Regional Impact Study

2021

Colorado Mesa University

COLORADO MESA UNIVERSITY

Regional Impact Study 2021

by **Carol Futhey**
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Laying the Foundation for Colorado Mesa University's Second Century

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/impact-study.

Appreciation is extended to the following individuals who aided in the completion of this study: Blake Bickham, Laura Bradley, Jeremy Brown, Annette Callaway, Sharaya Cowan, Dave Detwiler, Tim Foster, Jill Knuckles, Curt Martin, Heather McKim, Breanne Meier, Jared Meier, Liz Meyer, Kelly O'Connell, Tim Pinnow, Sylvia Rael, Andy Rodriguez, Bryan Rooks, Tara Schultz, Jeremy Smith, Whitney Sutton, and Derek Wagner. Special thanks to Lisa Smith for many contributions to the report's design.

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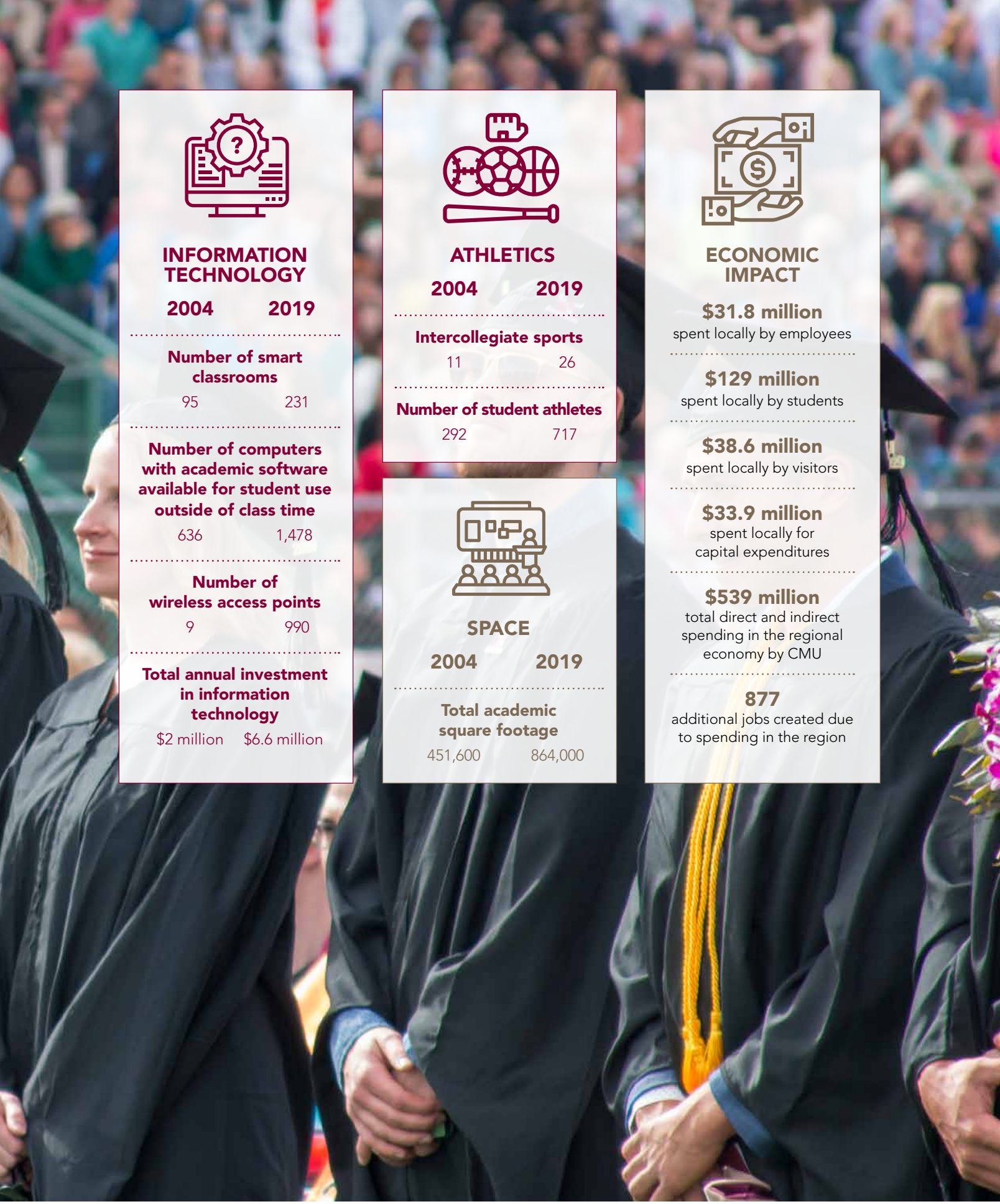
DEGREES AWARDED/ CONFERRED

	2004	2019
Technical certificates	47	434
Associate degrees (transfer)	37	184
Associate degrees (vocational)	87	119
Baccalaureate degrees	661	1,158
Master's degrees	28	39
Doctoral degrees	0	2



INFORMATION TECHNOLOGY

	2004	2019
Number of smart classrooms	95	231
Number of computers with academic software available for student use outside of class time	636	1,478
Number of wireless access points	9	990
Total annual investment in information technology	$2 million	$6.6 million

ATHLETICS

	2004	2019
Intercollegiate sports	11	26
Number of student athletes	292	717

SPACE

	2004	2019
Total academic square footage	451,600	864,000

ECONOMIC IMPACT

$31.8 million
spent locally by employees

$129 million
spent locally by students

$38.6 million
spent locally by visitors

$33.9 million
spent locally for capital expenditures

$539 million
total direct and indirect spending in the regional economy by CMU

877
additional jobs created due to spending in the region

Laying the Foundation for Colorado Mesa University's Second Century

Introduction

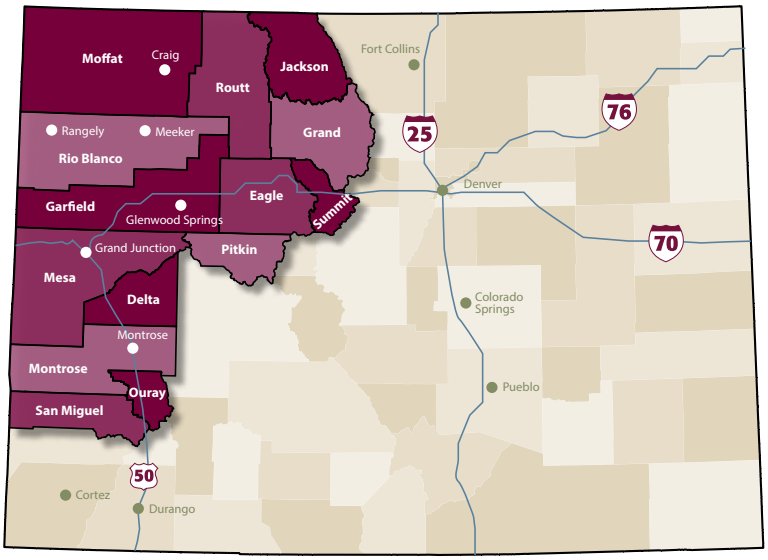
For nearly a century, Colorado Mesa University (CMU) has served Western Colorado residents by delivering excellent higher education and post-secondary vocational training across a 14-county region that spans 30,000 square miles, or nearly 30% of the area of the State of Colorado (see Figure 1).[1] Throughout its history, the institution's core mission to the region has remained unchanged as reflected by its current mission statement that, in part, reads: "[T]he institution's primary purpose is high quality education in a student-centered environment … Colorado Mesa University is a dynamic learning environment that offers abundant opportunities for students and the larger community to grow intellectually, professionally, and personally …"[2]

