



COLORADO MESA
UNIVERSITY

REGIONAL ECONOMIC IMPACT

2015

coloradomesa.edu

CMU AT A GLANCE

Total student enrollment:	9,676
In-state students:	87.3%
Full-time:	75.9%
From under-represented groups:	22%
From western Colorado's 14 counties:	60.8%
From elsewhere in Colorado/out-of-state/out-of-country:	39.2%

Institution accreditation: Higher Learning Commission
Programs with accreditation/approval by their respective professional organizations: Athletic Training, Emergency Medical Services (Basic), Music, Nursing, Peace Officer Standards and Training (POST), Radiologic Technology, Transportation Services

Proportion of class sections with fewer than 40 students: 89.3%

Proportion of class sections with fewer than 20 students: 49.9%

Proportion of student credit hours taught by full-time faculty and staff: 72%

Student to Faculty Ratio: 23:1

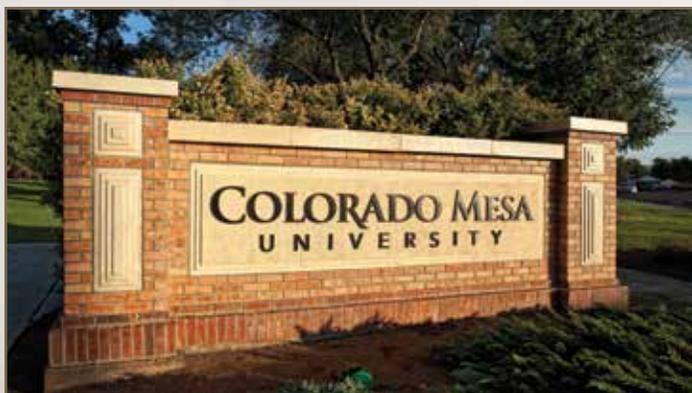
How CMU Students Rate Their Experience:

Survey Item	CMU Average	National Comparison Group Average
1. There is a commitment to academic excellence on this campus.	5.57	5.44*
2. I am able to experience intellectual growth here.	5.93	5.62**
3. Nearly all of the faculty are knowledgeable in their field.	6.11	5.75**
4. Academic support services adequately meet the needs of students.	5.61	5.29**
5. The instruction in my major field is excellent.	5.81	5.52**
6. It is an enjoyable experience to be a student on this campus.	5.74	5.39**
7. Students are made to feel welcome on this campus.	5.71	5.47**
8. I feel a sense of pride about my campus.	5.53	5.26**

* Difference statistically significant at the .05 level

** Difference statistically significant at the .001 level

Note: Results are based on 636 CMU students responding to the October 2014 administration of the Noel Levitz Student Satisfaction Survey, using 7-point scale with 7 being the highest satisfaction rating.



Financial aid awarded: \$74 million
Number of students in AY 2013-14 awarded MavScholars Academic Merit Scholarships: 833

Beds available in residence halls: 2,309

Most popular majors: Business Administration, Biological Sciences, Criminal Justice, Kinesiology, Liberal Arts Elementary Education, Mass Communication, Nursing, Psychology

Number of degrees and certificates awarded in Academic Year 2013-14: 1,427

Only Colorado public institution offering awards from technical certificates through the doctoral degree

Colorado Mesa University full-time faculty: 246 academic faculty members (tenured, tenure-track, non-tenure-track) and 32 technical faculty

Proportion of full-time academic faculty with a terminal degree: 82.7%

Number of Fulbright Scholar Awards: 12

CMU faculty and staff volunteered more than 357,000 hours of community service in Academic Year 2013-14, valued in excess of \$8 million.

Holdings in Tomlinson Library: 202,919 books; 43,611 e-books; 228,125 journals; 29,500 full-text journals; 85 journal databases; 441,536 government documents; and more than 30 million items through Proquest.

Technology: More than 2,000 computer workstations; 600 hotspots; and 195 technology-enhanced classrooms.

NCAA, Division II, Varsity Sports: Baseball (M), basketball (M, W), cross-country (M, W), football (M), golf (M, W), lacrosse (M, W), soccer (M, W), softball (W), swimming and diving (M, W), tennis (M, W), track and field (M, W), volleyball (W) and wrestling (M)

Athletics Highlights (January – December 2014):

- 217 All-Rocky Mountain Athletic Conference (RMAC) performances
- 138 RMAC Academic Student Athletes
- 21 All-Americans
- 6 RMAC Regular Season Champions
- 5 RMAC Tournament Championships
- 8 NCAA National Tournament Qualifying teams
- 15 NCAA National Individual Qualifiers
- 7 Nationally-ranked Teams
- 6 RMAC Athletes of the Year
- 4 RMAC Brechler Award Winners (for Highest Team Grade Point Average in RMAC)
- 2 RMAC Summit Award Winners (for Highest Individual Grade Point Average in RMAC tournament competition)
- 7 RMAC Coaches of the Year

Facilities Certifications for Environmentally-sustainable Construction and/or Renovations:

- LEED Gold - Dominguez Hall and Wubben-Science addition;
- Three Green Globes - Houston Hall;
- Two Green Globes - Escalante Hall

Note: Data based on fall 2013 data unless noted otherwise



REGIONAL ECONOMIC IMPACT 2015

by

Carol Futhey

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This publication is an update of the study *Achieving a Higher Degree of Leadership in Western Colorado* by Carol Futhey, Colorado Mesa University (then Mesa State College), Grand Junction, Colorado (2004). The original publication, and the updates focusing on the institution's regional impact, are available online at coloradomesa.edu/president/impactstudy.

