
Alumni Survey Report

August 2018

Office of Institutional Research, Assessment, and Planning
University of Massachusetts Boston

The Office of Institutional Research, Assessment, and Planning (OIRAP) is the primary source for official campus statistics, complying with the federal, state, and university reporting standards and requirements. OIRAP conducts student surveys and special research studies in support of university policy formation, assessment, and accountability.

This report is written by Fatema Binte Ahad, OIRAP Research Analyst for Institutional Effectiveness.

For questions or comments regarding the study findings, methodology, or data, please contact fatema.ahad@umb.edu or douglas.ducharme@umb.edu.

Thank you,

Dr. Douglas Ducharme, Associate Director for Assessment and Institutional Research
Dr. James J. Hughes, Associate Provost for Institutional Research, Assessment, and Planning
And, OIRAP colleagues for your help and support

Special thanks to the Office of Alumni Relations and our wonderful alumni who completed the 2017 Alumni Survey questionnaire.

Office of Institutional Research, Assessment, and Planning

University of Massachusetts Boston
100 William T. Morrissey Blvd., Boston, MA 02125-3393
Phone: 617-287-5420 | Email: inst.research@umb.edu

■ Background

In Spring 2018, the Office of Institutional Research, Assessment, and Planning (OIRAP) at UMass Boston launched the Alumni Survey 2017 to learn about alumni's post-graduation outcomes, alumni's willingness for engagement in various future activities, and their collegiate experience at this institution. The first UMass Boston alumni survey dates back to the early 1970's, years before alumni surveys gained popularity (around 1979) in the United States.¹ Since then, different offices, colleges, or departments at UMass Boston have been conducting alumni surveys almost every year including the annual surveys administered at the system level for all campuses. These surveys have been employing various research designs and different survey instruments over the years.

While alumni surveys have been an important part of the assessment practices at UMass Boston, there has not been a consistent research study of alumni outcome and engagement by the OIRAP in the recent years. At the institutional level, the most recent survey was the Alumni Attitude Study (AAS), a national, multi-college research survey study which was conducted in 2015.

From 2017 onward, OIRAP's new leadership team has planned to conduct an annual alumni

survey as an ongoing effort to creating a path for a sustainable assessment culture at UMass Boston. We thank the Office of Alumni Relations for partnering with OIRAP in this process.

This report presents respondents' demographic information, the findings from alumni's career and graduate or professional school outcomes, alumni engagement and experience as a student at UMass Boston, financial aid received, perceived benefits from the degree, self-reported connection with the institution at present time, and barriers of participation in alumni activities. We invited our graduate and undergraduate degree recipients with a valid email address in our record from the year of 2002, 2007, 2012, and 2017 to take the survey so that we can capture alumni outcomes of 15-year, 10-year, 5-year, and 6-months-out cohort. The response rate was 12 percent for the undergraduate and 16 percent for the graduate alumni.

The Appendices include sections that laid out the purpose of alumni survey research from the existing literature, methodology and data collection, limitations, and the frequency/percentage distribution tables. We used frequency distribution for this report, the data were not weighted.

■ Respondents' Demographics

While our primary focus was to collect information on alumni's post-graduation outcomes, collegiate experience, and participation and support, we were interested in learning about some demographics such as residency, citizenship information, and the first-generation status as more than half of UMass Boston entering freshmen, in general, are first-generation college students. Of those who responded to this survey, 52 percent of the undergraduate and 43 percent of graduate alumni reported that they were first-generation, that is, none of the parents or those who raised them received a bachelor's degree.

Nearly all (98%) of undergraduate and most (91%) of graduate alumni reported living in the United States (Figure 2). Of those who reside in the US, more than four out of five (83%) undergraduate and three-fourths (75%) of the graduate alumni live in Massachusetts.

Figure 1: Percentage of Alumni Who Are First-Generation

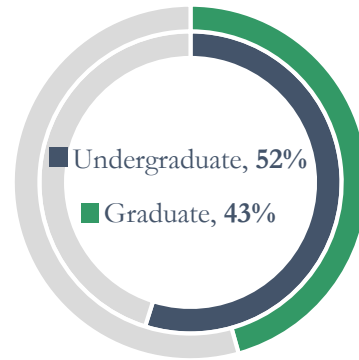


Figure 2: Alumni Residency



Among the respondents, 53 percent of undergraduate and 68 percent of graduate alumni were white. Among the undergraduate alumni who responded, 61 percent were female. Among the graduate alumni respondents, 74 percent were female. Figure 3 and 4 present respondents' race/ethnicity and gender distribution.

Figure 3: Alumni's Race/Ethnicity

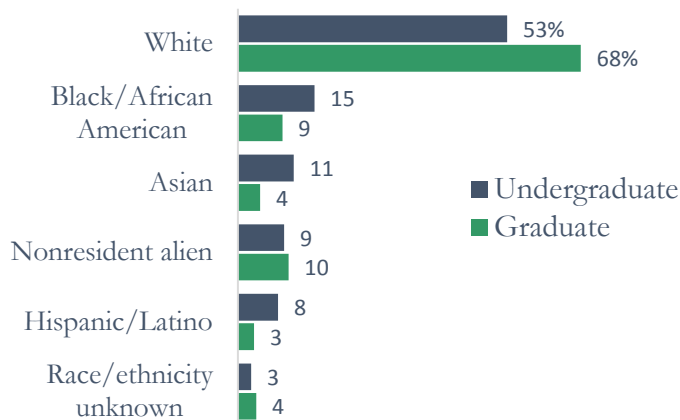
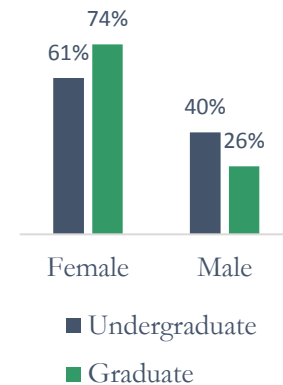


Figure 4: Alumni's Gender



Note: Race/ethnicity does not include *American Indian/Alaska Native* and *More than one race* as $n \leq 2\%$

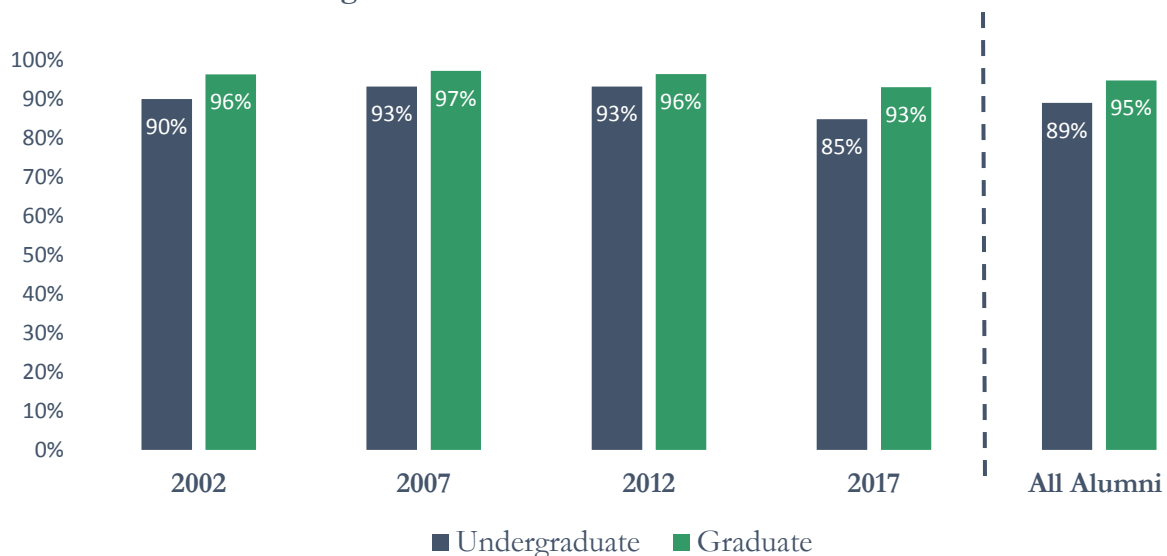
■ Career Outcomes

One of our primary objectives of this survey was to find out about the career outcomes of our alumni. From the self-reported employment status, we found that 95 percent of graduate and 89 percent of undergraduate UMass Boston alumni are in the workforce. When we looked at the employment status by alumni's graduation year, we found that 96 percent of graduate and 90 percent of undergraduate alumni from the class of 2002 were employed. 2007 and 2012 cohort had almost identical percentage of employed alumni. Nearly all (97%) of graduate and most (93%) of undergraduate alumni from 2007 cohort were employed while 96 percent graduate and 93 percent undergraduate from 2012 cohort were employed. A slightly lower

percentage of 2017 graduate (93%) and undergraduate (85%) alumni, the 6-months-out cohort, have reported being employed compared to the alumni from the other years. Figure 5 presents the percent of UMass Boston alumni who were employed at the time of taking the survey, by the year of graduation.

Among the graduate alumni, 88 percent work full-time and 6 percent work part-time. Among the undergraduate alumni, 76 percent work full-time and 12 percent work part-time. The remaining one percent of both the graduate and undergraduate alumni reported being employed, but on temporary leave (e.g., maternity, sabbatical, etc.) at the time of taking the survey.

Figure 5: Percent of Alumni in the Workforce



Note: based on those who were employed full-time, part-time, or on temporary leave.

We asked a series of questions to those who indicated that they were employed full-time, part-time, or on temporary leave, such as their employment sector, employers' industry, name of the organization, title, level of their current position, whether their position was related to the degree they received from UMass Boston, and how well UMass Boston had prepared them for their current career.

Figure 6 presents the alumni's employment sectors. Nearly half (46%) of the graduate alumni reported that they were working at the public sector that is, for the government or other public institutions including the military. On the other hand, private sectors were popular among the undergraduate alumni, nearly half (46%) of them reported that they were working for the for-profit corporations, companies, or group practices.

Figure 6: Employment Sector



Two percent of both our graduate and undergraduate alumni reported that they have reached the chief executive level that is, either CEO, COO, CFO, GM, or principal in a business or other organization, in their career. Thirty-five percent of the graduate alumni and 19 percent of the undergraduate alumni were either in the senior or executive level (except chief executive). The remaining graduate (63%) and undergraduate (78%) alumni were in the entry or mid-level of their career. We found that alumni's year of graduation and career-level have a statistically significant association. Alumni from 2017 and 2012 are more likely to be in the entry or mid-level in their careers while 2002 and 2007 alumni are more likely to be in the senior or executive level in their careers.

