

**Massachusetts Public Higher Education:
A Shrewd Investment with Significant Returns**

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Massachusetts Public Higher Education: A Shrewd Investment with Significant Returns

❖ Raising Consciousness: Public Higher Education- Massachusetts's Vital Resource

Throughout the country, federal and state policy has increasingly coalesced on **“education and training”** as the essential means for assuring regional and national prosperity. This focus persists whether we face “boom economies” with labor shortages or “economic downturns” with needs for creative educational and technological sparks for reignition. The importance of education to the economic health and well being of society has never before been more pronounced nor have educational issues assumed such prominence in national and state planning and policymaking. Educational transformation at all levels of the learning continuum has been a central theme and many states throughout the country have wisely recognized that investment in a responsive quality educational infrastructure is critical to sustaining economic and workforce growth and development. If the Commonwealth does not awake to the importance of educational investment in public higher education, it will sadly lose its spot atop the list of high performing states in the nation.

At the core of all successful state educational improvement initiatives is a tangible statewide commitment to building a cohesive, seamless public K-16 system that provides readily accessible, affordable, and responsive education, training, and lifelong learning opportunities for residents from all economic strata and walks of life. State leaders around the nation, have invested significantly to create high quality, integrally connected public K-12 and higher education systems as the vital foundation upon which to build state-wide workforce development strategies. In States like Florida, Texas, Maryland, Illinois, and California, public universities and colleges are central and pivotal players in meeting the social, cultural, and economic needs of the state's residents. Progressive approaches to educational reform at the state-level have recognized the intrinsic value of public education, in general, and a vibrant, high quality public higher education system, in particular.

Public education was born and nurtured in Massachusetts. As a result, the Commonwealth's rich mosaic of private/public higher education institutions is unequivocally its greatest asset for maintaining its competitive edge and sustaining economic prosperity in the new millennium. Though prominently enhancing Massachusetts' reputation for premier higher learning, the prevalence of so many prestigious private colleges and universities has in many respects undermined the full development of the public higher education system and

created a false perception that, in its public and private mix, the Commonwealth's higher educational infrastructure can adequately meet the emerging challenges of a knowledge-based economy while experiencing dramatically changing demographics.

Despite the fact that public higher education in Massachusetts is the primary provider of postsecondary opportunity for the majority of Massachusetts' residents enrolling in higher education, the state's public universities and colleges have existed for years in the shadows of their more renowned private peer institutions. In reality, public institutions not only serve more Massachusetts residents but also, due to strategic geographic positioning, have established a rich yet unheralded tradition of responding to the distinct needs of Massachusetts' communities and their residents. Unfortunately, these significant state and regional contributions do not always receive the acknowledgements and accolades they deserve. Nor is the public aware of just how vital a resource their public higher education system currently is or, more importantly, could be if developed into a comprehensive system. Public universities and colleges can and should be valued and supported as essential and cherished partners in state and local growth and development.

A strong cohesive system of public higher education is fundamental to the Commonwealth's continued economic viability. The following provides a point-by-point presentation of facts to ensure state leaders, policymakers, and the public understand that an investment in Massachusetts Public Higher Education results in significant returns for the Commonwealth and its citizens.

❖ ***Basic Truth 1: Higher Education = Higher Earnings = Higher Standard of Living and Quality of Life for the Commonwealth***

It should come as no surprise that there is a direct and positive correlation between level of education and earning potential. Less widely known, perhaps, is that in our knowledge-based economy, level of educational attainment matters **more now** than it ever has in our nation's history. Data, presented in Figure 1¹ clearly demonstrates that those who have attained postsecondary education degrees realize greater earnings. Dollars earned increase consistently as the level of educational attainment increases. ***Increased educational attainment beyond high school advances both the levels of and the rate of increase in total earnings. Whereas high school diplomas as terminal degrees produce little more than the minimum Massachusetts wage rate for full-time employed persons, college degrees, at any level, produce substantially higher incomes.*** Obtaining college-level credentials is clearly rewarded in the workplace. Any educational credential beyond a high school diploma earns that premium—whether it be an Associates Degree, a Baccalaureate, or post-graduate Degree; and whether such degrees are publicly attained or not. These

¹ Numbers represent full-time, full-year earnings so as to standardize earnings across groups, which might otherwise reflect differences in work effort.

premiums appear as higher wages and salaries and non-salary, self-proprietorship income.

In order for Massachusetts, with one of the highest per capita incomes in the nation, to stay ahead of other states, to maintain high property values (the major part of most citizens' wealth in the Commonwealth), and to avoid the costly burdens of supporting those without adequate workforce preparation, it is necessary to maintain educational attainment in the Commonwealth at levels higher than in other states. Secondary education, which has been a major state political focus and the beneficiary of increased state financial support since 1993, is merely a precursor for the higher educational attainment required in today's economy. We must be concerned about the adequacy of K-12 as a foundation for college success, but high school diplomas are not the panacea for this State's economic survival. Our economic vitality depends on higher education attainment.

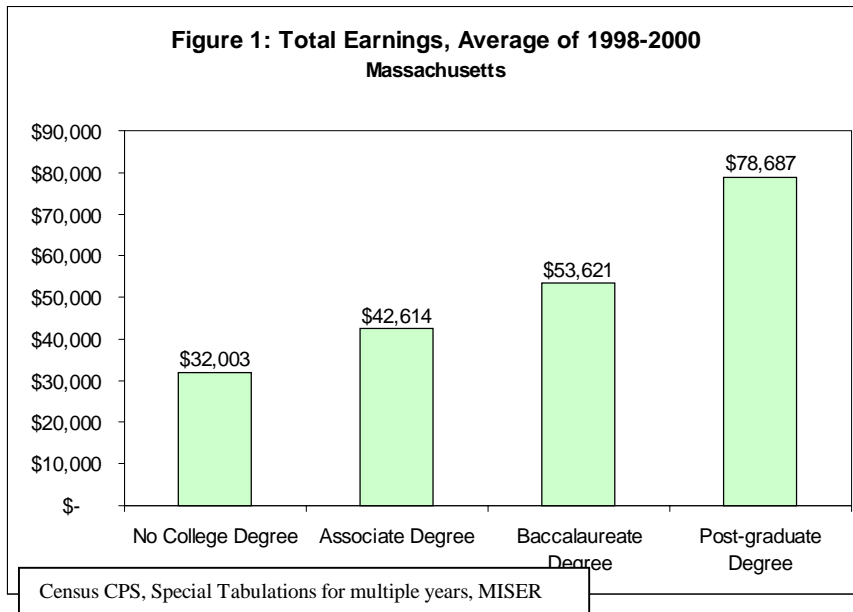
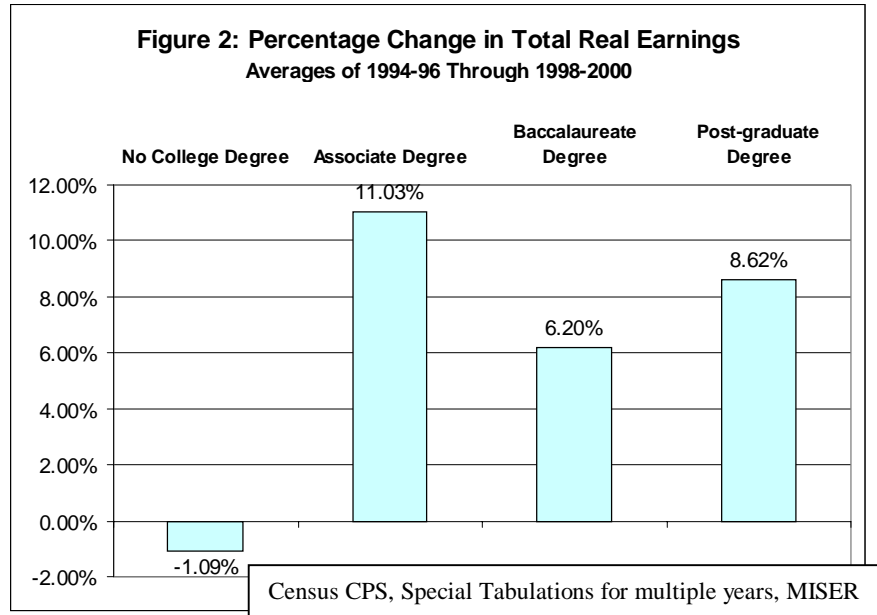


