



VISION PROJECT REPORT—TECHNICAL APPENDIX
Version 1.0—June 2016

Overview 2

1. College Participation (including Closing Achievement Gaps)..... 3

2. College Completion (including Closing Achievement Gaps)..... 5

3. Workforce Alignment (including Closing Achievement Gaps) 8

Overview

- **Board approval:** The initial metrics to be used in the Vision Project were approved by the Board of Higher Education in May 2010. An extensive period of refinement and review followed, including numerous public presentations of emerging data and methodology, with the Board approving three revisions to the metrics in March 2012.
- **Advice from national experts:** This review period included consultation with national experts including Cheryl Blanco, Vice President for Special Projects at the Southern Regional Education Board and former senior program director at the Western Interstate Commission for Higher Education; Patrick Callan, President of the National Center for Public Policy and Higher Education; Peter Ewell, Vice President of the National Center for Education Management Systems(NCHEMS); NCHEMS President Dennis Jones; Complete College America President Stan Jones; Bill Mass, Director of the Center for Industrial Competitiveness at UMass Lowell; Navjeet Singh, Vice President of Applied Research and Evaluation, Commonwealth Corporation; Andrew Sum, Director of the Center for Labor Market Studies at Northeastern University; Dawn Terkla, Associate Provost for Institutional Research and Evaluation at Tufts University.
- **National comparisons** are made with public institutions of similar Carnegie class, where possible. In some cases, fewer than 50 states are included in the comparison due to lack of comparability or data availability.
- **Timeliness of data:** Data used are the most recent available. Postsecondary education data typically becomes publicly available a year or more after the point of initial collection.

1. College Participation

College Readiness Rates

- **% of HS Seniors Scoring Proficient in Math/Reading (page 52)**

1	Metric	% of MA public high school seniors who are academically proficient in math and reading, as gauged by the 12th grade National Assessment of Educational Progress (NAEP)
2	Segment	Statewide Metric
3	Data Source	National Center for Education Statistics, US Department of Education
4	Cohort	Public high school seniors
5	Data Year	2013
6	Achievement Gap Data (page 53)	Available for race/ethnic and SES (measured by student report of parent’s highest degree of educational attainment); no breakdown by gender.
7	Comparison Group	Public high school seniors nationally (for the national average) and in 13 pilot study states (for the Pilot State Leader).
8	# of Comparison States	50 for national average, 13 for top state
9	Lead State (of 13)	MA for Math, CT for Reading
10	Special Notes	Begun in 1969, NAEP is the only nationally representative and continuing assessment of student knowledge in core subjects. 2013 marked the second year that state-level results were available for the 12th grade test—and only for the 13 states in a pilot study. Note that the 2009 12th grade NAEP also marked a change in the content assessed by the test as part of a shift from measuring what 12th graders know to a predictive measure of college readiness.

- **% of Recent High School Graduates Enrolling in Remedial Courses (page 52)**

1	Metric	% of MA public high school students who enter our public higher education system under-prepared for college level work
2	Segment	Community Colleges, State Universities, UMass
3	Data Source	Massachusetts Department of Higher Education’s Higher Education Information Resource System (HEIRS)
4	Cohort	First-time, full-time degree seeking students who are recent MA public high school graduates
5	Data Year	Fall 2015
6	Achievement Gap Data (pages 60–61)	Available for Gender and Race/Ethnicity

7	Comparison Group	Internal metric only-no national comparison possible.
8	# of Comparison States	Internal metric only-no national comparison possible.
9	National Leaders	Internal metric only-no national comparison possible.
10	Special Notes	This metric looks at first-time, full-time degree seeking students who graduated from a MA public high school in the previous 12 months, and shows the percent of this group who enrolled in remedial (non-credit bearing pre-college) courses. Because developmental education enrollment policies vary so significantly by state, no national comparison is possible and the metric is limited to Massachusetts.

