focus its work and track progress. The Vision Project provides the framework for system-wide and campus-level activity in seven “key outcome” areas. In this section, we provide a status check on where we stand today—and why we believe that the goal of national leadership among state systems of public higher education is **within our sights.**



## JANUARY 2011

The Boston Foundation awards \$125,000 grant to support Vision Project data collection, analysis, reporting on progress toward national leadership goals

## FEBRUARY 2011

Davis Educational Foundation funds AMCOA (Advancing a Massachusetts Culture of Assessment) with \$268,000 grant to strengthen learning outcomes assessment



## MARCH 2011

In a bid to improve college readiness, BHE approves new standard for campus admissions requiring four years of high school math beginning in fall 2016 for applicants to state universities, UMass



# KEY OUTCOME **1** College Participation



**THE FOCUS** Increasing the percentage of high school graduates who are going to college—and the readiness of these students for college-level work



■ **WHERE WE STAND** Massachusetts is a national leader in the number of young people it sends to college, but:

Among recent MA public high school graduates enrolling in public higher ed, **1 out of 3 place into remedial courses** during their first semester of college<sup>1</sup>

These rates have remained flat for five years. Further, college-going and college readiness rates for African-American and Latino students trail those of white students by as many as 31 percentage points, with no significant movement on these gaps in the past five years.

■ **WHERE WE SEE PROGRESS** In an unprecedented partnership, PreK–12 educators and public higher education faculty are taking critical steps to bridge the “readiness gap” between the senior year in high school and the first year in college. Meanwhile, **Holyoke** and **Northern Essex Community College** are among the campuses using aggressive, creative recruitment efforts to achieve double-digit increases in Latino student enrollment and retention. Turn to page 20 to read more about this work and to page 72 to track the data.

## JULY 2011

Legislature creates \$2.5 million FY12 Vision Project Performance Incentive Fund, establishing competitive grant program to support campus initiatives to achieve Vision Project goals

## AUGUST 2011

Massachusetts STEM (Science, Technology, Engineering & Math) Plan accepted by the National Governors Association as a model for state STEM initiatives

## DECEMBER 2011

Massachusetts Competitive Partnership and Bunker Hill Community College partner to launch the “Learn and Earn” pilot program, offering BHCC students paid internships with some of area’s largest employers

## SEPTEMBER 2011

15 community colleges win \$20 million, three-year grant from U.S. Dept. of Labor to implement the Massachusetts Community Colleges and Workforce Development Transformation Agenda (MCCWDTA)

## FEBRUARY 2012

Association of American Colleges & Universities grants Massachusetts status as a LEAP State, paving the way for interstate collaboration on learning outcomes assessment

## KEY OUTCOME 2

# College Completion



**THE FOCUS** Increasing the percentage of students who earn certificates & degrees to meet the state's need for a highly educated citizenry & workforce

■ **WHERE WE STAND** Massachusetts leads the nation with 51 percent of 25- to 64-year-old residents holding college degrees.<sup>2</sup> But demand for college-educated workers is now outpacing that supply. By 2020, 72 percent of Massachusetts jobs will require some college education.<sup>3</sup>

At present, 67 percent of Massachusetts high school graduates who attend college within the state enroll at a public college or university. Not enough of these students complete degrees and certificates to meet the state's workforce need:

Graduation and student success rates are **at or slightly above the national average** and have remained flat for five years

Massachusetts will need more graduates to meet workforce needs—and must find ways to close achievement gaps, some of which are even larger than the national average.

■ **WHERE WE SEE PROGRESS** **UMass Lowell** and **Framingham State University** have achieved significant improvement in their graduation rates. Discover their formulas for success beginning on page 28, and explore the Vision Project metrics on page 74.



### ■ MARCH 2012

BHE votes on revisions to Vision Project key outcomes and metrics, adds Preparing Citizens as 7th key outcome; vote establishes Massachusetts as first state to track civic learning as accountability metric

### ■ MAY 2012

Davis Educational Foundation provides \$328,580 grant to expand AMCOA work; Massachusetts hosts conference in Boulder, CO, to discuss/plan multi-state assessment system based on student work, not standardized tests

### ■ JUNE 2012

In a bid to improve college readiness, BHE approves new standard for state university, UMass admissions requiring three years of high school science beginning in fall 2017



# KEY OUTCOME **3** Student Learning



## THE FOCUS

Improving teaching & learning through better assessment, plus documenting our results for the public

■ **WHERE WE STAND** Massachusetts' public college and university students score at or below the national average on national licensure exams for professions like nursing and accounting, as well as on graduate admissions exams. However these exams test only small numbers of students on narrow areas of college learning.

Massachusetts needs a more comprehensive model for assessing knowledge and skills in critical areas like:

- ✓ **Written Communication**
- ✓ **Quantitative Literacy**
- ✓ **Critical Thinking**

The new model must help educators improve educational programs to achieve better results. And it must allow for comparisons of student learning between campuses and among states.

■ **WHERE WE SEE PROGRESS** Massachusetts is a national leader in organizing a multi-state effort to design cutting-edge ways to measure and compare student learning without using standardized exams. Meanwhile community college and university faculty are collaborating to build new assessment models using samples of real student work. See a progress report beginning on page 41 and a dashboard of available data on page 75.

### JULY 2012

Legislature increases Performance Incentive Fund for FY13 to \$7.5 million, instructs DHE to develop a community college funding formula based in part on performance on Vision Project goals, establishes new DHE Office of Workforce Coordination and new Rapid Response grants to advance Vision Project workforce agenda



### SEPTEMBER 2012

DHE releases *Time to Lead*, first Vision Project annual report including baseline data for measuring progress

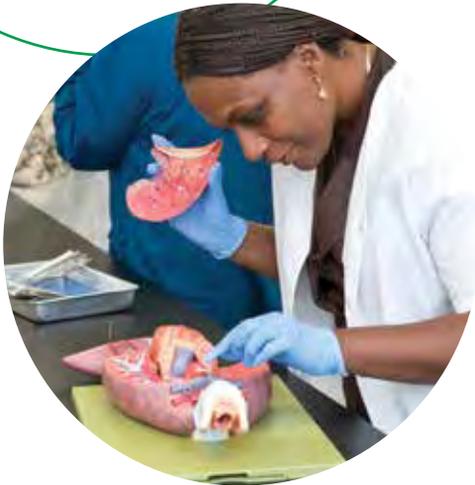
11 campuses begin pilot Completion Incentive Grant program, using financial aid to further Vision Project goals

KEY OUTCOME **4**

# Workforce Alignment



**THE FOCUS** Aligning occupationally oriented certificate & degree programs with the needs of statewide, regional & local employers



■ **WHERE WE STAND** Concerns about Massachusetts' ability to keep up with the demand for college-educated workers deepen when we examine specific areas of high workforce need. According to our estimates on pages 76–79, Massachusetts is heading for a shortage of graduates from public higher education in these fields including:

In STEM disciplines alone, **36,000 fewer associate and baccalaureate degrees will be granted** than the workforce will need by 2020

■ **WHERE WE SEE PROGRESS** Through strategic planning and greater connectivity with business and industry, Massachusetts' public colleges and universities are developing and transforming programs to help more students gain skills and credentials needed to work in innovative and high-growth fields. **Bridgewater State University** and **Massasoit Community College** are among the campuses closing ethnic and gender gaps in math and science, while the Department of Higher Education has developed a strategic plan to address a looming shortage of high-skilled nurses. Turn to page 49 for more on this work and to page 76 for all of the projections.

■ **DECEMBER 2012**

BHE endorses Nursing & Allied Health Plan to address state's growing need for more highly educated nursing workforce



■ **JANUARY 2013**

In State of the State Address, Governor Patrick calls for historic levels of investment in FY14 budget to increase affordability, achieve Vision Project performance goals



■ **MARCH 2013**

Governor Patrick announces first-ever High Demand Scholarships to students pursuing careers in high-need fields

# Preparing Citizens

KEY OUTCOME **5**



**THE FOCUS** Providing students with the knowledge & skills to be engaged, informed citizens

■ **WHERE WE STAND** With a 2012 **Board of Higher Education** vote to add Preparing Citizens as a key outcome of the Vision Project, Massachusetts became the:

**1st state in the nation** to include civic learning and engagement

within the metrics used to assess the performance of its public higher education system. This is already a strong focus of work for many campuses, 10 of whom have received the Community Engagement Classification from the Carnegie Foundation for the Advancement of Teaching. At present 24 campuses collect, analyze and share data regarding aspects of their students' civic learning.

■ **WHERE WE SEE PROGRESS** A Task Force has recently completed its recommendations to the Board of Higher Education on how to develop a statewide civic learning strategy. Meanwhile **Mount Wachusett Community College** is finding that service learning projects appear to boost retention rates by keeping undergraduates on track to complete their studies. Learn more starting on page 59.

■ **MARCH 2013**

Alongside Board of Elementary & Secondary Education, BHE approves state's first College & Career Readiness Definition to improve, assess student readiness for life after high school

■ **MAY 2013**

DHE convenes statewide AMCOA summit to take stock of Massachusetts' work in learning outcomes assessment over past three years and to develop plans for moving forward



## KEY OUTCOME 6

# Closing Achievement Gaps



**THE FOCUS** Closing achievement gaps among students from different ethnic, racial & income groups in all areas of educational progress

■ **WHERE WE STAND** Chronic achievement gaps exist among students of different ethnicities and economic status:

**Across nearly all indicators** of educational success—with little movement in the past five years

Closing these gaps is not only the right thing to do, but it is also one of the most powerful strategies to propel Massachusetts to national leadership in all educational outcomes.

■ **WHERE WE SEE PROGRESS** The success of Holyoke and Northern Essex Community Colleges in increasing Latino enrollment (page 20) and of Bridgewater State University and Massasoit Community College in closing gaps in STEM fields (page 52) are two important examples of progress. But closing gaps is so essential to the success of the Vision Project that campus efforts in this area are woven into all Vision Project-related work.



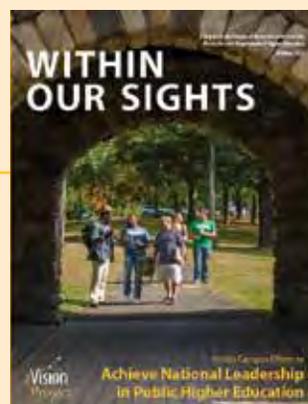
**Look for this icon throughout this magazine** to learn more about campus efforts to close gaps in College Participation, College Completion, Student Learning and other work, and get the big picture on achievement gaps through the wide array of metrics on page 80.

### JULY 2013

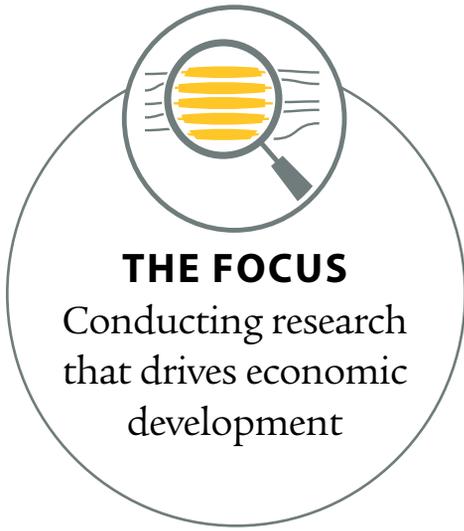
Legislature expands commitment to public higher education in FY14 budget, distributes community college funding via new performance formula, maintains Performance Incentive Fund at \$7.5 million

### OCTOBER 2013

*Within Our Sights*, second Vision Project annual report, is released at statewide conference attended by over 400 faculty and administrators from Massachusetts' public colleges and universities



# KEY OUTCOME 7 Research



■ **WHERE WE STAND** A recent study by *The Chronicle of Higher Education*<sup>4</sup> ranked the **University of Massachusetts:**

**11th in the nation and first among New England universities** in licensing revenue for every \$1 million spent on research in the past 20 years

while a three-year average of the University's licensing income showed a slight decline from 2009–11 to 2010–12.

■ **WHERE WE SEE PROGRESS** UMass research discoveries create new products and new jobs that drive economic development. Learn more on page 65, and study the trends in research income and expenditures on page 82. ■

## SOURCES

<sup>1</sup> Massachusetts Department of Higher Education, Fall 2012

<sup>2</sup> [www.luminafoundation.org/stronger\\_nation\\_2013/downloads/pdfs/massachusetts-brief-2013.pdf](http://www.luminafoundation.org/stronger_nation_2013/downloads/pdfs/massachusetts-brief-2013.pdf)

<sup>3</sup> [www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/massachusetts.pdf](http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/massachusetts.pdf)

<sup>4</sup> [www.massachusetts.edu/news/news.cfm?mode=detail&news\\_id=2226](http://www.massachusetts.edu/news/news.cfm?mode=detail&news_id=2226)



# #VisionWOS

Leading up to the release of this report, the DHE held a **Twitter photo contest**, asking faculty, staff and students to show us the people and places behind their campus' work to achieve national leadership—and that the goal is "within our sights." Here is just a small sampling of the enthusiastic response. For more, search #VisionWOS on Twitter.



# Thank you to all who participated!

“The data will take some time to move, but when I visit our campuses I see faculty and staff who share the Vision and are personally committed to reaching the leadership goals we have set for ourselves. We’re seeing some early signs of change at individual campuses, which is very exciting. I have no doubt that deeper and more persistent system-wide results will follow.”

**CHARLES F. DESMOND,  
CHAIRMAN,  
MASSACHUSETTS BOARD OF  
HIGHER EDUCATION**

# FEATURES

The goals of the Vision Project are informed by the data, but driven by the campuses. The following section tells the stories of hardworking faculty, staff and students at Massachusetts community colleges, state universities and UMass campuses who are committed to the pursuit of academic excellence and the goal of attaining national leadership among state systems of public higher education.



**Driving Up Enrollment** Students ride *La Guagua pa'l College*, “the bus to college,” a free shuttle between Holyoke Community College and the city’s largely Latino downtown neighborhoods. Story on page 20.



## KEY OUTCOME **1**

# College Participation

Massachusetts is a national leader in the percentage of high school graduates that attends college. Yet even as a national leader, the Commonwealth is not where it needs to be in preparing students for college. Through the Vision Project, public campuses are partnering with PreK–12 colleagues to:

- **Reduce numbers of students who arrive unprepared for college-level work**
- **Create new academic supports to ensure their success**
- **Close ethnic and socio-economic gaps in college-going rates**



## COLLEGE PARTICIPATION

# Ready or Not . . .

PreK–12 Educators, Higher Ed Faculty  
Define “Readiness” for College, Career

**How do we know if students are ready** for life beyond high school? For decades, the answer to that deceptively simple question seemed obvious enough. But in the 21st century, high school diplomas offer no guarantee that graduates are prepared for college coursework or the job market.

**Next-Generation Assessment.** In 2014, Massachusetts will pilot the new **PARCC (Partnership for Assessment of Readiness for College and Career)** assessments in English language arts and mathematics. PARCC will measure the full range of Common Core State Standards, create clearer pathways for post-secondary success, and allow for earlier interventions with struggling students.

**National Leadership.** Massachusetts is a Governing State in the PARCC Consortium; **Elementary and Secondary Education Commissioner Mitchell Chester** serves as the chair of the PARCC Governing Board, while **Higher Education Commissioner Richard Freeland** co-chairs the PARCC Advisory Committee on College Readiness. PARCC assessments will be piloted in spring 2014 in selected school districts.

**Collaboration at Every Level.** Unlike many top-down assessment strategies, PARCC’s development in Massachusetts has been fed by “engagement teams” of PreK–12 teachers and college faculty who helped create the state’s first comprehensive College and Career Readiness Definition to guide PARCC’s development.

Here, a  
conversation  
with a group  
of faculty  
who helped  
to craft the  
new definition.



**Marie Breheny,**  
Director of  
Assessment,  
Greenfield  
Community College



**Ellen Grondine,**  
Assistant Vice President  
of Planning and  
Strategic Initiatives,  
Northern Essex  
Community College



**Charles Kaminski,**  
Dean of Business,  
Science and Math  
Programs, Berkshire  
Community College



**Sue Lane,** Senior  
Director of Alignment  
and Engagement,  
Massachusetts  
Department of  
Higher Education



**Sue Miller,**  
Vice President,  
Academic and  
Student Affairs,  
Cape Cod  
Community College



**Christine Shaw,**  
Executive Director,  
Northeast Regional  
Readiness Center at  
Salem State University

**Q: Why was it so important to have this definition in place now?**

**Christine Shaw:** We needed to change the conversation from “What do you need to be a high school graduate?” to “What do you need to be successful in college or in a career?”

**Charles Kaminski:** The definition was important because it would really help bridge the confounding gap that exists between MCAS completion and students walking through the door shocked that they were placed into pre-college-level (non-credit) work. It would allow the community colleges to develop curriculum based on what high school students, having met this definition, would actually be able to do.

**Ellen Grondine:** It also provided an opportunity for K-12 and higher ed to take responsibility for student learning from the beginning. I think, prior to this, there was a finger-pointing (between K-12 and higher ed). The work on the definition has provided a bridge that wasn't there prior.

**Q: What is driving the need to agree on a definition of college and career readiness?**

**Sue Miller:** We were hearing from some policy makers, business and industry leaders, and other constituents that our student outcomes didn't match their expectations. So I think we had to go back to stage one and say, “How do we meet the expectations of the world and higher academia?”

**Christine Shaw:** There was a sense that the structure was finally in place for this discussion, that we could move past a discussion that always ends with “We use MCAS in PreK-12,” and “Well, we use ACCUPLACER® in higher ed (for assessment purposes).” Now we were asking each other, “How do we develop the pipeline so that people can transition easily and quickly from one level of education into the next?”

People came to the conversation a little leery. I'm not sure we've got complete buy-in yet that this is going to work, that we're going to have this collective and seamless public education system. But the definition helps drive us in that direction. →

**“I think it was the first time we really looked at how we are going to make such a large, systemic change, not only in how we deliver instruction but how we as colleges take responsibility for the students who become teachers.”**



## Almost Out the Door



**Greenfield Community College President Bob Pura** remembers the local high school student who was signing the papers to drop out of school, literally walking away from her education, when her guidance counselor called her back.

“He suddenly remembered this program at Greenfield Community College (GCC), and he told her about it,” Pura recalls. “That young woman has not only graduated from high school—she went on to graduate from GCC and is now enrolled in a four-year college.”

Greenfield welcomes would-be dropouts and students with educational challenges into its **Educational Transitions Program**, a partnership between GCC and two area high schools. Students accepted into the program from **Turners Falls** and **Greenfield High Schools** take classes at GCC and are eligible to earn both high school and college credit for their community college courses. Each entering cohort takes a three-credit first-year experience course but then enrolls in classes with other GCC students. They become full-fledged members of the campus community and are able to access the College’s full array of academic support services. ETP is partially financed through the federal **Community Development Block Grant** program and private donations, along with funds from the two high schools and the College. While funding has remained constant, it has not kept pace with rising educational costs, which has forced GCC to reduce the number of student seats available.

Despite the unfortunate cutbacks, the program continues to achieve successes with at-risk students. While Turners Falls and Greenfield High Schools have graduation rates that are significantly lower than the statewide average, the ETP program graduated 94% of its seniors in 2012 and 95% in 2013. This past year, 91% of all credits sought by the students were earned. Having secured their high school diplomas, 79% continued on to college.

“In high school I was convinced I was going to drop out because I did not fit in socially with the other students,” wrote one ETP graduate, Class of ‘12. “I felt very alone and disappointed in myself that I was so anxious to attend school every morning. I came to GCC, took risks, made friends, and found a sense of self and community that never existed for me before. ETP changed my life.”

← FROM PAGE 17

**Q. What were the sticking points in your discussions with PreK–12 teachers and administrators? Where were you in sync?**



**Sue Lane:** The superintendent of one large urban school system was very direct and said at the start of one meeting, “If we are not talking about college and career readiness for all students, then we can’t have this conversation.” That sentiment was echoed in every single meeting across the Commonwealth.

**Ellen Grondine:** What struck me was the frank discussion around teacher prep. One of the principals stood up and said, “If you keep cranking out the same teachers, we’re still going to have the same issues.” And I think it was the first time we really looked at how we are going to make such a large, systemic change, not only in how we deliver instruction but how we as colleges take responsibility for the students who become teachers.

**Charles Kaminski:** At Berkshire we already had three years of working with high schools to bridge the basic skills gap, and I think from talking to my own colleagues and PreK–12 faculty there was an appreciation of the new effort statewide to come up with a system to have this seamless transition, rather than us out here doing our thing and other regions doing their own.