Figure 1 represents earned income for workers with full-time, full-year jobs. This data from the Current Population Surveys (1999, 2000, and 2001) shows an income of \$32,000 for persons (roughly \$16/hour) without a college degree. This is as high as it is because it

reports only for full-time, full-year jobs. The prevalence of less than full-time, full-year jobs primarily falls to those with low levels of educational attainment. There is a significant jump in earnings from persons having no college degree to those with an Associates degree. This jump is more than ten thousand dollars per year for full-time, full-year employees. There are equally sizable gains for earning additional degrees—more than eleven thousand dollars for the baccalaureate and twenty five thousand dollars for post-graduate degrees. Increased earning potential through the attainment of college degrees is the significant key to providing individuals with opportunity for a high quality of life in the Commonwealth of Massachusetts.

Figure 2 shows that over time, the largest significant percentage gains in real income have come for those earning Associates degrees. This reflects a relative restructuring of the Massachusetts workforce over



the last six years with significant demand for technician level staffing. This does not contradict that more advanced degrees still do more for individual earnings. It merely indicates that Associate's degrees earn increasing premiums as the first step in the higher educational learning ladder. Total earnings for Associate's degrees rose by 11.0% in real terms compared to smaller real increments of 6.2% and 8.6% for baccalaureate and post-graduate degree holders. The 11.39% cost of living adjustments over the period wiped out the nominal 10.3% increases for those without college degree, leaving them with a 1.1% real loss.

The Commonwealth has focused considerable attention and resources in the last several years on dramatically reforming K-12 education. While policy makers would be ill advised to ignore the important resource needs in elementary and secondary education, we cannot lose sight of the greater returns to be achieved by focusing on the full educational continuum. In particular, we must address the equally demanding responsibilities falling on the shoulders of public universities and colleges as they contribute to the postsecondary education and training that will be required of more than eighty five percent of the state's future professional and managerial workers. A concerted effort to sufficiently fund education, including ***assuring adequate and balanced funding at all levels of education, including higher education***, will be necessary to sustain the State's high standard of living and quality of life as well as assure continued economic vitality.

Without sufficient investment, a significant portion of Massachusetts' resident population will enter early adulthood without affordable in-state collegiate options. Student choices will become limited. More will be likely to leave the state to pursue a college education. Under these circumstances, the Commonwealth would face the likelihood that fewer college graduates will return from out-of-state, thus depleting the state of the requisite educated workforce essential for sustained economic growth and development. A formidable future already

confronts residents in the lower economic strata. Without readily accessible and low cost collegiate options, these individuals are not likely to pursue postsecondary education, widening the existing gap between the "haves" and "have-nots" in the Commonwealth and posing a serious threat to the state's economic vitality and potential success in building the skilled workforce necessary for the new economy. Pursuing political and fiscal policies that weaken an already comparatively underdeveloped (in relationship to other states) public higher education system is unsound and unwise. Now more than ever, the state's public universities and colleges need to accommodate more rather than fewer students and provide these students with the highest quality learning opportunities that directly address the Commonwealth's workforce and economic development needs.

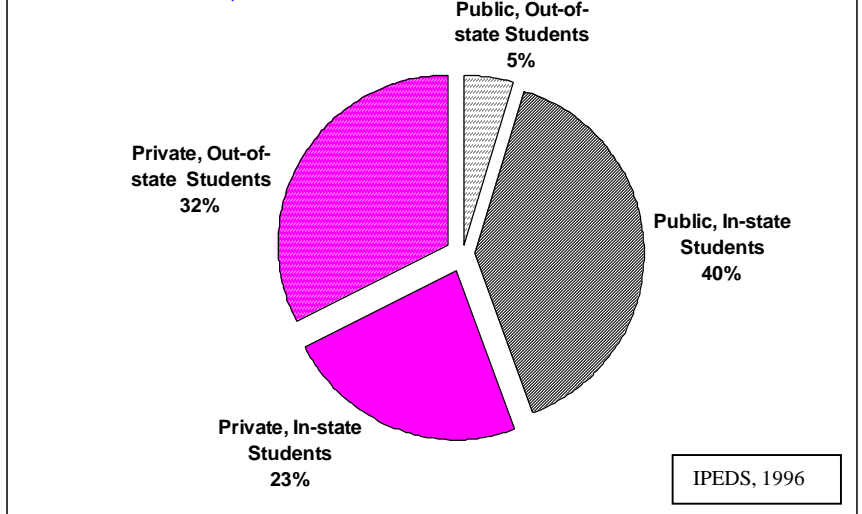
❖ **Basic Truth 2: Reality vs. Perception—Public Universities and Colleges, Not Privates, Are The Primary Providers of Higher Education for Massachusetts Residents**

Without detracting from the number and the quality of private sector colleges in the Commonwealth, federally collected data show that public higher education is the main source of higher education for citizens of Massachusetts. Unlike in most other states, the percentage of students enrolled in private Massachusetts' colleges and universities exceeds that enrolled in the public higher education sector. However, this is a deceiving statistic.

A closer look at Massachusetts' higher education enrollment data shows a very different and less known reality. According to the latest available residency data from the Federal IPEDS information system, most seats in private colleges in Massachusetts are reserved (and have been reserved, year in/year out for many years) for out-of-state students. Only 39.4% of the first-time freshmen entering private four-year institutions in Massachusetts in 1996 came from Massachusetts. By comparison, 84.4% of first-time freshmen enrolled at public four-year institutions are Massachusetts' residents.