Acknowledgments

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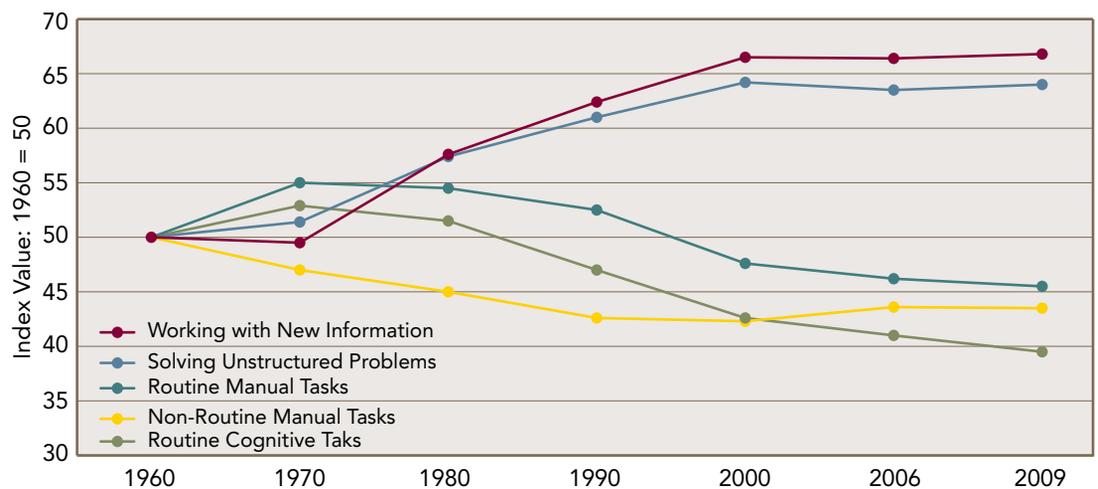
Introduction: The Relationship of Universities and Their Regional Economies

Institutions of higher education, such as Colorado Mesa University (CMU), are social, economic, and cultural assets to the regions in which they are located. Each brings positive visibility, improves the quality of life of its region's residents, offers employment opportunities, is a major purchaser of goods and services from area businesses, and educates students for a skilled workforce, all of which represent substantial contributions to the economic development of a region. Further, universities help stabilize regional economies as they generally are less susceptible to economic downturns than some other sectors.

Of all of Colorado Mesa University's contributions, one of the most challenging responsibilities that it faces, like all of higher education, is how it prepares students to be successful, not only for their initial employment but for their entire career. That responsibility goes beyond offering strong academic programs by highly-qualified and effective faculty members, delivering instruction in exceptional facilities that use current technologies, and providing supportive academic and student services. It extends to a thoughtful assessment of what students should know and be able to do by the time they graduate. What makes this responsibility particularly challenging is the dynamic nature of employment into which these students are entering. The U.S. Department of Labor estimates that today's students may have as many as 10-14 jobs by the time they are 38 years of age.¹

Whether or not job mobility will reach this level, no one can deny that the U.S. workplace, which has changed dramatically over the past half century, will continue to change. This historic shift is perhaps best summarized in a graph by economists Frank Levy and Richard Murnane in *Dancing with Robots: Human Skills for Computerized Work*.² In their 2013 paper, Levy and Murnane succinctly describe how the tasks in the nation's economy have dramatically shifted over the past half century as shown in Figure 1.

Figure 1: Index of Changing Work Tasks in the U.S. Economy 1960-2009



Source: Frank Levy & Richard Murnane (2013). *Dancing with Robots: Human Skills for Computerized Work*. Downloaded on December 7, 2014 from http://www.nald.ca/library/research/third_way/dancing_with_robots/dancing_with_robots.pdf.

The transition is from jobs that are routine in nature — be they manual or cognitive thereby relying on relatively lower level skills — to those that require abilities to solve problems for which a specific solution must be developed and often must make use of constantly developing, new information.

Further complicating the employment picture are the following projections reported by the Bureau of Labor Statistics:

- Every year, more than 1/3 of the entire U.S. laborforce changes jobs.³

¹ National Association of Secondary School Principals, "In the Age of Technology, Shift Happens." Downloaded on December 7, 2014 from <http://www.nassp.org/Content.aspx?topic=57556>. Editorial adapted from Tirozzi's address at the 2008 NASSP Convention. Some information used with permission from: Fisch, Karl. Did You Know/Shift Happens. The Fischbowl, Staff Development Blog, Arapahoe High School. <http://thefischbowl.blogspot.com/2006/08/didyou-know.html>.

² Frank Levy & Richard Murnane (2013). *Dancing with Robots: Human Skills for Computerized Work*. Downloaded on December 7, 2014 from http://www.nald.ca/library/research/third_way/dancing_with_robots/dancing_with_robots.pdf.

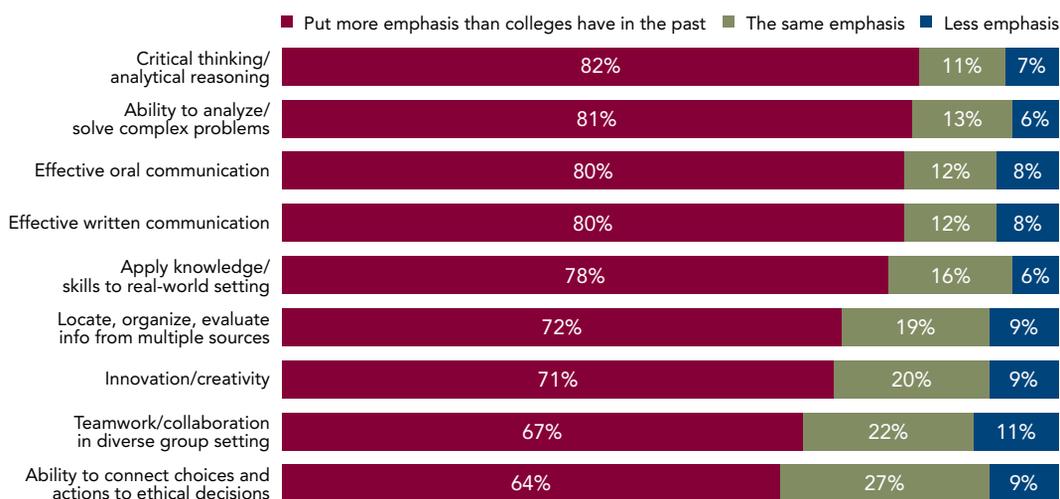
³ Quoted in Debra Humphreys and Anthony Carnevale, "The Economic Value of Liberal Education," A presentation prepared for the Presidents' Trust, Revised 2013 edition.

- Every year, more than 30 million Americans are working in jobs that did not exist in the previous quarter.⁴
- By 2018, 22 million new and replacement jobs will require some college.⁵

Given this context then, what knowledge base and skills should be developed in and by students as they progress through their college experiences? Put another way, how should they be prepared beyond their individual majors so they are best prepared to move into this dynamic environment?