This report's initial focus is primarily on the transitions of the recent past that the University has made as part of its ongoing evolution to prepare for its second century. Some of the changes can be captured quantitatively, as shown in Table 1, while many of the other University's gains are qualitative in nature. Regardless of its documentation, change has been an ongoing part of the institution's history, and its willingness to embrace change and become nimble has proven to be one of CMU's strengths. Since 1925, the institution has matured from its beginning as two-year Mesa Junior College, to baccalaureate-level Mesa State College in the mid-1970s, to what became Colorado Mesa University in 2011.

As of Fiscal Year (FY) 2019-20, CMU enrolls more than 10,700 students annually, confers awards that range from doctoral degrees to vocational certificates, has an annual operating budget of $175 million, and ranks as one of the top five employers in Mesa County,[3] with 770 full-time faculty and staff and an additional 1,400 part-time employees that include student workers. Along with growth on the main campus, CMU has also expanded educational programming on both the CMU-Montrose and Western Colorado Community College campuses.

- This report's initial focus is primarily on the transitions of the recent past that the University has made as part of its ongoing evolution to prepare for its second century.
- The second section of the report has a narrower focus and examines the economic impact of Colorado Mesa University on Western Colorado.

Figure 1: Map of Colorado Mesa University Service Region



1 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.

2 Colorado Mesa University, *2020 Strategic Plan*, January 29, 2016. Accessed on November 23, 2020 at https://www.coloradomesa.edu/president/documents/StrategicPlan01-2016.pdf.

3 Grand Junction Economic Partnership, Top 20 Employers in Mesa County. Accessed on November 23, 2020 at https://www.gjep.org/move-here/major-employers/.

Of Colorado Mesa's nearly 44,000 alumni, approximately 54% live in one of the 14 Western Colorado counties, with the largest share (approximately 14,000) residing in Mesa County. By studying at CMU, these former students have increased their ability to have higher earnings and gained new skills that make them more productive citizens and employees across the Western Slope.

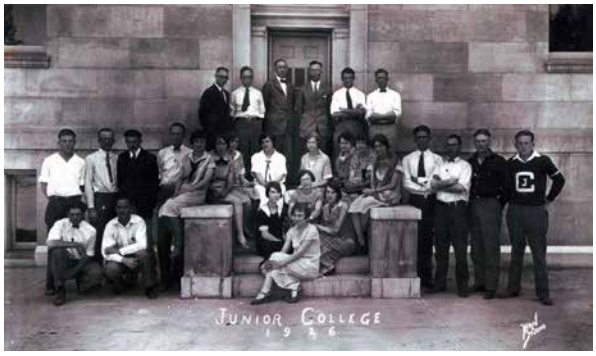
The second section of the report has a narrower focus and examines the economic impact of Colorado Mesa University on Western Colorado. As the institution has grown, CMU has become an increasingly significant economic stimulus for advancing the region as well as a major contributor to an improved quality of life for its residents. Without CMU, Western Colorado would be a very different region educationally, socially and economically.

Transitions that Lay the Foundation for CMU's Next Century

As the University nears 100 years of service, it is an appropriate time to pause and reflect on how CMU's adaptations and activities in the early 21st century have laid the groundwork for the institution's upcoming decades. The changes have been both impressive and dramatic, transitioning CMU into a competitive baccalaureate public university, not only within Colorado, but also reaching into parts of the broader Rocky Mountain and Midwest Plains regions.

The ongoing evolution is the result of both internal and external forces, with the institution capitalizing on its strengths and positively addressing its challenges. Be they demographic, cultural, social, political, or economic, these elements are continually reshaping the institution's academic program mix and levels, the formats for offering instruction, the students it serves, the sources of its funding, the interactions with its regional partners, and the economic impact it generates in the region. That said, CMU's adaptations have been framed within the University's values that have remain unchanged since its inception and also serve as part of CMU's foundation for success: an over-riding focus on student success, exceptional faculty and staff dedicated to excellent teaching, educational affordability, and service to the region.

It is noteworthy that the University's transformation is also occurring within a broader set of changes that higher education is experiencing nationally. Colleges and universities across the United States are being challenged about the perceived value of a degree as preparation for a successful career. Enrollments at many institutions are flat or in decline. Institutional budgets are increasingly strained, despite serious efforts to control costs and expand alternative revenue streams to offset the shrinking proportion of funding from the state. Institutions now require an organizational philosophy of adaptability and nimbleness to succeed, qualities that, as mentioned above, have been a part of CMU's culture from its inception and continue as the institution has navigated the first two decades of the 21st century.



Founded in 1925, Colorado Mesa University originally started as a junior college in one building with 39 students. Today it has over 10,000 students and three campuses.

What, then, are the transitions that CMU has made as preparation for success in its next century of service? The adaptations largely fall into one of the following seven categories:

1. Broadening Student Access and Diversifying Enrollments
2. Preparing Graduates for the 21st Century Workplace Employment Needs and Success
3. Engaging and Supporting Students
4. Transitioning Revenue Streams and Controlling Costs
5. Rebuilding the Campuses
6. Investing in Technology
7. Expanding Community Outreach

Table 1: Selected Comparisons of Colorado Mesa University, FY 2004-05 and 2019-20

COMPARISON MEASURE	FY 2004-05/ FALL 2004	FY 2019-20/ FALL 2019
Students Demographics		
Fall Headcount	5,750	9,373
Traditional Age	69.9%	82.9%
From Under-represented Groups	12.9%	29.3%
From Western Colorado's 14 counties	71.8%	53.4%
From Elsewhere in Colorado/Out-of-State/Out-of-Country	29.9%	45.0%
Full-time	79.1%	75.5%
High School (non-degree) Students	1.3%	9.5%
Students Enrolled in Baccalaureate Major	70.7%	73.8%
Are Pell-eligible and/or First Generation	54.9%	59.0%
Number of Students Living on Campus	925	2,533
First-year Retention Rate for First-time, Full-time, Baccalaureate-seeking Students	57.3%	75.2%
Six-year Graduation Rate for First-time, Full-time, Baccalaureate-seeking Students	26.3%	43.8%
Student-Faculty Ratio	19:1	20:1
Class Sections with Enrollments Less Than 20	52.7%	47.7%
Class Sections with Enrollments Less Than 40	89.9%	87.4%
Academic/Technical Fields of Study Offered		
Associate and Technical Certificate Level	14	40
Baccalaureate Level	24	35
Graduate Level	1	5
Academic/Technical Awards Conferred by Level		
Technical Certificates	47	434
Associate Degrees (transfer)	37	184
Associate Degrees (vocational)	87	119
Professional (Upper Division) Certificates	-	29
Baccalaureate Degrees	661	1,158
Post-baccalaureate Certificates	-	15
Master's Degrees	28	39
Doctoral Degrees	-	2
Total Awards	860	1,980
Library Holdings		
Books	174,304	201,647
E-books	7,406	128,724
Journals	211,593	259,060
Journal Databases	68	105
Government Documents	335,536	514,015
Materials Available through Prospector & Mobius	20 million	60 million