Data in **Figure 3** reflect total students enrolled in Massachusetts' colleges and universities. While 55% are enrolled in private universities and colleges compared to only 45% in public, the majority of the private college enrollees are

Figure 3: College Enrollments at Massachusetts Colleges and Universities, 1996



residents of states other than Massachusetts. In contrast, the large majority of students enrolled in the State's public institutions are Massachusetts' residents. The reality is that the Commonwealth's public colleges consistently enroll a much larger share of their students from within state than the private colleges.

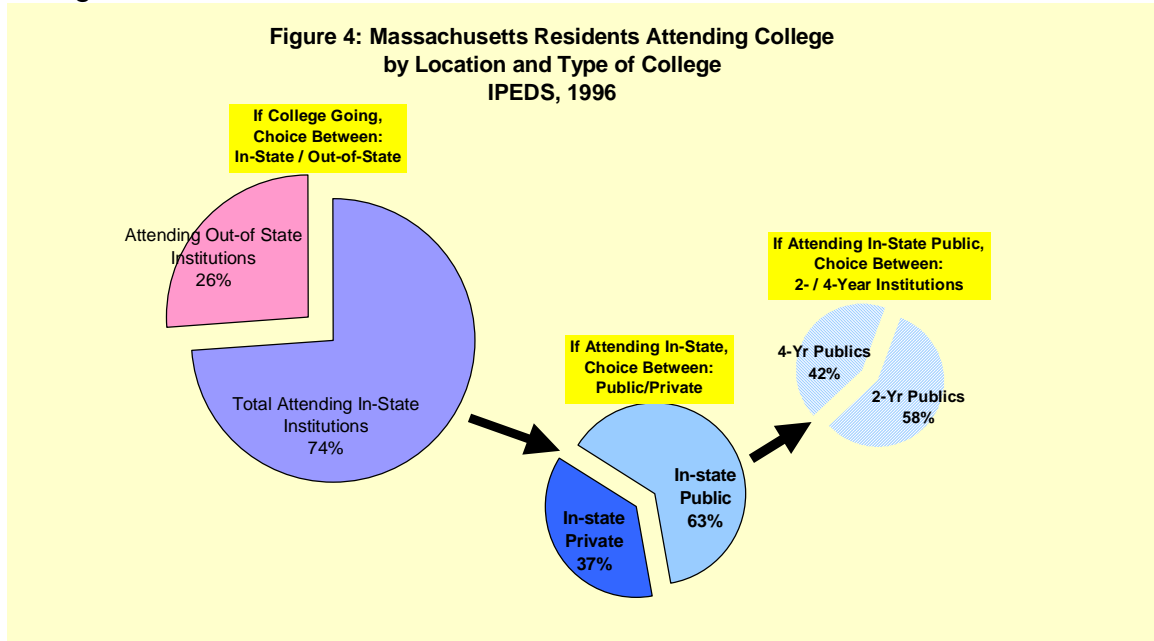
It is even more compelling to look at these enrollment trends from a slightly different perspective. Where do resident students, i.e. children of Massachusetts's taxpayers go if and when they attend college? **Table 1** provides these answers. Of Massachusetts' high school seniors who graduated from high school in 1996 and enrolled in college, the majority (N=39,242 or 73.9 percent) remained in State to attend college at Massachusetts' institutions. Only 26.07% of Massachusetts' residents enrolled at out-of-state institutions. Fully 63.2% of the Massachusetts' residents attending in-state institutions enrolled in the state's **public** institutions (26.8% at public four-year and 36.4% at public two-year institutions).

Institution of Attendance	Number of Students	Percent of All MA Resident College Students	Resident Students attending In-State by
In-state Public 4-Yr Institutions	10,516	19.81%	26.80%
In-state Private 4-Yr Institutions	12,927	24.35%	32.94%
In-state Public 2-Yr Institutions	14,285	26.91%	36.40%
In-state Private 2-Yr Institutions	1,514	2.85%	3.86%
Total Attending In-state Institutions	39,242	73.93%	100.00%
Attending Out-of state Institutions	13,839	26.07%	
Total Mass Resident College Students	53,081	100.00%	

The fact that private institutions in Massachusetts educate a larger number of students than publics should not be confused with the fact that the Commonwealth's public universities and colleges are serving a significantly larger number of Massachusetts' residents than the privates. ***The Massachusetts public higher educational sector is and has long been doing the job that the State should expect from it: educating nearly two thirds of those Massachusetts students who have grown up in the Commonwealth,*** i.e. students more likely (than out-of-state students attending Massachusetts' private institutions) to enter our workforce upon completion of college.

Figure 4 graphically portrays Massachusetts' resident students who attend college after high school. Of those who pursue education beyond high school, 26% leave the State to attend college. The remaining 74% attend Massachusetts's institutions. Of those attending college in state, 63% enroll in the public sector; only 37% enroll at private institutions. Of those enrolled in the

public system, 58% (initially) attend two-year colleges and 42%, four-year colleges.



❖ **Basic Truth 3: Massachusetts has the fastest growing public higher education system in the nation**

First-year attendance in public higher education in Massachusetts has increased at a greater pace than it has in any other US state. **Figures 5 and 6** show Massachusetts with the fastest growing public higher education system of any state in the country from 1992 to 1998. In addition, the enrollment pattern clearly depicts students shifting from four-year institutions to two-year institutions.