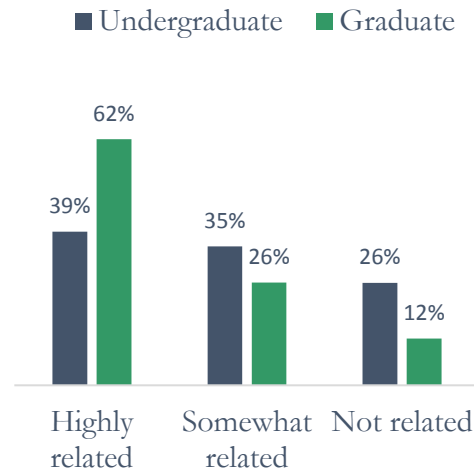
We asked our alumni to select the industry that best describes their employer and based on their responses we picked the top five industries. While the ranking was slightly different for graduate and undergraduate alumni, the top five industries (Figure 7) for both groups were identical. Top five industries according to the graduate alumni were: 1) medicine (18%), 2) elementary/secondary education (12%), 3) higher education (10%), 4) social services (6%), and 5) financial services (5%). Top five industries according to the undergraduate alumni were: 1) elementary/secondary education (29%), 2) higher education (25%), 3) medicine (9%), 4) social services (6%), and 5) financial services (5%). Overall, fifty-one percent of graduate and 74 percent of undergraduate alumni's careers belong to these five industries.

Figure 7: Most Popular Industry



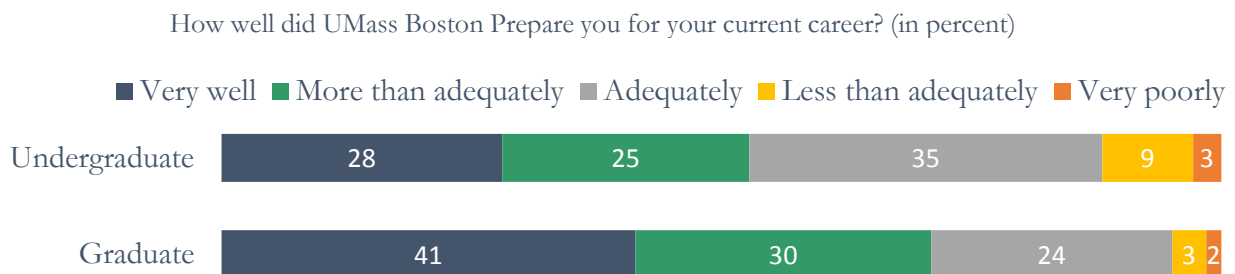
Figure 8 shows that the graduate degree recipients are more likely (62%) to report their current position as *highly related* to the degree they received from UMass Boston compared to the undergraduate degree recipients (39%). When we looked at these responses by colleges, we found that 80 percent of the graduate alumni from the College of Education and Human Development and 67 percent from the College of Nursing and Health Sciences reported their degree as *highly related* to their current position. Seventy-six percent of the College of Nursing and Health Sciences undergraduate alumni reported their degree as *highly related* to their current position. A complete list in Table 15 appears in Appendix E.

Figure 8: Relation Between the Current Position and Degree Received



We found (Figure 9) that a higher percentage of graduate alumni (71%) believed that UMass Boston had prepared them *very well* or *more than adequately* for their current career than the undergraduate alumni (53%). How the alumni perceive the relationship between their current position and the degree received from UMass Boston may have contributed to this gap as we found a statistically significant association between these two variables. We also found a statistically significant relationship between alumni’s degree year and how well they thought the institution had prepared them. A lower percentage of undergraduate alumni from 2017 and 2012 reported *very well* or *more than adequately* when responding to this question compared to those who received their degree in 2002 and 2007. Graduate alumni who received their degree in 2002, 2007 and 2012 were more likely to respond *very well* to this question.

Figure 9: Self-Evaluated UMass Boston’s Career Preparedness



Those who were not employed at the time of taking the survey reported that caring for the children, furthering their education, working on a personal project, taking time off for health reasons, and engaging in volunteering work were the top reasons for unemployment. Also, 21 percent of graduate and 8 percent of the undergraduate alumni who reported being unemployed retired from the workforce (Table 17 in Appendix E).

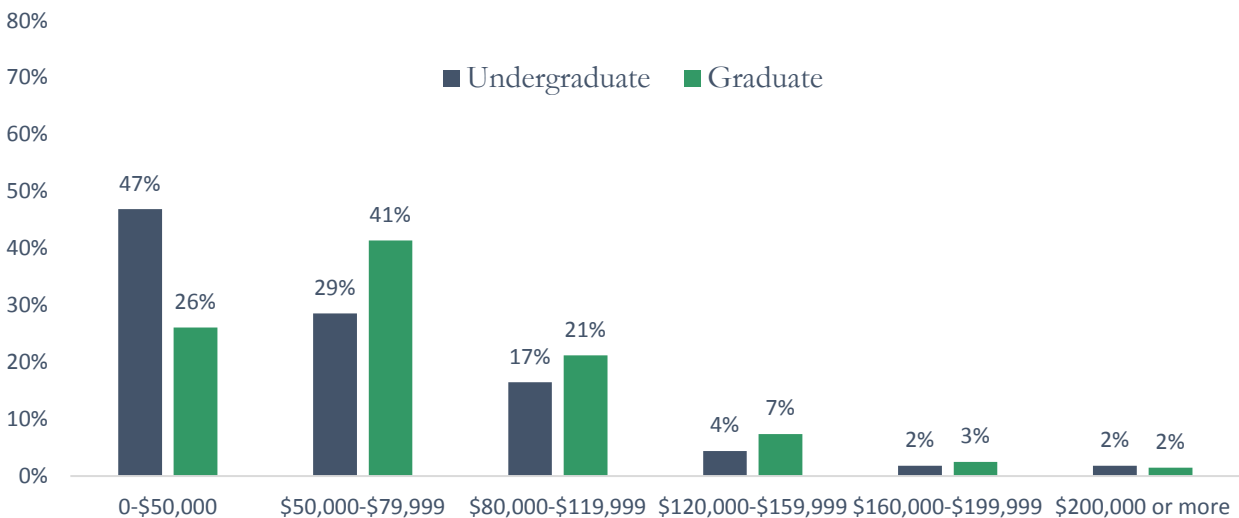
Income

We asked our alumni to report their personal annual income before taxes at the time of taking the survey. Figure 10 presents this information. From the descriptive statistics, we found that among the undergraduate alumni, nearly half (47%) earn less than \$50,000, 29 percent earn between \$50,000 and \$79,999, and 17 percent earn between \$80,000 and \$119,000. The remaining eight percent earn \$120,000 or more. Unlike the undergraduate alumni, a higher percentage of our graduate alumni were likely to be in the higher income brackets. Among the graduate alumni, 26 percent earn less than \$50,000, 41 percent earn between \$50,000 and \$79,999, 21 percent earn between \$80,000 and \$119,000, and the other 12 percent earn \$120,000 or more. According to the Bureau of Labor Statistics in 2014 (most recent data available), the national average of median

earning for those with a bachelor's degree or above was \$62,036.

This question was displayed to all survey respondents including those who were retired, were in graduate or professional school (full or part-time), were unemployed because of various reasons or, unemployed by choice as they were not looking for work at that time. Forty percent of undergraduate and nearly half (49%) of all respondents were 2017 degree recipients. Our assumption is that the 6-months-out alumni who are mostly in the entry or mid-level of their career are more likely to have lower income than alumni who have been in the workforce since the last 15, 10, or five years. Therefore, any interpretation and generalization should keep this in consideration.

Figure 10: Annual Income Before Taxes



We found a statistically significant relationship between Alumni income and their degree year. Figure 11 illustrates how the more recent alumni are more likely to earn less than the older cohort and vice versa. The majority (71%) of the undergraduate from 2017 cohort earn \$50,000 or less while only 16 percent from 2002 cohort earn the same. This staggering decrease was found in the graduate alumni earnings- a drop to five percent of 2002 graduate alumni from 39 percent of 2017 graduate alumni

who earn less than \$50,000. We also see a huge percent gap by alumni degree year for those who earn \$80,000 or more. Only 5 percent of undergraduate and 16 percent of graduate alumni of 2017 earn 80K or more while 49 percent of undergraduate and 73 percent of graduate alumni earn within the same bracket.