To gain some insights as to what employers expect of new hires, an online survey of 318 employers was undertaken by Hart Research Associates,⁶ most recently in 2013, at the request of The Association of American Colleges and Universities. The key findings from the survey, shown in Figure 2, are instructive to higher education as it considers its responsibilities in preparing the 21st century workforce.

Figure 2: Student Learning Outcome Priorities from Employer Survey⁷



Source: Hart Research Associates, *It Takes More Than a Major: Employer Priorities for College Learning and Student Success*. An Online Survey Among Employers Conducted on Behalf of The Association of American Colleges and Universities. Downloaded on December 7, 2014

In short, those entering the workplace need to be able to think critically through analytical reasoning, communicate in written and oral form, apply what they know to real-world scenarios by working in a team, evaluating information, and making ethical choices. In the context of Western Colorado, then, the question is how do the learning outcomes for Colorado Mesa University graduates align with what employers expect in future hires?

Colorado Mesa University in 2014

Colorado Mesa's distinctive role and mission among Colorado's 12 public four-year higher education institutions⁸ enables the University to offer a wide range of programming that addresses various student interests and levels of academic preparation. Its focus is primarily at the baccalaureate level, with more immediate workforce needs met through career and technical training at CMU's two-year division, Western



⁴ Anthony P. Carnevale, Jeff Strohl, Nicole Smith, "Help Wanted: Postsecondary Education and Training Required," *New Directions for Community Colleges*, No. 146, Summer 2009, pp. 21 – 31. Downloaded on December 7, 2014 from <http://www.learnedearn.org/For-Educators/HelpWanted.pdf>.

⁵ U.S. Department of Labor, Bureau of Labor Statistics, "Employment Projections: 2012-2022 Summary," Released December 19, 2013. Downloaded on December 7, 2014 from <http://www.bls.gov/news.release/ecopro.nr0.htm>.

⁶ Hart Research Associates, *It Takes More Than a Major: Employer Priorities for College Learning and Student Success*. An Online Survey Among Employers Conducted on Behalf of The Association Of American Colleges And Universities. Downloaded on December 7, 2014 from https://www.aacu.org/sites/default/files/files/LEAP/2013_EmployerSurvey.pdf. Survey respondents were employers whose organizations have at least 25 employees and report that 25% or more of their new hires hold either an associate degree from a two-year college or a bachelor's degree from a four-year college. Respondents were executives at private sector and nonprofit organizations, including owners, CEOs, presidents, C-suite level executives, and vice presidents.

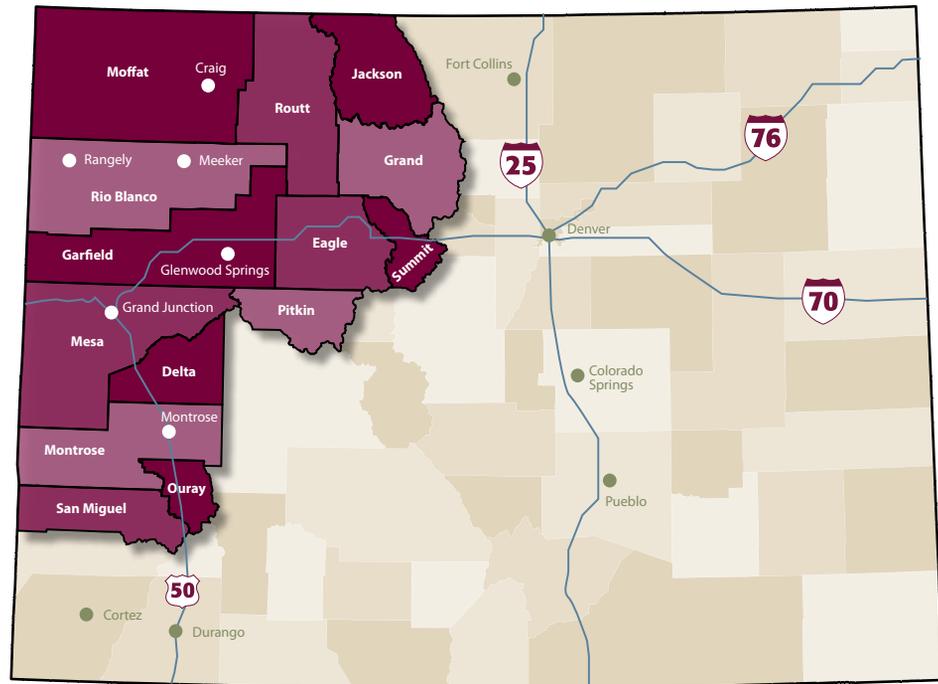
⁷ Downloaded on December 7, 2014 from <https://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary>.

⁸ CMU has a statutory four-year role and mission, as well as that for two-year transfer and vocational education and graduate programming. Source: Colorado Revised Statutes 23-53-101.

Colorado Community College. Both campuses are located in Grand Junction, while selected programs are also available at CMU's Montrose Campus. Collectively, these programs have a major impact on Western Colorado's economic development by educating future employees with the requisite knowledge and skills.

In fall 2013, CMU enrolled more than 9,600 students, building on an 89-year tradition of being the primary provider of higher education to residents of Colorado's Western Slope. Approximately 60% of CMU undergraduates come from one of the 14 statutorily-defined counties comprising CMU's service region,⁹ an area that spans nearly 30,000 square miles or approximately 30% of the State of Colorado (Figure 3). The University has prepared students to become leaders in their communities and increasingly is the first choice of students pursuing a college education. In Academic Year (AY) 2013-14, the University awarded 1,427 degrees and certificates, a 57.1% increase over the number of awards made five years earlier.