**Sue Miller:** We worked with a core of four high schools on language arts and math...What we found on both sides is that they (in PreK–12) are doing a lot of interesting and good things but in a vacuum that didn’t help students through the transition to college.

Massachusetts students who are college and career ready will demonstrate the knowledge, skills and abilities that are necessary to successfully complete entry-level, credit-bearing college courses, participate in certificate or workplace training programs, and enter economically viable career pathways.

FULL DEFINITION AVAILABLE AT [WWW.MASS.EDU/PARCC](http://WWW.MASS.EDU/PARCC)

In one case the English Composition course at our school is really a heavy, technical course on the skills of writing, whereas at the four high schools, the English class was focused on the literature. And so without this conversation they wouldn't have been able to identify that gap.

**Q. Next spring, Massachusetts will field test the first PARCC assessments, something that arguably couldn't happen without the College and Career Readiness Definition in place. Do you feel a sense of pride in having helped to create it?**

**Ellen Grondine:** It's exciting to see a big change; it's like pushing a boulder up the hill. We were trailblazers, to get it started.

**Sue Miller:** It was nice to be asked what we thought based on our experience and expertise in terms of college and career readiness. You have to remember that when the conversation started, higher education was being blasted by policy groups and industry about what we weren't doing right. So it meant a great deal that the thoughts of our faculty and the high school teachers were used to actually craft the final definition.

**Christine Shaw:** That's an extremely important statement. In my 25 years in education, it's the first time I've seen that kind of field-to-policy integration.

"In our elementary and secondary classrooms across the Commonwealth, teachers are implementing the state's new college and career ready standards to ensure every student experiences a rigorous course of study. The efforts of our teachers and college and university faculty to help develop the state's first definition of college and career readiness were instrumental in raising expectations for all students and educators."

**MITCHELL CHESTER,  
COMMISSIONER, MASSACHUSETTS  
DEPARTMENT OF ELEMENTARY &  
SECONDARY EDUCATION**

**Marie Breheny:** What stood out for me was looking at what the other colleges had produced and seeing that we were not alone in what our faculty and staff felt was important; to see that other faculty also valued the same things we valued. We really had a sense of hope that this final definition would indeed reflect the thinking of all the campuses together. ■



# ¡Sí Se Puede!

## Campuses Target Latino Enrollment

HOLYOKE COMMUNITY COLLEGE

### On the Bus to College

BY WILLIAM MESSNER, PRESIDENT



#### About six years ago, Holyoke Community College bought a bus.

Not a large one. Just a 20-seater. The HCC Express runs in the evenings between campus and the largely Latino neighborhoods in downtown Holyoke, and it's free. The bright orange and yellow bus is more commonly known around campus and around the city by its Spanish name, *La Guagua pa'l College*, literally, "the bus to college."

Naturally, La Guagua's most important purpose is transporting students who might not otherwise be able to get to school. It's also a mobile billboard. "*Encuentra lo mejor de ti!*" the message says on the side. "*Find the best in you!*"

In a way, the bus also represents HCC's commitment to the Latino community, providing access to a traditionally underserved population and creating pathways—routes, so to speak—to a college education.

**Frank Discussion.** I remember a humbling meeting not long after I arrived at HCC in 2004 with Edward Carballo, then the Holyoke school superintendent. He said to me, "Bill, you guys aren't doing the job."

He was right. I knew the numbers. In a city with a Latino population of 41 percent, HCC's Latino enrollment was a meager 14 percent.

I can't stress enough the importance of campus leadership standing up and articulating emphatically that increasing Latino student enrollment must be an institutional priority.

**A Turnaround.** Today, the numbers look a lot different. From fall 2006 to fall 2012, we've boosted our enrollment of Latino students from 866 (full- and part-time) to 1,465, an increase of nearly 70 percent, and Latinos now make up about 21 percent of our students.

**How Did We Do This?** Two words. Recruitment and retention. We not only needed to do a better job drawing Latino students to campus, but we needed to do a better job keeping them here.

We have dozens of programs now that reach out to underserved populations, including students from low-income families who are often the first ones in their families to attend college.

For example, eight years ago, our admissions office started *AVANZA 2 College*, a program that walks students and their families through the college registration, transfer and financial aid process. A few years ago, we opened an Adult Learning Center in downtown Holyoke above the bus station in a building called the Picknelly Adult and Family Education Center. Here, we run pre-GED and GED-preparation



**Express Route** Riders of *La Guagua pa'l College* reach their destination—Holyoke Community College.

courses, ESL classes and other adult basic education programs. We also run academic support programs for 7th and 8th graders in the Holyoke Public Schools.

stepped up our advising services, introduced career counseling for freshmen, and made attendance at orientation mandatory for incoming students. Over the past five years, we've seen our retention rate for first-time, full-time, Latino students increase from 48 to 53 percent.

It's a step in the right direction, but we've set our sights much higher. Like all community colleges, improving retention and graduation rates for all our students must be a top priority.

While the college experience for many of our Latino students begins with a ride to campus on *La Guagua*, we are committed to preparing them for the next leg of their journey, the one that begins on graduation day, as they start down a new road with an HCC diploma in their hands. ■

“He said to me, ‘Bill, you guys aren’t doing the job.’ He was right.”

**The Next Level.** But it’s not enough to recruit Latino students; we need to keep them here and then help them get to graduation day. So we’ve



**Honorable Mention** Governor Deval Patrick greets Westfield State University’s 29 *Who Shine* student honoree Jaime A. Jaquez at the State House in May 2013. Enrollment data show Westfield State’s population of Latino students has doubled since 2008, increasing from 3.5% to 7.6% for incoming freshmen and from 4% to 11% for transfers.



## NORTHERN ESSEX COMMUNITY COLLEGE

# The Power of Personal Outreach

BY LANE GLENN, PRESIDENT



### What a difference a year makes.

From the fall of 2011 to the fall of 2012, Latino enrollments at **Northern Essex Community College** increased 16.2 percent. Latinos now represent 34 percent of our student population, a 76 percent increase in five years. And I am proud to report that despite the challenges, the college is *graduating* more Latino students; the number of degrees and certificates awarded to Latinos rose from 98 in 2007–08 to 281 in 2012–13, a 187 percent increase.

This tremendous growth is the result of a focused effort to address the needs of the communities we serve. The percentage of Latinos in the population of Essex County, which includes the majority of cities and towns in the college's primary service area, rose from 11 percent in 2000 to 17 percent in 2010. And with a

population that's 74 percent Latino, Lawrence, home to one of our two campuses, has more Latino residents than any other community in Massachusetts.

**Reaching Out.** In the past two years, the college has expanded its partnerships with public schools and community organizations that reach Latino audiences, delivering a message about the importance of higher education and the cost benefits of starting at a community college. Enrollment counselors now visit Lawrence High School once a month, for example, rather than once a semester. Outreach to Latino students has also become personal, combining in-person meetings, phone calls, emails, and mail. The college also has launched a number of initiatives designed to improve retention of Latino students, including

increased hiring of minority faculty and staff, enhanced tutoring and advising, and professional development for faculty focusing on the needs of Latino students.

### Achievement of Distinction.

Two years ago, the college became one of only three in Massachusetts—and the only public campus—to receive a federal Title V grant for Hispanic Serving Institutions (HSI), which helped fund a Student Success Center in Lawrence. This center connects students with college resources and helps them work through non-academic barriers to college success, which can include child care, housing, financial, and mental health issues.

The center works aggressively to help students succeed through efforts such as a faculty mentor program, intensive advising which targets the



**Hive of Activity** Students take advantage of academic support services at the Student Success Center, which is funded by NECC's federal grant for Hispanic Serving Institutions and the Vision Project Performance Incentive Fund.



“This tremendous growth is the result of a focused effort to address the needs of the communities we serve.”

most at-risk students, and a Summer Bridge Program to prepare Latino high school grads for their freshman year in college.

Since the Student Success Center opened in November of 2011, over 1000 students have utilized its services. Students who took full advantage of the center's resources from the fall of 2012 to the spring of 2013 had a 78.2 percent retention rate, as compared to a similar group of students who had minimal engagement with the center and had a 65.8 percent retention rate.

**Access & Opportunity.** Providing a college education to Latino residents, along with a full complement of support services, is tremendously important to us at Northern Essex. By 2020, 72 percent of jobs in Massachusetts will require an associate's degree or certificate. We want to ensure that the growing number of Latinos living and working in the Merrimack Valley have access to the educational programs that will lead to well-paying careers. ■



## Dancing with New Partners

**“It’s like a middle school dance, with the boys on one side and the girls on the other.”**



That’s how **Framingham State University** English Professor **Lorretta Holloway** describes the early, pre-Vision Project engagement between University faculty and teachers at area high schools. The two groups of educators had agreed to meet in a bid to help more students prepare for college-level math coursework. By the end of the “dance” (in fact, a series of conversations that later resumed with Vision Project funding), both sides had shed their initial wariness and were able to move as partners. More importantly, Framingham was beginning to see a significant drop in the number of students placing into developmental (remedial) coursework from those feeder schools (Marlborough, Franklin, Framingham and Natick). The number of students from those schools needing remediation in math dropped from 21% in 2012 to 9% in 2013.

“We didn’t really talk to each other before, even though we were teaching the same students,” recalls Holloway of the pre-Vision Project discussions. “But after one of these conversations, I remember **Joyce Cutler**, the chair of our math department, saying, ‘Wow, now I understand why my students have been confused. We’re not even using the same terminology. If I had known the terms being used by teachers at their high schools, my students would have understood me much faster.’”

A **Vision Project Performance Incentive Fund** grant provided the FSU faculty and area high school teachers with stipends to work together on STEM course redesign. **MassBay Community College** was also a partner in the process. One of the topics of these peer discussions was “gap analysis,” identifying areas where students were in need of better preparation for college coursework and how we can get students to be active learners and critical thinkers through course design environments. The dialogue was key to helping educators from the feeder schools understand the importance of looking beyond the admissions process when helping students prepare for college.

Framingham previously had “pockets of people” working with PreK–12 partners, Holloway says, but the Vision

Project provided validation that such efforts were not only critical, but needed to be brought to scale at the institutional and state-wide levels.

“When the *Time to Lead* report came out, I was really excited because this is what we’d been doing and now I could see that it was also on the state’s agenda.”

**Work with area high schools to address gaps in college readiness is ramping up across the state—with promising results.**



In spring 2012, **Middlesex Community College** teamed with the **University of Massachusetts Lowell** and educators from four-year high schools to map the new Massachusetts Curriculum Framework for English Language Arts to the **Association of American Colleges and Universities’** Written Communication VALUE (Valid Assessment of Learning in Undergraduate Education) Rubric, part of the AAC&U’s Liberal Education for America’s Promise LEAP (Liberal Education & America’s Promise) initiative. The VALUE Rubrics are being used to guide campus work in developing new assessments of student learning.

“We did this to see if our high school colleagues were going after the same things in the area of composition that we were,” says **Kim Burns**, Associate Dean of K–16 Partnerships at Middlesex. “It was really exciting work because, at the end, we were able to see significant overlap between the English Language Arts frameworks and the LEAP VALUE Rubric.”

Thirty-two educators took part in “Taking the LEAP to Readiness for College-level Writing.” The mapping exercise helped them see real alignment between the state’s English Language Arts curriculum framework for high school juniors and seniors and five of the seven areas of competency spelled out in the VALUE Rubric for written communication. Middlesex is now developing a web portal where the results of the mapping will be available for review by all faculty.

“The immediate result is that our faculty were able to see that students have done a lot of this work at the high school level,” says Burns. “So they have a better understanding of what students should be able to do when they arrive at Middlesex, and the high school faculty have a better understanding of our standards and expectations.” ■

## STUDENT SPOTLIGHT

### Kelina Bracero is “Artward Bound”

Boston Public School junior **Kelina Bracero** still isn't sure if she wants to be an artist or a nurse, but her participation in the **Massachusetts College of Art and Design's Artward Bound** program has made her feel confident that she'll be ready for college when the time comes.

“Artward Bound has given me the feeling of how it is to be a college student,” she says. “I have overcome lots of challenges such as organization, following through with my ideas, and time management.”

Funded by a **Vision Project Performance Incentive Fund** grant, MassArt's first-in-the-nation art and academic college preparatory program is about to enter its third year. The PIF grant allowed MassArt to leverage nearly half a million dollars in support from local and national foundations.

The year-round program is free and requires students to make a hefty four- or five-year commitment to academic tutoring and visual arts instruction, all of it taking place in a dedicated classroom and studio space at the MassArt campus. MassArt students and faculty serve as mentors and coaches, engaging students in community art projects and gallery exhibitions. While art is the draw for most of the student participants, they are also required to take half-day English and math classes and three financial literacy courses during a six-week summer session.



“What we're seeing from our initial data is that the program is clearly fostering a desire to go to college among students from demographic backgrounds with lower levels of college participation,” says **Daniel Serig**, Associate Professor of Art Education at MassArt.



**College Knowledge** High school student Kelina Bracero mixes art class and college prep work at MassArt.

Kelina hopes her Artward Bound portfolio will strengthen her college application. While the program has provided her with a close insight into the MassArt curriculum, it has also given her a broader understanding of what a college environment is like and what colleges are looking for in a student.

“On my first day at Artward Bound I felt very nervous and shy,” Kelina remembers. “But as I got to know everyone I felt united because I was with people who have similar interests as me. We help each other when we are struggling with our artwork and share ideas that will help improve our work. I feel like having these skills will help me in the future.” ■

## QUICK TAKE

**Early College** Students at **Mount Wachusett Community College's** Pathways Early College Innovation School earn both their high school diploma and an associate's degree. Thirty-one percent of the first graduating class and 53 percent of the second graduating class made the Dean's List or President's List.



Seventy-one percent of Pathways students are low-income or first-generation college students.





**Cause for Celebration** Framingham State University has scored impressive increases in its rate of students completing degrees. Story starts on page 28.



## KEY OUTCOME **2**

# College Completion

Massachusetts public college and university students complete degrees and certificates at a rate that is at or just a few percentage points above the national average. Given the Commonwealth's economic focus on knowledge-intensive industries and its steadily increasing dependence on public higher education to produce a high-skilled workforce, these numbers aren't strong enough to ensure that Massachusetts stays competitive with other states and nations.

In a range of programmatic innovations that align with Vision Project goals, many public campuses are now engaged in efforts to raise student success rates, by:

- **Removing barriers that slow student progress toward graduation**
- **Taking aim at achievement gaps that hold back high-risk students**
- **Developing new, high-impact policies based on research and evidence**



# Raising the Rates

## Two Campuses, Ten Strategies for *Success*

“Graduation rates are hard to increase without a substantial and sustained effort. The work of these universities makes the case that raising graduation rates, while difficult, can be done,” says Stan Jones, president of Complete College America.

**In the job market, college credentials serve as a kind of vaccine,** protecting individuals with advanced degrees against the chance of job loss and financial ruin. College completion is a predictor of future civic participation, and of a graduate’s ability to pay off student loans. And, for business and industry, the supply of skilled graduates ready to work in knowledge-based sectors is key to determining whether a company grows deep roots in Massachusetts or moves elsewhere.

For all of these reasons, the Vision Project goal of national leadership in College Completion is critical to the well-being of the Commonwealth. (For a look at where Massachusetts stands in relation to leading states, see page 74.)

**Two Standout Institutions.** While all public colleges and universities are focused on completion, two universities have shown particular improvement in six-year graduation rates of first-time, full-time freshmen. At the **University of Massachusetts Lowell** the graduation rate increased 9.8 percent between fall 2007 and fall 2012. At **Framingham State University**, the six-year rate increased 8.9 percent during the same period (Source: USDOE/IPEDS).

“I am very impressed with these significant increases,” says **Stan Jones**, president of **Complete College America**. “Graduation rates are hard to increase without a substantial and sustained effort. The work of these universities makes the case that raising graduation rates, while difficult, can be done.”

Academic leaders at both campuses agree that a multi-faceted strategy involving the entire campus community—especially faculty—produced the promising results.

## “We Are Impatient About Success”

**Learning (and Living-Learning) Communities.** All incoming freshman at **UMass Lowell** are organized into learning communities. Cohorts of students take three courses and see each other nine times a week. Two of the courses are required; the third is a seminar related to a particular major. The goal, Provost **Ahmed Abdelal** says, is to connect students with faculty from their area of interest.

“When you look at what happens at universities, a freshman says, ‘I want to major in engineering,’ but they may not see a faculty from engineering until their third year. That is not a good model. You want to provide them with an opportunity early on to meet someone who represents the discipline.”

Acting on a suggestion from Student Services, the University also launched dorm-based Living-Learning Communities, each focused on a program major and staffed by a tenured faculty mentor. Freshmen retention rates for LLC residents was 89 percent from fall 2011 to fall 2012, 7 percent higher than the retention rate for all freshmen. →



## “I Knew We Could Do Better”

**Campus-wide Completion Message.** For interim President and former Vice President of Academic Affairs **Robert Martin**, Framingham State’s graduation rate did not do justice to the campus he loved.

“I believed our rate was not reflective of our quality and that we could do better,” he recalls. “It’s not enough to have conversations inside the university and say, ‘We know we’re good.’”

Faculty and administrators began working together to change the way they communicated with students. Starting at orientation and with all student academic and financial aid advising, students at Framingham State began to get the message about the importance of finishing college “in as few years as possible,” says Martin. “We became very systematic and we drilled that message hard, and it came as a bit of surprise to some parents.” →



## UMASS LOWELL

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**Freshman Research Co-ops.** UMass Lowell has aggressively pursued the co-op model of business and industry work experience for students, using a **Vision Project Performance Incentive Fund** grant to expand professional co-ops by 54 percent and community co-op placements by 77 percent from 2012 to 2013. The same fund supported an increase in service learning, with more than 130 additional students participating during the spring 2013 semester and another 171 scheduled to take part in fall 2013.

As a result, “students become much more focused on what they want to do,” Provost Abdelal notes. “They say, ‘I really learned from co-op

what I want to study and what I don’t want to study.’ And of course, they develop significant connections to faculty.”

**Early Warning System.** UMass Lowell is one of a growing number of campuses using a computer-based early warning system to identify students who appear to be struggling just weeks into the semester. Every two weeks, faculty are reminded to check their rosters to see which students appear to be having problems.

“And then through our student advising centers, we reach out to those students,” says **Charlotte Mandell**, Lowell’s Vice Provost for Undergraduate Education. “We try to see what’s going on. Is it a financial problem? Personal, or academic? Our response rate from faculty has been 90 percent.

“We had conversations with the faculty, encouraging them to think anew,” says Provost Abdelal. “And some of the faculty said, ‘Don’t you want us to weed out the weaker students?’ And we said, ‘No, the students we have admitted, we want them to succeed.’”



**On the Finish Line** Framingham State is graduating more students.

## FRAMINGHAM STATE

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Administrators also realized that they had stopped referring to cohorts as the “Class of 2011,” so they began hanging banners at campus events that featured the names of all students in a cohort and their expected graduation year.

“Part of the success is putting it back in students’ heads that this is a four-year experience,” says Susanne Conley, Vice President for Enrollment and Student Development.

### **First-Year Foundations.**

Framingham State faculty and staff attended the Foundations of Excellence program offered through the **Gardner Institute**, and as a result of the program’s rigorous self-study, decided to revamp their approach to freshman orientation.

Looking back, Conley now says, “I can’t believe we just threw books at them and said, ‘Here’s a course catalogue.’ Now, incoming students take placement tests and then, based on their majors and general education requirements, we say ‘Here’s your schedule.’”

All freshmen are required to take a first-year foundations course aimed at helping them adjust to college expectations. In their second term, freshmen learn from peer mentors how to make their own course schedules and track progress to graduation day.

Framingham also studied its freshman classes and discovered that undeclared commuter students were, as Conley puts it, “the most likely

The (software) people are astounded that we have 90 percent of the faculty participating.”

The University registrar’s office has also begun tracking students who appear to have enough credits to graduate but are not on the list to do so. In some cases there was a crisis at home, or they couldn’t afford books. Students who fell off the campus radar, Mandell says, are “thrilled” to get a call from someone checking in on them. The proactive approach resulted in an additional 15 students being cleared for graduation in February 2012 and all students who had earned 105 credits as of spring 2013 being automatically checked for eligibility to graduate. This information was then forwarded to each academic department. →

(population of students) to melt away.” The data prompted administrators to focus specifically on this population of students, developing wraparound supports and extra encouragement to choose a major.

**Four-year Completion Plans.** The publication and dissemination of four-year completion plans has created clearer degree pathways for students and served as a practical reminder to faculty of the need to construct programs that can be completed within four years.