(continued on page 7)

Table 1: Selected Comparisons of Colorado Mesa University, FY 2004-05 and 2019-20 (continued)

COMPARISON MEASURE	FY 2004-05/ FALL 2004	FY 2019-20/ FALL 2019
Financial Aid		
Total Financial Aid Awarded	$28,017,591	$75,668,928
Percent of All Students Awarded Financial Aid	57.5%	66.1%
Percent of First-time Undergraduates Awarded Financial Aid (Fall semester only)	74.0%	74.0%
Total Aid Awarded as Scholarships and Grants	$9,580,155	$18,458,558
Total Scholarships and Grants Awarded as:		
Colorado Student Grants		
Headcount	940	2,046
Awarded Funds	$1,343,389	$8,259,954
Federal Supplemental Educational Opportunity Grants (SEOG)		
Headcount	103	109
Awarded Funds	$175,450	$375,151
Total Student Loans (excluding parent loans)	$14,135,657	$26,074,500
Percent of Borrowers Who Were First-time	44.1%	50.0%
Total Parent Loans (PLUS)	$1,782,791	$11,521,414
Intercollegiate Athletics		
Number of NCAA Division II Varsity Teams	11	26
Number of Student-Athletes	292	717
Budget		
Total Operating Budget	$58,930,613	$175,167,882
Total Funding for Capital Activity	$1,787,247	$58,133,905
University Support: CMU Foundation Fund-raising		
Funds Raised	$2,732,473	$7,506,836
Funds Raised for Scholarships	$352,000	$2.9 million
Endowment Total	$7,047,390	$37,213,188
Campus Spaces (all locations)		
Total Square Footage	522,000	2,541,000
Total Academic Square Footage	451,600	864,000
Information Technology		
Number of Smart Classrooms	95	231
Number of Computers with Academic Software Available for Student Use Outside of Class Time	636	1,478
Number of Wireless Access Points	9	990
Total Annual Investment in Information Technology	$2.0 Million	$6.6 Million

Broadening Student Access and Diversifying Enrollments

One of the most visible changes to the University is the sharp growth in the number of students choosing CMU for their education, building on its 94-year tradition of being the primary provider of higher education to residents of Colorado's Western Slope. As summarized in Table 1, the Fall 2019 headcount of 9,373 is in sharp contrast to the Fall 2004 enrollment of 5,750, a 63.0% increase. Most notable was the growth during the decade between

Fall 2006 and 2016 when CMU ranked 5th nationally among the fastest growing baccalaureate institutions in the United States, with a 56.7% increase.

Not only have enrollments changed dramatically, but so too has the demographic profile for the students, with the most notable changes captured in Table 1. The Fall 2019 CMU enrollment has a higher proportion of traditional-aged students (82.9%), represents a significant increase in students from under-represented groups (29.3%), and comes from a broader geography (45.0%). The 14-county region's share of students has declined (53.4%), yet the University is attracting 19.4% more students (800+) from Western Colorado in Fall 2019 than it did 15 years earlier. Majors at the baccalaureate level continue to be the degrees most students pursue. Finally, the University continues its commitment to providing financial access to students who are first generation to college and/or Pell-eligible as the proportion has risen to nearly 60%.

	2004	2019
Enrollment	5,750	9,373
Traditional-Aged Students	69.9%	82.9%
From Under-Represented Groups	12.9%	29.3%
From Western Colorado	71.8%	53.4%
First-Generation/ Pell-Eligible	54.9%	59.0%

Preparing Graduates for 21st Century Workplace Employment Needs and Success

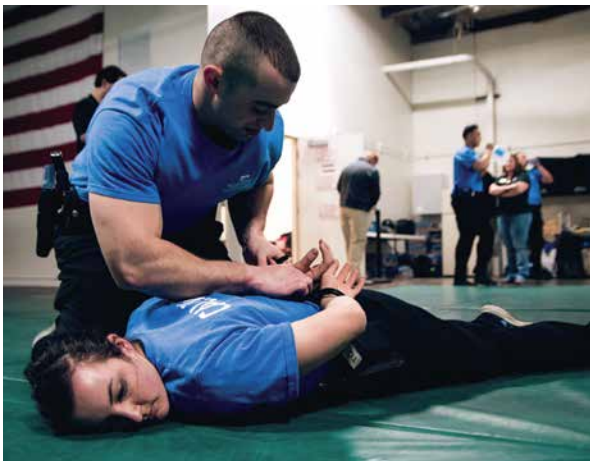
Western Colorado is a region of small businesses in rural communities that are spread across a vast area, each town supported by agencies and organizations related to health care, education, law enforcement, and the business sector. Not surprisingly, some of the most popular academic majors at Colorado Mesa align with these communities' needs. Beyond supporting these core employment sectors, however, the University worked aggressively to develop four- and two-year programs that support additional job creation and business expansion needed in Western Colorado.

CMU faculty members have an ongoing commitment to develop curricula that prepare students for successful careers in the new world economy and also support the economic development of the region. 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. The following offers some examples of the University's programs that have been implemented since the mid-2000s.

Designing Academic Programs That Respond to Regional Needs

Program development has often emerged from discussions between the University and regional business/industry/agency leaders, with the greatest interest coming from employers that face critical staffing shortfalls. Nursing shortages in hospitals across the region, for example, have come about due to retirements of baby boomers, while school districts also have experienced a high turnover of relatively new teachers in their systems. Recognizing the value of leveraging shared resources, various partnerships have led to the creation or expansion of high demand programs through a "grow your own" approach

CMU has partnered with the local health care sector, the Colorado Trust and the Mesa County Workforce Center to expand the Nursing program. Students can earn a certificate and return later to enroll and complete a master's degree.



The Peace Officer Standards and Training (POST) program, a collaboration between the Grand Junction Police Department, the Mesa County Sheriff's Office and the University, allows students to enroll in two- and four-year degree programs in Criminal Justice after completing the initial POST program.