Figure 3: Map of Colorado Mesa University Service Region



CMU faculty members have an on-going commitment to develop curricula to connect with the diverse needs and interests of the region's residents. As potential programs are considered, faculty members and the administration gauge potential interest in a new offering using multiple metrics, such as surveys, to evaluate student demand; regional employers' hiring trends; and statewide, ten-year employment projections from the Colorado Department of Labor and Employment. In most cases, a program's contribution to regional and local economic development also is a factor. The outcome of those factors are best demonstrated by the following efforts:

- Western Colorado is a region of small businesses in rural communities that is spread across a vast area. To meet local residents' needs, however, each community has agencies and organizations in health, education, law enforcement, and business sectors. Not surprisingly, some of the most popular academic majors at Colorado Mesa align with these communities' needs. More recently, the University has added programs in Social Work and Applied Mechanical Engineering. At the two-year level, a Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant from the U.S. Department of Labor to Western Colorado Community College has underwritten the delivery of six certificate programs: Basic Welder, Certified Network Technician, Computer-aided Design/Computer-aided Manufacturing (CAD/CAM); Computer Technician, Control Systems Technician, Electronics Technician.

⁹ The service region for CMU includes the following counties: Delta, Eagle, Garfield, Grand, Jackson, Mesa, Moffat, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Miguel, and Summit. Western Colorado Community College's service region is a subset of that group: Delta, Mesa, Montrose, Ouray, and San Miguel Counties.

- The University is committed to numerous academic programs using a career ladder model. This curricular structure makes it a regional leader in offering students seamless transitions across degree levels. CMU faculty members have structured nine curricular sequences into career ladders,¹⁰ whereby students can complete a credential at a specific level and then either continue to the next higher degree or move into the workforce and complete a higher degree at a later date. Regardless of the sequence of enrollment and employment, credit hours articulate up to the next level of degree.
- CMU is one of the few Colorado public higher education institutions to offer, in six fields, the Bachelor of Applied Science (BAS) degree.¹¹ The BAS enables students to complete a baccalaureate degree by building on the technical core from an Associate of Applied Science degree. The BAS works particularly well for adults who have completed a technical education program but need a baccalaureate degree for career advancement.
- The University currently delivers seven programs that are fully available via distance delivery formats, thereby making it more convenient and/or flexible for students to enroll. Additionally, faculty members offer approximately 150 class sections online each semester, eliminating the need for a student to come to any of Colorado Mesa's campuses for many courses.
- CMU faculty and administration engage with regional employers through a variety of collaborations. Among the connections are:
 - External Advisory Boards. Many four- and two-year CMU programs have external advisory boards, generally consisting of representatives of local employers and industries. Such boards offer oversight of the curriculum of these programs and thus ensure the currency of the program.
 - Partnerships. Numerous collaborations have been developed between external agencies and the University's academic programs. CMU's partnerships with regional K-12 schools, for example, have led to the development of new programs, such as the multiple cognates within the M.A. in Education including English for Speakers of Other Languages, Educational Leadership, Teacher Leader, and Exceptional Learner. Similarly, CMU's Health Sciences' advisory committees have guided the development of newer programs such as Health Information Technology Systems, Medical Laboratory Technician, and Medical Office Assistant. Finally, through a collaboration with St. Mary's Hospital's Saccomanno Research Institute, a 10-week, summer internship program enables undergraduates in Biological Sciences to conduct research with CMU faculty members.
 - The Redifer Institute. This Institute works closely with local, state, and federal governments and stakeholders to strengthen public policy through data collection and analysis. Four centers support the Institute's work: the Natural Resource Center, the Water Center, the Public Policy Center and the Center for Unconventional Energy. Among the projects completed by the Institute through grant funding are economic analyses of public lands, resource management plans, surveys and focus groups on public lands recreation, an annual water users' conference, mediation of stakeholder groups for energy and public lands development, course offerings and public presentations on resource issues, and many other consultations for government agencies at all levels.



Finally, Colorado Mesa ranks in the top ten largest employers in the region, with 1,996 full- and part-time employees in 2014 and a total yearly net payroll of more than \$25.1 million that is spent locally. Its expenditures for goods and services in the 14-county region totaled \$33.6 million for Fiscal Year (FY) 2013-14, while an additional \$32.2 million was spent on construction and technology. The single largest spending category, however, comes from CMU students at \$115.6 million, while visitors accounted for \$25.3 million. When direct spending is coupled with the effects of indirect spending, CMU's estimated economic impact of \$417.5 million in FY 2013-14 is a 189.5% increase over that for FY 2003-04 (Table 1). Further, an estimated 2,794 regional jobs come about due to CMU's spending. While these contributions will be presented more fully in a later section of this report, the next part describes CMU's efforts in preparing its students for the changing nature of employment that was discussed earlier.

¹⁰ CMU offers nine career ladder options: Applied Mechanical Engineering, Business, Computer Information Systems, Construction Technology/Management, Criminal Justice, Graphic Design, Nursing, Public Admin/Public Safety, and Radiologic Technology.

¹¹ The Bachelor of Applied Science is awarded in the following six majors: Business, Computer Information Systems, Criminal Justice, Hospitality Management, Public Administration/Public Safety, and Radiologic Technology.

Table 1: Changes in Estimated Economic Impact of Colorado Mesa University 2004-2014

Fiscal Year	Estimated Economic Impact
2003 - 04	\$144,209,049
2005 - 06	\$190,962,113
2007 - 08	\$225,587,773
2009 - 10	\$317,010,199
2011 - 12	\$351,064,354
2013 - 14	\$417,482,628



Going beyond a Major: Preparing CMU Students with the Knowledge and Skills Needed for the 21st Century

Colorado Mesa University's economic influence on its region is substantial, but its core mission is to raise the educational attainment of Western Coloradans by developing the human capital needed to advance the regional economy. To do so requires thoughtful discussions by faculty members and representatives of various employers that identify the knowledge and skillsets – expressed as student learning outcomes (SLOs) – that the dynamic, future workplace demands. In the case of CMU, the learning outcomes must support all majors, have a means by which the knowledge and skills can be assessed, and be transferable to various positions held by graduates throughout their careers.

In 2012, CMU initiated a series of conversations on what learning outcomes should be over-arching, regardless of major and level of award. It also required an evaluation of where general education fits within the curriculum. Recognizing that a liberal education¹² should be at the core of all academic programs, CMU faculty members undertook a two-prong approach:

1. Identify and prioritize the learning outcomes that were viewed as most critical for all students to demonstrate. Four SLOs were selected:
 - a. Content knowledge specific to the student's major;
 - b. Communication, both written and oral;
 - c. Computation (or quantitative literacy); and
 - d. Critical thinking/analysis.