“Even less experienced students are now going to advising appointments with a clearer sense of the courses they need to take,” says Conley. “They are better-educated consumers.” →

## “Perhaps the Most Important Work I’ve Ever Done”

**BY PAUL RAVERTA,  
FORMER PRESIDENT,  
BERKSHIRE COMMUNITY COLLEGE**



**It’s a common student complaint:** “They told me my credits won’t transfer!” A student’s need to repeat or take additional courses has wide-ranging effects: it can slow his or her ability to complete degree requirements and also damage institution-level or system-wide efforts to improve completion rates.

The **Department of Higher Education’s *MassTransfer*** policy assists students in transferring their general education course credits from one campus to another. It is also leading efforts to create curriculum pathways through majors, so that a student can be assured that his or her first two years of education in a particular pathway will transfer with no loss of credit.

Now, the Department is working to create a searchable online database of course-to-course equivalencies, giving students the ability to see how specific courses will transfer. Former **Berkshire Community College President Paul Raverta** was asked to design the new system, called the **Massachusetts Articulated System of Transfer (MAST)**.

**A Crucial Transfer Agenda.** There was a growing public perception that the decision on transfer credits varied between and within institutions, so it was clearly time to have a uniform transfer practice, one that would also support the Vision Project’s College Completion goals.

**Mapping the Road to Completion.** I created MAST, a common numbering system that maps course and elective equivalencies between Massachusetts public higher education institutions. I have been very pleased with the response to MAST; the community college and state university representatives have been working hard to bring the MAST Project database to life, and hopefully the UMass campuses will be joining the initiative in the near future.

Today, more than ever, students are moving freely throughout the Massachusetts public higher education system. MAST will allow them to determine in advance how a course will transfer to another institution that they might wish to attend. The entire database will be available to the public through the Department of Higher Education’s *MassTransfer* website ([www.mass.edu/masstransfer](http://www.mass.edu/masstransfer)).

**Perhaps the Most Important Work I Have Done.** I worked almost forty years in the Massachusetts public higher education system, and I tell everyone that MAST may be the most important work that I have ever done because of its positive impact on so many students in our community colleges and state universities. Everyone working on the project is committed to continuing these efforts. ■



## UMASS LOWELL

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**The “DFW” Report.** UMass Lowell has begun using spreadsheets to track students who are getting D’s and F’s or withdrawing from challenging courses such as Calculus and Organic Chemistry.

“The failure rates in Calculus for Engineering, a two-semester sequence, were between 60 and 70 percent,” Mandell recalls. “We met with the math department and we realized that by the time students had gotten to calculus they had already forgotten pre-calc.”

The sequence was redesigned to integrate the two courses, and large lecture classes with 300+ students were reduced in size to 30–40 students.

“And that was a place the faculty balked,” Mandell remembers. “They said, ‘We have our best lecturers doing these larger classes, and if we switch to smaller classes there will be more inconsistency and we’ll have to hire more (part-time) adjuncts.’ We said, ‘That’s OK. We think it’s really alienating to be in a class of 300 where you can’t ask a question.’”

The University also made placement testing mandatory: “We said it’s not an option to take the harder course and fail.”

“We had conversations with the faculty, encouraging them to think anew,” says Provost Abdelal. “And some of the faculty said, ‘Don’t you want us to weed out the weaker

students?’ And we said, ‘No, the students we have admitted, we want them to succeed.’”

Faculty came up with the idea of a calculus “camp,” a three-week, intensive program offered free of charge to students who had received a D in calculus and were likely to fail if they moved on to the next level. Eighty percent of the students who took the course passed it with a grade of C or better.

“And when the camp worked, that persuaded the faculty that they could change the situation, rather than blame the failure on the PreK–12 system, which we don’t control,” Abdelal observes.



**Faculty Play a Key Role.** Dr. Vandana Singh speaks to students in her Principles of Physics II course at Framingham State.

## FRAMINGHAM STATE

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### **Streamlining Requirements, Attacking Course Bottlenecks.**

Framingham reviewed all academic programs and found that additional requirements were slowing student progress toward completion.

“So we urged and cajoled the department chairs and curriculum committees to streamline, and I’d say we’ve moved about a third of our departments in this direction,” Interim President Martin says. “People delude themselves in saying the more requirements we have, the more prepared students will be. There is no relationship between the number of courses required and academic rigor.”

**Student Affinity.** When UMass Lowell officials discovered a high rate of student transfer between the sophomore and junior year, they began to ask, “Is our student life rich enough? Are our residence halls good enough? We need to make sure students are connected to the campus.”

The reason: Students who live on campus typically have better academic outcomes than commuter students. At Lowell, half the student population now lives in residence halls. The success of the **UMass Lowell River Hawks**, who were the 2013 Hockey East Champions and Frozen Four participants, has also had a huge impact on campus spirit, administrators say, while the number of student-run clubs and organizations has doubled since 2007. ■



**River Hawk Nation** UMass Lowell River Hawks are building school spirit, which officials believe aids retention efforts.

“Part of the success is putting it back in students’ heads that this is a four-year (college) experience,” says Susanne Conley, Vice President for Enrollment and Student Development.

The campus divisions of Academic Affairs and Enrollment also worked with department chairs to reduce course bottlenecks. A 57 percent growth in the Food and Nutrition program, for example, was creating a bottleneck in Chemistry. Too many students couldn’t get into the course.

“So we’ve opened extra sections of courses; we’re offering sections at night, and we’re now considering weekend courses,” says **Linda Vaden Goad**, Vice President for Academic Affairs.

**Internships.** Framingham has made an investment in non-student teaching internships, expanding the number by 20 percent from 2011 to 2012 and adding a full-time internship coordinator. The program introduces flexibility into the curriculum and incentivizes students to complete their prerequisites.

“This is another example of how our faculty has stepped up to the plate,” says Conley. “They’ve agreed to more independent studies; they’ve encouraged students to seek out these opportunities. It allows a student to say, ‘I’ll sub this internship for that elective.’ It opens up the room that a student often needs to finish the program.” ■



## COLLEGE COMPLETION

## TRANSFORMING

# Developmental Education

**When Middlesex Community College Math Professor Mike Williamson thinks back** to the way he used to teach remedial math courses, he remembers Jonathan, an easy-going student with a passion for theater who could not get through Algebra One.

“He was the nicest student,” Williamson recalls. “And I’d say, ‘Jonathan, we’re going to make it this time.’ And he’d say, ‘Yeah,’ and he’d come back the next semester and try a lot harder, but you could see the boredom setting in—because he had to start all over again from the beginning. What he needed was to work on the more challenging concepts in the latter part of the course, but he started to skip because he was bored. Eventually, he just left. It was very frustrating for me as an instructor.”

**“Bridges to Nowhere.”** Finding ways to hang on to students like Jonathan is critical to the statewide goal of raising graduation rates. The data make clear that students enrolled in remedial or “developmental” educa-

tion coursework are far less likely to graduate. Of the Massachusetts community college students who enrolled in fall 2006, 58 percent took at least one developmental math class. Sixty-eight percent completed the coursework, but only 31 percent went on to complete a college-level math class within two years. Only 10 percent of full-time community college students who entered in fall 2004 and took even one developmental course graduated within three years.

“Of the 11,000 community college students who took remedial math in fall 2010, 9,000 have yet to pass a credit-bearing course,” concludes a **Task Force on Transforming Developmental Math Education** convened by **Higher Education Commissioner Richard Freeland** in 2013. This fall, the Task Force will ask the **Board of Higher Education** to consider new criteria for placement into developmental education, as well as other recommendations to accelerate students’ entry into college-level coursework.

**Innovative Campus Solutions.** In 2011, Middlesex redesigned its developmental math instruction, creating a new sequence called **RAMP-UP** to help students *Review, Achieve, Master and Progress* into credit-bearing, college-level coursework. The new approach, fully implemented two years ago, breaks down semester-long courses into modules. Students work in computer labs and progress at their own pace while an instructor and tutors float around the room. Students are required to complete four modules with a C or better, but if they fail one, they only need to repeat that particular module, not the entire course. In fall 2010, only 54 percent of the students who placed in the developmental math sequence were able to pass on to college-level work. Now, 66 percent are succeeding.

“I’ve had students who were out for a couple of weeks, but they are able to come back and recover (because of the modular approach to instruction),” says Williamson. “In a



**A Failure to Remediate** Faculty meet at Massasoit Community College to chart a new course for remedial (developmental) education.

traditional class that would be very difficult to do. So this change is very exciting to see.”

At **Cape Cod Community College**, a new approach to developmental English classes is saving students both time and money. Instead of requiring students to take a developmental English course followed by a gateway English Composition course, the college combined them into one intensive course that meets for longer sessions and allows for deeper dives into literary text. The change eliminated the gap between the two courses, creating a seamless transition into college-level work. Students only had to pay for one course, not two.

“Students save money, and they save months,” says **Lore Loftfield De Bower**, Dean of Academic and Student Affairs, of the new “co-requisite” model. “It does take the same amount of hours as taking two

“Of the 11,000 community college students who took remedial math in fall 2010, 9,000 have yet to pass a credit-bearing course,” concludes a Task Force on Transforming Developmental Math Education.

courses, but in terms of the passing of their lives, it seems shorter.”

Associate Professor of English **Kathleen Soderstrom**, whose Critical Reading and Thinking course was also combined with developmental coursework, found the longer class periods challenging but also valuable for students, most of whom had never read literature

in high school, only textbooks.

“In a two-hour class we spent one full hour reading,” she says. “We had time for four novels in this class, much more reading and writing than before. I was able to walk through the text with my students, building up their confidence.”

Cape Cod’s experiment required a significant investment of faculty

time and campus resources. Across the state, campuses are tapping multiple funding sources, including **Vision Project Performance Incentive Fund** grants and funding providing through a \$20 million **U.S. Department of Labor** workforce grant, in their bid to redesign developmental education programs. →



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**Collaborative Efforts.** Funds from the grant (also known as the **Massachusetts Community Colleges Workforce Development Transformation Agenda**) have been used to develop 24 “contextualized” developmental education modules which are housed in a digital library and available for campus use. English and math topics are based on real scenarios found in three top industries where many student graduates will eventually land jobs: health care, information technology, and advanced manufacturing. Design teams comprised of campus and industry representatives aligned the modules with skills

“Daigneault says the contextualized approach helps students gain a much clearer understanding of why particular skills are necessary for certain occupations, discoveries that she and other faculty believe will motivate them to work harder.”

needed for positions in home health care, web design, or quality control. In the health care literacy module, for example, students might practice writing a rebuttal to an insurance company that denied a claim, or translating a medical record into plain English. The Common Core State Standards are “front and center” in the modules, says **Barbara Treacy**, an **Education Development Center (EDC)** consultant who

helped design them. “Faculty are having different conversations with students that point in the direction of completion. It’s opening up career discussions.”

**Kirsten Daigneault**, a member of the **Quinsigamond Community College** English faculty, used the Information Technology module in her intermediate writing class, and watched a disabled student discover a potential career path for himself as a help desk technician.

“We were able to talk about this as an entry point to an IT career for him,” she recalls. “It was like Willy Wonka finding the golden ticket.”

Daigneault says the contextualized approach helps students gain a much clearer understanding of why particular skills are necessary for certain occupations, discoveries that she and other faculty believe will motivate them to work harder. Early data based on student satisfaction surveys shows that participants in the contextualized writing classes were 22 percent

more confident about their writing skills and 22 percent more engaged and focused on their work than students in traditional developmental education courses.

**Fueling the Workforce.** At **Bristol Community College**, where 80–85 percent of students test into developmental education courses, the modularized approach to math

instruction is helping to move students faster to into jobs. Associate Vice President for Academic Affairs **Anthony Ucci**, who formerly chaired the engineering department, notes that while students do get diplomas, “there tend to be more placements than there are graduates, a wonderful position to be in.” But for students stuck in the educational quicksand of developmental math, even the brightest employment prospects can appear to be a mirage.

With computer-aided instruction in five labs funded by a **Vision Project Performance Incentive Fund** grant, Bristol’s engineering students are able to do an average of 4.7 math modules in a semester, up from a maximum of four under the old model.

“While only 60 percent of the students were passing in the old developmental courses, now we’re looking at rates where no one is failing the entire course. It’s just how far you’ve progressed,” Ucci notes. “And the average progress rate is 25 percent higher than it used to be.”

In the fall of 2013, Bristol will try to speed up the developmental sequence even more, using a pre-requisite model that injects algebra lessons into a statistics course.

“Students will actually take algebra and statistics simultaneously, and because they are coordinated, students will be able to get the algebra content they need just in time to use it in the stats class. This will save them a full semester.”

## BUSINESS COMMUNITY PERSPECTIVE

“Developmental (remedial) education is a serious drain on our education system, costing the state millions of dollars, and students time and money, which neither can afford. The innovative ways that campuses are moving students out of developmental education and into credit-bearing coursework at a faster rate is very encouraging and is critical to our students’ future and prospects in the workforce.”

**LINDA NOONAN, EXECUTIVE DIRECTOR, MASSACHUSETTS BUSINESS ALLIANCE FOR EDUCATION**

**Reducing Students’ Costs.** And such a savings also has financial implications. On average, students who test into developmental education classes at Bristol take three years to complete a two-year degree. Ucci hopes the new instructional approaches will reduce the time-to-degree for full-time students by at least a semester.

“We want to be hotbeds of innovation,” he emphasizes. “Historically, we haven’t had the resources to do things on a system-wide basis. The Vision Project Performance Incentive Fund has allowed us to create instructional resources and really free up faculty to do the development. It’s been a wonderful experience.” ■

## Berkshire Students “Get REAL” about Success



CEOs in the business world often turn to executive coaches to help them set

strategic goals for their companies. Now, **Berkshire Community College** students have coaches working one-on-one to help them set such goals for themselves.

Berkshire’s **GetREAL (Get Resources in Education, Advising and Learning) Advising Center** opened in 2011 with support from a **Vision Project Performance Incentive Fund** grant.

“Without the grant, we would not have been able to serve this population of students, nor pay for the staff and training,” says **Louise Hurwitz**, Director of Transition and Development Programs at Berkshire. “The coach is seen by the student as being on the same team as the faculty. They help GetREAL students to problem solve, learn how to manage their time, and to develop goals.”

Recognizing that students who place into remedial English and/or math present unique challenges not only in their academic preparedness but in overall readiness for college life, GetREAL hired and trained five academic advisors/coaches who in the first year worked with 20 students.

The strategy appears to be working: 100 percent of participants in the GetREAL pilot persisted in their studies (persistence defined as enrolling for more than two semesters). In fall 2011, the course completion rate for GetREAL students in English was 94 percent, compared with a baseline of 72 percent. In math, the numbers were also strong: 66 percent completion compared to a baseline of 39 percent.

One of the coaches, **Mark Clatterbaugh**, documented his experience working with an English student in a Berkshire blog post:

*At BCC, I find myself mining diamonds in the GetREAL program... Imagine our delight when several of the faculty mentors stumbled upon a real diamond, when we were asked to help look over an English assignment for a student named Samantha. Samantha’s short essay about her grandmother, entitled “Wait Until You Get a Load of This,” bowled us over. ... It is nice to see our mine producing gems.*

“At a commuter college like ours, GetREAL is a home that builds connections for students,” says Hurwitz. “It has become a critical retention tool.” ■



## On Track, On Time for Graduation



At the end of her first year at **Massachusetts College of Liberal Arts** (MCLA), student **Rhea Werner** was running behind in

credits needed to graduate within four years. The Arts Management major had not yet completed a math prep course that she would later need to enroll in college-level math. When staff with the MCLA **Center for Student Success and Engagement (CSSE)** encouraged Rhea to enroll in a summer course to help her stay on track for graduation within four years, she worried about a potential three-hour commute to and from campus.

MCLA's worries were more long-term: What if students like Rhea fail to make it to graduation day? The question was at the heart of a new college initiative to help such students earn 30 credits before the start of their second year.

Launched in fall 2011 with a **Vision Project Performance Incentive Fund** grant, the "**30-in-3**" program offers a way for students to earn 30 credits in three semesters before the start of their second year at MCLA. 30-in-3 identifies and provides support to first-year students at risk of not earning enough credits to graduate within four years. According to **Charlotte Degen**, MCLA Vice President of Student Affairs, 30-in-3 was launched after college data showed that students who did not obtain 30 credits by the beginning of their second year had lower persistence rates and took longer to graduate.

"We have an opportunity and a responsibility to ensure that all students, and especially first-year students, understand

how important it is to earn enough credits toward graduation right from the start," says **Cynthia Brown**, MCLA's Vice President for Academic Affairs. "Some of them need pre-college courses to prepare them for college-level work, but those credits do not count toward graduation. So we wanted to find a way to help them stay on track."

During the fall 2011 semester, the program identified 28% of the MCLA first-year cohort who would benefit from 30-in-3 support. The students were offered additional academic advising, refresher workshops, tutors, and specialized courses—such as the one that Rhea enrolled in—in an effort to support them in earning 30 credits by the start of their second year. The strategy has paid off. In just two years, MCLA has increased the number of students earning 30 credits before the start of their second year from 30% in fall 2010 to 63% in fall 2012.

For Rhea, what first appeared to be a challenge became a highly rewarding experience. Her course was offered online, easing her commuting fears. She enjoyed making digital connections with her professor and classmates. She obtained three more credits, giving her the desired 30, and she gained more focus, what she described as a "wake-up call" to the need to graduate on time.

"We're very happy with the outcome for Rhea and other students," remarks Brown. "This program sets high aspirations and supports the College Completion goals of the Vision Project. Moreover, it illustrates the positive impact of intentional advising on student success." ■

## 11 Campuses Pilot Completion Incentive Grants

**MassBay Community College** is one of 11 campuses participating in the new **Massachusetts Completion Incentive Grant Fund (CIGF)** pilot program launched by the **Department of Higher Education** in 2012.

"Typically, financial aid is used to provide college access, but with no guarantee that students who receive it will ever earn a degree," says **Clantha McCurdy**, DHE's Senior Deputy Commissioner for Access and Student Financial Assistance.

"The pilot would test a powerful idea: the use of aid as a financial incentive to keep students moving toward graduation day."

“Such grants help define the identity of our students as academically successful and worthy of investment, and they lay the base for increasing both their academic and career aspirations,” says **President John O’Donnell** of MassBay Community College.



**Funds to Finish** Completion Incentive Fund grants propel students to graduation day at MassBay Community College and 10 other campuses.



With the goal of increasing the college retention and completion rates of low-income students, the program was designed to link the amount of aid students receive to the number of courses they take—and complete.

In its first year, a randomly selected group of first-year students was provided with up to \$2000 in grants. To be eligible to receive the funds, students had to meet a list of criteria, and earn course credits in consecutive semesters while maintaining a minimum 2.0 GPA. The aid was paid either directly to them or put toward any remaining school balance upon completion of a semester. The pilot will continue through the summer of 2016, at which point it will be evaluated and expansion possibilities considered.

"The Massachusetts Completion Incentive Grant Fund will, I believe, play a crucial role in supporting the degree completion aspirations of our low-income students," says **President John O’Donnell** of MassBay Community College. "The Grant reward makes a statement to them: semester by semester, you’re succeeding, you’re earning credits, and you’re moving forward toward earning a degree or certificate. Such grants help define the identity of our students as academically successful and worthy of investment, and they lay the base for increasing both their academic and career aspirations." ■



**Habits of Mind** A look inside the classroom at Fitchburg State University, an active participant in the statewide AMCOA (Advancing a Massachusetts Culture of Assessment) project. Learn more about this collaborative work to strengthen assessment in public higher education on starting on page 45.



## KEY OUTCOME **3**

# Student Learning

How do we know what college students have actually learned by the time they graduate? Ideally, assessment practices should reveal enough about student learning to guide faculty efforts to improve programs. Moreover, if Massachusetts public colleges and universities aspire to produce “the best-educated citizenry and workforce in the nation,” we need to be able to compare student learning outcomes with results from other states. Data on page 75 offer a quick but incomplete snapshot: our student pass rates on licensure and graduate entrance exams currently range from below to slightly above the national average. But exam scores alone don’t tell us enough about what students know and can do.

Massachusetts has made major strides in designing better ways to assess learning, by:

- **Strengthening campus-level assessments, and creating a statewide mechanism for assessment of student learning in Massachusetts**
- **Leading a multi-state consortium working to design a means to compare student learning across state lines without use of standardized testing**



## STUDENT LEARNING

# A New Vision of Learning Outcomes Assessment

BY BONNIE ORCUTT, ECONOMICS PROFESSOR,  
WORCESTER STATE UNIVERSITY; and  
DIRECTOR OF LEARNING OUTCOMES ASSESSMENT,  
MASSACHUSETTS DEPARTMENT OF HIGHER EDUCATION



**Commencement season is a joyous time** in the lives of college students and their families. Diplomas in hand, graduates head into the world with high hopes and a well-earned feeling of “mission accomplished.”