College Enrollment Rates

- **College Enrollment Rates of Recent High School Graduates (page 52)**

1	Metric	College-going rates of recent MA high school graduates
2	Segment	Statewide Metric
3	Data Source	IPEDS, WICHE’s Knocking on the College Door
4	Cohort	Recent high school graduates enrolled as first-time degree seeking students
5	Data Year	Fall 2014
6	Achievement Gap Data (pages 60-61)	1-Public High School Graduate College Going Rate Gap analysis is based on a match of MA public high school graduates to National Student Clearinghouse House Data provided by the Massachusetts Department of Elementary and Secondary Education via the Massachusetts State Longitudinal Education Data System. The indicator captures the share of MA public high school graduates who enrolled in postsecondary education in the immediate fall after high school graduation. The enrollment gaps are calculated based on the three year average of 2012, 2013, and 2014 high school graduating classes.
7	Comparison Group	National
8	# of Comparison States	49 (Mississippi is excluded from the analysis because of concerns with the high school cohort.)
9	National Leaders	MA, CT, SC, LA, VA
10	Special Notes	For this metric, the Vision Project report uses the approach developed by Thomas Mortenson, Senior Scholar at the Pell Institute for the Study of Opportunity in Higher Education. The approach combines two data sources: IPEDS for the numerator, and the Western Interstate Commission for Higher Education’s projections of public and private high school graduates for the denominator. More specifically, the numerator is the number of first-time students from a given state enrolled in fall 2014 in any postsecondary institution reporting to IPEDS, and the denominator is the total estimated

		<p>graduating high school class for 2014 (according to WICHE’s <i>Knocking at the College Door</i>).</p> <p>While this metric is the best available for analyzing college participation of recent high school graduates, it does not allow for achievement gap analysis. We therefore use two additional metrics. For Massachusetts, data from the Department of Elementary and Secondary Education combined with that from the National Student Clearinghouse enables us to quantify participation gaps based on race/ethnicity, gender, or income for Massachusetts public high school graduates. This data does not, however, allow for national comparison. For this we turn to the American Community Survey of the U.S. Census Bureau, the source used by the US Department of Education in its state-level comparisons. This data takes a different age group than the key metric (18 to 24 year olds rather than recent high school graduates) but it does allow for comparison with other states for gaps based on race/ethnicity.</p>
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- **College Enrollment Rates of 18–24-year-olds (page 52)**

1	Metric	Percent enrolled in college as a fraction of persons aged 18-24 who have a HS education but have not completed a Bachelor’s Degree
2	Segment	Statewide Metric
3	Data Source	US Census Bureau, American Community Survey, 2011-2013. IPUMS-USA, University of Minnesota, www.ipums.org
4	Cohort	Adults 18-24 with a high school diploma without a Bachelor’s degree.
5	Data Year	2011-13
6	Achievement Gap Data (page 53)	Available for Race/Ethnicity comparisons.
7	Comparison Group	National
8	# of Comparison States	50
9	National Leaders	MA, RI, NY, CT, and VT
10	Special Notes	

2. College Completion

Graduation and Student Success Rates

- **Community Colleges—Six-Year Success Rate (page 54)**

1	Metric	Achieving the Dream Six Year Success Rate
2	Segment	Community Colleges

3	Data Source	DHE/HEIRS and NSC, Jobs for the Future for comparison data
4	Cohort	First-time degree-seeking students
5	Data Year	Fall 2008 entering cohort for MA, Fall 2003 entering cohort for comparison group
6	Achievement Gap Data (pages 60, 61)	Race/Ethnicity and Gender available for MA only
7	Comparison Group	Participants in Achieving the Dream Cross-State Data Work Group
8	# of Comparison States	8
9	National Leader	Washington
10	Special Notes	<p>This measure was developed by Achieving the Dream Cross State Data Workgroup, initially published in <u>Test Drive: Six State Pilot Better Ways to Measure and Compare Community College Performance</u> (http://www.jff.org/sites/default/files/testdriveforWeb.pdf) and updated and revised in <u>On the Road to Success: How State Collaborate and Use Data to Improve Student Outcomes</u> . (http://www.jff.org/sites/default/files/ATD_OnTheRoadToSuccess_012712.pdf) This indicator expands the IPEDS cohort to include students who enroll part-time in the initial fall, and tracks graduation, transfer, credit accumulation and persistence outcomes over a six-year period. It measures the degree completion, transfer, and persistent outcomes after six years of all students who initially enroll as first-time degree seeking students (including part-time students). Transfer is assessed for both students earning an award at a community college first and students transferring prior to earning an award. NSC is used to capture transfer outside of the state public system. For more information see: http://www.jff.org/publications/education/road-success/1386</p>