Of these four, learning outcomes unique to each major had already been designed prior to the discussions on campus-wide expectations. The next three SLOs were implemented in 2013 as Phase I of the multi-year project; two other SLOs – ethical reasoning and information literacy – are to follow as Phase II.¹³ It is important to note the alignment of CMU's University-wide learning outcomes with those identified by the CEOs in the 2013 Hart Research Associates survey shown previously in Figure 1.

CMU students are introduced to the notion that programs of study build over time and that there is a coherence and intentionality for each major's curriculum. For example, understanding that English composition goes beyond taking two 100-level courses, and that a student's writing will be evaluated

¹² Liberal education is defined by the American Association of Colleges and Universities as "...an approach to college learning that empowers individuals and prepares them to deal with complexity, diversity and change. It emphasizes broad knowledge of the wider world (e.g., science, culture, and society) as well as in-depth achievement of a specific field of interest. It is not a political point of view. It helps students develop a sense of social responsibility as well as strong intellectual and practical skills that span all major fields of study, such as communication, analytical and problem-solving skills, and includes a demonstrated ability to apply knowledge and skills to real-world settings." Adapted from: *Greater Expectations: A New Vision for Learning as the Nation Goes to College* (American Association of Colleges and Universities, 2002).

¹³ Since initial work on the campus-wide SLOs began, information literacy was subsequently integrated into critical thinking. Discussions related to ethical reasoning are planned for 2015.

in all courses in which s/he enrolls. Similarly, mathematics/algebra is another knowledge base that applies to other areas of study. Thus, students see that learning is an integrative process that involves developing these skills in addition to the content of a major during their college career.

2. Rethink the delivery of general education to:
 - a. define that curriculum as a significant foundation for initial development of the above-listed SLOs. This body of courses has been renamed Essential Learning to underscore the importance of these lower division requirements as the base upon which all majors are built.
 - b. create opportunities for students to wrestle with complex problems that require integrating what is learned in various general education courses. In order to do so, students will begin developing proficiency in the campus-wide SLOs much earlier in their academic career. This is being accomplished through the Maverick Milestone course, required of students as they approach their late sophomore/early junior classification. Team-taught by faculty members from different disciplines, the Milestone course is a topic-based, problem-solving course wherein students will tackle an issue for which there is no solution. Students must make connections from their Essential Learning courses and use the intellectual tools (e.g., critical thinking, computation, communication) they have learned. Thus students begin applying and integrating their learning prior to transitioning into the upper division courses in their majors.

When coupled with the content learned in their respective majors, then, students practice the skills they will need at graduation as they seek not only their first position, but a lifetime of employment.

That said, the cost of an education, nonetheless, remains a significant investment for most students and their families, so the question remains if a baccalaureate degree is worthwhile to pursue. One of the most widely recognized sources of information on this topic comes from Anthony Carnevale of Georgetown University's Center on Education and the Workforce. In the 2013 issue of *Hard Times: College Majors, Unemployment and Earnings*, Carnevale reported:

As we recovered from the recession during 2010 and 2011, college graduates fared better than less educated workers. Overall unemployment rates during this period were 9–10 percent for non-college graduates compared to 4.6 – 4.7 percent for college graduates 25 years of age or older.¹⁴

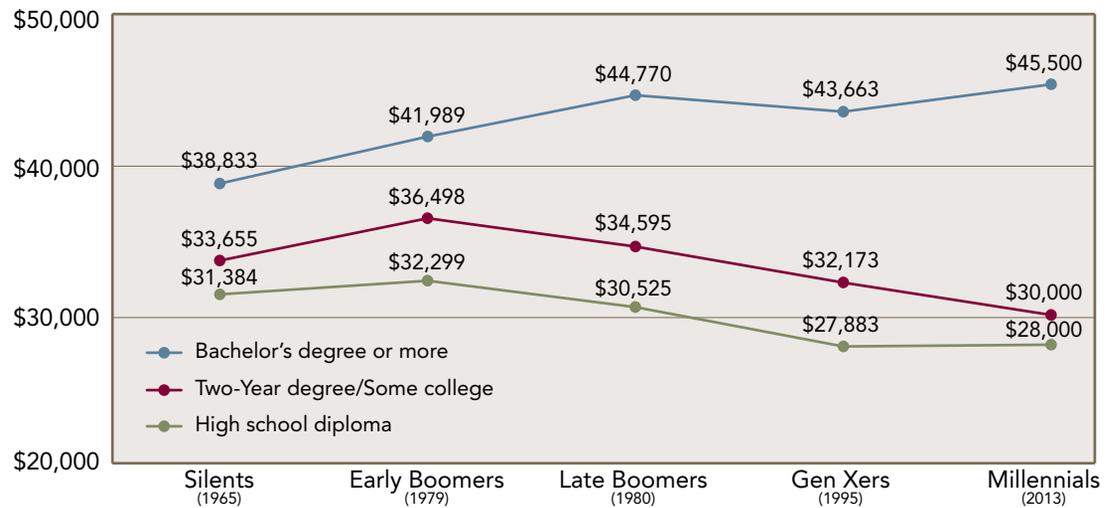
Of course, there are no employment guarantees upon graduation. Finding employment in the current economic climate has been challenging for recent college graduates. But as Carnevale observes, individuals with a baccalaureate degree have weathered the economic downturn better than those without a degree. Thus, higher education continues to be seen as a worthwhile investment.



¹⁴ A. P. Carnevale and B. Cheah, *Hard Times: College Majors, Unemployment, and Earnings*. Washington, D.C.: Georgetown University Center on Education and the Workforce, 2013. Downloaded on December 7, 2013 from <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/HardTimes.2013.2.pdf>.

It has been well-documented that an educated labor force enjoys a higher standard of living. It also earns significantly higher incomes, regardless of age, as documented by the 2014 report by the Pew Research Center, *The Rising Cost of Not Going to College* (Figure 4).¹⁵

Figure 4: Median Annual Earnings of 25- to 32-year-olds, by Educational Attainment
Median annual earnings among full-time workers, in 2012 dollars



Notes: Median annual earnings are based on earnings and works status during the calendar year prior to interview and limited to 25-30 year-olds who worked full time during the previous calendar year and reported positive earnings. "Full time" refers to those who usually worked at least 35 hours a week last year.