The Center for Teacher Education (CTE) at Colorado Mesa University has 13 approved licensure/endorsement programs. The CTE has a strong relationship with the 14-county Western Slope community of school districts and works closely with them to educate and prepare new teachers through field placement and toward employment.

to meet Western Colorado's employment needs, illustrated by the following examples.

Among the earliest of these partnerships were efforts between CMU, representatives of the local health care sector, the Colorado Trust, and the Mesa County Workforce Center, a model that was used subsequently in Montrose for expanding the Nursing program in that town. This program development was based on a career ladder curriculum model that enables students to complete a program of study, such as a two-year degree, exit for employment, and then later return to enroll in the next higher degree level with credit hours fully transferable across all program levels. Over time, this has resulted in CMU's Nursing program offering undergraduate awards from a Practical Nurse technical certificate through the Associate of Applied Science/Registered Nurse and Bachelor of Science in Nursing/Registered Nurse degrees, and then as relevant, graduate-level degrees. The delivery of these programs has prepared more than 3,200 graduates at various levels for a wide range of nursing careers, helping to bend the health care cost curve.

Similarly, the Grand Junction Police Department and Mesa County Sheriff's Office collaborated with the University to create the Peace Officer Standards and Training (POST) program that also affords completers the follow-up opportunity to enroll in two- and four-year degree programs in Criminal Justice. This program also illustrates how pursuing the Bachelor of Applied Science in Criminal Justice enables a student to build on technical training to earn a four-year degree by reducing the time to degree completion.

Some partnership programs have been designed for a single degree level. A Master's degree in Education and professional development sessions were designed following meetings with representatives from regional school districts in 2006, assisted by financial support from grants awarded by the U.S. Department of Education and the Colorado Department of Education. Since then, post-baccalaureate and graduate certificates have been added, and if the student desires, CMU offers the additional pedagogical coursework for completing the master's degree.

Yet a final example is the Mechanical Engineering Partnership Program supported by both CMU and the University of Colorado at Boulder (CU Boulder) to jointly deliver a baccalaureate Mechanical Engineering (ME) program on Colorado Mesa's campus. Initiated in Fall 2008, the partnership reflects an efficient pooling of state resources to make a fully-accredited engineering program — often cited as a critical element in economic development — available in its entirety on the Western Slope. Complementing this program, CMU subsequently developed the Mechanical Engineering Technology (MET) career ladder at both the associate and baccalaureate levels, and in the last several years, CU Boulder has added two other majors: Civil Engineering and Electrical and Computer Engineering.

In a world of limited resources, however, there must be a willingness to balance the addition of academic and technical majors with an objective review of existing majors that, when necessary, can result in the hard decision to discontinue a major if demand no longer justifies its delivery. Thus, CMU reviews each program

on a rolling basis, using external reviewers, to ensure that majors are relevant and current. In addition to periodic reviews, the University modeled a program review and prioritization process. The evaluation was a year-long review of all academic programs in FY 2008-09, resulting in an academic and a technical program and five concentrations within specific majors being discontinued, while another major was totally redesigned to align the curriculum with professional standards for the discipline.

In sum, Table 2 reflects the number of graduates in specific fields of study who are prepared for an array of careers and can support the region's needs for an educated workforce that attracts companies to the Western Slope. Over the course of the last 15 years (or less, depending on the date of program approval):

- nearly 2,000 graduates became Registered Nurses, another 1,200 earned certificates either as a Practical Nurse or Nurse Aide, and approximately 60 more were awarded either the master's or doctoral degree in Nursing;
- the POST program trained approximately 500 law enforcement officers;
- more than 1,000 students met initial licensure requirements to be elementary or secondary teachers;
- over the past nine years, 170 engineers completed the partnership program with CU Boulder, along with an additional 115 students completing CMU's Mechanical Engineering Technology programs at the two- or four-year level; and
- over 1,800 undergraduates earned a degree in one of a variety of STEM disciplines.

As the region's future economy continues to diversify, so too will the education preparation for that workforce. Colorado Mesa University's role as an active partner in meeting those needs will support that progress, just as it has over the past two decades.

Restructuring Curriculum to Make Graduates Competitive in the Workplace

Beyond new program development, the University has undertaken numerous initiatives to enhance existing programs. Four are described briefly below.

Essential Learning: A Liberal Education Core for All Degrees

Nearly everyone recognizes that the world is changing more rapidly than it ever has. The average person will change jobs as many as a half dozen times during their lifetime, with many of these jobs not yet in existence. The challenge for higher education is to prepare students not only for an ever-changing world, but to also develop a knowledge and skill base to solve problems that haven't even been thought of yet. At Colorado Mesa, each associate and baccalaureate major has a liberal education core — the Essential Learning curriculum, also known as general education — that introduces students to a foundational knowledge from various disciplines. This course sequence also develops communication, critical thinking, and problem-solving skills that are essential to workplace success, career advancement, and/or graduate education. When combined with the specialized knowledge of an academic major, this core prepares graduates for successfully tackling future problems and applying their learning to new situations.

Over the past nine years, 170 Engineering majors completed the partnership program with CU Boulder, along with 115 students completing CMU's Mechanical Engineering Technology programs.

Student Learning Outcomes That Employers Expect in Employees

Numerous surveys of employers over the past decade consistently report that hiring managers are placing a growing emphasis on applicants' cognitive skills and less on those that are manual in nature. As reported in the 2020 study by the Georgetown University Center on Education and the Workforce, *Workplace Basics: The Competencies Employers Want,* the authors identified five cognitive competencies in the modern labor market that are in high demand across all occupational groups: (1) communication, (2) teamwork, (3) sales and customer service, (4) leadership, and (5) problem-solving and complex thinking.[4]

4 Georgetown University Center on Education and the Workforce, Workplace Basics: The Competencies Employers Want, 2020. Accessed on November 27, 2020 at https://cew.georgetown.edu/cew-reports/competencies.

Table 2. Selected Examples of CMU Program Awards Contributing to Regional Economic Development

PROGRAM	TOTAL AWARDS SINCE FY 2004-05
Business: Bachelor of Business Administration/Bachelor of Applied Science	2,270
Construction*	
Associate of Applied Science, Construction Technology	68
Bachelor of Science, Construction Management	147
Criminal Justice	
Technical Certificate, Peace Officer Standards and Training (POST)*	491
Bachelor of Arts/Bachelor of Applied Science*, Criminal Justice	605
Education	
Initial Licensure**	1,041
Post-baccalaureate and Graduate Certificates*	172
Master of Arts, Education*	316
Electric Lineworker: Technical Certificate	504
Emergency Medical Technician: Tech. Certificate/Assoc. of Applied Science	540
Manufacturing Technology Cluster (including Welding)	
Technical Certificate, Manufacturing Technology	330
Associate of Applied Science, Manufacturing Technology	291
Engineering (conferred by CU Boulder)*	
Bachelor of Science, Mechanical Engineering	164
Bachelor of Science, Civil Engineering	6
Mechanical Engineering Technology*	
Associate of Applied Science, Mechanical Engineering Technology	35
Bachelor of Science, Mechanical Engineering Technology	80
Nursing	
Technical Certificate, Nurse Aide*	784
Technical Certificate, Practical Nurse*	397
Associate of Applied Science/Registered Nurse*	447
Bachelor of Science, Nursing/Registered Nurse	1,519
Master of Science, Nursing*	41
Doctor of Nurse Practice*	19
Radiologic Technology	
Associate of Applied Science, Radiology Technology	243
Bachelor of Applied Science, Radiologic Sciences*	118
STEM Disciplines (also see Engineering and Mechanical Engineering Tech. above)	
Bachelor of Science, Chemistry***	51
Bachelor of Science, Biological Sciences	820
Bachelor of Science, Computer Science	257
Bachelor of Science, Computer Information Systems	151
Bachelor of Science, Environmental Science and Technology	303
Bachelor of Science, Geosciences***	47
Bachelor of Science, Mathematics	166
Bachelor of Science, Physics***	20
Bachelor of Science, Physical Sciences***	278