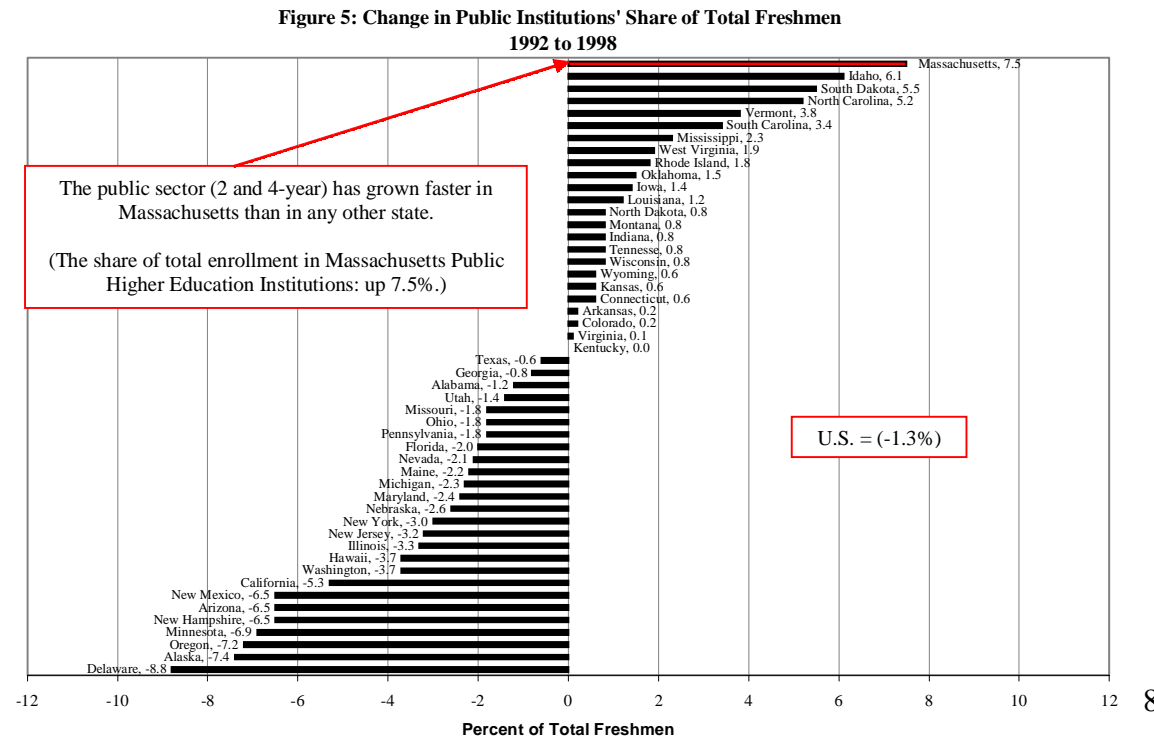
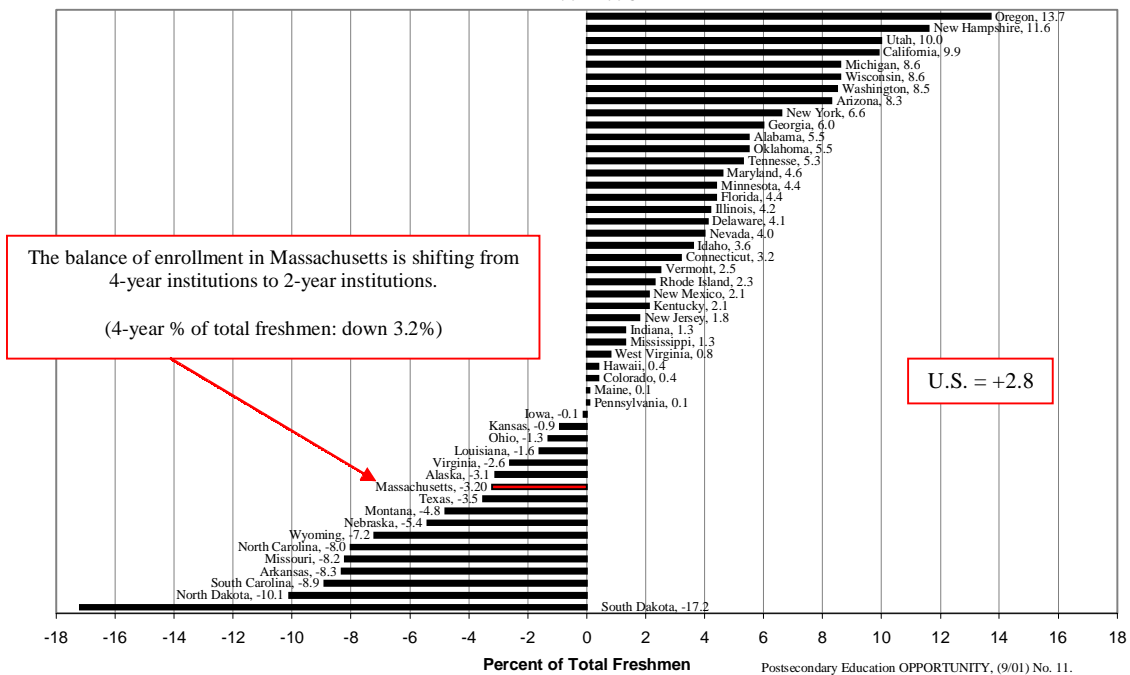


Figure 6: Change in 4-Year Institutions' Share of Total Freshmen
1992-1998

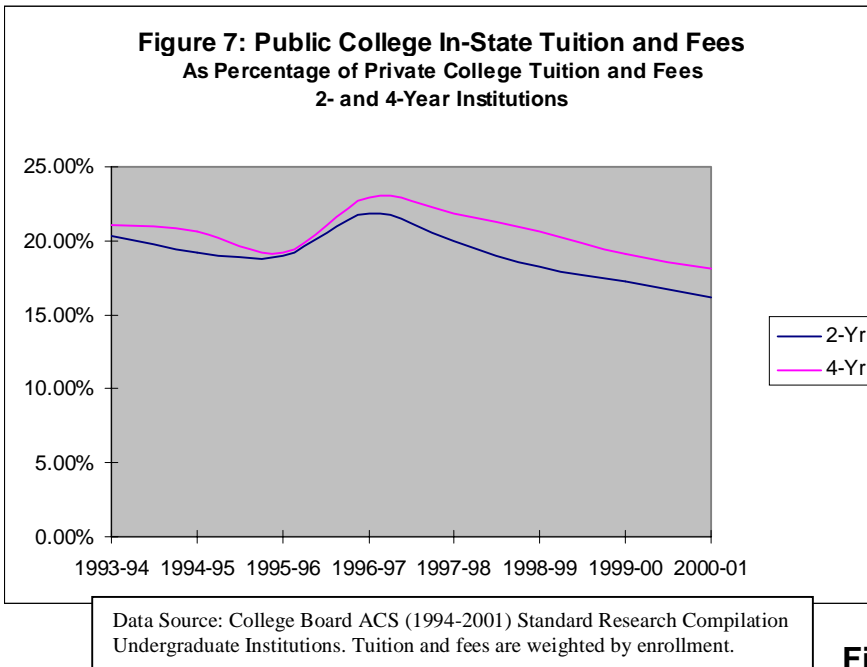


The balance of enrollment in Massachusetts is shifting from 4-year institutions to 2-year institutions.
(4-year % of total freshmen: down 3.2%)

U.S. = +2.8

American Freshmen, Longitudinal Trends, a report based on thirty year's of analysis of college freshmen characteristics and traits produced jointly by the American Council on Education's Cooperative Institutional Research Program (CIRP) and the Higher Education Research Institute (HERI) at University of California at Los Angeles, recently showed that the proportion of freshmen with a major concern over ability to pay for college rose 8.6% to 18.0% from 1966 to 1996. While some of the major concern was attenuated by record-breaking economic growth rates in assets in the late 1990s, it is fair to assume that recent economic troubles along with growth in the cost of attending postsecondary institutions² is generating even greater concerns about current college affordability. This concern is just the tip of the iceberg, however. By 1996, the incidence of "some" and "major" concern over finances reached a record high of 68.9%. Increasing financial uncertainty influences students' college choices with larger numbers selecting public over private and an increasing number of two-year over four-year institutions. In Massachusetts, this college attendance shift has dramatically changed the state's higher education landscape.

² This has been recently documented in the report, *Unequal Opportunity, Disparities in College Access Among the 50 States*, from the Lumina Foundation for Education, Vol. 4, No. 3, January 2002.