Source: Pew Research Center, *The Rising Cost of Not Going to College*. February 11, 2014. Downloaded on December 7, 2014 at <http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/>

Further, graduates' earnings circulate throughout the economy, and an educated citizenry lowers social costs. University graduates report better overall health, make fewer claims on public social services, and have greater civic participation than those with a high school diploma or less. It is also well-documented that college graduates experience lower rates of unemployment, incarceration, and poverty.

Alumni

Of the University's approximately 30,000 alumni, nearly 14,000 (or 47%) live in the 14-county Western Colorado region served by CMU. Not surprisingly, the largest share of that total — approximately 10,500 — are found in Mesa County and another 1,000 in Montrose County. An additional 6,500 individuals reside elsewhere in Colorado. The fact that many CMU graduates remain in the region improves the quality of life and raises the educational level of the workforce, attracting new and vital businesses that can lead to expansion of the local economy.



Volunteerism

CMU's faculty and staff members serve as volunteers in community-based organizations, and in many instances, they play a major leadership role. In recognition of these activities, Colorado Mesa University was named to the 2014 President's Higher Education Community Service Honor Roll, the highest federal recognition a college or university can receive for its commitment to volunteering, service learning, and civic engagement. CMU is one of three Colorado institutions to be named to the Honor Roll for all eight years that this recognition has existed.

The award is sponsored by the Corporation for National and Community Service, in collaboration with the U.S. Department of

¹⁵ Pew Research Center, *The Rising Cost of Not Going to College*. February 11, 2014. Downloaded on December 7, 2014 at <http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/>

Education, Department of Housing and Urban Development, Campus Compact, and the American Council on Education. Criteria for honoree selection include scope and innovation of service projects, percentage of student participation in service activities, incentives for service, and the extent to which the school offers academic service-learning courses. For Academic Year 2012-13, CMU reported 3,482 students who engaged in 357,210 hours of community service that was valued at more than \$8 million.¹⁶ The economic value of these hours is not reflected in any calculations for this study.

Contributing to the Regional Economy of Western Colorado

Model Overview and Methodology

The economic impact of Colorado Mesa University on Western Colorado is based on a short-term approach examining the impact on local economic activity from the presence of an institution. Beck and Elliot define economic impact as "...the difference between existing economic activity in a region given the presence of the institution and the level that would have been present if the institution did not exist."¹⁷

Relying heavily on the American Council on Education model developed by Caffrey and Isaacs,¹⁸ this study considers the economic impact of Colorado Mesa University during FY 2013-14. The model examines CMU's direct spending in five expenditure categories — the University, employees, students, visitors, and capital — and encompasses University non-payroll spending on everything from furniture to utilities to computers to food service to research lab equipment. CMU's employee contribution is analyzed in terms of its payroll, while the student component accounts for that sector's spending in a separate category. Visitor spending relies primarily on campus visits related to events in the University Center and athletic competitions, while capital expenditures reflect major campus construction and renovation projects as well as investments in technology.

The model then applies a multiplier to calculate indirect spending, thereby producing an estimated total economic impact of the University. In the case of Colorado Mesa University, its direct, estimated impact on the regional economy for FY 2013-14 was \$231.9 million. When both direct and indirect, or re-spending, components are taken into account by the application of the economic multiplier, the estimate expands to \$417.5 million worth of economic activity associated with Colorado Mesa. Thus the University clearly creates a significant economic benefit to the businesses, households, and local governments in Western Colorado.

Last, a few comments about the limitations of the calculations should be noted. The estimated impact does not measure the economic contributions of organizations associated with Colorado Mesa, such as the Alumni Association and the CMU Foundation; the economic impact of faculty and staff earnings from private consulting and intellectual property; the economic impact of faculty and staff expertise used by businesses and organizations; volunteer activities; and other collateral economic activities. Colorado Mesa also offers health care benefits and insurance for faculty and staff, and these insurance plans help bolster the local health care community by providing financial support for services. None of these were in the model's calculations.

This study also excludes the economic contributions by alumni to Western Colorado as well as the impact of Colorado Mesa graduates residing elsewhere in the state. CMU graduates enter the job market earning salaries well above those of high school graduates. Even higher returns accrue to those with graduate-level degrees. Thus the most important long-term economic benefit — not reflected in this report — is the better-educated human capital provided by higher education institutions. With these exclusions in mind, the economic impact of Colorado Mesa reported in this study understates its overall financial effect.

Direct Expenditure Categories

College Expenditures

In order to determine the University's spending in the surrounding region, budgets for all departments and auxiliary accounts were analyzed and then adjusted to exclude out-of-state companies without a regional presence. The estimate is based on the myriad products and services that Colorado Mesa



¹⁶ Downloaded on December 5, 2014 from http://www.independentsector.org/programs/research/volunteer_time.html.

¹⁷ Roger Beck and Donald Elliott, "Economic Impact Study of Regional Public Colleges and Universities," *Growth and Change*, Spring 1995, Volume 26, Issue 2, p. 245.

¹⁸ John Caffrey and Herbert Isaacs, *Estimating the Impact of a College or University on the Local Economy*, Washington: American Council on Education, 1971.

purchases from the surrounding region ranging from furniture to office supplies to utilities. Total in-state expenditures for FY 2013-14 exceeded \$41.1 million (Table 2). Further analysis documented that more than \$33.6 million, or 81.8%, of the amount spent on goods and services stayed in Western Colorado, while most of the balance was spent elsewhere in the state.

Table 2: Colorado Mesa University Expenditures in Colorado, FY 2013-14

Goods and Services Purchases	Amount	Percent
In Western Colorado	\$33,624,833	81.8%
Elsewhere in Colorado	\$7,470,896	18.2%
Total	\$41,095,729	



Employee Salary/Wage Expenditures

For this category, all monies budgeted for salaries and wages for all University offices and auxiliary accounts — \$39.1 million — were reviewed to calculate employee salary/wage expenditure dollar amounts (Table 3). The total takes into account items purchased by CMU employees, from food to housing to entertainment to education and transportation. Federal and state taxes represented 12.1% of the total, and benefits — including retirement, medical insurance, and life insurance — and amounted to another 16.5% of the total. Once taxes and benefits were deducted, net wages amounted to approximately \$27.9 million.