- **State Universities, UMass—Six-Year Graduation Rate of First-Time Freshmen (page 54)**

1	Metric	Six year graduation rate, <i>same institution</i>
2	Segment	State Universities, UMass
3	Data Source	USDOE\ IPEDS
4	Cohort	First-time, full-time degree seeking students
5	Data Year	Fall 2008 entering cohort
6	Achievement Gap Data (page 55, 60 and 61)	Race/ethnicity, gender; 3 year rolling average based on Fall 2006 to Fall 2008 entering cohorts
7	Comparison Group	All states with at least one public master one institutions (according to 2000 Carnegie Classification)

8	# of Comparison States	45 states for State Universities, 25 states for UMass
9	Top State	VA, IA, NJ, WA, AZ for State Universities, VA, NJ, SC, PA, FI for UMass
10	Special Notes	<p>The National Center for Education Statistics defines the four-year college graduation rate as the cohort of first-time full-time, degree-seeking new freshmen who, in 6 years or less, complete a degree program at the initial institution in which they enrolled. This is the traditional IPEDS 150% of normal time completion metric required by Student Right to Know Act for all postsecondary institutions participating in Title 4. It measures the percent of first-time, full-time baccalaureate degree seeking students who earn a bachelors degree within six years from the institutions of initial enrollment. The following students may be excluded from the cohort reported to IPEDS if they left the institution for the following reasons: death or total and permanent disability; service in the armed forces (including those called to active duty); service with a foreign aid service of the federal government, such as the Peace Corps; or service on official church missions.</p> <p>Achievement gap comparisons are limited to states with at least 100 students in the initial cohort for the subgroup used in the analysis. For example a state with fewer than 100 Hispanic first-time, full-time degree seeking students in the initial cohort would not be included in the Latino-White graduation gap rankings.</p>

• **State Universities, UMass—Six-Year Graduation Rate of Students Who Transfer In (page 54)**

1	Metric	Transfer Student Graduation Rate
2	Segment	State Universities, UMass
3	Data Source	DHE/HEIRS
4	Cohort	New, full-time degree seeking transfer students
5	Data Year	Fall 2008
6	Achievement Gap Data	Race/Ethnicity, Gender
7	Comparison Group	National comparison data not available
8	# of Comparison States	National comparison data not available
9	National Leaders	National comparison data not available
10	Special Notes	This metric captures those students who transfer <i>into</i> our public postsecondary institutions, by looking at the graduation rates of transfer students. It shows the percent of new, full-time degree seeking transfer students entering in the fall term who earn a degree from the State University or the UMass campus that they transfer into within six years of entry.

- **Community Colleges—Three-Year Graduation Rate (page 55—Gaps section only)**

1	Metric	IPEDS 3 year graduation rate
2	Segment	Community Colleges
3	Data Source	IPEDS
4	Cohort	First-time, full-time degree seeking students
5	Data Year	2009-11 entering fall cohorts
6	Achievement Gap Data (page 55, 60 and 61)	Race/ethnicity and gender; 3 year combined cohorts based on Fall 2007 to Fall 2009 entering cohorts
7	Comparison Group	All states with at least one public associate college (based on 2000 Carnegie classification)
8	# of Comparison States	49
9	National Leaders	Varies by gap comparison
10	Special Notes	This is the traditional IPEDS 150% of normal time completion metric required by Student Right to Know Act for all postsecondary institutions participating in Title 4. It measures the percent of first-time, full-time degree seeking students who earn a degree or certificate within a 150% of normal time. Normal time is defined as two years for an associate’s degree, so 150% of normal time is three years for an associate’s degree. Normal time for a certificate varies by program. Students may be excluded from the cohort reported to IPEDS if they left the institution for the following reasons: death or total and permanent disability; service in the armed forces (including those called to active duty); service with a foreign aid service of the federal government, such as the Peace Corps; or service on official church missions.