Like states across the nation, however, Massachusetts lacks the means to report out what these students actually learned during their college years. Scores on assignments and final exams, the standards for which vary from campus to campus, present a decidedly narrow view. Without the ability to gauge what students have learned and are prepared to do, it’s difficult to pinpoint stumbling blocks or improve instruction.

**State of Assessment.** Learning outcomes assessment has been a hot topic in higher education circles for years, but Massachusetts’ pioneering work in this area is drawing particular attention. Of

keen interest is the state’s decision to compare undergraduate student learning across disciplines, campuses, and states without use of a high stakes exit exam—to build a new assessment model from the bottom up based on actual student work.

Traditional standardized assessments typically measure a test-taker’s ability to recall facts and figures, which is arguably less relevant in the digital age of on-demand information. Such measures provide little if any insight into students’ ability to internalize, interpret, apply, and transfer knowledge—yet it is this more nuanced set of “higher-order thinking skills” that is most needed to address complex problems in a rapidly changing world.

**The Massachusetts Model.** The model embraced by the **Massachusetts Department of Higher Education** and participating campuses allows students to demonstrate their

learning in multiple ways, using classroom-based work. Rather than simply collect and evaluate course grades or test results, policy makers and faculty participants favor assessments that will enable instructors to use the evidence to make curricular changes, rethink course design, and implement new classroom teaching and learning methods—all with an eye toward improving student learning.

Beginning on the ground with faculty, staff, and administrators from campuses across the Commonwealth, new assessment programs built upon actual student work are being developed and implemented within and across majors, across institutions, and even across states. In the words of **Commissioner Freland**, “This is the area of the Vision Project where we have truly begun to move the needle nationally.”

**Quantitative Literacy**—also known as **Numeracy** or **Quantitative Reasoning**—is a “habit of mind,” competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

LEAP VALUE RUBRICS AVAILABLE FROM AAC&U AT [WWW.AACU.ORG/VALUE](http://WWW.AACU.ORG/VALUE)

**Fundamentals of Liberal Education.**

What kinds of learning should be assessed? Competencies that are broadly embraced across the nation include:

- **written communication,**
- **quantitative literacy, and**
- **critical thinking.**

While campuses, instructors, students and prospective employers value these broad-based skills, states and local institutions have historically lacked the means to demonstrate achievement in these areas.

In February 2012, Massachusetts was accepted into the **American Association of Colleges and Universities’ LEAP** (Liberal Education for America’s Promise) State Initiative. AAC&U’s LEAP Essential Learning Outcomes and VALUE (Valid Assessment of Learning in Undergraduate Education) Rubrics served as the building blocks for a concerted effort by 22 public campuses to develop the

Commonwealth’s first statewide post-secondary assessment plan.

**The First Pilot.** During spring 2013, Massachusetts launched a pilot study of a new statewide model to assess learning outcomes. Six campuses—**Bristol Community College, Framingham State University, Middlesex Community College, Mount Wachusett Community College, Northern Essex Community College** and **UMass Lowell**—

participated in the pilot. A sample of students nearing graduation was identified at each institution and some of their completed course assignments were collected for analysis.

“The pilot outcomes gave us confidence in our ability to measure learning using student work,” says **Patricia Crosson**, senior academic policy advisor who led →

**“**In the words of Commissioner Freeland, “This is the area of the Vision Project where we have truly begun to move the needle nationally.”



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the first two years of Vision Project-related assessment work at the Department of Higher Education. “The results show us that this approach can indeed work, that future assessments using this model can disclose patterns and levels of student learning that are informative and useful for campuses and the state.”

Approximately 350 samples of completed student work were collected—drawn from over 130 courses instructed by approximately 120 faculty across the six participating institutions—and scored by 22 faculty from across the system using the corresponding LEAP VALUE Rubrics. Many of the 142 faculty directly involved in the pilot have already indicated they plan to rethink and redesign their assignments and teaching approaches to allow for better measurements and classroom practice to enhance learning. Given the course loads of these full-time instructors, the initial pilot has the potential to impact the learning assessment of an estimated 4,000 students.

“We (educators) need to continue to collect and celebrate data that helps us improve,” observes **Bob Pura**, President of **Greenfield Community College**, following completion of the pilot. “Indeed, while this is more the norm inside our classrooms, it is challenging at both the campus and state level with pushback that stems from a longstanding protectiveness of talking publicly about areas where needed improvements have been identified. Nonetheless, it is impera-

tive for us to further build a culture that supports honest reflection and open discussion about where we need to improve, and how, with a non-punitive eye.”

A second pilot study is planned for fall 2014, with additional campuses and a larger sample size being drawn. Over the upcoming academic year, intensive professional development workshops are planned.

**Crossing Borders.** The Massachusetts LEAP State initiative also provided the framework for the **Multi-State Collaborative for Learning Outcomes Assessment** to advance assessment and allow for cross-state comparisons. Working with nine partner states, the AAC&U, and the **State Higher Education Executive Officers (SHEEO)**, Massachusetts is focused on how best to develop assessment systems that:

- Present assessment outcomes in ways understandable by non-academic stakeholders;
- Center on using actual student work, closely linked to curriculum and to the instruction work of the faculty; and
- Allow comparison of student learning across state lines.

The motivation for the collaborative work among states comes from the belief that governors and state legislators will continue to expect accountability from public higher education in the area of student learning.

“If public higher education does not succeed in developing a workable collaborative system for assessment,

we will be forced to live with state mandates that do not support deepening student learning but simply document it,” says Commissioner Freeland.

“If successful, this ambitious work will transform the fear of accountability—narrowly viewed as judging individual institutional performance for funding purposes—to a broader understanding of accountability to achieve a common purpose, which is to enhance student learning.”

In contrast, Massachusetts’ approach to assessment and comparisons across states will allow each campus to articulate what level of learning it is trying to achieve, and to know when it has been achieved. In short, state and multi-state models of assessment effectively change the terms of engagement for all involved—with students the greatest beneficiaries. ■

# “Do You See What I See?”

## Faculty Build New Campus Assessment Models

**For two years, faculty and assessment directors from multiple campuses and disciplines have been working away on a construction site of sorts.**

There are no cranes or hard hats on this particular job; the building occurs in campus conference centers and meeting rooms.

The tools of the trade, called artifacts, are samples of student work that faculty place in each other’s hands.

Then, using the VALUE Rubrics that are part of the **American Association of Colleges and Universities’** signature LEAP (Liberal Education and America’s Promise) initiative, the faculty “score” the samples and compare notes on the strengths and weaknesses of what they see. →



## Quantitative Reasoning Assessment at Holyoke

**HOLYOKE**  
COMMUNITY COLLEGE

Futures Inspired

When **Holyoke Community College** won a **Vision Project Performance Incentive Fund** grant in 2012, the campus

was already deeply immersed in work to assess students' quantitative reasoning (QR) skills. An assessment committee had begun to use the **American Association of Colleges and Universities'** LEAP VALUE Rubrics to gauge the quality of student learning.

"Our first snapshot showed that only a third of our students were proficient in quantitative reasoning, that they were strongest in calculation and weakest in the actual reasoning," recalls **Judith Turcotte**, Director of Planning and Assessment at Holyoke. "We had learned many things from artifacts of student work and from student focus groups. We found that context was important. It helped when QR was connected to information students could relate to."

Holyoke decided to use the Vision Project grant to bring nine faculty members into the assessment process, pairing them with math experts to develop new quantitative reasoning modules for use across the curriculum. The goal, based on the VALUE Rubric's emphasis on developing

students' "competency and comfort" with numbers, was to give students many opportunities to analyze numerical data in their courses.

"The guiding principle was, 'focus on the use of numbers and the interpretation of numerical data,'" Turcotte says. Instead of a criminal justice student being asked to compute crime stats, he or she might be asked to examine crime data on college campuses and decide which campus is most dangerous and why. In an English class, students looked at a graph of social media users versus non-users, and were then asked to write a clear statement about cyber-bullying.

Associate Professor **Laura Hutchinson** incorporated her quantitative reasoning module into five sections of the same nutrition class. "Not only was the overall class work much better than last semester," she observes, "But the average final exam score was 10% higher than the previous semesters."

By the end of last spring, Holyoke had doubled the number of faculty working on quantitative reasoning assignments. "The Vision Project grant allowed us to actually do something about the student results we were seeing," says Turcotte. "Preliminary data indicate about 80% of students improved their overall QR score from the pre-test to the post-test. There will be a lasting impact for Holyoke if faculty persist in being intentional about quantitative reasoning as they develop curriculum and assignments. If that happens, student performance will continue to grow stronger." ■

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What might appear to be endless rounds of conversation is, in fact, a painstaking process aimed at constructing a new system of student learning assessment in Massachusetts. (See page 42 for more on this work.) Unlike many assessment models, this one is rising from the ground up, its foundation firmly rooted in faculty experience and perspective.

**Seeds of Partnership.** "The icebreaker for us occurred when a campus at one of these meetings shared its findings about scoring student work for writing," recalls **Peggy Maki**, a nationally recognized assessment

consultant who facilitated monthly **Advancing a Massachusetts Culture of Assessment (AMCOA)** meetings and quarterly conferences during the project's first two years. "I think AMCOA members were amazed that someone would actually stand up and share their institutional results! But it's those moments that have made the difference in this project, being able to say, 'This is what we've learned, and this is what we have to do to improve the patterns of student work.'"

Statewide interest in AMCOA meetings has been intense, productive and engaging of faculty across all three sectors of the public higher

education system. In its second year, the project moved to disseminating successful assessment practices, developing a bank of web-based assessment resources, and creating a cadre of campus-based assessment leaders. Faculty, Maki says, have continued to clamor for more opportunities to score student work.

"Two of our conference co-chairs, **Ellen Wentland** at **Northern Essex Community College** and **Judith Turcotte** at **Holyoke Community College** coined the phrase, 'Do You See What I See (in evaluating student work)?'" explains Maki. "This is a very important step in designing a new assessment system."

**Branching Out.** According to AMCOA Working Group Member **Neal Bruss**, Associate Professor of English at the **University of Massachusetts Boston**, the longevity of AMCOA “nourished the soil” for a subsequent collaboration between his campus and three community colleges: **Bunker Hill, Massasoit** and **Roxbury**. The project was funded by a **Vision Project Performance Incentive Fund** grant.

“We felt the timing was right with the Vision Project. We wanted to be in dialogue with (the community colleges) and learn more about their expectations for reading, writing and critical thinking because many of their students transfer into UMB and face our requirements,” Professor Bruss recalled.

In a series of meetings, UMass Boston faculty worked closely with faculty from Roxbury and the two other community colleges, comparing their expectations for student work with an eye toward identifying both commonalities and differences. Faculty exchanged assignments, statements of value, and student papers from freshman English courses, with the AAC&U’s LEAP VALUE Rubrics “providing us with a common language.”

“There was no question that our colleagues in the community colleges valued the same things we valued: student writers taking a position, developing that position, and presenting it in a way that anticipated readers’ needs and expectations,” Bruss observed. “We found some differences amongst ourselves, in terms of the value placed on students sticking their necks out and taking a position on the material they read, or how much weight was given to students explaining the importance

of the position they took. But in the end, our story was one of fundamental commonality.”

The goal of this particular assessment dialogue was to smooth the transfer pathway between the two campuses. **Mark Kjellman**, Associate Professor of English at Roxbury Community College, remembers a certain level of apprehension amongst his colleagues about the dialogue with UMass.

“The concerns at RCC were that we’re teaching a high percentage of economically disadvantaged

**“I can’t emphasize enough how much faculty—who work nonstop teaching, writing, formulating assignments, and reading drafts and revisions of student work based on those assignments—appreciated the chance to slow down, look closely at small numbers of student materials, and talk about what they see in them,” says Bruss.**

students, and if we align our VALUE Rubrics with those of UMass Boston and make our assessment and curriculum more rigorous, more students may end up failing,” Professor Kjellman explained.

“So we had this fundamental debate: do we make the curriculum more rigorous, and risk more failing? It’s ultimately a question of how you define student success.”

“The RCC group was rethinking student success down to the level of the individual assignment,” Bruss recalls. “Their VALUE statements included the prototype of an assignment flowchart that was extremely precise. While all of us in the group were thinking about these considerations, the RCC group operationalized them very clearly. It certainly went beyond anything I expected to see when the project began.”

The majority of RCC faculty taking part in the discussions had never seen assignments from UMass Boston. Understanding UMass expectations, based on the shared review of student work, Professor Kjellman believes, gave faculty the opportunity to see “how community colleges need to structure writing assignments to help students prepare for the future.”

The great benefit, Professors Kjellman and Bruss agree, is that the dialogue gave time-strapped instructors a chance to pause and consider what they mean by style, or how to

teach argument, and whether they were using the same set of values and terminology with students.

“I can’t emphasize enough how much faculty—who work nonstop teaching, writing, formulating assignments, and reading drafts and revisions of student work based on those assignments—appreciated the chance to slow down, look closely at small numbers of student materials, and talk about what they see in them,” says Bruss. “They found it invigorating. We need to stay with this, to maintain the activity that the Vision Project Performance Incentive Fund allowed us to pilot.” ■



**Sparking an Interest** A student at Springfield Central High School enjoys an interactive STEM fair hosted by several public colleges and universities, the Massachusetts Department of Higher Education, and GEAR UP, as part of the *Go Public!* initiative.



## KEY OUTCOME **4**

# Workforce Alignment

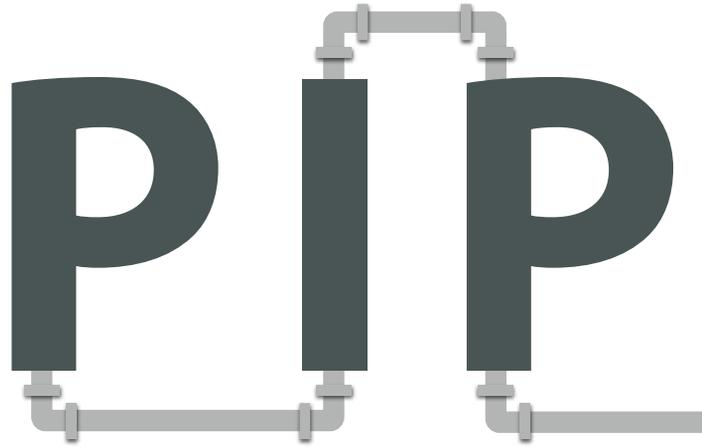
Massachusetts public colleges and universities are barely keeping pace with the Commonwealth's need for a high-skilled workforce, and current projections foresee significant shortfalls of graduates in the years ahead. In health care, the state's largest industry, and in the all-important science, technology, engineering and math (STEM) fields, the public campuses are not likely to hit future targets for their share of the state's needed number of certificates and associate's and bachelor's degrees. Through Vision Project-related activity, campuses are working in partnership with local businesses and industries to:

- **Develop critical solutions to workforce development needs in high-demand sectors (including health care, finance, information technology and advanced manufacturing)**
- **Strengthen student interest and success in these fields**
- **Reduce achievement gaps in STEM fields for students of color and female students**



## WORKFORCE DEVELOPMENT

# Building the Talent



**“Innovative and Aggressive.”** That’s how President Patricia Meservey describes Salem State University’s approach to meeting nursing workforce needs.

## “How many nurses do we need?”

That was the question **David Cedrone** kept asking when he arrived at the **Department of Higher Education** three years ago to lead its workforce development efforts. He was armed with a mandate to focus on health care and other high-demand sectors of the Massachusetts economy, where industry forecasts based on labor market projections showed impending shortages of graduates in critical fields, nursing among them.

The nursing shortage was a looming challenge given the state’s aging population and the profession’s increasingly complex demands. As the health care system continued its transition from an acute-care model to a community-based care model, nurses would need education in advanced technology and gerontology among other priorities to help patients manage disease diagnoses and treatment plans.

# PIPELINE

The need for highly skilled nurses was forecast to grow at exactly the same time that large numbers of nurses were expected to retire, along with the faculty needed to teach the next generation of nursing students. Research indicated that better-educated nurses had better patient outcomes. There were good programs in place, but Massachusetts lacked a long-range strategic plan to address the transitions of this workforce.

**A Need to Rebalance.** “The real catalyst for our work came in 2010, when the **Institute of Medicine** and the **Robert Wood Johnson Foundation** issued a landmark report on the future of nursing, calling for 80 percent of nurses to be educated at the baccalaureate or higher level by 2020,” Cedrone recalls. “The data showed that 55 percent of Massachusetts’ incumbent nurses had associates’ degrees or diplomas. The only way we were

going to rebalance Massachusetts nursing workforce was to focus on raising the educational levels of nurses already working in the field. But that strategy wasn’t on the radar to any significant degree.”

Instead, the focus was on increasing the pipeline of new nurses—despite reports that many recent graduates were having trouble finding jobs. Older nurses, shaken by the economic impact of the recession, were postponing retirement. Historical assumptions based on labor market projections would have to be re-examined if Massachusetts was to achieve the essential transition toward a more highly educated nursing workforce.

“It was that initial data analysis that showed us that this is largely an incumbent workforce issue,” Cedrone says. “Absolutely we need new nurses, and we know we’ll have a retirement

exodus at some point. But in the meantime, the critical strategy is to support nurses currently in the field who seek to return for additional education.”

Consulting with the directors of nursing programs at the campuses, Cedrone quickly concluded that rebalancing the workforce to achieve the target of 80 percent BSN or greater RN’s by 2020 was unrealistic. Through further modeling and in collaboration with campus and industry leaders, the target of 66 percent was established and later validated through a \$300,000 grant award by the **Robert Wood Johnson Foundation** for the **Massachusetts’ Academic Progression in Nursing** program. Campuses reacted positively to the revised target. Cedrone disaggregated the state data so that individual campuses could see the potential impact for their nursing programs. →



**The Heat Is On.** A student works in Massasoit's biotechnology lab, part of their highly successful Science Transfer Initiative.

## Massasoit Community College, Bridgewater State U Draw Students of Color to STEM Fields

When **James Chavre** transferred from **Massasoit Community College** to **Columbia University**, he remembered the parting wisdom of elderly relatives in Haiti who had once told him, "If you want to accomplish something, you need to have the heart of a lion." The biochemistry major had heeded their advice, brushing aside discouraging comments from those who said he'd never be accepted to Columbia.

When he returned to Massasoit in 2012 to offer encouragement to prospective transfer students, he repeated the words that had once helped him dismiss the naysayers. "Be lion-hearted," he told students. "Apply to any school you want to go to."

Chavre is a poster child for the success of Massasoit's **Science Transfer Initiative (STI)**, which has led to a remarkable increase in students pursuing science majors. Massasoit's Liberal Arts Transfer—Science (LATS) degree program is now one of its fastest-growing, increasing in size by 35 percent since last year alone, with a five-fold increase in students in just four years. Forty-four percent of LATS students are under-represented minorities; an impressive 64 percent are female. STI has received the **Department of Higher Education's @Scale Endorsement** for serving as a model science, technology, engineering and math (STEM) program that can be replicated at other campuses. This year STI expanded to **Bristol** and **Cape Cod Community Colleges**.

"As a member of the faculty, I'm very proud of the contributions we've been able to make to the success of STI," says Biology Professor **Gilles Bolduc**. "The division of Science and Mathematics faculty are devoting many hours of advising to help students form career choices and find the best path

to reaching their goals. Massasoit also provides undergraduate research opportunities for dozens of students, with faculty serving as summer research mentors. We believe that the advising and exposure to research have resulted in the success we see, with the majority of these students either transferring to a four-year college or finding employment in a STEM-related field."

At nearby **Bridgewater State University**, the focus is on training the next generation of science teachers—and making sure that students of color are well-represented within their ranks. Minority representation in BSU's biology, chemistry, and computer science programs increased from 14 percent in fall 2008 to more than 20 percent in fall 2012 (similar to growth seen during the same time period at **Fitchburg State University**, **Framingham State University** and **Massachusetts College of Liberal Arts**).

In August, Bridgewater was awarded a \$1.5 million **National Science Foundation** grant to recruit and develop talented undergraduate science majors to become elementary and secondary science teachers in high-needs districts. The **Massachusetts Science Teachers Scholars Program** will include Massasoit Community College and four area school districts as partners.