Figure 11: Change in Alumni Earnings by Degree Year

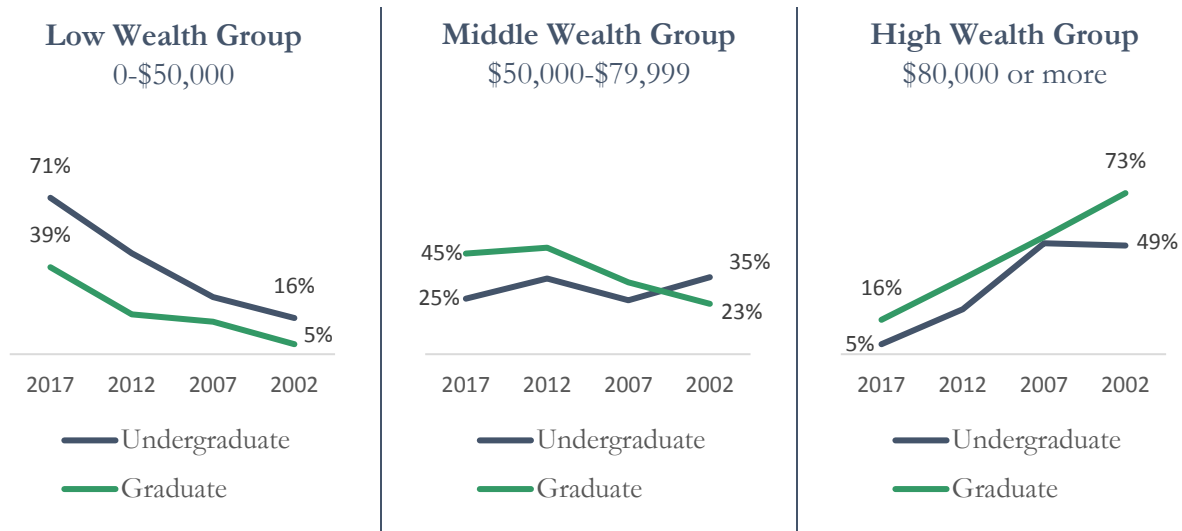
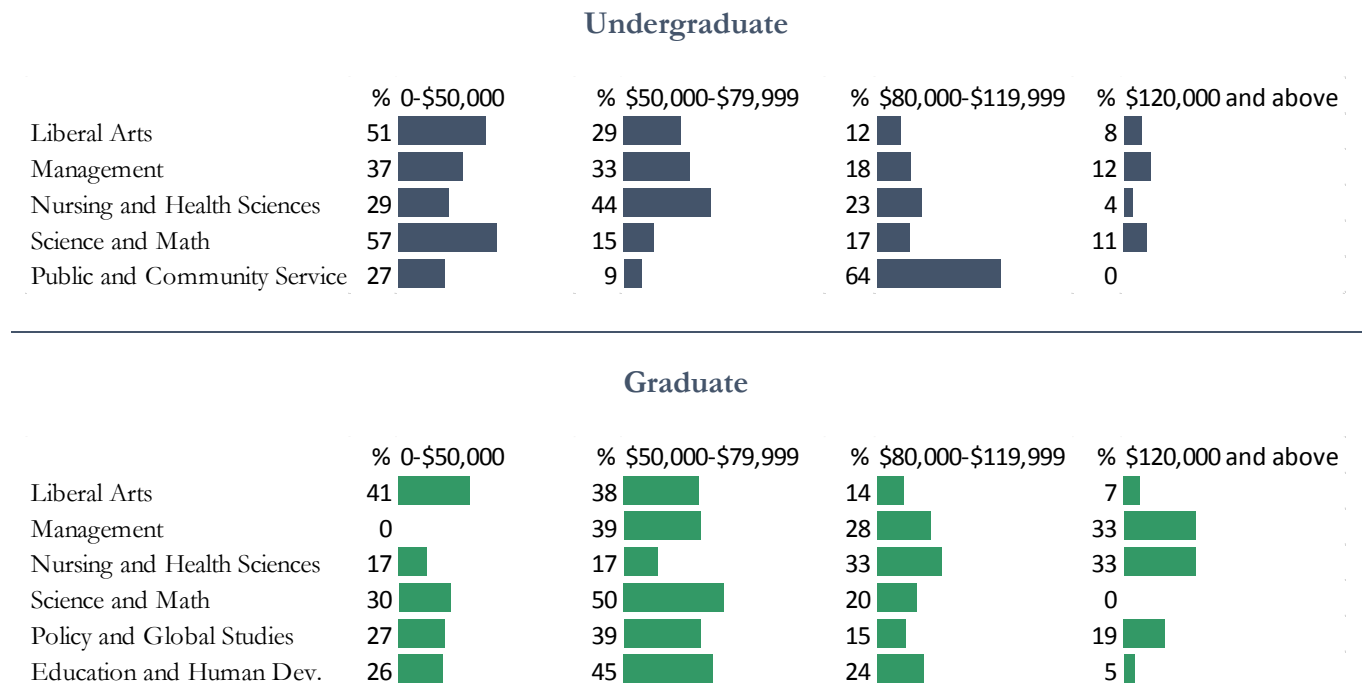


Figure 12 shows alumni income by colleges (Colleges with less than 10 responses were excluded).

Figure 12: Income by College

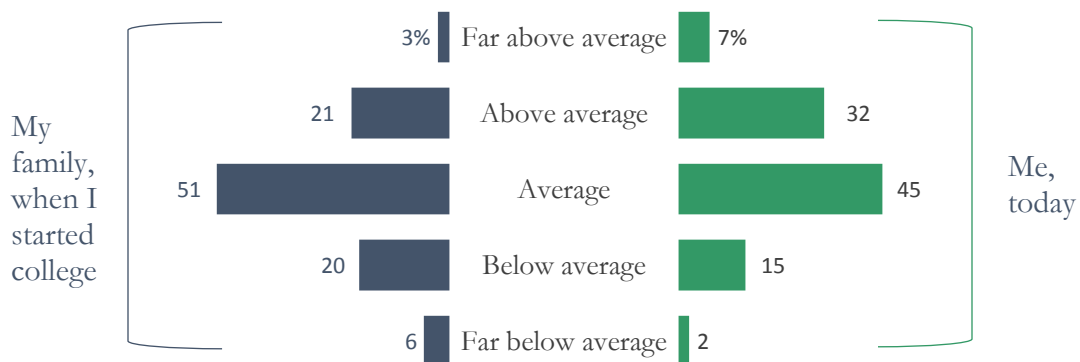


■ Generational Living Standard Mobility

Existing literature firmly established that even though the investment in a college degree poses a financial burden, especially to those in lower income brackets, the benefits outweigh the cost in the long run.² While measuring the inter-generational income or living standard mobility is challenging and requires an extensive research, we included a rather simple question in our survey instrument for our undergraduate alumni to get a glimpse of how they perceive their living standard compared to their family. We found a higher percentage of

undergraduate alumni live far above average (7%) and above average (32%) than their families did (3% and 21%, respectively). Similarly, a lower percentage of alumni live in far below average, below average, and average compared to their families. Figure 13 shows the living standard mobility between our alumni at the present time and their families when they started college. The gap between families and alumni is larger for older alumni, that is, 2002 and 2007 alumni than the younger alumni, that is, the 2012 and 2017 alumni.

Figure 13: Living Standard Mobility



■ Graduate School Outcome

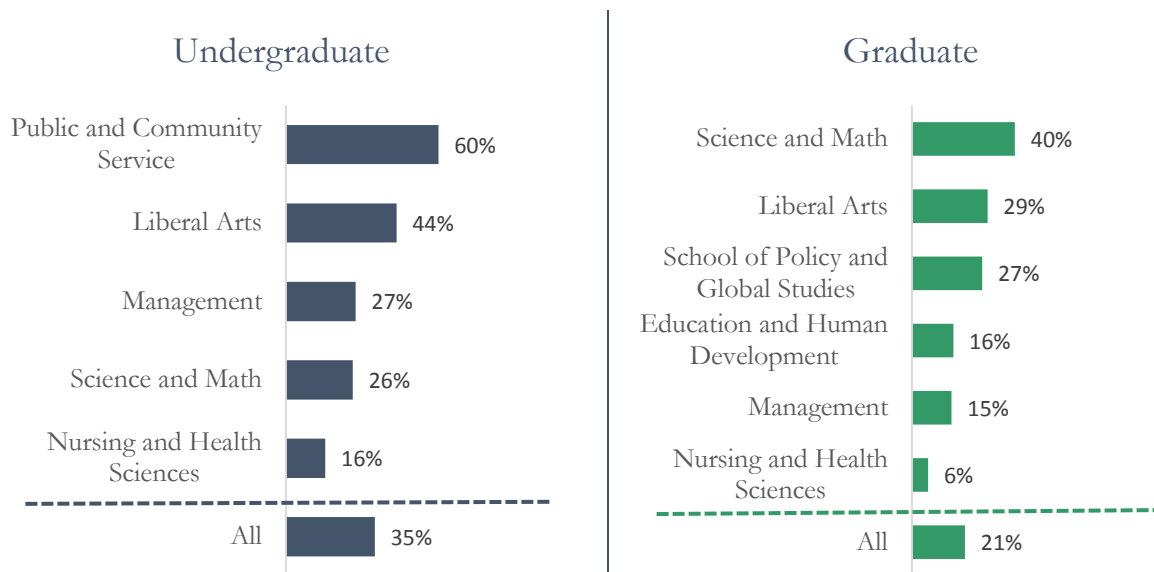
Three out of five (60%) College of Public and Community Service and nearly half (44%) of College of Liberal Arts undergraduate degree recipients enrolled in a graduate or professional degree program since graduating from UMass Boston. Two out of five alumni (40%) with a graduate degree from the College of Science and Mathematics enrolled in a graduate or professional degree program after graduating from UMass Boston. Twenty-nine percent of the College of Liberal Arts and 27 percent of McCormack Graduate School of Policy and Global Studies graduate degree recipients have also done the same.

Overall, 35 percent of undergraduate and 21 percent of graduate alumni enrolled in a

graduate or professional degree program after graduating from UMass Boston. Figure 14 presents our alumni's enrollment information in a graduate or professional program by colleges.

Alumni who indicated that they have enrolled in a graduate or professional program since graduation from UMass Boston were also asked if they were enrolled in that program at the time of taking the survey. Thirty-six percent of undergraduate and 43 percent of graduate alumni answered in the affirmative and indicated that they were either a full-time or a part-time student.

Figure 14: Enrollment in a Graduate or Professional Program

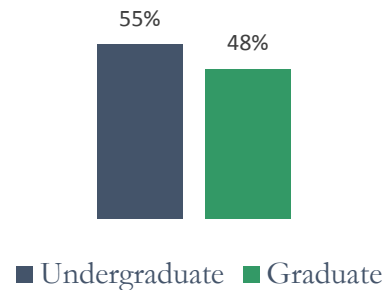


Note: Excludes colleges that have less than 10 respondents.

A higher percentage of men graduate alumni (26%) were enrolled in another graduate or professional program compared to women (19%). On the other hand, a slightly higher percentage of women (36%) among the undergraduate alumni enrolled in a graduate or professional program than men (34%). Alumni's major and graduate school enrollment decision have a statistically significant association. Alumni from some majors such as Applied Sociology, Criminal Justice, Economics, English, and History are more likely to enroll in a graduate and professional program while Anthropology, Art, Biology, Human Services, Information Technology, Management, Nursing, Political Science, Psychology, and School Counseling alumni are less likely to enroll in a graduate or professional school. Moreover, we found (Figure 15) that more than half (55%) of first-

generation undergraduate and nearly half (48%) of graduate alumni enrolled in a graduate or professional program.

Figure 15: Graduate School Enrollment by First-Generation Status

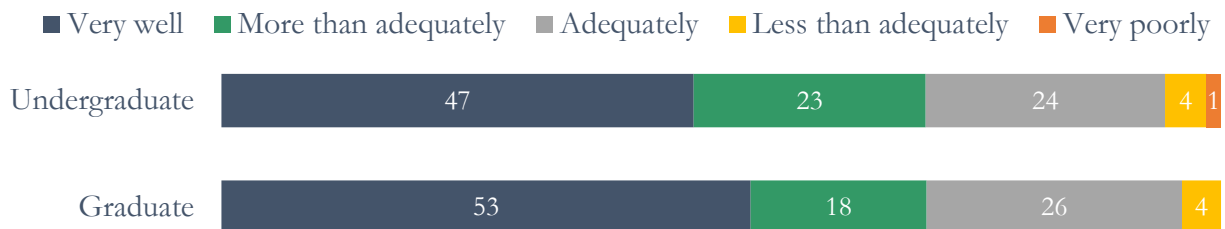


Among the undergraduate alumni who went to a graduate school after graduating from UMass Boston, the majority (82%) were enrolled in or have already received a master's degree (includes MA, MFA, MS, MBA, professional master's such as MPA, or other master's program). Among the graduate alumni, 67 percent had either received or enrolled in another master's program. Twenty-nine percent of graduate alumni pursued a doctorate program while nine percent of undergraduate alumni did the same. Table 6 in Appendix E presents this information.