3. Workforce Alignment

Trends and Projections in College Attainment

- **Community Colleges, State Universities, UMass—Associate’s and Bachelor’s Degrees in All Fields (pages 56–57)**

1	Metric	MA public degrees produced compared against degrees needed
2	Segment	Community Colleges, State Universities, UMass
3	Data Source	NCHEMS, HEIRS, Georgetown Center for Education and the Workforce
4	Cohort	Not applicable

5	Data Year	Projection is 2016-2020; actual data available for 2010-15
6	Achievement Gap Data	Not applicable
7	Comparison Group	None-internal metric only
8	# of Comparison States	None-internal metric only
9	National Leaders	None-internal metric only
10	Special Notes	<p>While there is a near national-consensus on the importance of increasing college attainment, there is the wide variety of approaches to measuring this goal, with different groups using different end dates (2020 vs. 2025), different population cohorts (25- to 34- year olds vs. 25- to 64-year olds) and different levels of minimum educational achievement (Associates Degree vs. Some College).</p> <p>The metric used in the Vision Project Report is based on the national college attainment goal of having 60% of 25- to 34-year olds hold an AA degree or higher by 2020. Note that this omits certificates—the fastest growing award at many Massachusetts community colleges, and a key component of the national focus on middle skill jobs. The choice to use AA degrees or higher is partly a consequence of data limitations--the census' American Community Survey does not distinguish between college dropouts and certificate holders in its "some college" category—and partly a consequence of seeking to align with the national goal, which in turn aligns with international comparisons in its focus on degree holders. The DHE would hope to include certificates in future reports.</p> <p>We used NCHEMS 2010 state-level projections as the base for our calculations, and refined this calculation further by looking at:</p> <ul style="list-style-type: none"> • Public share of Massachusetts undergraduate degrees: In order to determine public higher education's share of the total degrees needed, we used Massachusetts' 2010 public share of associate and for bachelor's degrees. • Segmental breakout within Massachusetts public degrees: In order to refine this to a segmental projection, we used CEW's projections of the percentage of Bachelors and Associates degrees needed in Massachusetts in 2018. • Mobility: This analysis also assumes that the net inflow and outflow of degree holders will remain unchanged.

- **Community Colleges, State Universities, UMass—Trends in Degrees Awarded in High Need Fields (pages 58–59)**

1	Metric	Number and share of associate and bachelor degrees that were awarded in high-need occupational fields.
2	Segment	Community Colleges, State Universities and UMass combined (public BAs)
3	Data Source	HEIRS for Degree Production; Georgetown Center for Education and the Workforce and the MA EOLWD for identification of high need fields “.
4	Cohort	Not Applicable
5	Data Year	Degree data provided for 2010-2015
6	Achievement Gap Data	Not Applicable
7	Comparison Group	None-internal metric only
8	# of Comparison States	None-internal metric only
9	National Leaders	None-internal metric only
10	Special Notes	High Need Fields: High need field were defined as those fields which are predicted to have the largest growth in absolute number of jobs over the next decade. To determine this, we identified the occupations that occurred most frequently based on projected change in jobs from 2008 to 2018. From this list, we removed occupations for which less than 60% of the jobs required a postsecondary education, using Bureau of Labor Statistics data for jobs requiring an Associate’s degree or higher. In addition, state level job vacancy data was used to supplement identification of high need fields. High need fields were then cross walked with Classification of Instructional Program (CIP) codes.