* Program was approved since 2004, so the timeframe for total awards is less than 15 years.
** Data available only for completers since 2008-09.
*** Awards prior to 2014-15 were conferred as a Physical Sciences major and not included in the awards reported since 2014-15 for the specific disciplines.

CMU's response to employer expectations has been to restructure curriculum around student learning outcomes (SLOs) that align with employer criteria and provide students with applied learning opportunities that further develop the necessary competencies. The institution's initial SLOs, developed in FY 2012-13, were built on a liberal education core of communications (both written and oral), critical thinking/analysis, and computation (or quantitative literacy). Subsequent efforts have added student outcomes related to personal and social responsibility and to information literacy. Further, many academic and technical programs and student life activities offer CMU undergraduates the opportunity to participate in projects that involve working in teams and honing leadership skills.

How have CMU seniors responded to these expectations? To what extent do these soon-to-be Colorado Mesa graduates perceive their education has prepared them to demonstrate these learning outcomes when compared to seniors at other institutions nationally? Based on the 2019 National Survey of Student Engagement (NSSE), the average responses for CMU seniors have been competitive as many of the scores often exceeded those for seniors at other institutions. Of particular note were CMU averages associated with the student learning outcomes shown in Table 3.

The perceived level of career preparation indicated by CMU seniors in the NSSE is consistent with the findings from University alumni surveys of baccalaureate degree

Table 3. Comparison of CMU Responses to Those at Other Institutions Regarding Seniors' Preparation in Specific Student Learning Outcomes and Ability to Integrate Knowledge

NSSE Questions	In response to the question, CMU seniors' NSSE average response for the specified skills exceeded that for other survey participants at other -		
	Colorado Public Inst	NSSE Inst Nationally	Inst Nationally with Same Carnegie Classification
Student Learning Outcomes: How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?			
Thinking critically and analytically	✓	✓	✓
Solving complex real-world problems	✓	✓	✓
Speaking clearly and effectively	✓	✓	
Writing clearly and effectively	✓		
Analyzing numerical and statistical information		✓	✓
Acquiring job- or work-related knowledge and skills	✓	✓	
Working effectively with others	✓		✓
Student Learning Outcomes: During the current school year, how much has your coursework emphasized the following?			
Analyzing an idea, experience, or line of reasoning in depth by examining its parts	✓	✓	✓
Knowledge Integration: During the current school year, about how often have you done the following?			
Formed a new idea or understanding from various pieces of information	✓	✓	✓
Worked with other students on course projects or assignments		✓	✓
Combined ideas from different courses when completing assignments		✓	✓

completers. Of the nearly 800 alumni respondents, 93.3% indicated that they were adequately to well-prepared for their career, and 91.4% were either satisfied or very satisfied with their undergraduate education. Additionally, the Alumni Survey reported that the student learning outcomes embedded in their CMU education had adequately to very well prepared them to:

- think critically (96.0%);
- prepare a well-organized written and/or oral presentation (97.3%);
- apply quantitative methods correctly (94.3%); and
- apply the knowledge learned in their major through a hands-on research project (94.1%).

While there is no employment guarantee upon graduation, there is little doubt that university graduates who can demonstrate these outcomes will navigate economic downturns and accrue higher lifetime earnings, justifying higher education as a worthwhile investment. The expectation of each CMU degree completer is a demonstration of this blend of hard and soft skills so that the graduate can then articulate their grasp of those skills, in addition to their knowledge of the specific major, to prospective employers.

Experiential Learning and the Tools of the Trade

Colorado Mesa continues to honor its long-standing commitment to hire faculty who are highly-qualified and current in their respective academic disciplines. All faculty members meet regional accreditation credentialing requirements either by holding the terminal degree in their teaching field or having extensive education and/or professional experience in their discipline. They are committed to exemplary undergraduate instruction and view students as active partners in learning at the collegiate level so that students will engage in their education and develop higher-level critical thinking skills and more meaningful learning experiences.

The emphasis that faculty members place on engaging students to actively apply their learning is reflected in the number of undergraduates enrolled in one or more courses with these types of opportunities (Table 4). Recognizing the importance of these high impact practices to a student's post-graduation success, some academic programs offer active learning options on campus, such as undergraduate research projects in a laboratory. Others have placements in off-campus internships, clinical assignments, student teaching placements, and other pre-professional settings that replicate "real world" work environments.

Table 4: CMU Students Participating in High Impact Coursework, FY 2019-20

Type of Placement/Course	Number of Participants*
Off-Campus	
Clinical	533
Student Teaching	111
Internships/Co-Op	449
Practicum	223
Total	1,316
On-Campus	
Independent Study	117
Research	590
Thesis	95
Capstone	376
Total	1,178

*Unduplicated student count within each type of course.

And in others, students can opt for study abroad or service-learning experiences.

Further, CMU offers an annual forum for students to share their projects, in a variety of forms, each spring through its Student Showcase. In Spring 2019, approximately 550 students presented papers, posters, and projects, giving students yet another venue for displaying their professional knowledge and skills.

Wade Rose and Hayden Gardner present their project to Colorado Governor Jared Polis and CMU President, Tim Foster at the 2019 Student Showcase. Approximately 550 students presented papers, posters, projects and performances in the annual forum for students to share their work.

At CMU, specific examples of experiential learning venues, many of which have been developed in the past decade or two, include the simulation labs and regional hospitals in Health Sciences; the Forensic Investigation Research Station; 437CO, CMU's art gallery in downtown Grand Junction; the Monfort Human Performance Laboratory; CMU-TV and KMSA-FM; classrooms in elementary and high schools across the region; Confluence Hall Engineering Labs; the Maverick Innovation Center; the Cybersecurity Center; the Hotel Maverick; the Kelley Herbarium; a state-of-the-art commercial kitchen lab; the Peace Officers Training Academy site; and Mainstage Music and Theatre Arts productions, just to name a few.