Figure 16 presents alumni's self-evaluation on how UMass Boston prepared them for graduate and professional school. The Majority of the undergraduate (70%) and graduate (71%) alumni indicated that UMass Boston had prepared them either *very well* or *more than adequately* for the graduate or professional school. Only five percent of undergraduate alumni and four percent of graduate alumni indicated that training provided by the institution for graduate school was less than adequate or very poor.

Figure 16: Self-Evaluated UMass Boston's Graduate School Preparedness

How well did UMass Boston Prepare you for your current career? (in percent)






■ Engagement while a UMass Boston Student

Nearly one in five (19%) graduate and two in five (42%) undergraduate alumni participated in any organization or activities while they were a student at UMass Boston. Among the graduate alumni who reported participation in any organization and activities, more than one-third (34%) were engaged in a professional or career-related organization, 23 percent in an honor society, 17 percent in community services, and 15 percent in academic clubs.

Among the undergraduate alumni, more than one-third (36%) were engaged in an honor society, 28 percent in an ethnic or cultural club or organization, 25 percent in academic clubs, and 18 percent in a professional or career-related organization. Our alumni reported a wide variety of organizations and activities that they participated in while studying at UMass Boston, Figure 17 lists some examples.

Figure 17: Participation in Organization or Activities While a Student at UMass Boston

 <p>Honor Society</p>	 <p>Professional/Career related Organization</p>	 <p>Academic Clubs</p>
<ul style="list-style-type: none"> - Beta Gamma Sigma - Sigma Phi Omega - Sigma Theta Tau - Alpha Lambda Delta - Pi Sigma Alpha - Psi Chi - Sigma Tau Delta - Delta Sigma Pi 	<ul style="list-style-type: none"> - Pre-medical society - Student nurses association - Applied Linguistics meet-ups - Eastern Sociological Society - Southern Demographic Society - Health Equity Scholars Program 	<ul style="list-style-type: none"> - Anthropology Society - Biology club - Classics Club - Game Development Club - Latino Leadership Opportunity Program - Math club - Sustainability Club
 <p>Ethnic/Cultural/Religious Clubs/Organization</p>	 <p>Community Service</p>	 <p>Student Media/Athletics Musical/theater/art/book</p>
<ul style="list-style-type: none"> - African Student Union - Cape Verdean Club - Desi Student Association - French Club - Indian Student Association - Christian Fellowship group - Muslim Student Association 	<ul style="list-style-type: none"> - 3Point Foundation - Student Leadership & Community Engagement - Beacon Voyages for Service - Project Serve - Strong Women, Strong Girls - Students Advocates for Students 	<ul style="list-style-type: none"> - The Mass Media - Basketball team - Volleyball - Men's Lacrosse - Men's Ice Hockey - Chamber Singers - Sailing Club - Soccer

■ UMass Boston Experience

We asked our alumni to indicate how well they thought the academic experience at UMass Boston prepared them to do a series of degree, knowledge, or skill outcomes. Figure 18 presents the responses of our undergraduate alumni.

Figure 18: Undergraduate Academic Experience

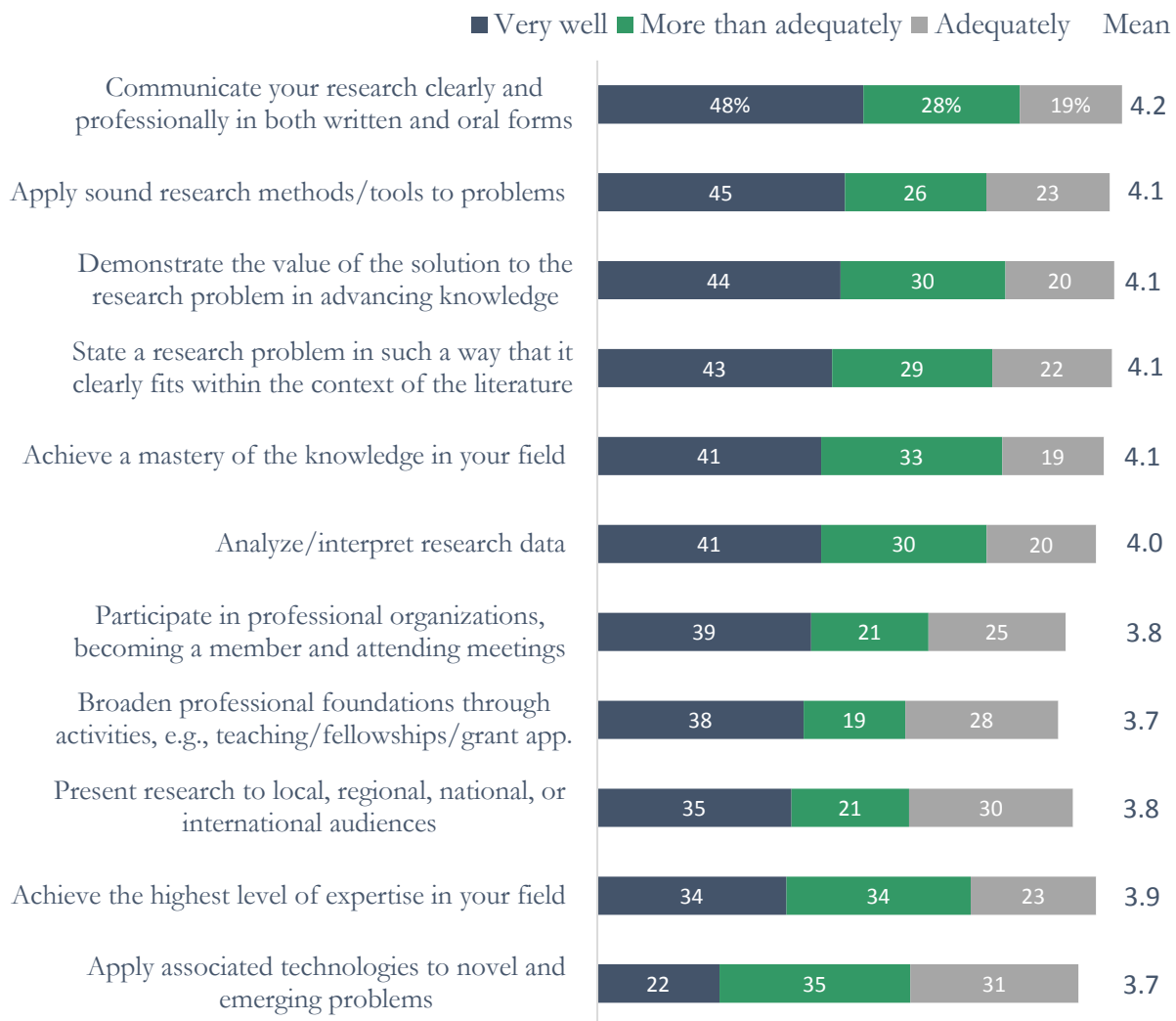


Note: the mean calculation includes the remaining two answer choices *less than adequately* and *very poorly*.

Nearly three out of five (59%) undergraduate alumni reported that UMass Boston did *very well* in preparing them to relate well to people of different races, nations, and religions. Also, based on the percentage of undergraduate alumni who responded that the institution prepared them *very well*, the top areas were: function independently without supervision (48%), to identify moral and ethical issues (47%), and to judge the merits of arguments based on their sources, methods, and reasoning (42%). Outcomes at the bottom were *read or speak a foreign language* (16%), use quantitative tools (24%), and understand the process of science and experimentation (29%).

Graduate Alumni were also asked an identical question, but addressing different skills and outcomes that are more focused on research experience (Figure 19). Based on the percentage of alumni responding *very well* to eleven skills or outcomes, *communicate research clearly and professionally in both written and oral forms* was at the top and *apply associated technologies to novel and emerging problems* was at the bottom of the list.

Figure 19: Graduate Academic Experience

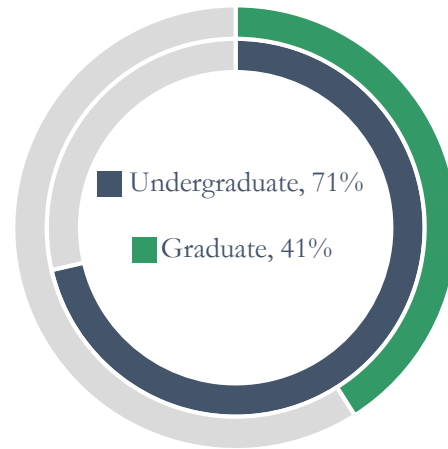


Note: the mean calculation includes the remaining two answer choices *less than adequately* and *very poorly*.

■ Amount Borrowed, Benefits Received

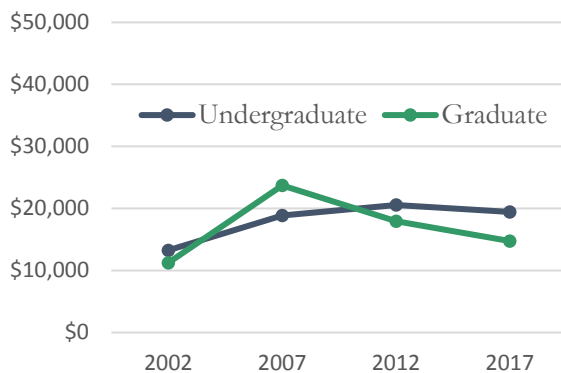
More than seven out of ten (71%) undergraduate and more than two out of five (41%) graduate alumni received some form of financial support from UMass Boston (Figure 20) such as a grant, scholarship, student loan, or work-study jobs, tuition waiver, or stipend. On an average, undergraduate alumni borrowed \$18,761 and graduate alumni borrowed \$16,620 to finance their degree from UMass Boston. We found that there is a statistically significant association between undergraduate alumni's ethnicity and the amount they borrowed to finance their degree. On average, White undergraduates borrowed \$18,520, African Americans borrowed \$23,981, Hispanic/Latinos borrowed \$19,712, Asians borrowed \$16,842, and non-resident aliens borrowed \$11,111 for their degree.

Figure 20: Percentage of Alumni Who Received Any Financial Support from UMass Boston



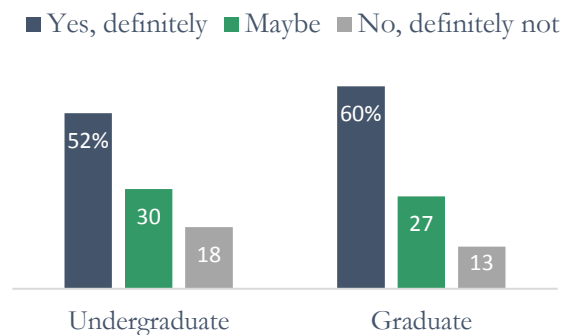
We see an upward trend on the amount borrowed by the undergraduate alumni in 2002, 2007, and 2012 with a slight dip in 2017. For the graduate alumni, the total amount boomed in 2007 and then decreased in 2012 and 2017. We asked our alumni whether the benefits they received from attending UMass Boston outweigh the financial costs they had to bear. Three out of five (60%) graduate alumni reported that it definitely did, 27 percent indicated that *maybe* it did, and the remaining 13 percent indicated that it definitely did not. Among the undergraduate alumni, more than half (52%) reported that it definitely did, 30 percent reported that it *maybe* did and nearly one out of five (18%) reported that the cost definitely did not outweigh the benefits.