"With this grant we will place a particular emphasis on training students of color as science teachers," says Bridgewater President **Dana Mohler-Faria** after receiving news of the award. "The addition of our new science center, combined with this focused effort, I believe, will enable us to train and graduate more science and math majors and students of color over the coming years—in a region where less than 7 percent of the population and 5 percent of the college-age population are people of color." ■

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**Putting the Data to Use.** “We were aware of the gap (in nurses with BSN degrees),” says **Neal DeChillo**, Dean of the College of Health and Human Services at **Salem State University**. “But to have the whole picture from the state was new.”

Salem’s 2011 graduation data showed the university to already be in alignment, even slightly exceeding the state’s new target for BSNs. But year by year the need for graduates would ramp up sharply. Salem would need to graduate nearly 100 additional BSN candidates by 2020, raising questions about program capacity and funding.

“What we’ve asked campuses to do is incorporate the state plan into their own strategic planning, with the understanding that we will bring that back to the **Board of Higher Education** so that the Board will understand the implications,” Cedrone has promised. “Are there capital implications, a greater need for faculty? What are the barriers to a strategic plan like this and how can the campuses and the Board consider those challenges?”

“The state plan helped us clearly see our role in educating the number of nurses necessary to meet the future needs of the Commonwealth,” says **Patricia Meservey**, President of Salem State University. “We know we will have to be innovative and aggressive without compromising quality.

We are dedicated to expanding our programs, collaborating with health care and educational partners, and finding ways to meet that need.”

Salem’s well-established partnerships with area hospitals will

“We’re engaging industry leaders in what’s happening on the macro level and then drawing out of that what it might imply for workforce strategies. It gives us a better sense of what we need to do at our campuses and in employer communities,” says Cedrone.

be a critical asset in meeting the statewide goal of a better-educated nursing workforce. **Winchester Hospital** asked Salem to run an RN-to-BSN program for its nurse employees; the University is in early discussions with **North Shore Medical Center** and **Spaulding Rehabilitation Hospital**, both in Salem, to set up similar programs.

In Central Massachusetts, where only 52 percent of incumbent nurses are trained at the baccalaureate or higher level, **Worcester State University** has partnered with **UMass Memorial Medical Center** to help hospital RNs earn their BSN degrees. The partnership, partially funded with a **Nursing Education Redesign**

grant from the Department of Higher Education, has exceeded its student enrollment goals and is expanding to other area hospitals that are part of the UMass Memorial Health Care system. Students take classes where they work and also

at Worcester State. Their classes are usually held at night, and hospital managers know not to schedule them for the nights they have to be in class. Additionally, nurses can access a tuition reimbursement program which helps to defray costs.

“Worcester State has been awesome in supporting our nurses, some of whom haven’t been to school in 30 years,” says **Cathy Jewell**, Associate Chief Nursing Officer at UMass Memorial Medical

Center. “For us, it’s a commitment to the growth of our staff. We’re being a little self-serving because I need nurses who have their BSNs so they can go get their master’s. I need someone to succeed me; I’m not going to work forever! I think the hospital and our patients will get more out of this in the long run.”

**Additional Pathways.** Running parallel with the push to educate incumbent nurses is an equally important effort to smooth the transfer pathway from two-year to four-year nursing programs. Salem State is partnering with **North Shore Community College** on a new RN-to-BSN program. After students complete their associate’s degree →



## Bridgewater State University Uses Assessment Data to Improve Science Learning



BRIDGEWATER

STATE UNIVERSITY

**Bridgewater State University** is earning an A for effort in its bid to reduce the number of students who fail or withdraw from science classes. In 2010, the campus won a \$1 million, five-year grant from the **National Science Foundation** to boost learning outcomes in math and science courses. The project, called **STREAMS (Student Retention Enhancement Across Mathematics and Science)** uses Structured Learning Assistance (SLA) to improve learning outcomes in courses with high failure rates. The STREAMS model employs undergraduate peers to lead inquiry-based learning activities in introductory science courses. Physics and chemistry professors have also reduced class lectures in favor of more interactive learning techniques.

The investment in this pedagogical approach appears to be paying off. The percentage of students earning D's, F's or withdrawing from Physics 244, for example, declined 23 percent after the introduction of the new learning supports. Similarly strong declines in failure rates were seen in Chemistry and Biology classes. Student retention in physics, biology and chemistry, combined, increased from 63 percent to over 72 percent in a single year.

Bridgewater recently won a FY14 **Vision Project Performance Incentive Fund** grant to expand the STREAMS project to seven other departments, using assessment data to identify high failure rates and map a plan for structural change in teaching and student support. ■

“To give LPNs credit for their education and thus not require them to repeat content they have already mastered has long been a dream of mine,” says Linda McKay, chair of Fitchburg State’s nursing department.

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in nursing, they will complete an additional 25 credits at North Shore and then 30 credits at Salem. This program, also launched with a Department of Higher Education Nursing Education Redesign grant, promises a “seamless progression” between the two campuses and is expected to save students an average of \$3,000.

“Most (nursing) facilities want a BSN or higher, and I don’t want to be limited down the road,” says 35-year-old **Ryan Wilkins**, who graduated from North Shore last spring and was immediately hired as an RN at a Peabody hospital. “This program allows me to get some of the prerequisites out of the way but not feel the pressure of having to take four courses while also holding down a full-time job. And the beauty of it is, my employer will pay for my education from here on out!”



**Advancing by Degrees** Commissioner Freeland joins Fitchburg State University President Robert Antonucci and students enrolled in Fitchburg's LPN-to-BSN program.

Worcester State has teamed with **Fitchburg State University** to develop curriculum for a regional LPN-to-BSN bridge program. Fitchburg took the lead with **Montachusett Regional Vocational Technical High School** to create an accelerated pathway for LPNs to achieve their baccalaureate degrees. **Assabet Valley** and **Bay Path** voc-tech schools later joined the effort, and nursing faculty from the five institutions worked together to develop curriculum. The first cohort of 18 students has received 18 credits for their LPN education, dramatically shortening their time to degree.

“To give LPNs credit for their education and thus not require them to repeat content they have already mastered has long been a dream of mine,” says **Linda McKay**, chair of Fitchburg State’s nursing department. “We’ve had prospective students come from

quite a distance, telling us that if accepted they are going to move to Fitchburg to do the program.”

**Drawing Recognition.** McKay and colleagues have been invited to present their model at the National League for Nursing Education Conference in Washington this fall. “We are very excited and extremely proud” to be asked to present, McKay says.

Statewide, a new nursing education transfer compact is being designed to create a universal pathway from two-year to four-year nursing programs. The compact will help ensure that incumbent nurses with associate’s degrees don’t have to retake—and pay for—courses when they enter a university nursing program.

The strategic workforce plan for nursing, just barely a year old, has been so well received that it is now being used as a model for planning

in information technology. IT leaders are also grappling with rapid industry changes and the need to keep employees ahead of the curve.

“To me, that’s what is so different about how we are approaching workforce development today,” says Cedrone. “We’re engaging industry leaders in what’s happening on the macro level and then drawing out of that what it might imply for workforce strategies. It gives us a better sense of what we need to do at our campuses and in employer communities. What are the supports and inducements to help incumbent workers advance in their education? We need to be in constant dialogue with industry leaders to answer such questions. We’re not just a supplier. We’re a strategic partner. Big difference.” ■



## STUDENT SPOTLIGHT

### Edilena Florentino: Local Entrepreneur Who Gives Back

When **Springfield Technical Community College (STCC)** nominated student **Edilena Florentino** to receive the **Department of Higher Education's 29 Who Shine** award, she had no idea that the honor would land her on national television in her native Brazil and position her to help other budding entrepreneurs through a forthcoming advice column in the Boston-area *Brazilian Times*. Since graduating with STCC's class of 2013 and winning the *Shine* award at the State House last May, this marketing major and small business owner has been fielding phone calls and letters from admirers who hope to learn the secrets of her business savvy. Florentino's Springfield cleaning company has more than doubled in size, with added employees and large contracts at area hospitals, clinics, and companies. She is the recipient of a regional **Grinspoon Award** for entrepreneurship and eager to help others learn from her success.

"I have helped two of my employees open their own businesses," she notes with pride. "I like to do a lot of community service!"

Edilena Florentino's journey to STCC began in 2006. At 23, she left her native Brazil to complete an English language course in Florida. Moving to Massachusetts, she enrolled in STCC's English as a Second Language (ESL) program and then transferred to the Business Administration program. Her dedication to service inspired her to found a non-profit organization in Springfield to offer free classes, legal assistance, and counseling to help Portuguese-speaking families. In addition, she has served as a volunteer for the **National Psoriasis Foundation** since 2009.



**Shining Example** 2013 *29 Who Shine* honoree Edilena Florentino credits STCC with giving her "everything" she needed to launch her business.

Even though she has transferred to **Western New England University**, where she is enrolled in a five-year program to earn a bachelor's and then an MBA, Florentino continues to serve as a role model for STCC students.

"STCC gave me everything," she says. "When I started my company all my professors were working together to help me grow, to increase my net worth, to help me learn everything I needed to know to be a successful entrepreneur. The marketing department even used my company for a class project to help me build my website. I want to give back what was given to me." ■

## Bunker Hill Fills Employer Needs

Last spring when **Bunker Hill Community College** was choosing a new president, the director of a Boston industry group called it “one of the most important hiring decisions that will be made in the city this year.”

The observation (about the soon-to-be hired **President Pam Eddinger**) reflects the emergence of Massachusetts’ largest community college as a workforce development powerhouse. Fifty percent of degrees and certificates awarded by Bunker Hill last year were in high-demand fields: health care, business and computer technology. The College’s production of these much-needed graduates has increased 43 percent since fiscal year 2006, and college data show strong retention and completion in health care programs for students regardless of race, gender or income.



Bunker Hill has identified the need to “close workforce gaps” as one of its seven strategic goals for 2010–2013.

Bunker Hill administrators believe their success in increasing the number of students prepared for jobs in key industry sectors begins before a student even arrives on campus. The College uses math boot camps, summer bridge programs and a dual enrollment program to help high school students better prepare for college-level work, especially in math.

“In the health and IT programs, the math is a critical component,” says **James Canniff**, Vice President of Academic Affairs and Student Services. “These initiatives are allowing students to get into the high-demand programs whereas, before, math would have been a barrier for many of them to get in.”

To encourage students of color to get a jumpstart on entry to the competitive nursing field, Bunker Hill sought a **Vision Project Performance Incentive Fund** grant to sustain its **Students Taking Action for Nursing Diversity (STAND)** program. STAND is part of a multi-state “Pathways to Prosperity” network, which seeks to create specific career pathways from high school to college. Through STAND, students of color are able to take dual enrollment courses to complete a Certified Nurse’s Aide (CNA) program, beginning in 11th grade. The College has set specific targets for the number of students it hopes will complete the pathway in the next three years. The potential payoff for future employers: a cadre of culturally competent, well-trained nurses from diverse backgrounds.



**Where the Jobs Are** Recent BHCC graduate Ana Maria Ovalle at work at an internship with Millenium in Cambridge, Massachusetts.

Another key strategy is a recent requirement that all students in Bunker Hill’s professional studies programs enroll in a freshman seminar, or learning community. Each learning community is comprised of 20 students, a faculty advisor, a success coach, and a peer mentor. Retention rates for Bunker Hill students in learning communities are consistently 10 percent higher than for the general student population.

“We turned our introductory courses, like Intro to Business, into these freshman seminars,” says **Bogusia Wojciechowska**, Dean of Professional Studies at Bunker Hill. “The students are taking the seminar as part of their major; they have an opportunity to start on their career track. This gets them into the department from the first semester they are here.”

But getting students into the workplace—either directly, or after they complete further studies at another college or university—is the real goal. Bunker Hill’s Computer Information Technology Department offers dozens of “stackable” certificates that allow students to literally stack credits into a full associate degree. The College’s IT curriculum is delivered through the academy learning systems of major companies such as Cisco.

“All of our curriculum is mapped to industry specifications,” says **Michael Puopolo**, Chair of Bunker Hill’s Information Technology department. “So students are able to tell prospective employers that they passed both the Bunker Hill certification and the industry certification.” ■

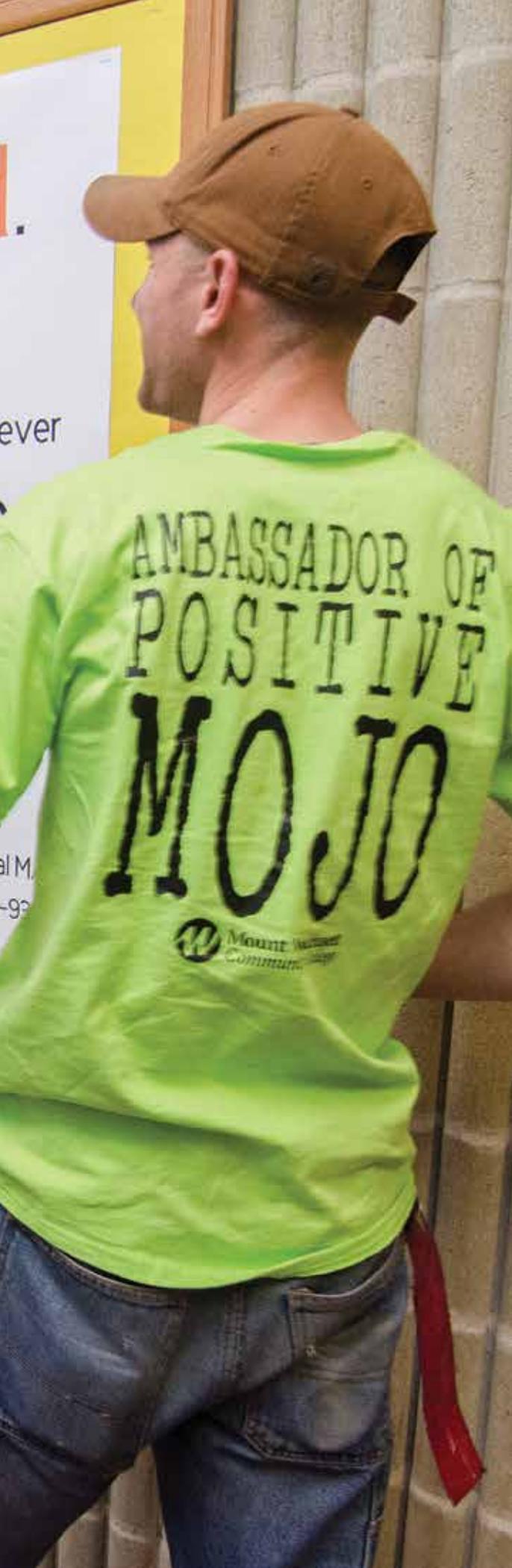


change your **world**  
start here.

Mount Wachusett Community College is hosting our first-  
**United Way Day of Caring**  
featuring united way **youth venture**  
Kylee's Kare Kits for Kidz  
Thursday, September 19, 2013  
Shift 1: 9:30-10:45 a.m. • Shift 2: 12:30-1  
Help Kylee prepare 16,000 packages for young people in need of food  
To sign up, contact Kathleen Craigen, room 192: [kcraigen1@mwcc.edu](mailto:kcraigen1@mwcc.edu) (508) 630-  
6300

Mount Wachusett Community College logo and other graphics are visible on the poster.

**Learning to Lead** Civic learning and participation are integral to the student experience at Mount Wachusett Community College. Learn more on page 60.



## KEY OUTCOME **5**

# Preparing Citizens

The mission of public higher education is not focused solely on preparing the Commonwealth’s future workforce. The overarching goal of the Vision Project is to produce “the best-educated citizenry and workforce in the nation”—with the word citizenry placed first for decided emphasis. Without well informed, deeply engaged citizens, our democracy is in peril.

Across the U.S., higher education is reasserting its responsibility to prepare students for civic responsibilities—as an integral and essential component of a liberal arts education—and Massachusetts is at the forefront of this effort.



# TURNING THE WHEELS OF CHANGE

Mount Wachusett's Civic Learning Mission

**When Mount Wachusett Community College graduate Neisha Boulanger crossed the stage** last May to receive her associate's degree in human services, she was wearing more than a cap and gown and a big smile. Around her neck was a heavy, bronze medallion signifying her achievement in the area of civic learning and engagement. Watching with pride was **Fagan Forhan**, the Mount's Director of Experiential Learning Opportunities & Civic Engagement, for whom Neisha logged 1700 hours as an **AmeriCorps** volunteer. In that capacity, Neisha helped design and staff a new **Students Serving Our Students Office (SOS)**, which trains students to help peers through crises with housing, jobs and health care. She also served as an intern for the **United Way's Youth Venture Program**, a national program developed

at the Mount, and as a parent volunteer for the **Junior ROTC** program at a local vocational technical high school—all while working towards her degree and raising three children.

"I have such pride and astonishment in our students," Forhan reflects, "Some of them do 100 to 150 hours of service learning over the course of a semester, and I watch them establish their own community connections as a result."

For Forhan and others who share **President Dan Asquino's** commitment to civic learning—forged in the aftermath of the 9/11 terrorist attacks—those connections suggest a deeply practical purpose to the work of preparing citizens. With more

than 80 percent of the Mount's students destined to remain in Central Massachusetts, the campus has felt a responsibility to educate them about the workings of government and the importance of community engagement, so that, in Forhan's words, "when they need to turn those wheels of change, they know where to go and how to do it."

The knowledge, skills, values and competencies of a civically minded person," Fagan believes, "are things that employers speak to as desirable qualities in a worker. I've had some of our local employers tell me that they're happy to teach our students how to build the widget, but that they need them to come in already knowing how to speak to people who are different than them, and



**Change Makers.** Mount Wachusett students volunteer for the College's first-ever "Day Of Caring" in September 2013.

Students' service learning hours are tracked and cumulatively totaled on their transcripts, with the hope that such community activities will help set them apart in college admissions and job interviews.

"It's not just the human services students who do service learning," Boulanger asserts. "Our automotive students also report their hours. Everyone wants the recognition."

Mount Wachusett Community College is receiving recognition for its groundbreaking work, in partnership with **Fitchburg State University**, to use the **American Association of Colleges and Universities'** LEAP VALUE rubrics to develop a new means of evaluating and assessing student work in the area of civic learning. This fall the campuses will utilize the new rubric as a tool to begin to develop assignments and prompts that will ensure that civic learning is incorporated within curricula.

"It's easy to see how a student has mastered Algebra I," Forhan observes. "It's not so easy to gauge whether a student is ready to challenge injustice or find its root causes. So we are working to empower not just a generation, but all learners, to be able to become active and contributing citizens of our communities, of our country and of today's global society." ■

how to understand the impact of the work within the context of a larger community."

Civic learning at the Mount, while not unique among the state's community colleges, is especially pervasive at the campus, which serves over 11,500 students. Faculty receive stipends and support for their efforts to infuse civic learning in their curriculum. Service learning is required in many of the Mount's career-focused programs, such as nursing and dental hygiene.

A pilot study found that Mount Wachusett students enrolled in courses with a service learning component had a 26 percent higher retention rate (meaning that they were more likely to return to the college the following semester) than students enrolling in similar courses without a service learning component. The study also showed higher course completion rates for service learners.

**“**A pilot study found that Mount Wachusett students enrolled in courses with a service learning component had a 26 percent higher retention rate than students enrolling in similar courses without a service learning component.



## PREPARING CITIZENS

# A New Mandate for Civic Learning and Action

**Massachusetts is the first and only state** to require that its public colleges and universities measure and report the civic learning and engagement of all students. In 2012, the **Board of Higher Education** added civic learning to the Vision Project's list of key outcomes, in response to criticism from the public higher education community

regarding “a comprehensive and contemporary approach to civic education and engagement programming that takes into account all aspects of the student experience.” Its members met during the 2012–13 academic year to create a working definition of civic education, an inventory of current civic education initiatives, and a set of proposed metrics by

“Our colleges and universities are uniquely positioned to renew our civic vitality and provide meaningful opportunities for students to engage fully and enthusiastically as citizens,” says Chairman Charles Desmond. “I believe this is the most important work that we can do in higher education.”

that while the Vision Project included specific references to workforce development, there was not a parallel emphasis on the need to develop a well-informed and engaged citizenry.

“I was very appreciative of this critique,” notes **Higher Education Commissioner Richard Freeland**.

“By placing this work at the center of the Vision Project and in keeping with the goals and promise of liberal education, Massachusetts public higher education is affirming its role in nurturing a responsible democracy.”

The Commissioner appointed a study group to advise the Board

which to measure and report student and institutional outcomes.

The Study Group's recommendations will be presented to the Board of Higher Education in December.