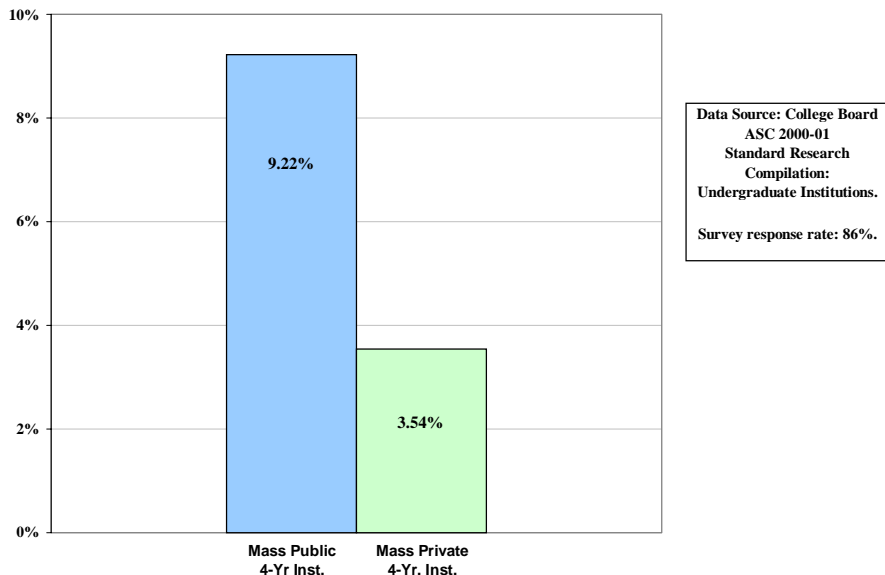
Growth in attendance at public sector postsecondary institutions has mirrored trends in concern over the affordability of higher education. Such trends suggest that public higher education becomes even more important in times of economic uncertainty.

Figure 7 shows that relative costs in the public sector, for both two-year and four-year institutions, are low and, in Massachusetts, have been decreasing since 1996-97. ***Given recent downturns in the state and national economies, public higher education must remain well supported and affordable for the citizens of the Commonwealth.***

Four-year institutions, particularly in the public sector, also act as the transition for students from two-year programs into four-year programs. When it comes to continuing toward four-year degrees or to transferring, State transfer compacts support the absorption of two-year transfers into four-year public institutions.

Figure 8 shows that transfers represent nearly three times the proportion of total enrollments at public

Figure 8: Transferring Students as a Percentage of Enrollment: 2000-01

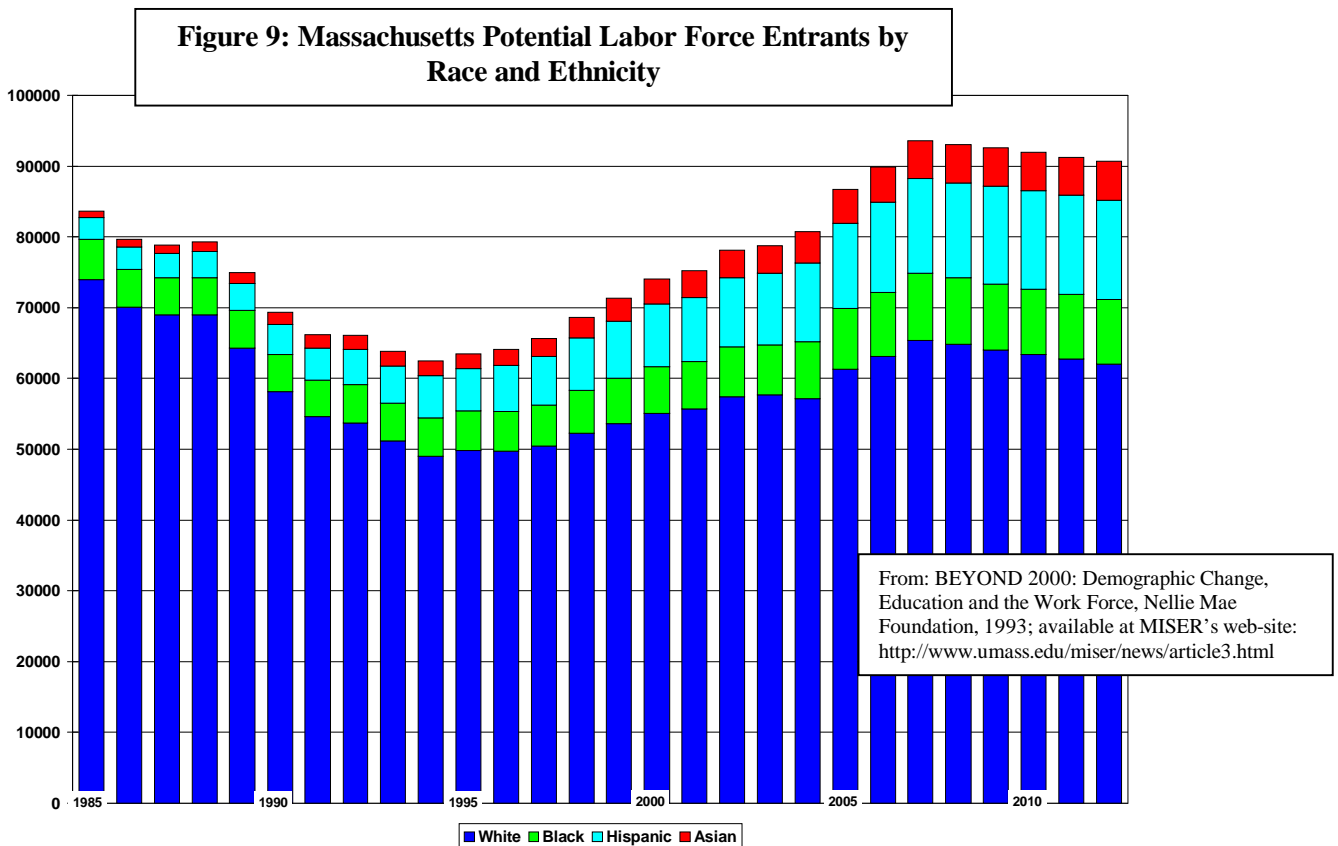


four-year institutions than in their private counterparts. These flows to public four-year institutions include many of the vertical transfers of students from two-year programs to four-year programs. These are the shifts through which students become prepared to engage in the workforce at higher skill and pay levels. Appropriate articulation systems assure that those financial restrictions currently affecting students do not deny further educational opportunities.

❖ **Basic Truth 4: Enrollments in Public Universities and Colleges will Rise as an Increasing Proportion of Minority Students Attend the Public Sector**

The numbers of students being educated in Massachusetts is growing and this growth is largely the result of increases of in-state (resident) students.