Figure 21: Average Amount Borrowed by Year



Note: amount in present value

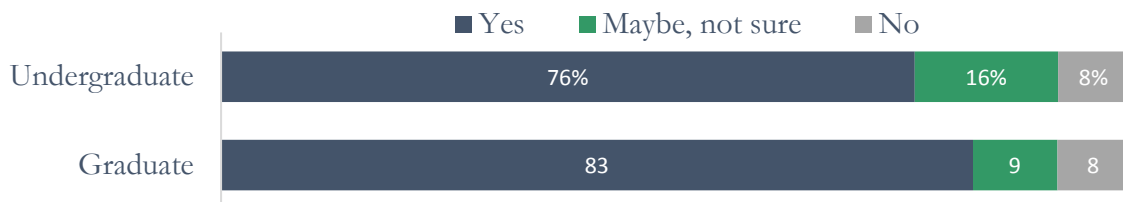
Figure 22: Percent Reporting If the Benefits of Attending UMass Boston Outweigh the Financial Cost



Overall Experience at UMass Boston

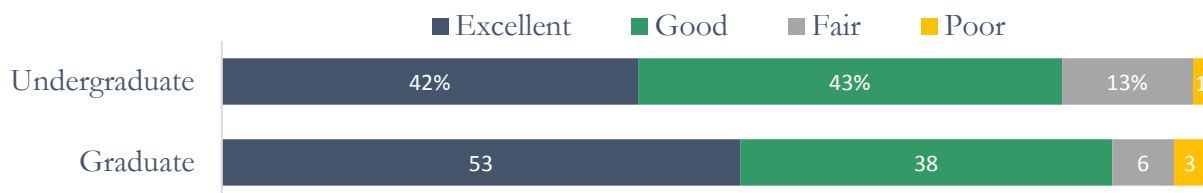
We asked our alumni to let us know if they would encourage a prospective undergraduate/graduate student who resembles them when they were an undergraduate/graduate student (similar background, ability, interest, and temperament) to attend UMass Boston. More than three-fourths (76%) of the undergraduate and most (83%) of the graduate alumni indicated that they would. Eight percent of both groups of alumni indicated that they would not. Remaining 16 percent of undergraduate and nine percent of graduate alumni reported that they were not sure (Figure 23).

Figure 23: Percentage of Alumni Who Would Encourage a Prospective Student to Attend UMass Boston



UMass Boston graduate alumni are more likely to rate their entire educational experience as *excellent*. Ninety-one percent of the graduate alumni either rated their experience as *excellent* or *good* while 85 percent of the undergraduate alumni rated the same (Figure 24). We found that only one percent of the undergraduate and three percent of the graduate alumni rated their experience as *poor*.

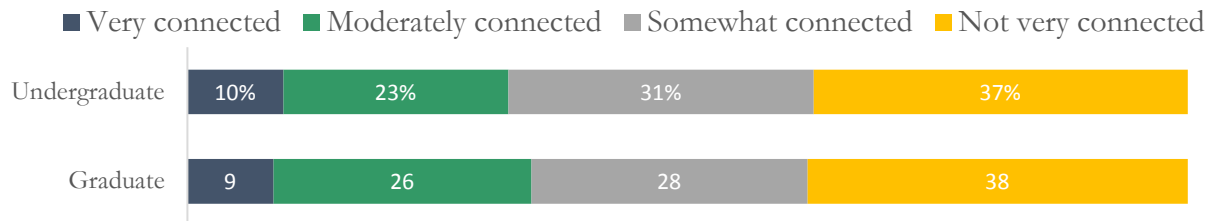
Figure 24: Alumni's Entire Educational Experience



Alumni's Connection with the Institution

We asked our alumni a series of questions to understand their willingness for participation and support. We began with the question that asked them to report their self-perceived connection with UMass Boston at the time of taking the survey. A higher percentage of alumni reported that they feel *not very connected* (37% of undergraduate and 38% of graduate) compared to only 10 percent undergraduate and nine percent graduate alumni who reported feeling *very connected*. The remaining reported either moderately connected or somewhat connected to the institution (Figure 25).

Figure 25: Perceived Connection with the Institution



A little more than half (55%) of undergraduate and less than half (46%) of graduate alumni indicated that they would like to be connected with UMass Boston (Figure 26). We asked alumni to report ways they would be most interested in connecting with UMass Boston. They had an option to choose more than one option. *Keeping in touch with people from UMass Boston (professors, staffs, or classmates)* turned out to be the most popular way to be connected with the institution among both the undergraduate (38%) and graduate (42%) alumni. The second best way according to 31 percent undergraduate and 28 percent of graduate alumni was *career networking*. Donating to or fundraising for the university was the least popular among both the undergraduate (4%) and graduate (5%) alumni. Figure 27 presents this information.

Figure 26: Percent Who like to Be Connected with the Institution

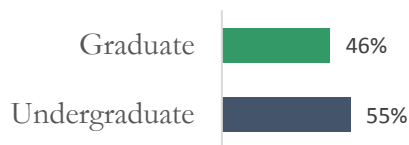
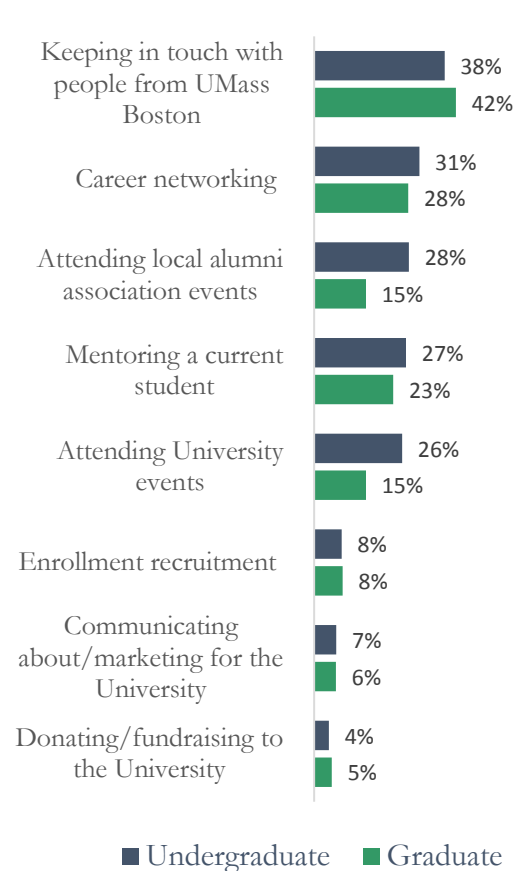


Figure 27: Percent Expressed Interest in Ways to Connect to UMass Boston



We were interested in learning how important some of the features regarding their connection to UMass Boston were to our alumni. Figure 28 presents the responses of undergraduate alumni and Figure 29 presents the responses of graduate alumni.

Figure 28: What Is Important for Undergraduate Alumni

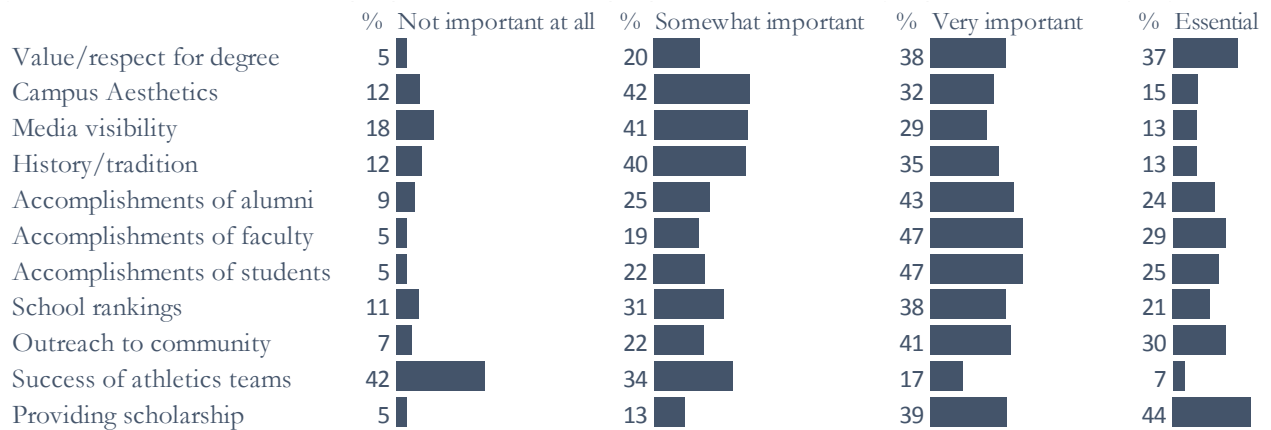
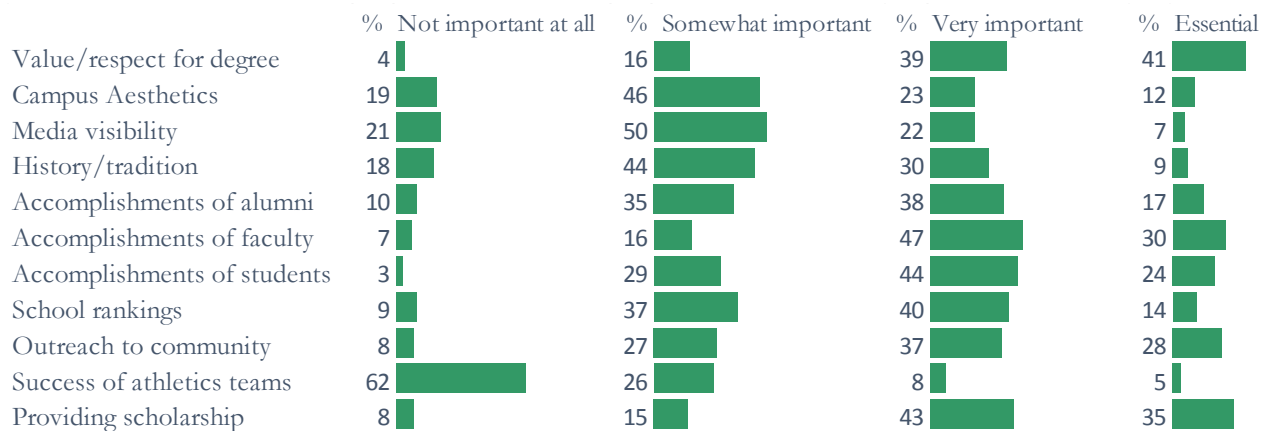