“We are at a moment in history when public discouragement with the democratic process appears to be at an all-time high,” says **Chairman Charles Desmond**. “Our colleges and universities are uniquely positioned to renew our civic vitality and provide meaningful opportunities for students to engage fully and enthusiastically as citizens. I believe this is the most important work that we can do in higher education.” ■

## Southeastern MA: Three Campuses, One Mission to Serve Community



**Relaying Their Support** Students, alumni, faculty, staff and families of **UMass Dartmouth** prepare to start a 55-mile Torch Relay from Dartmouth to Boston to support the **OneFund**.

“It was an easy decision to make service learning mandatory at **Massachusetts Maritime Academy** because the students asked me to make it mandatory. ... One hundred percent of our freshmen now participate in service learning before they can move on to the privileges associated with being a sophomore. But what was interesting is that upperclassmen got such a rush out of the experience helping others that they stayed active in service learning beyond freshman year.”

**ADMIRAL RICHARD GURNON,  
PRESIDENT, MASSACHUSETTS  
MARITIME ACADEMY, 2013 CIVIC  
ENGAGEMENT SUMMIT, UMASS  
DARTMOUTH**

**A Good Fellow** Maurice Cyr, one of nine Massachusetts students named a **2013 Newman Civic Fellow**, staffs the monthly food bank held at the Fall River campus of **Bristol Community College**. Since 2008, the number of hours Bristol students have served in the community has increased 155 percent to 181,413 hours in the 2012–13 academic year.





Meet **"Big Mama"** Researchers at UMass Amherst hold the gecko that inspired a breakthrough super-adhesive product.



## KEY OUTCOME **7**

# Research

The research metrics of the Vision Project are exclusive to the **University of Massachusetts**. The University's R&D expenditures increased from \$587 million in FY2011 to \$598 million in FY2012. In FY2011, these expenditures grew at a slightly faster rate overall—8.1 percent—than the national university growth rate of 6.3 percent.

While the University's average licensing income declined from \$50 million in 2009–11 to \$44 million in 2010–12, UMass ranked 11th on a list of 26 U.S. universities with the highest licensing revenue for every \$1 million it spent on research, according to an analysis of data over a 20-year period from the Association of University Technology Managers (AUTM). UMass also had the best record of any university in New England.

- **For more detailed information on UMass research outcomes, please see the *FY2012 Annual R&D Expenditures Report* available at [www.umassp.edu](http://www.umassp.edu)**



### Research That Sticks.

Cracking the code of the gecko paw was key to creating the Geckskin™ super-adhesive.

## RESEARCH

# UMass Amherst's Little Lizard That Could

CNN has named Geckskin™, the super-strong adhesive developed at UMass Amherst by an interdisciplinary team of scientists, as one of the top five science breakthroughs of 2012 and *Bloomberg News* has named it one of “14 Smart Inventions Inspired by Nature” in 2013.

Created by Professor of Polymer Science and Engineering **Alfred Crosby**, Professor of Biology **Duncan Irschick**, and doctoral candidate **Michael Bartlett**, Geckskin™ exhibits such an adherent strength that a strip the size of an index card can support up to 700 pounds.

Both designations focus on the Geckskin™ project as a herald of biomimetic design: innovation that takes its inspiration from structures in nature. The CNN list features Geckskin™ as one of several innovations with great potential to have an impact on the business world, alongside gene therapy, a one-carbon-atom sheet that could eventually replace rare-earth metals, “augmented reality” smart phone applications, and re-visioned automobile drivetrains.

Geckskin™, the development of which was funded partially by the **U.S. Defense Research Projects Agency**, is an example of a key UMass priority: sponsored research that leads to discoveries that will then have an application in the world outside of the academy.

The researchers worked together to crack the code of the gecko paw, which can support a great weight proportional to the size of surface contact and peel off and reattach without leaving residue. The secret of the strength of a gecko hold lies in the lizard’s tendons, which connect directly to its skin. The team created a synthetic tendon in the Geckskin™ polymer, and then engineered the fabric to drape over and into miniscule irregularities on surfaces.

The product is shown mounting flat screen televisions to walls and other such practical applications, yet that is just scratching the surface of its imaginable uses. Geckskin™ can be used anywhere adhesive products

are used in everyday life—and also in places where they were previously unable to be used.

Geckskin™ will have prosaic uses such as adhering objects to walls and ceilings, but also opens up entirely new possibilities for human use, such as serving as an alternative to ladders in rescue operations or a substitute for stitches in medical applications.

Over the past three years, Geckskin™ has been perfected, pending patent and prepared for commercialization. Crosby, Irschick and others have formed Felsuma, LLC to commercialize this technology. Felsuma has an option to license the intellectual property portfolio relating to this Gecko-inspired adhesive system. “Our design for Geckskin™ shows the true integrative power of evolution for inspiring synthetic design that can ultimately aid humans in many ways,” says Irschick. “It’s definitely an exciting time. All possibilities are open.” ■

# UMass Medical Discovery prompts new hope for pediatric HIV cure

**UMass Medical School researchers are part of a team** that recently announced a dramatic discovery of the first functional HIV cure in an infant.

“We never thought this was possible,” says **Katherine Luzuriaga, M.D.**, professor of pediatrics and molecular medicine, who worked with doctors from the **Johns Hopkins Children’s Center** and the **University of Mississippi Medical Center** on the stunning case of a Mississippi baby who, given very early and aggressive antiretroviral therapy, appears to have cleared most traces of HIV.

The breakthrough, announced in March, received international attention as only the second well-documented case of a cure, out of the more than 70 million cumulative HIV infections. It is the first time the infection was cleared with currently available medications.

“Up to this point, we believed that all children who were treated for HIV were sentenced to a lifetime of treatment,” says Dr. Luzuriaga, a nationally known pediatric HIV specialist who has spent more than two decades studying the disease at UMMS. “This case suggests that if we can treat early enough, we may be able to reduce the size and the extent of those viral reservoirs to the point that we may someday spare children a lifetime of therapy.”

The baby in this case, born to an HIV-infected mother who did not have prenatal care, received therapeutic antiretroviral treatment beginning 30 hours after birth. That therapy continued until about 18 months of age, when the child was lost to follow-up and off the drugs. Months later, the child returned to the hospital and underwent repeated standard blood tests, none of which detected HIV presence in the blood. Tests for HIV-specific antibodies—the standard clinical indicator of HIV infection—also remained negative throughout.

**Deborah Persaud, M.D.**, of Johns Hopkins Children’s Center and Luzuriaga headed a team of laboratory researchers on the case, funded by the **National Institutes of Health** and the **American Foundation for AIDS Research (amfAR)**. **Hannah Gay, M.D.**, of the University of Mississippi Medical Center treated the baby. The investigators say the prompt administration of antiviral treatment likely led to the infant’s cure by halting the formation of hard-to-treat viral reservoirs—dormant cells responsible for reigniting the infection in most HIV patients within weeks of stopping therapy. ■



**Breakthrough Researcher** Katherine Luzuriaga, M.D., is part of a team that discovered a treatment for pediatric HIV using currently available medications.



## RESEARCH

# UMass Lowell is home to advanced robotics-testing center

Robots run obstacle courses, climb through a honeycomb of compartments, test their vision and soak themselves in simulated rainstorms. Those are just a few of the challenges at the **New England Robotics Validation and Experimentation (NERVE) Center at UMass Lowell**, one of the nation's most advanced robotics-testing facilities.

Designed to fuel robotics research and development in all of the New England states, the NERVE Center, which opened in February, serves what is already a \$1.9 billion industry in Massachusetts alone, according to a recent **Mass Technology Leadership Council** report.

The center features a dozen courses that test the strength, design and functionality of robots using wood, sand, gravel and water to simulate conditions including rough terrain, rubble and inclines, even those a robot would face if deployed inside a collapsed building on a search-and-rescue mission.

iRobot of Burlington was the first company to become a member of the center, citing its ability to rigorously test robots in real environments. The center supports new technology in fields from defense and health care to manufacturing and marine science that will spur job and other economic growth in the region. More than 150 robotics companies are based in Massachusetts, 60 percent



**Testing the Terrain** A robot on a testing course at the NERVE Center, one of only three robotics-testing facilities in the U.S., and the only one in New England.

of which are less than 10 years old and have grown employment 39 percent since 2008.

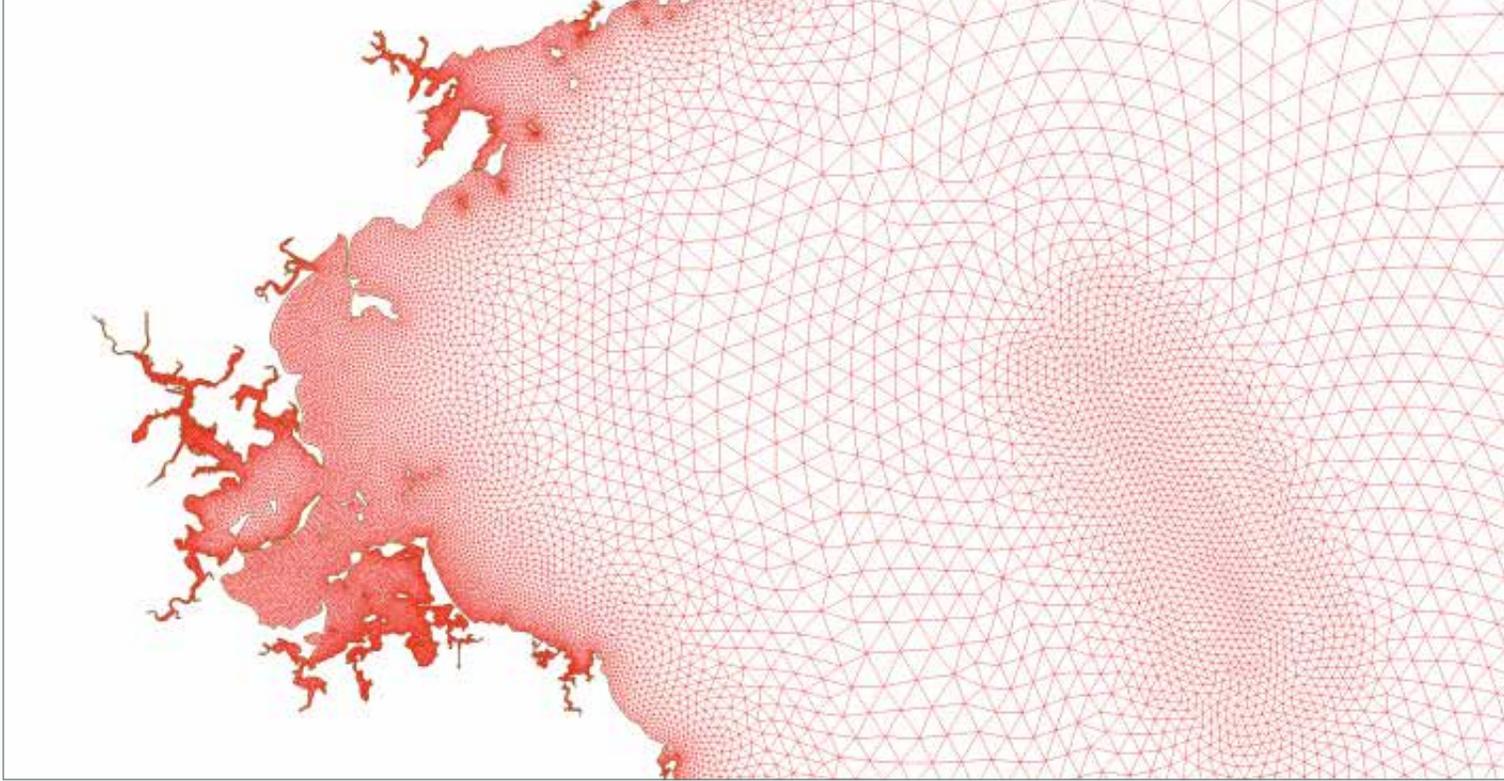
The only robotics-testing facility in the Northeast and one of only three in the nation, the center was developed in collaboration with the **U.S. Department of Commerce's National Institute of Standards and Technology (NIST)** and will cut development and other costs for New England robotics companies and academic researchers.

"Before the NERVE Center, researchers who wanted to test their robots needed to travel to Maryland or Texas. This center is within an hour's drive of many of the companies and universities in the regional robotics cluster, which allows more frequent testing during development, leading to improved systems and faster design cycles," says **Holly Yanco**, NERVE Center director and

professor of computer science at UMass Lowell.

"Through the work of talented faculty led by Prof. Yanco, UMass Lowell has established itself as a leader in research in cutting-edge fields like robotics," says UMass Lowell **Chancellor Marty Meehan**. "The NERVE Center will provide opportunities for students to get hands-on experience in a field that holds tremendous promise, from creating and sustaining jobs to solving problems and enhancing lives."

Students in Yanco's Robotics I course last semester built a Mars rover-style robot and tested it at the center during its development. The rover captured first place in a national **NASA**-sponsored contest that required the robot complete challenges on a course in Houston while being controlled remotely by students at the center in Lowell. ■



**New Model** A detail view of one of the Marine Ecosystem Dynamics Modeling Research Laboratory models of Massachusetts Bay.

RESEARCH

# UMass Dartmouth Tracks Storm Surges, Sunken Aircraft

**Dr. Changsheng Chen of UMass Dartmouth's School of Marine Science and Technology is a coastal oceanographer** who leads the **Marine Ecosystem Dynamics Modeling Research Laboratory**, which has developed highly sophisticated ocean models that are being used here in Massachusetts and around the globe.

Dr. Chen and his team, partnering with **Dr. Robert Beardsley** of the **Woods Hole Oceanographic Institution**, have developed computer models to illustrate and predict storm surges along the Massachusetts coastline. Over the years, the model has been used to analyze the impacts of the 2011 Japan tsunami, assist fishermen in

their search for safe and productive fishing grounds, measure red tide, help locate a downed Air France jet in the middle of the ocean, and guide Olympic sailors.

Following the tsunami, Dr. Chen's team determined how the surge of water was able to cause so much damage to the **Fukushima Nuclear Power Plant**, offering lessons on how coastal structures can be protected in the future. The scientists also found that radioactive particles spread through the ocean differently, at varying depths. They estimated that in some cases, contaminated seawater could reach the western coast of the United States in as little as five years.

In the case of the Air France jet, which disappeared on June 1, 2009, in the equatorial Atlantic Ocean en route from Rio de Janeiro to Paris, Dr. Chen's model was used by the Woods Hole Oceanographic Institution, which deployed an autonomous underwater vehicle to find the sunken aircraft nearly two years later, in April 2011.

The team also collaborates with scientists from the **Massachusetts Institute of Technology** and other leading research institutions. The team's work has been funded by the **National Science Foundation**, the **National Oceanographic Atmospheric Administration**, and other agencies. ■



## Photo Credits

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# DATA

## Dashboards

“It would be very easy to cherry-pick data and put the best spin on results that we’re not happy with. But that’s not what the presidents of our public campuses have chosen to do. Through the Vision Project they have shown real courage, acknowledging the improvements that need to be made, rolling up their sleeves, getting the job done. That’s what leadership is all about.”

**MATTHEW MALONE,**  
**SECRETARY OF EDUCATION,**  
**COMMONWEALTH OF**  
**MASSACHUSETTS**

### How does the Massachusetts system of public higher education compare against other state systems in the U.S.?

This section presents the data used to track progress in the key outcome areas of the Vision Project. In line with the goal of national leadership, Massachusetts’ standing is compared to leading states and the national average where available. The data is presented in a series of dashboards; trend data is incorporated where available to show whether Massachusetts is improving in performance, remaining flat, or showing a decline in performance on key metrics.

### How to Read the Dashboards

**Bar Graphs.** Where available, national comparisons are displayed along with Massachusetts’ performance in the central bar graphs.

 = Leading State(s)    = Massachusetts    = National Average

**MA Trend Data.** Where available, analysis of trend data on Massachusetts’ performance, comparing three-year rolling averages, is displayed to the right of the bar graphs.

 = Improving Performance    = Flat Performance    = Declining Performance

**Data Source Acronyms.** A glossary of these acronyms is on page 83.

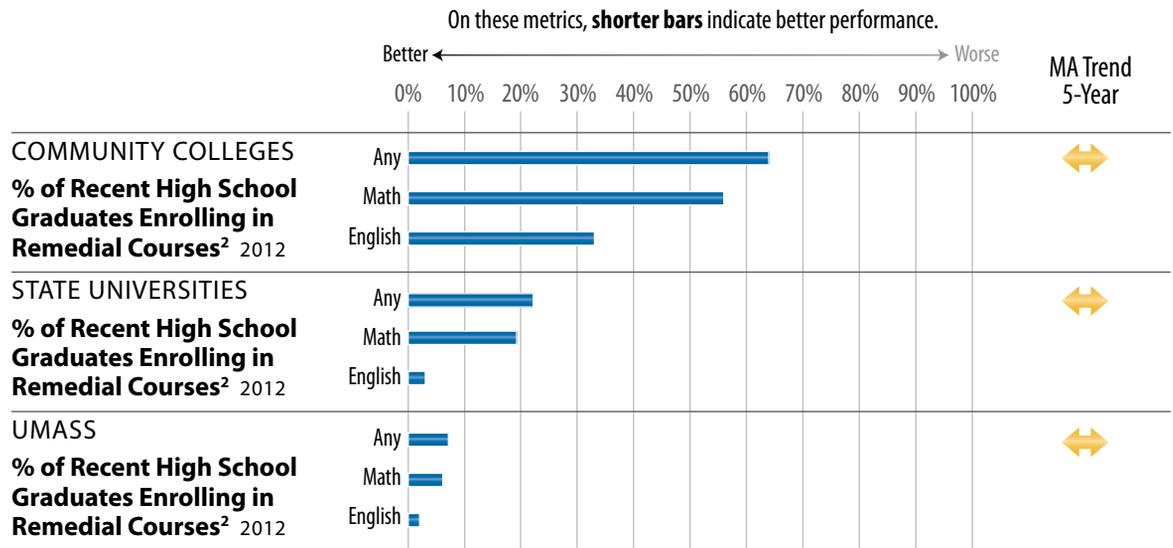
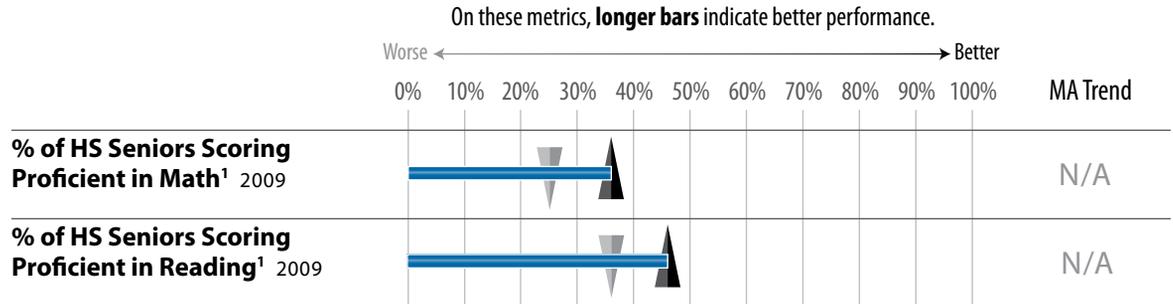
**Other resources,** including supplemental metrics, index of leading states, and technical appendix are available at [www.mass.edu/vpreport](http://www.mass.edu/vpreport)