Table 3: Colorado Mesa University Employee Salaries, Taxes, and Benefits, FY 2013-14

Gross Wages	\$39,126,414
Less Federal and State Taxes	\$4,736,682
Less Benefits	\$6,469,713
Net Wages	\$27,920,019
Less 10% non-local spending	\$2,792,002
Estimated Total Employee Local Spending	\$25,128,017

This calculation is based on the assumption that employees of Colorado Mesa spend most of their net income in the area's economy, given the University's location in Western Colorado. The Bureau of Labor Statistics' Consumer Expenditure Survey reports that housing and transportation are the two largest areas of consumer expenditures, so it is appropriate to assume that there is little dollar leakage out of the region. Some activities, such as vacations and entertainment, however, are examples of dollars that might leave the regional economy, so the model assumes that 10% adequately accounts for leakage out of the region. This results in an estimate of \$25.1 million in employee disposable income that was added to the Western Colorado economy. It is assumed that most of that income was spent in local private businesses, and these direct expenditures multiply through the economy, as will be described in a later section.

Student Expenditures

The single largest component of the University's economic impact is associated with the dollars added to the economy by CMU students. Because a significant share of the institution's students are from Western Colorado, this model assumes that most of their spending stays in the local economy. To calculate student spending, a mean monthly expenditure was determined by the CMU Financial Aid Office for purchases such as room, board, personal expenses, transportation, and entertainment. This produced an average expenditure of \$1,501 per month while enrolled during FY 2013-14. No distinction was made between on-campus and off-campus students. Table 4 shows the amount of student expenditures estimated to stay in the regional economy, based on the assumption that 90% of the total remained in Western Colorado. At that rate, students infused approximately \$115.6 million into the local economy for items that include groceries, entertainment, and transportation. This amount is in addition to their spending at CMU for tuition, goods, or other services.



Table 4: Estimated Colorado Mesa University Student Spending, FY 2013-14

Term	Student Enrollment	Term Length (in months)	Average Student Monthly Expense	Total
Fall 2013 Enrollment	9,676	4	\$1,501	\$58,094,704
Spring 2014 Enrollment (including January Term)	9,003	5	\$1,501	\$67,567,515
Summer 2014 Enrollment	1,866	1	\$1,501	\$2,800,867
Estimated Annual Student Spending				\$128,463,086
Less 10% non-local spending				\$12,846,309
Estimated Total Student Local Spending				\$115,616,777

Last of all, it should be noted that the above estimate of student spending excludes other ways that Colorado Mesa students affect the local economy. Nearly 40% of Colorado Mesa students come to the University from outside the region, thereby bringing money into Western Colorado. Additionally, students leave the University with increased knowledge and skills that enhance their subsequent employability and spending levels. While many of these students have chosen to forego earnings during their college years, the payback on their educational investment is financially worthwhile.

Visitor Expenditures

Colorado Mesa University attracts a significant number of individuals to Grand Junction for many reasons. Families visit the campus for admissions visits, orientations, and graduations. Other visitors come for conferences, while many attend athletic events and arts and music performances. In so doing, these visitors — frequently from communities outside Grand Junction — purchase food, entertainment, lodging, and fuel. Because these dollars are out-of-area dollars, they are “new” dollars to the community and increase overall economic activity.



Based on estimates from academic, student, and athletic departments for the past year, nearly 14,000 individuals attended the University’s music and theatre programs and more than 70,000 fans attended athletic events as part of an estimated visitor total of nearly 366,000 individuals. Table 5 offers an expanded listing of CMU activities and their estimated attendance, but excludes informal campus visits such as prospective students and their families.

Table 5: Colorado Mesa University Estimated Visitors by Activity, FY 2013-14

Activity	Estimated Visitors
Tomlinson Library	19,000
Moss Performing Arts Center	13,888
University Center	252,504
Athletics	70,816
Graduation	9,500
Total	365,708

An estimated standard destination per diem within the continental U.S. of \$129 (\$83 for lodging and \$46 for meals and incidental expenses) was obtained from the U.S. General Services Administration.¹⁹ Assuming that 25% of the visitors identified in Table 5 — or approximately 91,000 individuals — came to the campus from outside the region, and spent at least the daily average of \$129 for at least one day while

¹⁹ <http://www.gsa.gov/portal/category/100120> Downloaded December 5, 2014.



the remaining 75% spent the estimated amount for meals (thereby excluding lodging for that segment), the estimated value to the regional economy is \$25.3 million.

Capital Expenditures

Capital investments expand the University's capacity for a variety of academic and campus life activities, in addition to the various forms of outreach in which the institution is involved. This component of the model varies significantly from year to year since capital expenditures are dependent on the availability of funding for construction. Because of that variability, they are typically separated from all other University expenditures. That said, these investments not only create and sustain jobs in the region during construction periods, but their multiplier effects reach manufacturers, suppliers, and retailers throughout the region and the State of Colorado.

During FY 2013-14, CMU initiated, continued, and/or completed an extensive series of projects that resulted in this expenditure category exceeding \$37.4 million (Table 6). The funds were spent on construction projects — such as Escalante Hall, CMU's newest classroom building — in addition to spending on technology upgrades for classrooms, labs, and the TV studio; parking; and controlled maintenance. Of that amount, the proportion spent locally averaged 86.2% though the specific proportion differed from project to project. Total dollars spent in the regional economy on capital projects for the last year approximated \$32.2 million.

Table 6: Colorado Mesa University Capital Expenditures in Colorado, FY 2013-14

Project	Expenditure	Percent Spent Locally
Expenditures in Western Colorado	\$32,239,887	86.2%
Expenditures Elsewhere in Colorado	\$5,148,798	13.8%
Total	\$37,388,685	

Direct Expenditures Summary

By combining the five expenditure categories, Colorado Mesa University infused over \$231.9 million directly into the regional economy in FY 2013-14 (Table 7 and Figure 5). Nearly half of that year's spending is associated with students attending Colorado Mesa (49.8%), with the balance spread relatively evenly across the remaining four expenditure categories. To more accurately reflect the total economic contribution of Colorado Mesa on Western Colorado, however, indirect expenditures also must be considered and are discussed in the next section.