Figure 29: What Is Important for Graduate Alumni



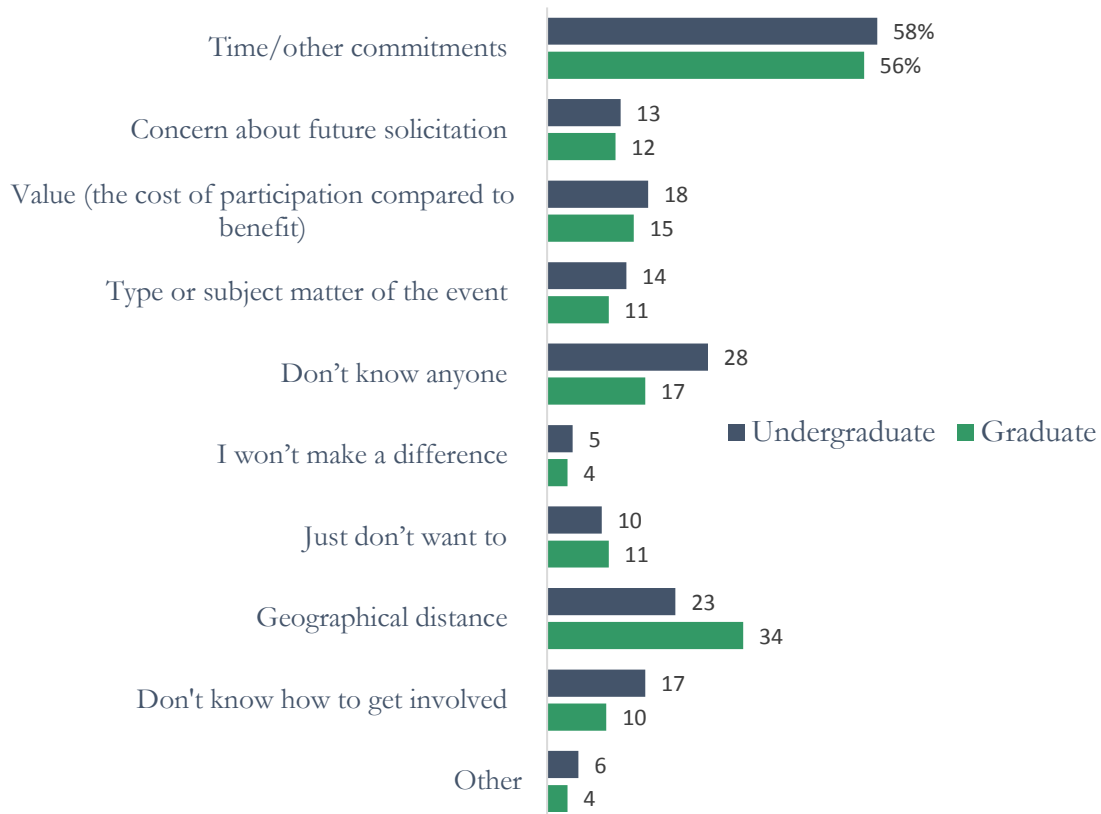
■ Barriers to Participation

The top barrier for our alumni to participate in alumni activities is the *time or other commitments*. Nearly three out of five (58%) undergraduate and more than half (56%) of graduate alumni indicated time or other commitments was an obstacle. The geographical distance was reported by 23 percent of undergraduate and 34 percent of graduate alumni. *Don't know anyone* was reported by 28 percent of the undergraduate and 17 percent of the graduate alumni. Figure 30 presents this information. Alumni had an option to report *other* barriers that were not listed in the answer choices. We

found a variety of circumstances and concerns. This information will be shared with the Office of Alumni Relations, and if needed, with the leadership team to understand how to overcome some of these barriers.

We asked our alumni to tell us what UMass Boston can do to help them stay engaged with the institutions in an open-ended question. We received many valuable responses that will be shared with appropriate offices that may help strengthen our outreach effort.

Figure 30: Barriers to Participation



■ Appendices

■ Appendix A: Purpose of Alumni Research Studies

For many decades, alumni surveys have been identified as an important assessment tool. Alumni survey has an impact on how policies, practices, planning, and advancement decisions get shaped up at higher education institutions as the institutions depend on their alumni for information and financial support. This information includes alumni perception on academic programs and student services, collegiate experience on student cognitive and non-cognitive development, evidence of student outcome for accreditation purposes, and alumni feedback for improving educational and administrative services.³ While there is a wide variety of audience and interests in post-graduation outcome and experience, alumni surveys are also a crucial assessment tool for higher education accountability and improvement.⁴

Many of this assessment of performance, accountability, and financial information of an alumni survey can be categorized into three primary concepts—1) alumni outcomes, 2) engagement and competencies, and 3) alumni giving.⁵ Alumni outcomes approach assumes that quality and effectiveness of an institution can be assessed by alumni accomplishments such as income, job satisfaction, and occupational attainment in the years following degree completion. However, focusing on the alumni outcomes as a measure to assess institutional excellence and effectiveness has been seen overly simplistic and criticized as a flawed measure. Instead, scholars argue that student engagement and attainment of competencies should be the focus of the institutional quality assessment. This approach

seeks to answer the character and nature of the experiences of the student in college, the extent to which competencies are acquired in college, and the extent to which alumni apply those in the workforce or graduate school. Alumni giving surveys assess alumni willingness to give and their capacity to do so as understanding the underlying factors for alumni to decide to support their alma mater is critical for maintaining the quality of institutional programs.⁶

Other than these most influential approaches, alumni surveys are tailored toward fulfilling many internal and external demands for assessment, accountability, and market-driven research such as demands from the legislators and taxpayers for assessing how postsecondary education provided by the public or community colleges yield economic and social benefits to the state and communities.⁷ Because there is a significant positive relationship between alumni satisfaction and alumni involvement in giving and participation,⁸ alumni surveys are also commonly used to understand satisfaction. Not only at the institutional level, but Alumni surveys at the program levels can also be an important assessment tool. For example, alumni studies can analyze alumni ranking of ‘the importance of’ and ‘preparation in’ the desired outcomes set by accreditation bodies,⁹ alumni preparedness and competency on workforce readiness, changes since graduation on emotional states and personality qualities, or can provide suggestions for institutions on how to provide opportunities that enhance workforce success.¹⁰

Inspired by the existing research and institution's assessment needs, the instrument for the Alumni survey 2017 was developed by the OIRAP which primarily focuses on the outcome-based approach. This is because the outcome-based approach is built on easily understood indicators of success¹¹ and is the most cost-effective way to begin outcome assessment. This approach is useful—1) internally for enhancing academic curricula, support programs and administrative policy and 2) externally for supporting accreditation, accountability, recruitment,¹² and engagement.

Contents of the Alumni Survey 2017 include:

Post-graduation Outcomes

- Graduate or professional degree enrollment
- Additional degrees earned
- Employment and career status
- Occupational attainment

- Preparation for graduate or professional school
- Preparation for employment
- Income

Collegiate Experience

- Engagement in clubs and organizations
- Financial aid or support received

Alumni Participation and Support

- Perceived connection with the institution
- Barriers to participation
- Participation options according to alumni interests

Respondent's Demographics

- First-generation college student
- Residency

■ Appendix B: Methodology and Data Collection

The survey invitation was sent to 2002, 2007, 2012, and 2017 undergraduate and graduate degree recipients to capture 15, 10, 5-years, and 6-months-out cohort data. Alumni information such as name, email address, the name of the college, and degree received were provided by the Office of Alumni Relations. Please note that the list only included the alumnus/alumna with a valid email address known to the Office of Alumni Relations. The survey invitation went to our graduate, undergraduate, and dual graduate and undergraduate degree recipients for those years. Alumni who were non-degree or

certificate students were not included in this study. However, some of the alumni in this study may have completed a certificate program at the same time as getting their graduate or undergraduate degree.

This web-based survey was administered in Qualtrics, an online survey platform. The initial invitation was sent on January 31, 2018. The fourth and final reminder was sent on March 7, 2018. Two, \$50 each, visa gift cards were awarded as incentives. The winners were notified on March 20, 2018.

■ Appendix C: Response Rate

Qualtrics created a unique link for each invitee. The unique links prohibited duplicates. In the case of incomplete responses, if at least 50 percent of a survey was completed, the responses were kept. The email invitation was sent to 3,905 undergraduate alumni (among which 313 emails were either failed or bounced) and 1,714 graduate alumni (107

emails failed or bounced). A total of 418 undergraduate and 250 graduate alumni participated in the survey. This yielded a response rate of 12 percent for the undergraduate and 16 percent for the graduate alumni. We did not include incomplete responses in the responses rate calculation.

■ Appendix D: Limitations

We found at least three limitations. First, the survey was scheduled to launch in the first week of November of 2017 as one of the intended group was the 6-months-out cohort. It was postponed until January 2018 as another system-wide alumni survey invite went out only a few days before our intended launch. In order to avoid survey fatigue and a very low response rate, we decided to push back the launch date to spring.

Second, we expect sampling bias or selection bias due to using a convenient sample that is, selecting only those with a valid email address. We have to keep this in mind when interpreting the results and generalizing them.

Third, the survey had an overall low response rate although a low response rate, by all emphasis, does not invalidate a survey and the results are likely to be as representative as studies with a higher response rate.¹³

■ Appendix E: Frequency Tables

Table 1: Response Rate

	Undergraduate	Graduate
Invitation email sent	3905	1714
Email failed	4	1
email bounced	309	106
Usable responses	418	250
Response rate	12%	16%

Table 2: Percentage of Respondents by College

College	Undergraduate	Graduate
College of Advancing and Professional Studies	<1%	10%
College of Education and Human Development	1%	87%
College of Liberal Arts	51%	51%
College of Management	15%	26%
College of Nursing and Health Sciences	14%	17%
College of Science and Mathematics	14%	15%
McCormack Graduate School of Policy and Global Studies	<1%	33%
School for Global Inclusion and Social Development	-	7%
School for the Environment	1%	4%
College of Public and Community Service	4%	-

Table 3: Percentage of Respondents by Degree Year

Degree Year	Undergraduate	Graduate
<i>n</i>	418	250
2002	14%	12%
2007	19%	16%
2012	26%	23%
2017	40%	48%

Table 4: Enrollment in a Graduate or Professional Program

Have you enrolled in a graduate or professional degree program since graduating from UMass Boston?				
	Undergraduate		Graduate	
	<i>n</i>	%	<i>n</i>	%
Yes	146	35%	51	21%
No	272	65%	197	79%
Total	418	100%	248	100%

Table 5: Enrollment in a Graduate or Professional Program at Present

Are you enrolled in a graduate or professional degree program now?		
	Undergraduate	Graduate
<i>n</i>	145	51
Yes, I am a full-time student	23%	20%
Yes, I am a part-time student	13%	24%
No	64%	57%

Note: This question was displayed to those who answered *Yes* in Table 4.