Analysis of census data shows continuing growth in the state's population with especially high growth among under-represented minorities: African Americans, Hispanics and Native Americans (first reported in MISER's work on **Beyond 2000** in 1993, but subsequently proven as a highly accurate forecast by the Year 2000 Census counts). **Figure 9** displays the percentage of potential high school

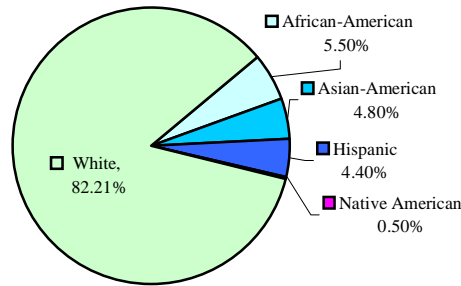


graduates of an age ready to enter the labor force. It forecasts the greatest increases for minority populations, predicting their rise from 11.6% of the population in 1985 to 31.5% in 2012. During this period, the under-represented minority population of Black and Hispanic college students is expected to expand from 11.6% to 25.5%. These students, often from families with low incomes, will

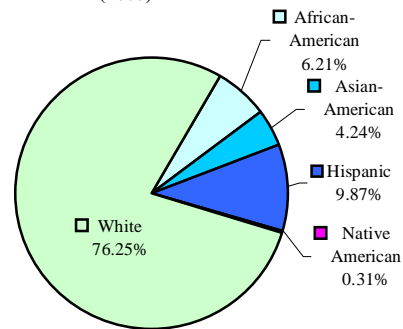
more likely pursue college at public universities and colleges due to the public sector's greater affordability. The Commonwealth must ensure that the state's increasing population of minorities obtains the postsecondary education and training essential for their contributions in the future workforce. Failure to maintain public higher educational affordability and accessibility will place Massachusetts at a marked competitive disadvantage to states that do. **Figure 10** shows the degree to which minorities are under-represented in New England colleges and universities. Though Massachusetts's institutions, overall, do a slightly better job enrolling minority students than other New England States, many of the minority students enrolled in the Commonwealth are recruited from outside of the State. Out of state students are less likely to remain in Massachusetts after graduation. The Commonwealth needs to increase its role in addressing the educational needs of minorities from Massachusetts.

Figure 10: New England

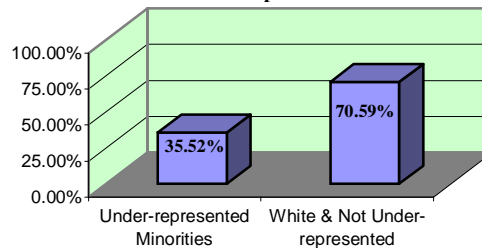
College Enrollment by Race/Ethnicity (1999)



18 to 24 Year-Old Population by Race/Ethnicity (2000)



College Enrollment as % of 18 to 24 Year-Old Populations



From the Press Packet for Diversity Among Equals: Educational Opportunity and the State of Affirmative Admissions in New England, MISER and CEP, done for the Nellie Mae Education Foundation

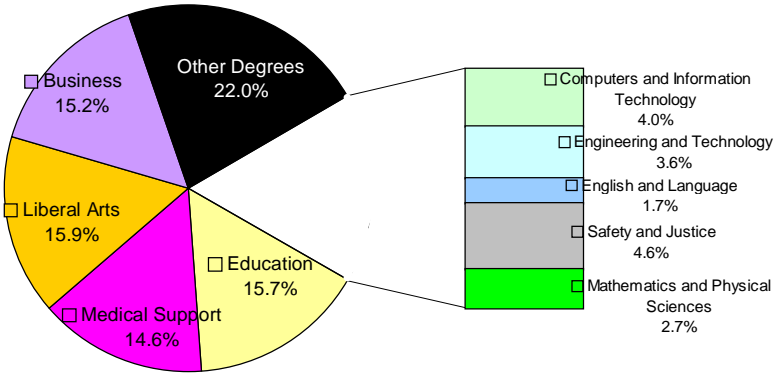
Enrollment data from The New England Board of Higher Education's Directory of New England Colleges, Universities and Institutions: FACTS 2001. Percentage of White enrollees was imputed using Minority Totals. Minority Totals do not include portions of the population classified as non-White. Amounts may not add up due to rounding. Enrollment data does not reflect in or out migration. Populations of 18 to 24 year-olds by race/ethnicity from Census 2000 data, SF1, U.S. Bureau of the Census, as compiled by MISER, University of Massachusetts, Amherst. Under-represented Minority Population includes Hispanic; African-American, Native American and Multi-Race -- Not Hispanic. White & Not Under-represented includes White, Asian, Hawaiian/Pacific Islander and Other -- Not Hispanic. Population for students outside of 18 to 24 year-old age range has not been corrected.

❖ **Basic Truth 5: Public Higher Education Contributes Significantly to State Workforce Development Needs**

Public colleges and universities in Massachusetts focus on educating and training students for the future workforce in Massachusetts and continually monitor regional labor market and economic development needs to assure the relevancy and responsiveness of their program offerings. As a result, the public higher education system offers a wide variety of programs that are valued by employers in the workplace. Though maintaining programmatic currency is never an easy task in an ever-changing technological world, certificates and degrees awarded across the public system tend reasonably to match the Commonwealth's job openings. This does not happen by chance. It reflects continual cooperative interactions between public sector faculty, staff, and regional employers as well as responsiveness to students' (often with limited incomes) increasing expectations that their higher education spending will bring a real return. Students place high priority on "high-demand, workplace relevant" courses and learning experiences. Massachusetts' public colleges take seriously their responsibility to deliver responsive programming and services. To this end, MISER, the Board of Higher Education and the campuses cooperatively developed the Placement Accountability System (PAS) to track graduate placements in the workplace and use reported data at the institutional level to continuously improve curriculum and instruction.

Figures 11a and **11b** show the distribution of degrees and certifications awarded in 1999 by the Commonwealth's Community and State College system. This is the most recent tracking year within the Placement Accountability System (PAS), which the state's Board of Higher Education (along with the Department of Labor and Workforce Development) uses to track the number of persons who have been placed into the workforce upon completion of their educational or training programs. The data in **Figures 11a** and **11b** indicate the volume of degrees awarded respectively by the Commonwealth's Community Colleges and State Colleges in several areas: business; computer and information technology; mathematics and the physical sciences; engineering and technology; and medical support—all generally acknowledged as serving prima-facie "high-demand" needs. Given teacher shortages and the heightened needs for safety and justice beyond September 11, 2001, **Figures 11a** and **11b** also isolate awards in education and safety and justice programs. To these, we add Liberal Arts as well as English and foreign language programs, because these are the dominant feeder programs of students entering into transfer programs, whether that be from either the State Colleges or the Community Colleges through the State University, from the Community Colleges through the State Colleges, or from either through the various private institutions that accept transfers. This leaves barely one-fifth of earned degrees in either segment, Community Colleges or State Colleges, in an "Other" category, possibly outside of the realm of "high-demand."