# College Participation

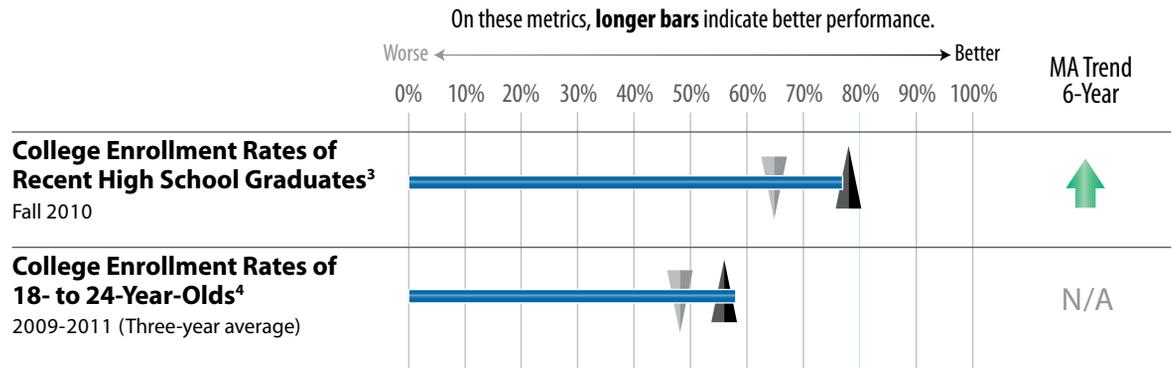
## College Readiness Rates

With national comparisons and trends where available



## College Enrollment Rates

With national comparisons and trends where available



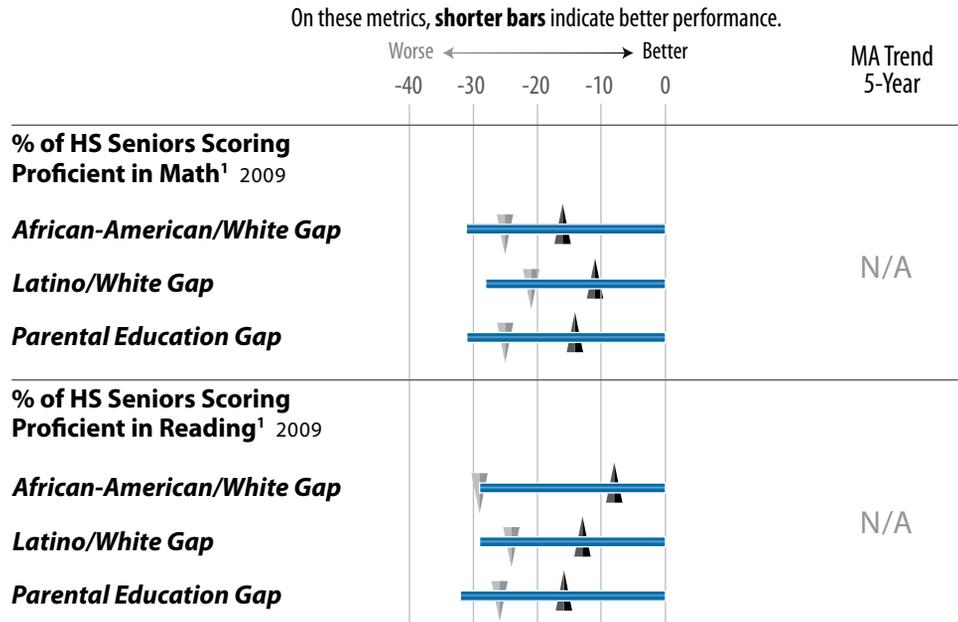
**Bar Graphs** ▲ = Leading State(s) ■ = Massachusetts ▼ = National Average

**MA Trend Data** ▲ = Improving Performance ↔ = Flat Performance ▼ = Declining Performance



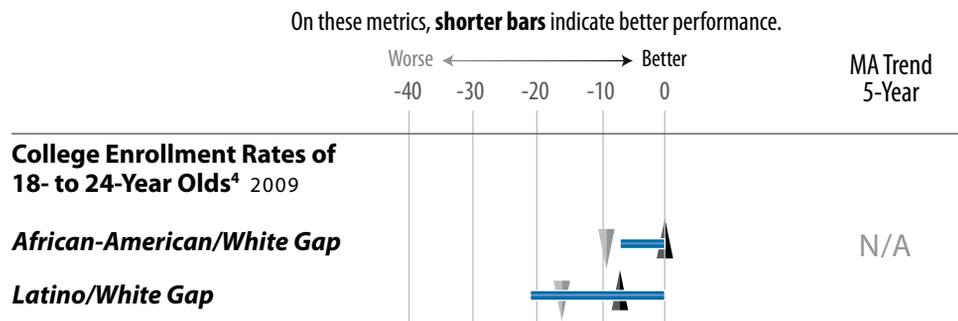
## Gaps in College Readiness Rates (in percentage points)

With national comparisons



## Gaps in College Enrollment Rates (in percentage points)

With national comparisons



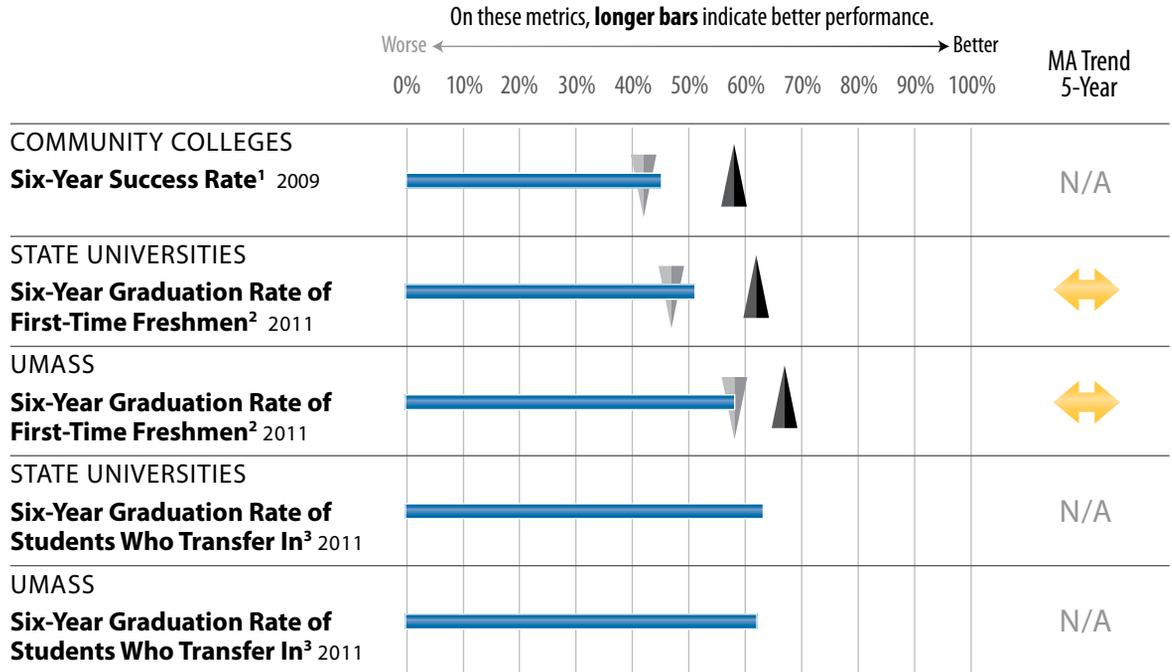
**Cohorts and Sources** • <sup>1</sup> Cohort: Public high school seniors scoring proficient or higher in 2009 (most recent year available; update based on 2013 test results expected in 2014). Source: 12th Grade National Assessment of Education Progress (NAEP), USDOE/NCES • <sup>2</sup> Cohort: First-time, full-time, degree-seeking students who are recent Massachusetts public high school graduates and who enrolled in remedial courses in fall 2012. Trend data spans 2007–2012. Source: MDHE • <sup>3</sup> Cohort: Recent high school graduates (graduated within past year) enrolled anywhere (public or private, in state or out of state) as first-time, degree-seeking students in fall 2010. Trend data spans 2006–2010. Source: USDOE/IPEDS, WICHE • <sup>4</sup> Cohort: 18- to 24-year-olds enrolled in college, at public or private institutions, in 2009–2011. Source: US Census Bureau, 2009–11 American Community Survey



# College Completion

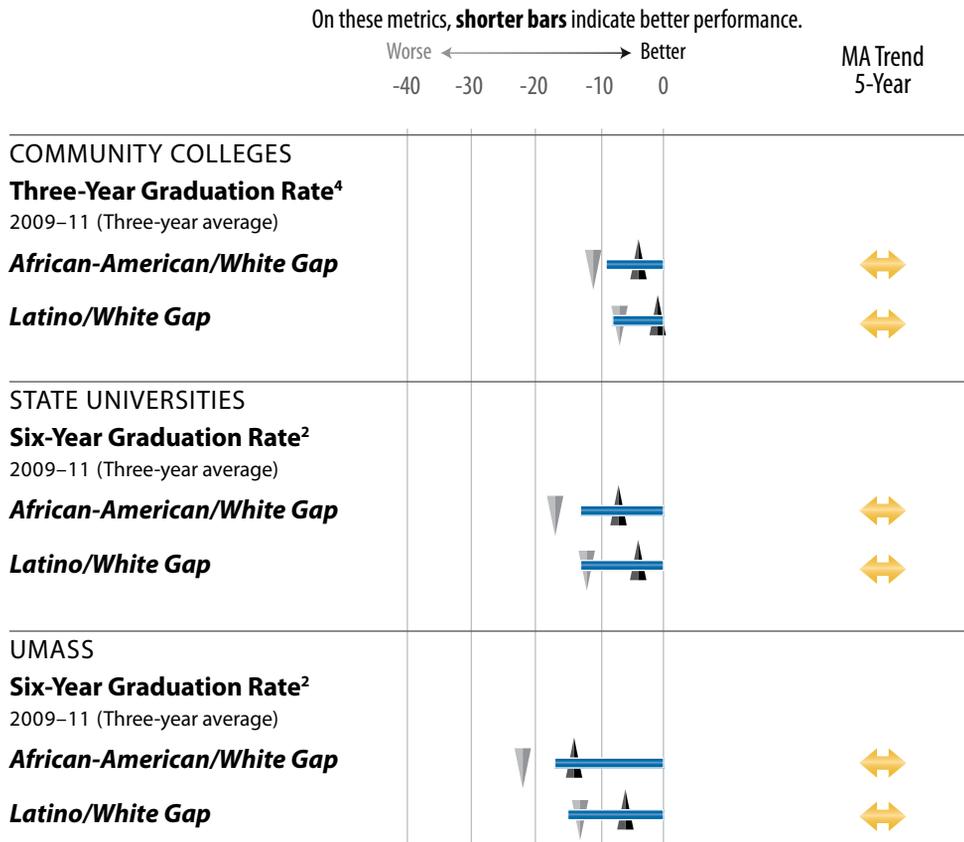
## Graduation and Student Success Rates

With national comparisons and trends



## Gaps in Graduation Rates (in percentage points)

With national comparisons and trends



Bar Graphs ▲ = Leading State(s) ■ = Massachusetts ▼ = National Average

MA Trend Data ↑ = Improving Performance ↔ = Flat Performance ↓ = Declining Performance

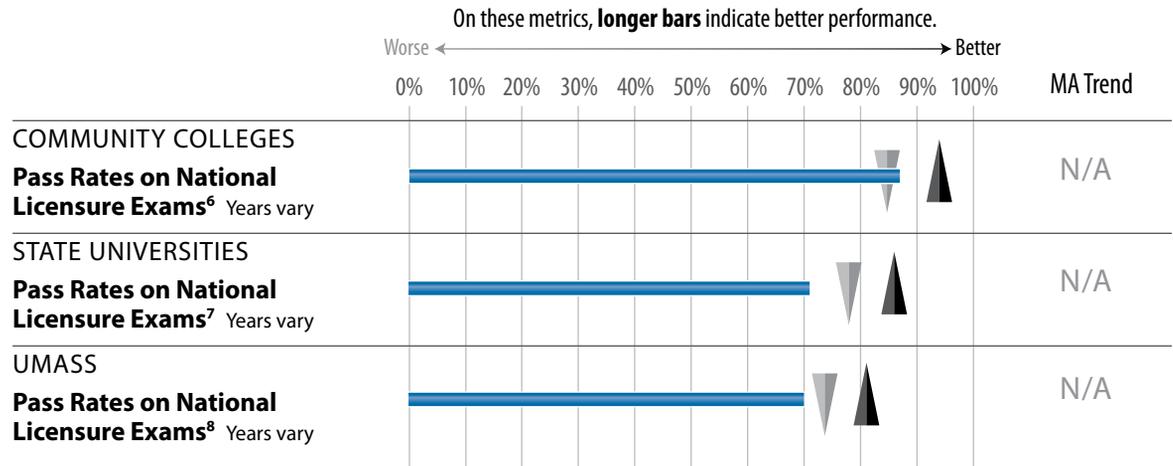
3



# Student Learning

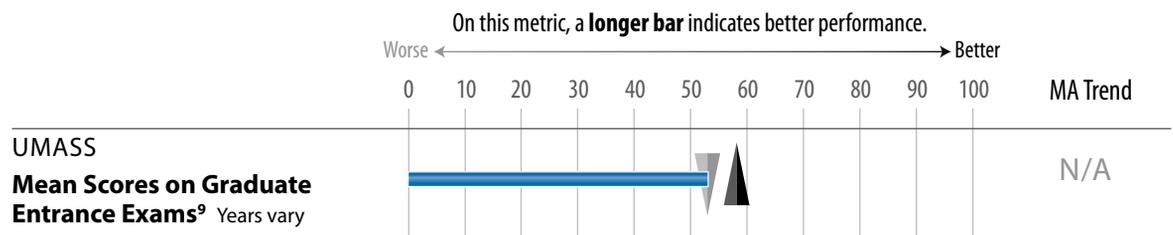
## Pass Rates on National Licensure Exams

With national comparisons



## Mean Scores on Graduate Entrance Exams (normalized to 0–100 scale)

With national comparisons



**Cohorts and Sources** • <sup>1</sup> Cohort: First-time, degree-seeking students entering in fall 2003; measure examines their rate of success by September 2009. Source: MDHE, NSC, Jobs for the Future. This metric recognizes the complex mission of community colleges by including both full- and part-time students and capturing students who, within six years of initial enrollment, earn an associate's degree or certificate, transfer to a four-year institution, or are still enrolled with at least 30 credits earned. Data is only available for nine states; because of the small comparison group, national leadership is equated with the performance of the top state, rather than the top five states. • <sup>2</sup> Cohort: First-time, full-time, degree-seeking students entering in fall 2005; measure examines their rate of graduation within six years of initial enrollment by 2011. Trend data compares three-year averages for students entering fall 1999–2005 and graduating by fall 2005–2011 respectively. Gap analysis is based on three-year average for students entering fall 2003–2005 and graduating by fall 2009–2011 respectively. Source: USDOE/IPEDS • <sup>3</sup> Cohort: Transfer students entering in fall 2005; measure examines their rate of graduation by 2011. Source: MDHE. • <sup>4</sup> Cohort: First-time, full-time, degree-seeking students entering in fall 2006–2008; measure examines their rate of graduation within three years of initial enrollment by 2009–2011 respectively. Trend data compares three-year averages for students entering fall 2002–2008 and graduating by 2005–2011 respectively. Source: USDOE/IPEDS • <sup>5</sup> Tests included: Dental Assistant, Dental Hygiene, Licensed Practical Nurse, Medical Assistant, Occupational Therapy Assistant, Physical Therapy Assistant, Radiation Technologist, Registered Nurse, Respiratory Therapy Assistant, Surgical Technologist. Cohort: Cohorts vary by test; see technical appendix on website for more information. Source: National testing agencies; see technical appendix on website for more information. • <sup>6</sup> Tests included: Certified Public Accountant, Registered Nurse, Social Work BA. Cohort: Cohorts vary by test; see technical appendix on website for more information. Because of the comparatively small numbers of state university students taking these exams, results are aggregated over the most recent three years. Source: National testing agencies; see technical appendix on website for more information. • <sup>7</sup> Tests included: Certified Public Accountant, Registered Nurse, Engineering-FE. Cohort: Cohorts vary by test; see technical appendix on website for more information. Source: National testing agencies; see technical appendix on website for more information. • <sup>8</sup> Tests included: Graduate Record Examination (GRE), Law School Admissions Test (LSAT), Medical College Admissions Test (MCAT), Pharmacy College Admissions Test (PCAT). Cohort: Cohorts vary by test; see technical appendix on website for more information. Source: National testing agencies; see technical appendix at [www.mass.edu/vpreport](http://www.mass.edu/vpreport) for more information.



# Workforce Alignment

## Trends and Projections in College Attainment

*Massachusetts compared with 60% by 2010–2020 Goal*

### How to read these charts:

These projections began with calculations of the number of college graduates that Massachusetts would need each year, beginning in 2010, to meet the goal of 60% of residents holding a college degree by 2020.

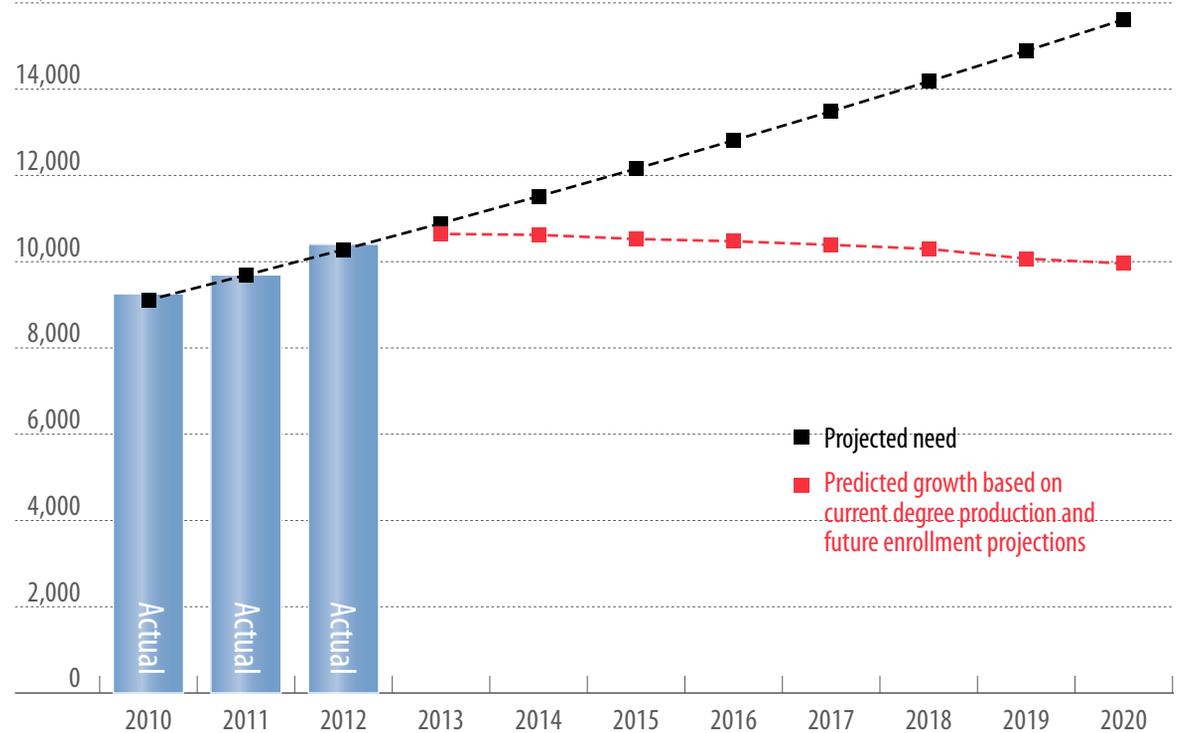
To better align this goal with Massachusetts' specific workforce needs, this total number of graduates was broken out by degree type—associate's, bachelor's, and graduate—using projections from Georgetown's Center for Education and the Workforce.

Because this report focuses on Massachusetts' public campuses, degree totals were then broken out by public and private share using the current split in Massachusetts for each degree type. Only the public share is shown here; the charts do not show the projected need for or growth in private college graduates.