Table 6: Type of Graduate or Professional Degree

Please tell us about the graduate and professional degrees you have either already received or for which you are currently enrolled. Mark all that apply.				
	Undergraduate		Graduate	
	<i>n</i>	%	<i>n</i>	%
Master of Arts (MA)	25	17%	5	10%
Master's in Fine Arts (MFA)	2	1%	-	-
Master of Science (MS)	30	21%	11	22%
Master of Business Administration (MBA)	15	10%	4	8%
Professional Masters (e.g., MEd, MPA, MSW)	28	19%	8	16%
Other master's Degree	19	13%	6	12%
Law degree (e.g., JD)	11	8%	-	-
Medical degree (e.g., MD)	5	3%	-	-
Doctorate (e.g., PhD, EdD)	13	9%	15	29%
Other degree:	6	4%	10	20%

Note: This question was displayed to those who answered *Yes* in Table 4. Denominator for percent calculation was the number of respondents who answered *Yes* in Table 4. Total does not add up to 100% as respondents had an option to select more than one category.

Table 7: Graduate and Professional School Preparedness

How well did UMass Boston prepare you for graduate or professional school?		
	Undergraduate	Graduate
<i>n</i>	142	51
Very well	47%	53%
More than adequately	23%	18%
Adequately	24%	26%
Less than adequately	4%	4%
Very poorly	1%	-

Note: This question was displayed to those who answered *Yes* in Table 4.

Table 8: Participation in Organizations or Activities

Did you participate in any organizations/activities while you were a student at UMass Boston?				
	Undergraduate		Graduate	
	<i>n</i>	%	<i>n</i>	%
Yes	173	42%	47	19%
No	243	58%	201	81%
Total	416	100%	248	100%

Table 9: Type of Organization or Activities

Please select any and provide a name/type. You can select more than one.				
	Undergraduate		Graduate	
	<i>n</i>	%	<i>n</i>	%
Honor Society	63	36%	11	23%
Religious Organization	11	6%	3	6%
Professional/career related organization	32	18%	16	34%
Academic clubs	43	25%	7	15%
Ethnic/cultural clubs/organizations	48	28%	3	6%
Student Media	13	8%	1	2%
Athletics	14	8%	2	4%
Community Service	22	13%	8	17%
Musical/theater/art/book	10	6%	-	-
Other	37	21%	8	17%

Note: This question was displayed to those who answered *Yes* in Table 8. Denominator for percent calculation was the number of respondents who answered *Yes* in Table 8. Total does not add up to 100% as respondents had an option to select more than one category. A list of organizations/activities reported by the students can be provided upon request.

Table 10: Current Employment Status

What is your current employment status?				
	Undergraduate		Graduate	
	<i>n</i>	%	<i>n</i>	%
Employed, full-time	293	76%	204	88%
Employed, part-time	46	12%	14	6%
Employed, but currently on leave (e.g., sabbatical, maternity)	5	1%	2	1%
Not employed, looking for employment at this time	41	11%	12	5%
Total	385	100%	232	100%

Note: Excludes those who are *not employed, not looking for employment at this time*.

Table 11: Employment Sector

In what sector are you employed? Please mark the best answer.		
	Undergraduate	Graduate
<i>n</i>	302	199
Self-employed in own business or professional non-group practice	4%	5%
For-profit corporation/company/group-practice	46%	22%
Government or other public institution or agency, including military	24%	46%
Non-profit organization, institution or NGO (e.g., arts/human services/international organizations)	27%	28%

Note: This question was displayed to those who indicated being employed full-time, part-time, or on temporary leave in Table 10.

Table 12: Employer's Industry

Please select the industry that best describes your employer.		
	Undergraduate	Graduate
<i>n</i>	278	170
Biotech/Pharmaceutical	2%	1%
Business Services	4%	2%
Communications/Marketing/PR	1%	1%
Computer Science/Technology	4%	1%
Education: Higher education (public or private)	10%	25%
Education: Elementary or secondary education, adult education (public or private)	12%	29%
Engineering	1%	1%
Environment	1%	1%
Financial Services	5%	5%
Fine/Performing Arts	1%	1%
Hospitality, Tourism, Travel	1%	1%
Information Technology	4%	1%
Law/Legal Services	4%	1%
Manufacturing	1%	1%
Media/Journalism/Publishing	2%	-
Medicine	18%	9%
Military/Defense	<1%	1%
Politics, Public Policy, Advocacy	1%	2%
Retail	4%	2%
Science	2%	1%
Social Services	6%	6%
Other	14%	11%

Note: This question was displayed to those who indicated being employed full-time, part-time, or on temporary leave in Table 10.

Table 13: Current Level of Employment

	Undergraduate	Graduate
<i>n</i>	323	198
Entry level	34%	19%
Mid-level	44%	44%
Senior level	16%	30%
Executive level (except chief executive)	3%	5%
Chief executive (CEO, COO, CFO, GM or principal in a business or other organization)	2%	2%

Note: This question was displayed to those who indicated being employed full-time, part-time, or on temporary leave in Table 10.

Table 14: Current Position and UMass Boston Degree

Is your current position related to the degree you received from UMass Boston?		
	Undergraduate	Graduate
<i>n</i>	324	204
Highly related	39%	62%
Somewhat related	35%	26%
Not related	26%	12%

Note: This question was displayed to those who indicated being employed full-time, part-time, or on temporary leave in Table 10.

Table 15: How Related Alumni's Current Position Is to UMass Boston Degree, by Colleges

Is your current position related to the degree you received from UMass Boston?						
College	Undergraduate			Graduate		
	Highly related	Somewhat related	Not related	Highly related	Somewhat related	Not related
College of Advancing and Professional Studies	-	-	-	25%**	63%**	13%**
College of Education and Human Development	80%*	20%*	0%*	80%	18%	3%
College of Liberal Arts	24%	39%	37%	53%	20%	27%
College of Management	40%	44%	17%	50%	45%	5%
College of Nursing and Health Sciences	76%	18%	6%	67%	25%	8%
College of Science and Math.	42%	31%	27%	50%	42%	8%
McCormack Graduate School of Policy and Global Studies	100%*	0%*	0%*	54%	27%	19%
School for Global Inclusion and Social Development	-	-	-	60%*	20%*	20%*
School for the Environment	67%*	33%*	0%*	50%*	50%*	0%*
College of Public and Community Service	50%**	50%**	0%**	-	-	-

Note: * $n \leq 5$; ** $n \leq 10$

Table 16: Career Preparedness

	Undergraduate	Graduate
<i>n</i>	320	203
Very well	28%	41%
More than adequately	25%	30%
Adequately	35%	24%
Less than adequately	9%	3%
Very poorly	3%	2%

Note: This question was displayed to those who indicated being employed full-time, part-time, or in temporary leave.

Table 17: Reason for Unemployment

If you are not employed right now, what is your primary activity?		
	Undergraduate	Graduate
<i>n</i>	71	28
Furthering my education	17%	14%
Caring for children	8%	25%
Caring for other family members	8%	-
Taking time for my own health	10%	-
Planning/starting a business	3%	7%
Working on a personal project (e.g., book, artistic endeavor)	4%	11%
Volunteering, engaging in service or unpaid work	10%	7%
Traveling or taking time off	6%	7%
Retired	8%	21%
Other reasons:	21%	4%
Did not Respond	4%	4%

Note: This question was displayed to those who indicated that they are *not employed, looking for employment at this time* or *not looking for employment at this time*. If *other* reasons included any of the answer options listed above, they were objectively assigned in one of these choices.

Table 18: Recommending UMass Boston

Would you encourage a current high school senior who resembles you when you were a high school senior (similar background, ability, interests, and temperament) to attend UMass Boston? Or, Would you encourage a prospective graduate student who resembles you when you were a graduate student (similar background, ability, interests, and temperament) to attend UMass Boston?		
	Undergraduate	Graduate
<i>n</i>	386	227
Definitely yes	51%	56%
Probably yes	26%	26%
Maybe, not sure	16%	9%
Probably not	6%	5%
Definitely not	2%	3%

Note: question-wording was slightly different for graduate and undergraduate alumni.

Table 19: Undergraduate Academic Experience

Based on what you know now, how well do you think your academic experience at UMass Boston prepared you to:						
	<i>n</i>	Very well	More than adequately	Adequately	Less than adequately	Very poorly
Write clearly and effectively	385	37%	29%	30%	3%	0%
Work effectively as a member of a team	381	35%	22%	37%	6%	0%
Acquire new skills and knowledge on your own	380	41%	28%	26%	5%	1%
Communicate well orally	384	35%	25%	33%	6%	0%
Be an effective leader	380	30%	22%	35%	11%	2%
Relate well to people of different races, nations, and religions	383	59%	23%	15%	1%	2%
Use quantitative tools	371	24%	27%	35%	12%	3%
Develop global awareness	366	37%	26%	28%	7%	1%
Read or speak a foreign language	359	16%	12%	35%	23%	15%
Gain in-depth knowledge of a field	367	35%	27%	29%	6%	3%
Understand the process of science and experimentation	364	29%	23%	32%	13%	3%
Develop career- or work-related knowledge and skills	367	34%	24%	30%	8%	4%
Identify moral and ethical issues	367	47%	22%	27%	4%	1%
Acquire broad knowledge in the arts and sciences	364	34%	29%	29%	7%	2%
Function independently, without supervision	363	48%	25%	24%	3%	1%
Synthesize and integrate ideas and information	366	41%	27%	29%	3%	1%
Develop or clarify a personal code of values or ethics	364	40%	23%	31%	4%	2%
Judge the merits of arguments based on their sources, methods, and reasoning	365	42%	25%	29%	3%	1%

Note: the answer choices were different for graduate and undergraduate alumni.