**Figure 11a: Awards of Degrees, by Type
Massachusetts Community Colleges
Academic Year 1999**



**Figure 11b: Awards of "High-Demand" Degrees
Massachusetts State Colleges
Academic Year 1999**

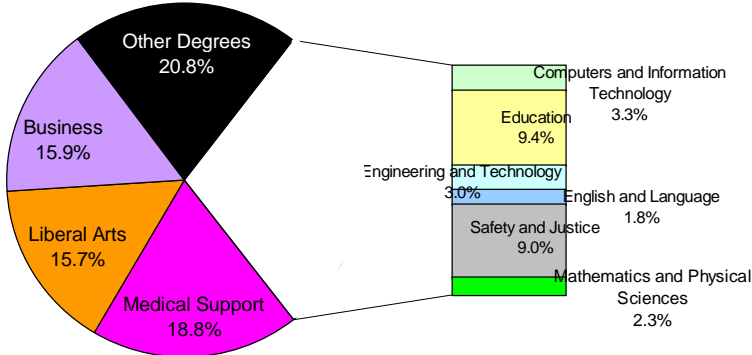
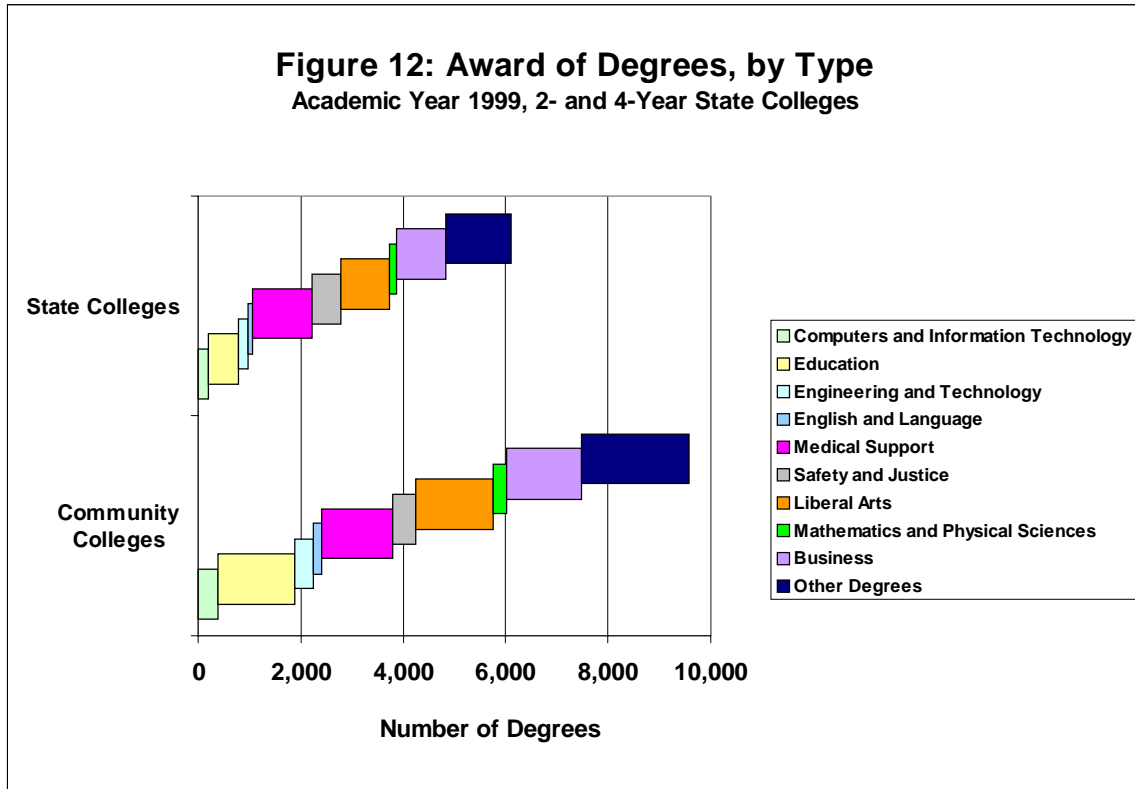
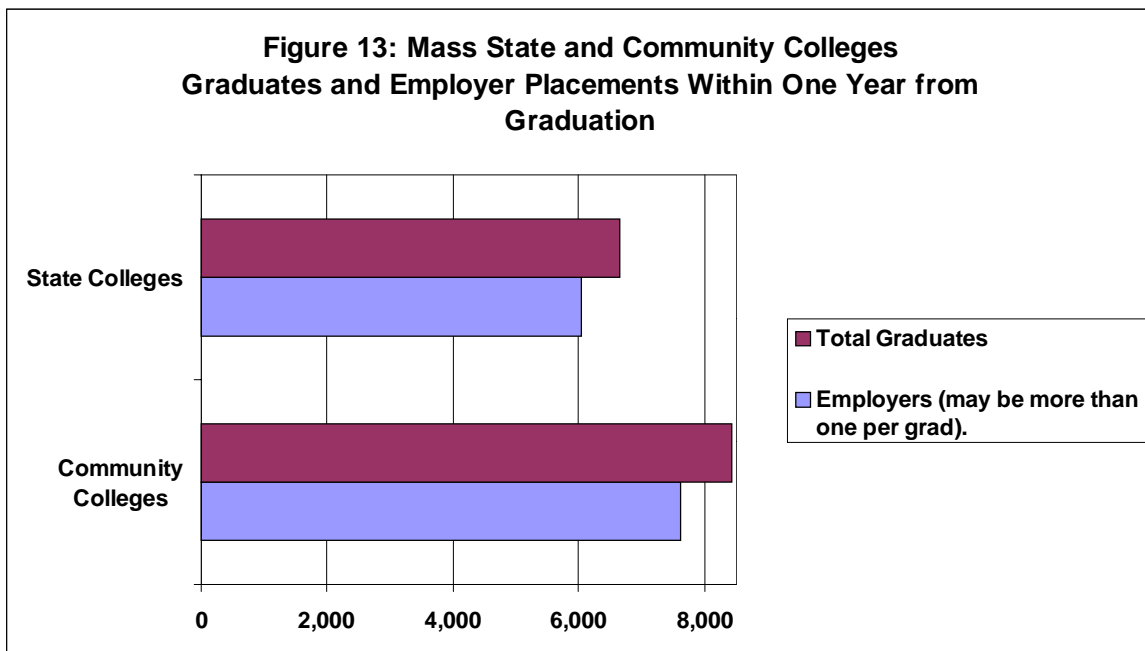


Figure 12 presents the total number of degrees awarded by the State and Community Colleges using the same degree classification as used in **Figure 11a** and **11b**.