Technology is integral to the best learning environments for students and faculty as graduates prepare for a successful future. It is fundamental to virtually any job, and research shows its ample use encourages student engagement. Much has been written about the yet-to-be-created jobs of the future,[5] with some estimates claiming that 65% of children entering primary school today will ultimately end up working in completely new jobs that don't yet exist. Undoubtedly, future employment skills will need to be addressed, but what about those entering the workforce now?

Most current employment positions require what are often described as "middle" or digital skills, [6, 7] so it is crucial that a part of students' experiential learning involves the use of computers and software applications in addition to word processing and building spreadsheets that are the minimal "tools of the trade." At CMU, students now begin their collegiate experience by receiving training in the use of communication software that connects them with their instructors and peers in an online environment. When synchronous video and audio communication is called for, students can use Microsoft Teams or Zoom to collaborate online for small group projects. They build on that training by accessing course content via CMU's Learning Management System, while other software applications enable interactive video and audio discussions and media exchanges. Students continue by learning software that they will use in their careers, whether it's statistical software to perform data analysis to address community or regional questions, computer animation software to design games or interactive content, or video editing software to create immersive or simulated environments.

For students to demonstrate the proficiency levels of their learning outcomes, ePortfolio not only aids in collecting various documents virtually, but also enables students to share their credentials and document their knowledge and skills with potential employers. As a

State-of-the-art commercial kitchen labs ensure that graduates of the Culinary Arts program have experience with all types of kitchen equipment when entering the workplace.

Julia Bremner and eight other CMU students interned with the GJ Rockies. She honed skills that were first learned in a classroom: problem-solving to come up with quick solutions to customer issues.

5 For example, see the report from the World Economic Forum, *The Future of Jobs Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*, January 2016. Accessed on December 1, 2020 at http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf.

6 Amy Ahearn, *Forget 'Jobs of the Future.' Let's Prepare People for Ones That Already Exist*. June 29, 2020. Accessed on December 1, 2020 at https://www.edsurge.com/news/2020-06-29-forget-jobs-of-the-future-let-s-prepare-people-for-ones-that-already-exist.

7 "For an increasing number of American workers, the term "middle-skill" has come to mean "digital skills" … The number of jobs with digital skill requirements is growing faster, and the jobs pay more and offer greater opportunity for career advancement than jobs without those requirements. By contrast, the jobs that don't require digital skills are concentrated in only a few industries, such as transportation and construction … Digital skills serve three key functions for middle-skill job seekers: Serving as a door opener to the middle-skill market … providing career advancement in lieu of advanced education … [and] [d]efining a set of domain-specific competencies for specialized roles." Source: Burning Glass Technologies, The Digital Edge: Middle-Skill Workers and Careers, September 2017. Accessed on December 1, 2020 at Digital_Edge_report_2017_final.

final example, Handshake software is available to all students who complete a job profile that showcases their skills, experience, and research projects, to explore career options, and find jobs and internships with employers. Developing and practicing the use of these and many other applications lead to an active, engaging learning experience, make a student more competitive for earning money while they pursue their education, and also become a key component in a student's future employment toolkit. How CMU has supported these technologies is described in a later section of this report.

Instruction in Various Formats

CMU has taken strategic steps to stay current in the fast-changing world of online education since the early 2000s. The first online courses were offered in Spring 2005, followed by its first two fully online programs in 2007: bachelor degrees in Nursing and in Liberal Arts for Elementary Education. Since then, faculty members have been required to complete Online Teaching Essentials training before they can offer online instruction, and students must also enroll in an online orientation before their first remotely-delivered course.

In 2014, the University was the first institution in Colorado to be approved by the National Council for State Authorization Reciprocity Agreement (NC-SARA), an interstate compact that gave permission for CMU to offer its online classes to students residing in other states. That same year, Colorado Mesa offered its first accelerated online program: the RN to Bachelor of Science in Nursing. Finally, in 2017, CMU completed its first certification of an online course by Quality Matters, the world's largest online quality control organization, with two additional courses approved the next year.

The University continues adding courses and programs for online delivery. As of Fall 2019, CMU offered more than 238 sections and a dozen programs at various degree levels online, eliminating the need for a student to come to any of Colorado Mesa's campuses for many courses. With approximately 3,300 students enrolled in at least one online course that semester, these expanded online opportunities have made education more flexible for students who need to work, care for their family, or participate in athletics programs that require frequent travel. Finally, various forms of academic support are transitioning more and more of their services to online availability. Tomlinson Library, for example, evaluated many of its holdings as part of its renovation and expansion project in FY 2015-16. It continues building more of its collections electronically, resulting in a dramatic increase in computer access to learning resources of all types (see Table 1).

Engaging and Supporting Students

Student Engagement Outside the Classroom

A second component of student engagement to which CMU has made a significant commitment has occurred outside the classroom. Meaningful learning that develops leadership, builds skills, and creates communities is integral to development of the whole student, and the University has created a wide array of engagement experiences and environments over the past 20 years in which this can happen.

The divisions of Student Life and Residence Life now coordinate nearly 200 student clubs and 20 organizations. As the student body has become increasingly diverse, six cultural alliances comprise the Cultural Inclusion Council. With the number of students living in 12 residence halls on campus approaching three times the bed count in Fall 2004, students can select from approximately 2,500 activities per year. They range from eSports to Campus Recreation to Greek Life to the Outdoor Program, all in addition to student chapters and clubs associated with most academic programs. Further, the Student Wellness Center makes medical, mental health, and prevention services available to students and their minor dependents.

Again, results from the National Survey of Student Engagement (Table 5) indicate how CMU has fared when seniors evaluated their participation in non-classroom activities. The University's respondents documented higher averages in comparison to other schools for developing proficiencies in the student learning outcomes described in the preceding section.

Finally, intercollegiate athletics (IA) plays a significant role in student development and engagement on many campuses, underscoring the sports contributions

Student Life and Residence Life coordinate nearly 200 student clubs and 20 organizations. Activities offered include everything from eSports to Greek Life to the Outdoor Program events.

Table 5. Comparison of CMU Responses to Those at Other Institutions Regarding Seniors' Engagement in Outside-the-Classroom Activities That Support Student Learning Outcomes

NSSE Questions	In response to the question, CMU seniors' NSSE average for the specified skills exceeded that for other survey participants at other -		
	Colorado Public Inst	NSSE Inst Nationally	Inst Nationally with Same Carnegie Classification
Student Development and Engagement Outside the Classroom:			
How much does your institution emphasize the following?			
Attending campus activities and events (performing arts, athletic events, etc.)	✓		✓
Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)	✓		
Providing support for your overall well-being (recreation, health care, counseling, etc.)	✓	✓	✓
During the current school year, about how often have you done the following?			
Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	✓		✓
Discussed course topics, ideas, or concepts with a faculty member outside of class	✓	✓	✓

to various learning outcomes. Since 2004-05, Colorado Mesa has elevated the presence of student-athletics on campus and its participation in regional competitions. Further, the athletics program enjoys widespread community support. As of Fall 2019, Intercollegiate Athletics sponsored 26 sports that involve more than double the number of student-athletes who participated in Fall 2004 (Table 6).