Table 20: Graduate Academic Experience

Based on what you know now, how well do you think your academic experience at UMass Boston prepared you to:						
	<i>n</i>	Very well	More than adequately	Adequately	Less than adequately	Very poorly
State a research problem in such a way that it clearly fits within the context of the literature in an area of study	220	43%	29%	22%	6%	1%
Demonstrate the value of the solution to the research problem in advancing knowledge within that area	217	44%	30%	20%	6%	1%
Apply sound research methods/tools to problems in an area of study	218	45%	26%	23%	6%	1%
Analyze/interpret research data	216	41%	30%	20%	8%	1%
Communicate your research clearly and professionally in both written and oral forms appropriate to the field	215	48%	28%	19%	4%	1%
Achieve the highest level of expertise in your field	215	34%	34%	23%	8%	1%
Achieve a mastery of the knowledge in your field	216	41%	33%	19%	7%	1%
Apply associated technologies to novel and emerging problems	216	22%	35%	31%	11%	1%
Present research to local, regional, national, or international audiences	215	35%	21%	30%	10%	3%
Participate in professional organizations, becoming a member and attending meetings	216	39%	21%	25%	11%	4%
Broaden professional foundations through activities such as teaching, internships, fellowships, and grant applications	216	38%	19%	28%	12%	5%

Note: the answer choices were different for graduate and undergraduate alumni.

Table 21: Entire Educational Experience

How would you evaluate your entire educational experience at UMass Boston?		
	Undergraduate	Graduate
<i>n</i>	376	222
Excellent	42%	53%
Good	43%	38%
Fair	13%	6%
Poor	1%	3%

Table 22: Self-Perceived Connection with UMass Boston

Today, how connected do you feel to UMass Boston?		
	Undergraduate	Graduate
<i>n</i>	374	221
Very connected	10%	9%
Moderately connected	23%	26%
Somewhat connected	31%	28%
Not very connected	37%	38%

Table 23: Willingness to Be Connected More with UMass Boston

Today, how connected do you feel to UMass Boston?		
	Undergraduate	Graduate
<i>n</i>	366	217
No	45%	54%
Yes	55%	46%

Table 24: Barriers to Participation

What are the barriers to your participation in alumni activities (select all that apply)				
	Undergraduate		Graduate	
	<i>n</i>	%	<i>n</i>	%
Time/other commitments	242	58	139	56
Concern about future solicitation	54	13	30	12
Value (the cost of participation compared to benefit)	74	18	38	15
Type or subject matter of the event	58	14	27	11
Don't know anyone	118	28	43	17
I won't make a difference	19	5	9	4
Just don't want to	40	10	27	11
Geographical distance	94	23	86	34
Do not know how to get involved	72	17	26	10
Other	23	6	9	4

Table 25: Ways to Connect to UMass Boston

What are the barriers to your participation in alumni activities (select all that apply)				
	Undergraduate		Graduate	
	n	%	n	%
Keeping in touch with people from UMass Boston (e.g. professors/staffs/classmates)	160	38	104	42
Mentoring a current student	113	27	58	23
Attending local alumni association events	116	28	38	15
Attending University events	108	26	38	15
Donating/fundraising to the University	18	4	13	5
Enrollment recruitment	34	8	21	8
Career networking	129	31	69	28
Communicating about/marketing for the University	27	7	16	6

Table 26: Important Factors Regarding Connection to UMass Boston- Undergraduate

When you think about your connection to UMass Boston today, how important is each of the following to you?					
	<i>n</i>	Not important at all	Somewhat important	Very important	Essential
Value/respect for degree	350	5%	20%	38%	37%
Campus Aesthetics (buildings, scenery, etc.)	340	12%	42%	32%	15%
Media visibility	336	18%	41%	29%	13%
History/tradition	339	12%	40%	35%	13%
Accomplishments of alumni	339	9%	25%	43%	24%
Accomplishments of faculty	340	5%	19%	47%	29%
Accomplishments of students	334	5%	22%	47%	25%
School rankings (e.g. U.S. News & World Report)	338	11%	31%	38%	21%
Outreach to community	338	7%	22%	41%	30%
Success of athletics teams	331	42%	34%	17%	7%
Providing scholarship	328	5%	13%	39%	44%

Table 27: Important Factors Regarding Connection to UMass Boston- Graduate

When you think about your connection to UMass Boston today, how important is each of the following to you?					
	<i>n</i>	Not important at all	Somewhat important	Very important	Essential
Value/respect for degree	204	4	16	39	41
Campus Aesthetics (buildings, scenery, etc.)	191	19	46	23	12
Media visibility	196	21	50	22	7
History/tradition	199	18	44	30	9
Accomplishments of alumni	201	10	35	38	17
Accomplishments of faculty	203	7	16	47	30
Accomplishments of students	203	3	29	44	24
School rankings (e.g. U.S. News & World Report)	203	9	37	40	14
Outreach to community	197	8	27	37	28
Success of athletics teams	200	62	26	8	5
Providing scholarship	199	8	15	43	35

Table 28: Financial Aid or Support Received

Did you receive any financial aid from UMass Boston (e.g., grant, scholarship, student loan, or work-study job) while you were an undergraduate? Or, did you receive any financial support from UMass Boston (e.g., tuition waiver, and/or stipend) while you were a graduate student?		
	Undergraduate	Graduate
<i>n</i>	367	212
Yes	71%	41%
No	29%	59%

Note: question-wording was slightly different for graduate and undergraduate alumni.

Table 29: U.S. Residency

Are you living inside or outside the U.S.?		
	Undergraduate	Graduate
<i>n</i>	366	212
In the U.S. (including Puerto Rico, territories, etc.)	98%	91%
Outside the U.S.	2%	9%

Table 30: Amount Borrowed to Finance the Degree

What was the total amount you borrowed to finance your degree earned from UMass Boston?		
	Undergraduate	Graduate
<i>n</i>	331	196
None	24%	39%
Less than \$5,000	7%	5%
\$5,000-\$9,999	10%	10%
\$10,000-\$14,999	14%	8%
\$15,000-\$19,999	8%	6%
\$20,000-\$24,999	8%	7%
\$25,000-\$29,999	8%	3%
\$30,000-\$34,999	5%	4%
\$35,000-\$39,999	5%	3%
\$40,000-\$49,999	5%	7%
\$50,000-\$59,999	4%	5%
\$60,000-\$69,999	1%	3%
\$70,000-\$79,999	1%	1%
\$80,000 or more	2%	2%

Table 31: Benefits from UMass Boston Degree

Did the benefits you received from attending UMass Boston outweigh the financial costs to you and your family? Mark the best answer.		
	Undergraduate	Graduate
<i>n</i>	355	208
Yes, definitely	52%	60%
Maybe	30%	27%
No, definitely not	18%	13%

Table 32: First-Generation College Student

What is the highest level of education completed by either of your parents (or those who raised you)?		
	Undergraduate	Graduate
<i>n</i>	360	211
Did not finish high school	10%	7%
High school diploma or G.E.D.	28%	21%
Attended college, but did not complete degree	8%	6%
Associate's degree (A.A., A.S., etc.)	6%	9%
Bachelor's degree (B.A., B.S., etc.)	26%	24%
Master's degree (M.A., M.S., etc.)	14%	22%
Doctoral or professional degree (Ph.D., J.D., M.D., etc.)	8%	11%

Table 33: Citizenship Status When Started at UMass Boston

Were you a U.S. citizen or permanent resident (held a green card) when you started at UMass Boston?		
	Undergraduate	Graduate
n	367	213
Yes	93%	89%
No	7%	11%

Table 34: Standard of Living

Thinking back to when you started college, how would you say your family's standard of living compared to all American families? How would you place yourself today? Just give your best estimate. Mark the best answer in each row.		
	My family, when I started college	Me, Today
n	360	355%
Far below average	6%	2%
Below average	20%	15%
Average	51%	45%
Above average	21%	32%
Far above average	3%	7%

Note: This question was asked to undergraduate alumni only.

Table 35: Income

Which of the following most accurately describes your current personal annual income before taxes? Please report your personal income, not your total household income. We ask this question to help measure institutional quality and student outcomes.		
	Undergraduate	Graduate
n	364	213
No earned income	8%	5%
Less than \$50,000	36%	20%
\$50,000–\$59,999	12%	15%
\$60,000–\$79,999	14%	25%
\$80,000–\$99,999	9%	8%
\$100,000–\$119,999	7%	13%
\$120,000–\$139,999	3%	5%
\$140,000–\$159,999	1%	2%
\$160,000–\$179,999	1%	1%
\$180,000–\$199,999	1%	1%
\$200,000–\$219,999	1%	0%
\$220,000–\$240,000	0%	1%
More than \$240,000	1%	1%
I prefer not to respond	7%	5%

■ References

- ¹ Cabrera, A. F., Weerts, D. J., & Zulick, B. J. (2003). Alumni Survey: Three conceptualizations to alumni research. Ponencia del Seminario Métodos de Análisis de la inserción laboral de los universitarios, Universidad de León.
- ² Porter, K. (2002). The Value of a College Degree. ERIC Digest.
- ³ Volkwein, J. F. (2010). Assessing alumni outcomes. *New Directions for Institutional Research*, 2010(S1), 125-139.
- ⁴ Borden, V. M. (2005). Using alumni research to align program improvement with institutional accountability. *New Directions for institutional research*, 2005(126), 61-72.
- ⁵ Cabrera, A. F., Weerts, D. J., & Zulick, B. J. (2003). Alumni Survey: Three conceptualizations to alumni research. Ponencia del Seminario Métodos de Análisis de la inserción laboral de los universitarios, Universidad de León.
- ⁶ Cabrera, A. F., Weerts, D. J., & Zulick, B. J. (2005). Making an impact with alumni surveys. *New Directions for Institutional Research*, 2005(126), 5-17.
- ⁷ Cabrera, A. F., Weerts, D. J., & Zulick, B. J. (2005). Making an impact with alumni surveys. *New Directions for Institutional Research*, 2005(126), 5-17.
- ⁸ Gaier, S. (2005). Alumni satisfaction with their undergraduate academic experience and the impact on alumni giving and participation. *International Journal of Educational Advancement*, 5(4), 279-288.
- ⁹ Puerzer, R. J., & Rooney, D. M. (2002). The alumni survey as an effective assessment tool for small engineering programs. *Journal of Engineering Education*, 91(1), 109-116.
- ¹⁰ Landrum, R. E., Hettich, P. I., & Wilner, A. (2010). Alumni perceptions of workforce readiness. *Teaching of Psychology*, 37(2), 97-106.
- ¹¹ Cabrera, A. F., Weerts, D. J., & Zulick, B. J. (2005). Making an impact with alumni surveys. *New Directions for Institutional Research*, 2005(126), 5-17.
- ¹² Volkwein, J. F. (2010). Assessing alumni outcomes. *New Directions for Institutional Research*, 2010(S1), 125-139.
- ¹³ Lambert, A. D., & Miller, A. L. (2014). Lower response rates on alumni surveys might not mean lower response representativeness. *Educational Research Quarterly*, 37(3), 38.