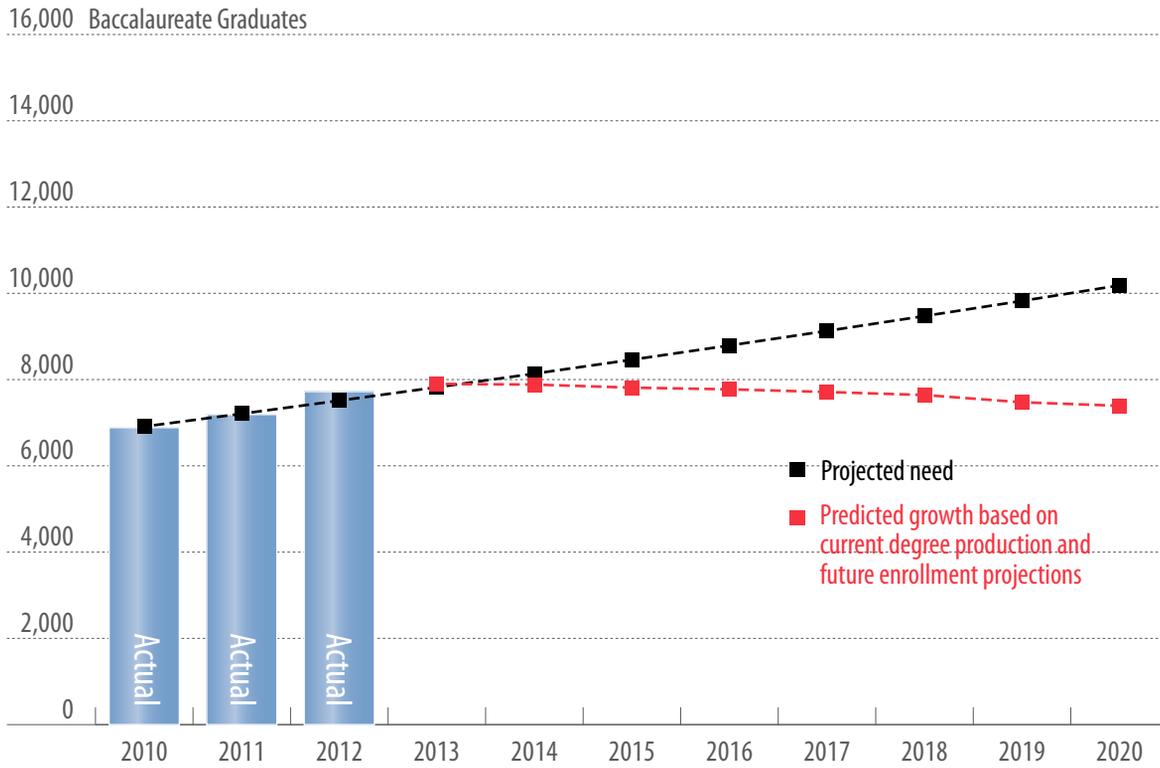
### COMMUNITY COLLEGES

#### Associate's Degrees in All Fields

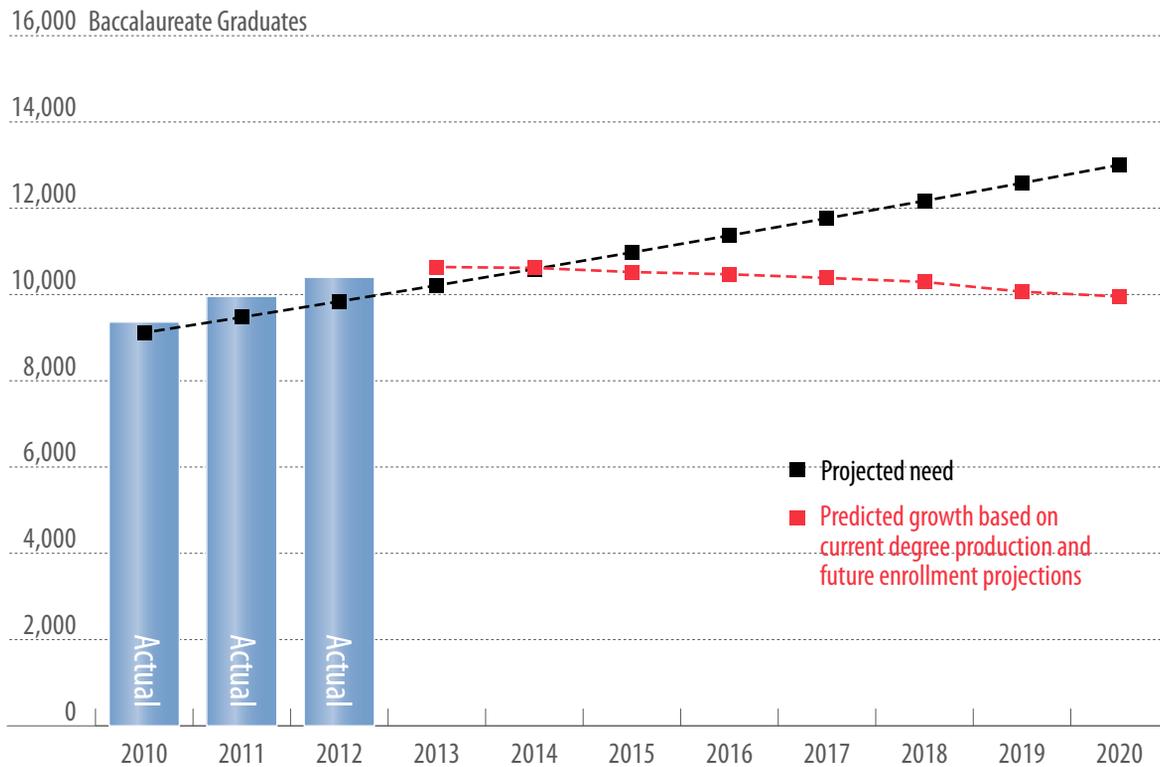
16,000 Associate Graduates



STATE UNIVERSITIES  
**Bachelor's Degrees in All Fields**



UMASS  
**Bachelor's Degrees in All Fields**



Source for all Trends and Projections in College Attainment graphs • MDHE with data from WICHE, NCHEMS, Georgetown Center for Education and the Workforce, USDOE/IPEDS.



## Workforce Alignment (cont'd)

### Projected Level of Alignment in High-Need Fields by 2020

With comparison to 25 most populous U.S. states

#### How to read these charts:

This metric looks at future workforce needs, rather than current job vacancies.

Each chart shows a comparison of the 25 most populous states' projected workforce alignment in high-need fields in 2020.

Each bar represents projections for one state, with its height representing, in the respective field, that state's distance from its needed number of graduates in 2020. Leading States are those with the smallest bars, whether Below or Above, meaning they are projected to be closest to On Target. To the left of the Leading States are the states projected to be progressively further Below Target; to the right, the states progressively further Above.

**High-Need Fields:** While graduates of Massachusetts' public campuses are employed in a wide range of fields, the three fields included in this metric—Health Care; STEM (Science, Technology, Engineering & Mathematics); and Business & Finance—show both a high level of projected growth and a high number of future vacancies. For example, Health Care, STEM and Business & Finance represent 38 percent of projected jobs in 2020 requiring a bachelor degree.

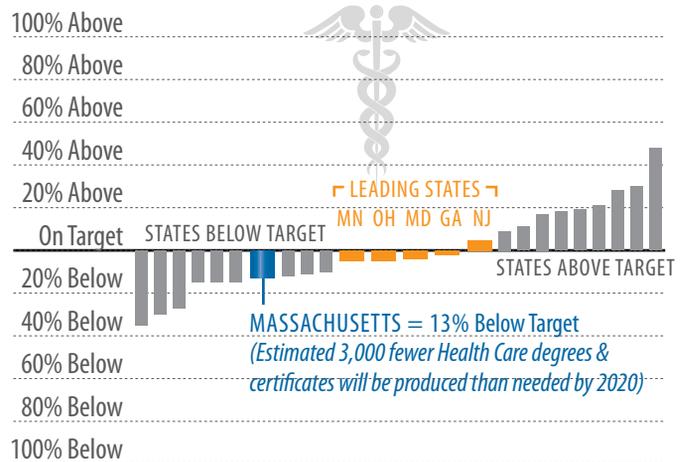
These fields include the four high-growth sectors on which the Patrick Administration's workforce development strategy focuses—Health Care, Life Sciences, IT and Advanced Manufacturing. The latter three are included in the STEM field analysis.

**Comparison States:** For this metric, Massachusetts is compared against the 25 most populous states in the nation, as alignment in smaller states is often skewed to overproduction because of issues of scale.

This metric also looks only at public campuses' contribution to workforce development; the estimated number of future jobs is adjusted for the public higher education share of degrees in that field.

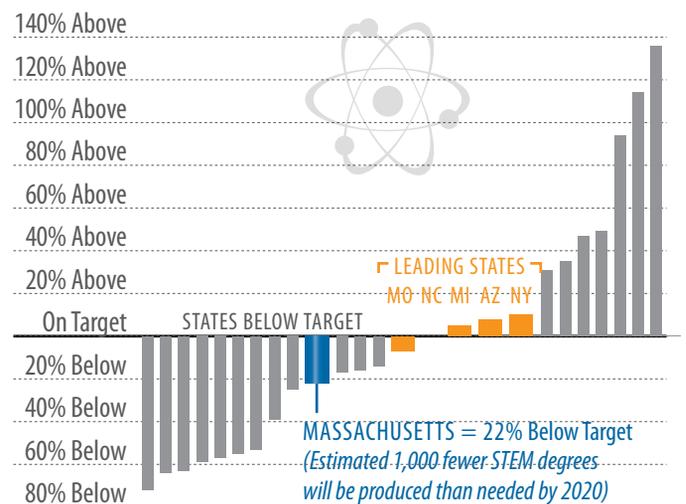
#### COMMUNITY COLLEGES

##### Associate's Degrees & Certificates in Health Care Support

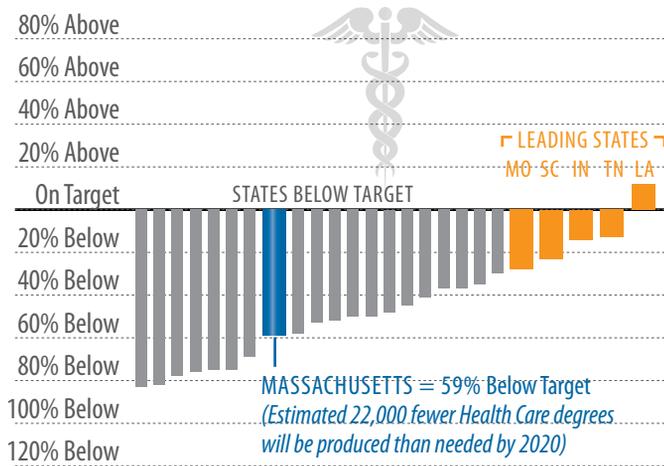


#### COMMUNITY COLLEGES

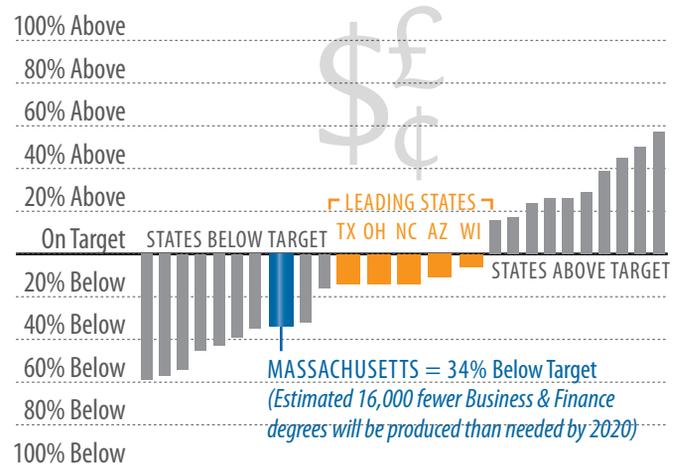
##### Associate's Degrees in STEM Technician Fields



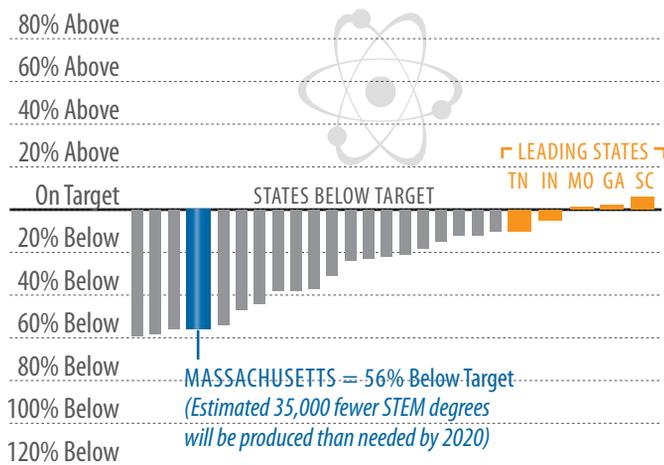
STATE UNIVERSITIES & UMASS  
**Bachelor's Degrees in Health Care Practice**



STATE UNIVERSITIES & UMASS  
**Bachelor's Degrees in Business & Finance**



STATE UNIVERSITIES & UMASS  
**Bachelor's Degrees in STEM Fields**



Source for all Level of Alignment in High-Need Fields graphs • MDHE with data from WICHE, USDOE/IPEDS, Georgetown Center for Education and the Workforce, USDOE Baccalaureate and Beyond Longitudinal Study.



# Closing Achievement Gaps

## African-American/White Gaps

All available Massachusetts data

On these metrics, **shorter bars** indicate better performance.



COMMUNITY COLLEGES  
% of Recent High School Graduates  
Enrolling in Remedial Courses 2012

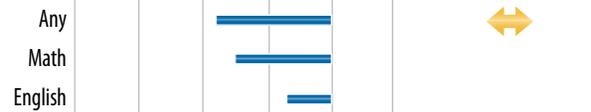
Worse ← → Better  
-40 -30 -20 -10 0 +10 MA Trend  
5-Year



STATE UNIVERSITIES  
% of Recent High School Graduates  
Enrolling in Remedial Courses 2012



UMASS  
% of Recent High School Graduates  
Enrolling in Remedial Courses 2012



College Enrollment Rates of Recent  
Public High School Graduates<sup>1</sup> 2012



COMMUNITY COLLEGES  
Six-Year Success Rate 2011



COMMUNITY COLLEGES  
Three-Year Graduation Rate 2011



STATE UNIVERSITIES  
Six-Year Graduation Rate 2011



UMASS  
Six-Year Graduation Rate 2011



COMMUNITY COLLEGES  
Pass Rates on Licensed Practical Nurse Exam<sup>2</sup> 2011



COMMUNITY COLLEGES  
Pass Rates on Registered Nurse Exam<sup>3</sup> 2011



STATE UNIVERSITIES  
Pass Rates on Registered Nurse Exam<sup>4</sup> 2011



UMASS  
Pass Rates on Registered Nurse Exam<sup>4</sup> 2011



UMASS  
% Above Competitive Score on MCAT Exam<sup>5</sup> 2010



COMMUNITY COLLEGES  
% of Graduates Employed and/or Pursuing Additional  
Education in MA in the Year After Graduation<sup>6</sup> 2011



STATE UNIVERSITIES  
% of Graduates Employed and/or Pursuing Additional  
Education in MA in the Year After Graduation<sup>6</sup> 2011



UMASS  
% of Graduates Employed and/or Pursuing Additional  
Education in MA in the Year After Graduation<sup>6</sup> 2011



<sup>1 2 3 4 5 6</sup> See footnotes on page 83.

### Latino/White Gaps

All available Massachusetts data

On these metrics, **shorter bars** indicate better performance.



COMMUNITY COLLEGES  
% of Recent High School Graduates  
Enrolling in Remedial Courses 2012



COMMUNITY COLLEGES  
Six-Year Success Rate 2011

COMMUNITY COLLEGES  
Three-Year Graduation Rate 2011

STATE UNIVERSITIES  
Six-Year Graduation Rate 2011

UMASS  
Six-Year Graduation Rate 2011



COMMUNITY COLLEGES  
Pass Rates on Licensed Practical Nurse Exam<sup>2</sup> 2011

COMMUNITY COLLEGES  
Pass Rates on Registered Nurse Exam<sup>3</sup> 2011

STATE UNIVERSITIES  
Pass Rates on Registered Nurse Exam<sup>4</sup> 2011

UMASS  
Pass Rates on Registered Nurse Exam<sup>4</sup> 2011

UMASS  
% Above Competitive Score on MCAT Exam<sup>5</sup> 2010



COMMUNITY COLLEGES  
% of Graduates Employed and/or Pursuing Additional Education in MA in the Year After Graduation<sup>6</sup> 2011

STATE UNIVERSITIES  
% of Graduates Employed and/or Pursuing Additional Education in MA in the Year After Graduation<sup>6</sup> 2011

UMASS  
% of Graduates Employed and/or Pursuing Additional Education in MA in the Year After Graduation<sup>6</sup> 2011

<sup>1 2 3 4 5 6</sup> See footnotes on page 83.



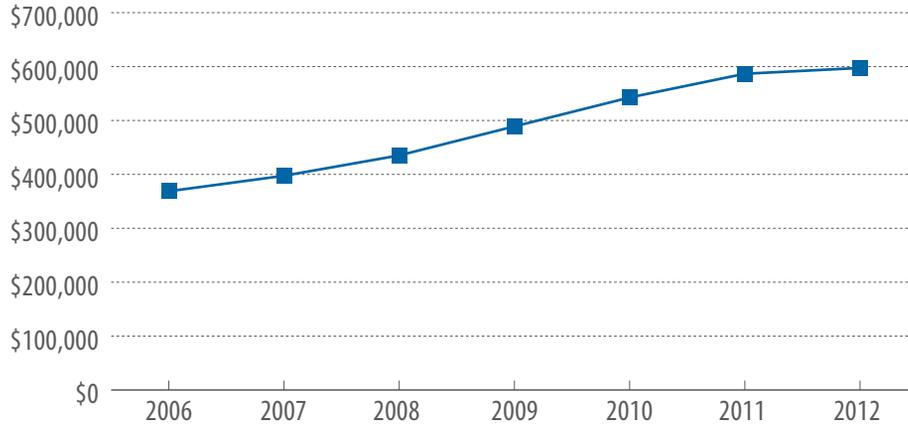
# Research

## Research and Economic Development Data

*With trends*

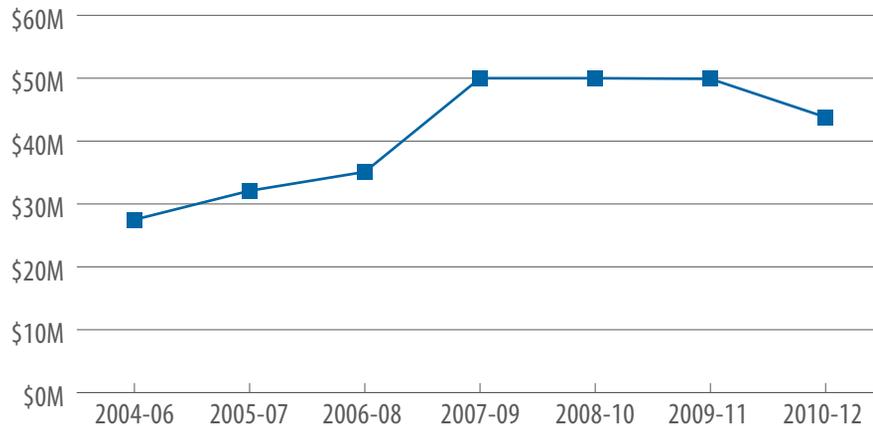
UMASS

### Trend in Research and Development Expenditures<sup>1</sup> 2006–12



UMASS

### Trend in Licensing Income<sup>2</sup> 2004–12 (Three-year averages)



**Sources** • <sup>1</sup>UMass President's Office / National Science Foundation. • <sup>2</sup>UMass President's Office / Association of University Technology Managers

## DATA SOURCE ACRONYM GLOSSARY

### **Georgetown CEW**

Georgetown University Center on  
Education and the Workforce

### **HEGIS**

Higher Education General  
Information Survey (USDOE)

### **IPEDS**

Integrated Postsecondary  
Education Data System (USDOE)

### **MDESE**

Massachusetts Department of Elementary  
and Secondary Education

### **MDHE**

Massachusetts Department of Higher Education

### **NCES**

National Center for Education Statistics (USDOE)

### **NCHEMS**

National Center for Higher Education  
Management Systems

### **NSC**

National Student Clearinghouse

### **NSF**

National Science Foundation

### **USDOE**

United States Department of Education

### **WICHE**

Western Interstate Commission for Higher Education

## ADDITIONAL RESOURCES AT [WWW.MASS.EDU/VPREPORT](http://WWW.MASS.EDU/VPREPORT)

**Data Tables for all graphs in this report**

**Index of Leading States for each metric**

**Supplemental Metrics**

**Technical Appendix**

### **Cohorts and Sources for Closing Achievement Gaps** (pages 80–81)

<sup>1</sup> Cohort: Massachusetts public high school students graduating in 2010–2012. The measure is the percent enrolling in college in the immediate fall term after high school graduation. Trend analysis is based on 2005–2012 graduating classes. Source: MDHE, MDESE, NSC.

<sup>2</sup> Cohort: First-time U.S.-educated candidates in 2011. Source: National Council of State Boards of Nursing; Massachusetts Department of Health and Human Services

<sup>3</sup> Cohort: First-time U.S.-educated candidates with associate's degrees in 2011. Source: National Council of State Boards of Nursing; Massachusetts Department of Health and Human Services.

<sup>4</sup> Cohort: First-time U.S.-educated candidates with bachelor's degrees in 2011. Source: National Council of State Boards of Nursing; Massachusetts Department of Health and Human Services.

<sup>5</sup> All test takers in 2011. Source: American Association of Medical Colleges.

<sup>6</sup> Massachusetts residents earning a degree or certificate from a MA public higher education institution in FY2011. Source: MDHE, Massachusetts Department of Career Services, NSC.

**The Massachusetts Department of Higher Education acknowledges with gratitude the encouragement, support and counsel of leaders of state government, including members of the Great and General Court, as well as the assistance of the philanthropic community.**

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## **Philanthropic Supporters of the Vision Project**

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Massachusetts Department of Higher Education

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