Assisting Students Financially

While many believe that higher education is a common good, there has been a significant philosophical change at the state and federal levels over the past two decades on who should pay for that education. The result has been a shift to one where students are expected to bear a larger share of their expenses. CMU has consistently had one of the lowest rates of undergraduate tuition and mandatory fees. Currently, Colorado Mesa has the lowest mandatory fee rate for the 12 Colorado four-year public institutions and ranks tenth for in-state tuition rates. It is also notable that the University has not implemented program-level tuition differentials that can discourage students from selecting specific majors that may have higher costs.

To assist students, CMU awarded approximately $76 million in financial aid in FY 2019-20, with the proportion awarded aid having grown by nearly ten percentage points (Table 2). The share of awards given by the State to first-year undergraduates has remained flat over time, reflecting a change in the state's financial aid policy that mandates an increase in awards to upper division students. While the number of grants from the State more than doubled, the dollar allocation rose by $6.9 million. Meanwhile, the change in the federal government's commitment to college students with the greatest need (SEOG) was the result of award amounts rising from $1,000 to $4,000 rather than expanding the support for more students.

To help offset the financial burden for some students, CMU has increased the amount awarded as institutional aid to the industry standard of 10% of tuition revenue. The other notable change has been in the growth of student and parent loans. As noted in Table 1, both loan categories have increased substantially over the last 15 years, most likely due to limits on the amount a dependent student can borrow leading to parent loans. That said, the cost

Table 6. Comparison of CMU Intercollegiate Athletics, Fall 2004 and 2019

SPORT	FALL 2004	FALL 2019
Baseball	✓	✓
Football	✓	✓
Softball	✓	✓
Volleyball	✓	✓
Men's Basketball	✓	✓
Women's Basketball	✓	✓
Men's Tennis	✓	✓
Women's Tennis	✓	✓
Men's Cross Country		✓
Women's Cross Country	✓	✓
Men's Golf		✓
Women's Golf	✓	✓
Men's Soccer		✓
Women's Soccer	✓	✓
Men's Lacrosse		✓
Women's Lacrosse		✓
Men's Swimming and Diving		✓
Women's Swimming and Diving		✓
Men's Indoor Track		✓
Women's Indoor Track		✓
Men's Outdoor Track		✓
Women's Outdoor Track		✓
Women's Triathlon		✓
Men's Wrestling		✓
Women's Wrestling		✓
Women's Beach Volleyball		✓

of an education, nonetheless, remains a significant investment for most students and their families. Financial aid allocations are crucial to reducing the financial barriers that many students and their families experience and increasing the probability of student retention and degree completion.

Transitioning Revenue Streams and Controlling Costs

At the end of FY 2003-04, then Mesa State College's financial condition was such that it spent more funds than it took in, clearly not a sustainable condition. Employees had not had an inflationary salary increase for several years, and salaries for hiring new faculty and staff were not competitive in the marketplace. Further, the campuses' facilities were in need of significant renovation and updated technology. Getting the institution's budget adjusted took a multi-pronged strategy that focused on budget discipline, broader and increased revenue streams, and greater external support.

The first order of business was to review budgets, beginning by constraining some areas of spending and reallocating resources to priority areas such as faculty and staff salaries. From a budgetary perspective, early notable changes included the decision to eliminate the dean positions across academic schools and renegotiate health insurance costs. Among the other steps taken to reduce costs since FY 2004-05 are those shown in Table 7, a list that exemplifies the myriad ideas that came from across the campus community.

Revenue enhancement required a longer timeframe. Given CMU's mission of serving a largely first-generation and low-income student body, it could not rely on tuition increases as a primary source of new funds. Hence, the focus was on increasing revenues by growing enrollment and boosting the profitability of campus auxiliaries such as food service and housing. As noted previously, the number of students living on campus grew from 925 to 2,533, offering a variety of living arrangements. Housing costs have been kept affordable during this expansion, averaging an annual rate increase of 3%.

Finally, as the campus looked to update facilities, grow enrollments, and improve technology, fundraising played an important role. As is reflected in Table 1, annual fundraising increased from $2.7 million in FY 2004-05 to $7.5 million in FY 2019-20, while the CMU Foundation endowment climbed from $7 million in FY 2004-05 to $37 million in FY 2019-20. Most importantly, donor scholarship support for CMU students grew from $352,000 in FY 2004-05 to $2.9 million in FY 2019-20, totaling over $16.5 million in the 15-year timeframe. Beyond scholarship support, however, it is noteworthy that the University raised an additional $25 million since 2004 for building projects as described in the following section.

The resulting resources have enabled the University to invest in its people and new programs that have

Table 7: Examples of CMU Controlling Costs Since FY 2004–05

Cost Control Action	Estimated Savings
Eliminated academic dean positions	$500,000
Renegotiated health insurance	$300,000
Reduced banking fees	$150,000 over 10 years
Re-bid food service contract	$300,000/year
Implemented IT efficiencies, consolidated licenses, etc.	$382,112 over 10 years
Used "state intercept" legislation to issue bonds with State's credit rating	Debt service avoidance of $5 million
Issued ARRA Build America Bonds	Debt service avoidance of $5 million
Streamlined financial, student, and academic administration services	$1,185,238
Reduced auxiliary business costs	$230,467
Optimized building usage in summer months	$154,895
Bid competitively for University computers	$146,000/year
Opted out of State Risk Management	$250,000/year
Selected e-commerce solution for all electronic money transactions (e-bills, e-payments, e-refunds, etc.)	$105,725/year
Outsourced accounts receivable to private firm	$280,000/year
Reduced the cost of its annual classroom upgrades	$140,000/year
Upgraded the wireless network infrastructure	$52,000/year
Implemented GeoExchange Technology	$10,428,261 over 12 years

accelerated student growth that, in turn, created additional resources. The reallocations have made the University competitive in the recruiting marketplace for students, faculty, and staff. It also has enabled faculty and staff members to receive an inflationary salary increase each year since FY 2004-05, a critical priority in higher education due to the sector being overwhelmingly reliant on people. Campus facility and technology infrastructure continue to be updated. Finally, the resource shift has placed CMU in a position where it has among the lowest administrative costs of any four-year public college or university in Colorado. Based on data for FY 2018-2019, the most recent year available for institutional comparisons, CMU's institutional support was 7.6% of its expenditures, second only to Colorado State University — Fort Collins at 6.3% — while the remaining ten institutions spent from 10.1% to 15.7% in this expense category.

Rebuilding the Campuses

In 2004, the Mesa State campus was dated and tired. A small number of classrooms had limited technology, such that the majority were reliant on chalk and blackboards. Further, classrooms were flat with poor acoustics and sight lines. What transpired was an effort to update literally every learning space, to integrate technology in every classroom and lab, and to ensure that students could hear and see presentations and interact with their instructors.