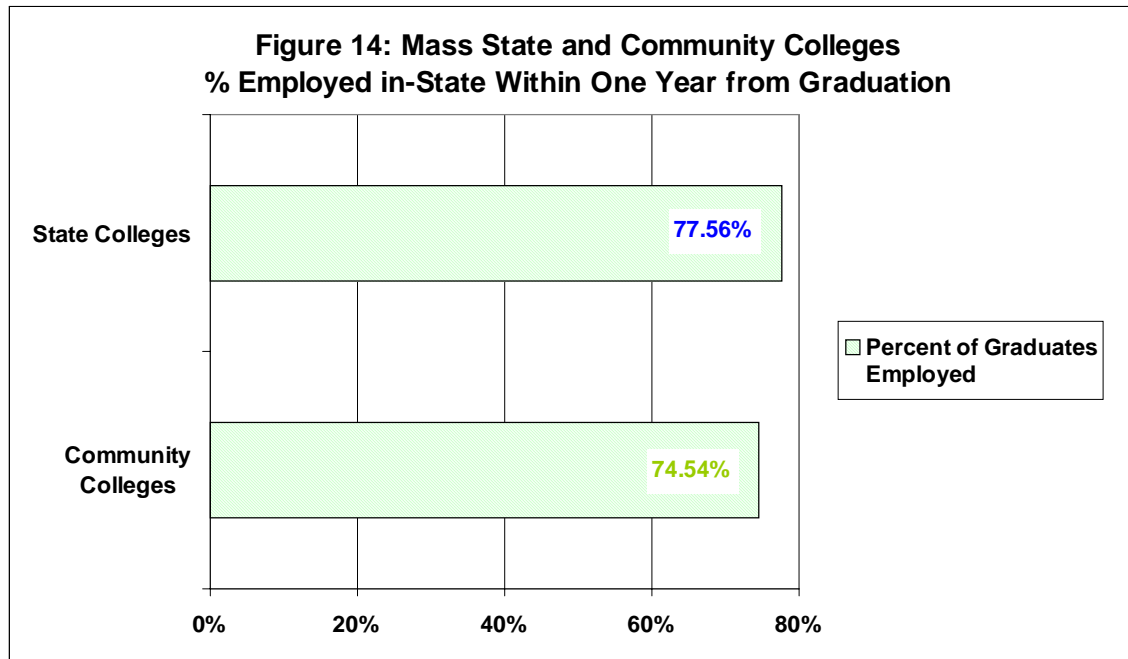
Massachusetts' public higher education system not only delivers relevant programs but, as shown in Figure 13, it supplies a significant number of



workers for Massachusetts businesses and industries. Figure 13 depicts the number of graduates from state and Community Colleges and the number of unique employers hiring these students within a year of graduating. This **Figure** reflects employers only once even if they hire more than one student—they are unique to the individual institutions. There may be some overlap, but not a great deal, among these employers across campuses, since campuses generally serve distinct geographic locations. **Figure 13** clearly indicates the degree to which the public system serves a wide variety of employers, nearly 14,000—a number that compares favorably, for example, against the approximately 79,503 establishments that employ 5 or more employees.³ ***This implies that the public campuses support (in placement of even just a single year’s graduates) more than one in six hiring employers. It is obvious that the public system works for the Commonwealth!***

Figure 14 further enhances the overall picture by presenting the high percentage of public higher education graduates who are employed in their first year beyond graduation. These percentages are particularly high, given that the data in the evolving PAS system does not currently account for graduates employed out-of-state, graduates continuing with their college educations either in graduate school or in completing their baccalaureates, or a full reporting of the employer community. The data also does not reflect persons becoming self-employed upon college completion or others who may have completed college for self-improvement rather than occupational advancement. With the increase in numbers of older college students, this component is likely to be growing.

³ This division of firms was chosen to eliminate the single employee firms and others of very small magnitude that are unlikely to be hiring anyone.



The impact of **Figures 13** and **14** is particularly significant: many employers benefit each year from employing graduates of the Massachusetts' public higher education system. That most of student graduates are quite immediately hired into the workforce implies the degree that the employer community positively seeks them. A reduction in the ability of the State's colleges and universities to serve these students may greatly decrease the number of potentially qualified entrants into the Massachusetts workforce.

Massachusetts public colleges and universities supply a significant proportion of desired entrants into Massachusetts occupations. The National Occupational Information Coordinating Committee (NOICC) produces a "cross-walk" which identifies educational degree programs, which new employees hired to work in particular occupations, have dominantly completed. We have coupled degree production in the public Community and State College systems with the most recent forecasts of occupational demand within the Commonwealth produced by the Division of Employment and Training. The latter, done in 1996 and designed to estimate conditions through 2006, are the most recent available from DET's web site. We recognize that some of these detailed forecasts may have already gone off track because of cyclical patterns in these labor markets. They may no longer reflect current conditions.⁴ Further, some degrees (like those oriented to film and video) earned in Massachusetts may be better applied in States other than the Commonwealth. For these cases, there may well be greater production of degrees than forecasts predict as necessary. Nonetheless, matching graduate production with employment hiring

⁴ Medical Radiologic Technology is a clear case in point. Forecast to have relatively few demands for new personnel, it is a highly cyclical and is currently experiencing supply shortages.

expectations shows the essential contributions that the public Community and State College systems make to Massachusetts workforce development.

We produced clusters of occupations and occupations that link with each other in a one-to-one way so as not to double count either jobs or degrees. We found that areas with the greatest excess of expected jobs over degrees awarded are precisely the areas that the public colleges produce most of their degree awards.⁵ This analysis needs much more review of the quality of the cross-walk, fuller data on degrees awarded by other institutions—particularly the private sector, and an evaluation of the accuracy of the occupational forecasts, but the fact that 95% of degrees awarded by the Community and State College segments fall in areas where there are the largest gaps between expected jobs and degrees is significant. Degrees awarded by the public system seem oriented to making the most important contributions to the workforce preparedness of the Commonwealth.

Conclusion

Public higher education has served the Commonwealth of Massachusetts extremely well throughout its long and proud history. The clear evidence documented in this paper demonstrates that public higher education has been a good investment for the Commonwealth of Massachusetts. However, in order to compete and thrive in an increasingly competitive and dynamic environment, public colleges and universities need increasing levels of support in order to meet the challenges of the new millennium in ways that maximize the human and economic potential of our great state.

“Mind power” is the strength upon which Massachusetts has and will continue to sustain prosperity. The Commonwealth’s public higher education system, now more than ever, must be recognized as an essential top priority for investment—an investment with real and indisputable returns; an investment that the state can ill afford to neglect. State leaders, particularly in this difficult time of economic adversity and uncertainty need to think in terms of wise investments with a distinguishable “bang for their buck”. Investing to maintain and strengthen the Commonwealth’s higher education system is sound fiscal policy with tangible short and long-term benefits.

A strong cohesive system of public higher education is fundamental to the Commonwealth’s continued economic viability. It is imperative that we, in Massachusetts, recognize this fundamental fact and more importantly take action to ensure that the existing contributions of public higher education to the Commonwealth remain intact while providing public higher education with resources essential for making certain that the full potential of public higher education becomes a reality in the Commonwealth.

⁵ We fully recognize that vacancies not filled by public college graduates may be filled by private college graduates or by persons shifting from other occupations; or the vacancies may remain unfilled.