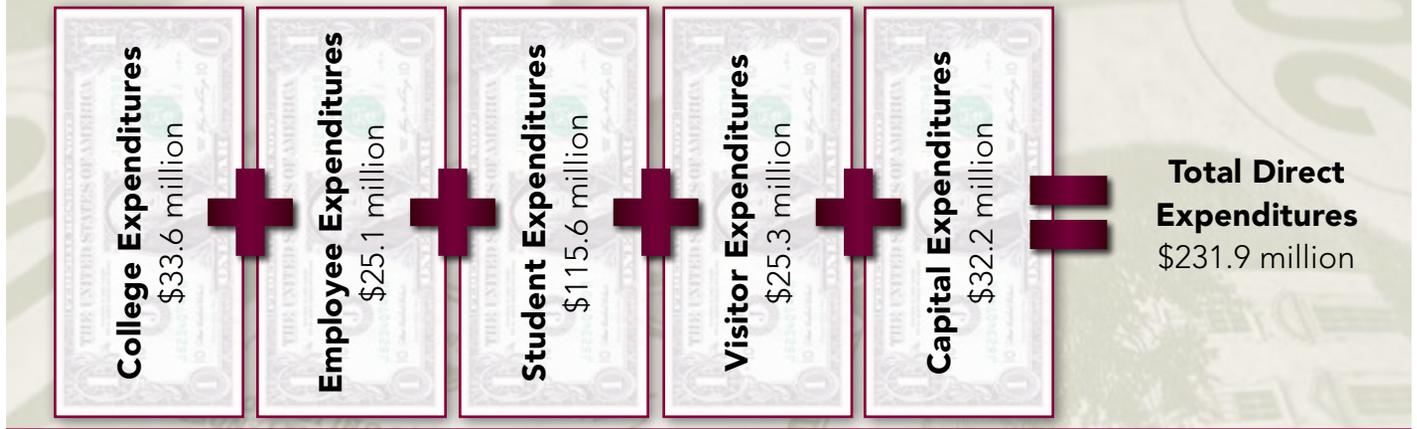
Output Multiplier Effect

A multiplier captures the relationship between the dollars spent by one individual that then becomes the income of another person to be spent. The initial dollar, since it is being "re-spent," has a greater impact on the economy than just the original dollar, and hence, dollars "grow" as they circulate through the economy. For example, the ripple effect of the wages paid to Colorado Mesa University faculty and staff members is the employees' "re-spending" on housing, food, clothing, entertainment, etc. The remainder of the earnings is withheld from the local economy in the form of savings, taxes, and spending on goods and services outside the region, adjusted for here by their exclusion.

Table 7: Economic Impact of Colorado Mesa University by Expenditure Category, FY 2013-14

Expenditure Category	Direct Impact	Multiplier (indirect impact)	Total Impact	Percent of Total
College	\$33,624,833	1.8	\$60,524,700	14.5%
Employees	\$25,128,017	1.8	\$45,230,431	10.8%
Students	\$115,616,777	1.8	\$208,110,198	49.8%
Visitors	\$25,325,279	1.8	\$45,585,502	10.9%
Capital	\$32,239,887	1.8	\$58,031,797	13.9%
Total	\$231,934,794	1.8	\$417,482,628	100.0%

Figure 5: Summary of Colorado Mesa University Direct Expenditures, FY 2013-14



The multiplier effect magnifies the economic impact of the initial Colorado Mesa expenditures, with a large multiplier indicating a greater regional economic impact than a smaller one. Similarly, the revenues generated by area businesses from supplying goods and services to Colorado Mesa are paid out in wages and material purchases, which in turn are spent on living costs. In theory, this process continues through several rounds of activity with diminishing increments at each stage.

This study, however, was limited to the secondary effects of spending. Generally speaking, higher education studies that include multipliers reflect that the re-spending factor varies rather widely. For this study, a multiplier of 1.8 was chosen, one which is conservative compared with many other studies. Applying this multiplier to the University's direct expenditures, the total addition to the 2014 economy was estimated to be \$417.5 million due to the presence of Colorado Mesa University. Put differently, without the spending by CMU — including its faculty, staff, students, visitors, and all others affected by what the University does — the income flowing to Western Colorado would be \$417.5 million less each year.

Labor Multiplier Effect

The money spent by Colorado Mesa on goods and services generates jobs in Western Colorado in several ways. First is the direct employment of faculty, staff, and students in positions at the University and their accompanying spending. Last year, there were 1,996 people who owed their jobs to the existence of CMU. Second, non-payroll regional expenditures create other jobs for workers who supply the goods and services to Colorado Mesa.

A labor multiplier estimates the number of jobs created by the influx of Colorado Mesa's spending into the surrounding community. Again, when other impact studies were reviewed, a range of labor multipliers were found. Using a conservative labor multiplier of 1.4 to estimate the additional number of jobs due to Colorado Mesa expenditures, an approximately 2,794 full- and part-time jobs are estimated.

Concluding Comments

Colorado Mesa University's most significant impact is to educate graduates who are prepared and competitive for employment in the ever-changing work environment they will enter in the 21st century. The University's commitment to delivery of curricula that are constantly being updated, built on learning outcomes aligned with expectations of business leaders, and structured in ways to offer the greatest range of opportunities for degree-seeking students is clear.

It is equally well-documented that CMU has a profound impact on the economy of Western Colorado. This study estimates that in FY 2013-14, CMU was responsible for spending more than \$231.9 million directly in the regional economy; when indirect spending is considered, the total exceeds \$417.5 million. Further, there were approximately 798 additional jobs beyond the 1,996 employed by Colorado Mesa University due to the institution's spending in the region. One of the major criticisms of economic impact studies that are produced internally is the temptation to inflate numbers, use larger multipliers than appropriate, and thus overstate the impact of an institution on its surrounding region.²⁰ This study has used a very conservative approach in its calculations and multipliers to estimate the total economic impact of CMU, ignoring contributions such as the value of volunteerism to the region. As a result, it is highly likely that the economic impact of Colorado Mesa University is somewhat greater than the \$417.5 million estimated in this study.

²⁰ Roger Beck and Donald Elliott, "Economic Impact Study of Regional Public Colleges and Universities," *Growth and Change*, Spring 1995, Volume 26, Issue 2, p. 245.




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