With student growth, the need for additional instructional space became even clearer as classrooms by FY 2009-10 were over 75% full between the hours of 8 a.m. and 5 p.m., with some too small to accommodate specific class sizes. By FY 2019-20, academic space had grown to 864,000 square feet, a major expansion from the 451,600 square feet in FY 2004-05. Every square foot of the campuses is either new or newly-remodeled and outfitted with the high standard technology connectivity and presentation equipment that ensure teaching and learning conditions are optimal. Enrollment growth also resulted in increased demand for on-campus housing. Over the past 15 years, the University has added 1,600 beds for more students to live on campus, a significant expansion from the 925 who were in residence halls in Fall 2004.

By FY 2019-20, academic space had grown to 864,000 square feet, a major expansion from the 451,600 square feet in FY 2004-05. Over the past 15 years, 1,600 beds have been added, a significant expansion from the 925 in Fall 2004.

A GeoExchange technology system provides up to 89% of the heating and cooling for the campus and generates a savings of $1.5 million annually. CMU's system is one of the largest in the United States.

One of the most consequential decisions — in terms of scope, environmental impact, and budget savings — has been the implementation of a GeoExchange technology system that now provides up to 89% of the heating and cooling for a significant portion of the main campus. Recognized by the Environmental Protection Agency as "the most energy-efficient, environmentally clean, and cost-effective space conditioning system available,"[8] CMU's system is one of the largest systems in the U.S., based on its size (1.2 million square feet) and number of connected buildings (16), with plans for future expansion. Generating an energy savings estimated at $1.5 million annually, the campus' carbon footprint has been reduced by 10,069 metric tons per year.

For the campuses to grow, however, CMU needed to address the fact that, since the mid-1980's, it found itself landlocked and unable to grow. The City of Grand Junction and Mesa County committed $300,000 per year to assist the University in buying homes to enable the campus to grow within an area bounded by Orchard and North Avenues and 7th and 12th Streets. After a decade, both local government entities doubled their commitment to $600,000 annually which continues to this day. Supporting campus expansion has benefited the city by enabling CMU to serve as an economic anchor and stimulant to revitalizing the surrounding Grand Junction neighborhoods.

A similar, more recent, agreement began in 2014 between the University and the City of Montrose and Montrose County. Patterned after the main campus relationship, both the city and the county support the CMU-Montrose Campus through funding for scholarships and capital construction. The collaboration with these agencies led to closing a half-block of South Cascade Street, thereby expanding student support spaces and creating a campus mall.

The physical result of these investments is shown in Figure 2. Beyond the extensive remodeling of the Main Campus' core that existed in 2004, construction of a significant number of academic and student spaces is largely responsible for the expansion of the facilities inventory. When coupled with the renovations and additions at the other campuses and sites, CMU's total footprint is nearly five times greater in 2020 than it was two decades earlier (see Table 1).

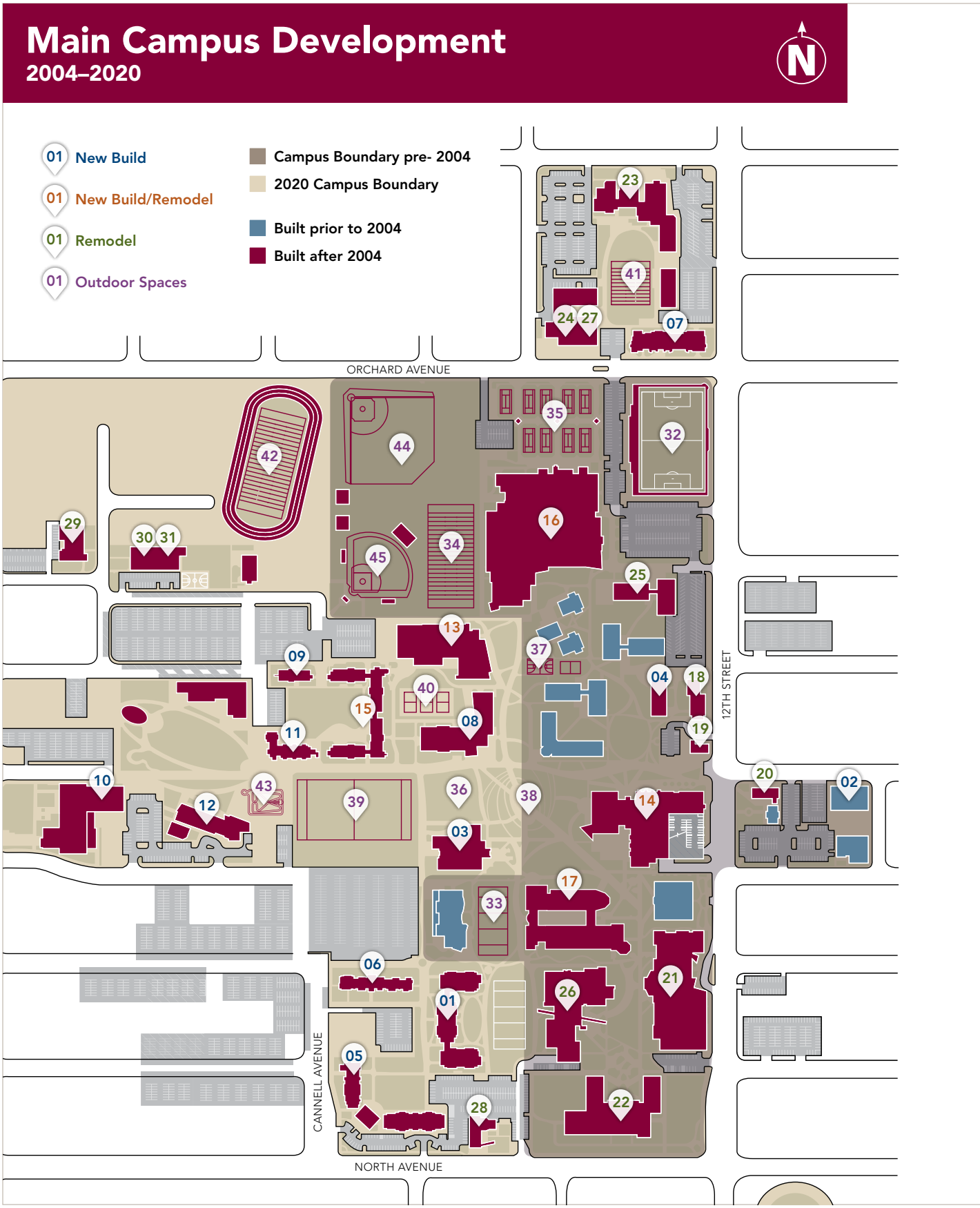
Investing in Technology

Two decades into the 21st century, the information age has evolved into the age of digital experiences, fueled by the pervasiveness of mobile devices and the prevalence of wireless networks enabling access to media and applications anywhere, anytime. This digital transformation is not one technology project or process-improvement initiative, but rather, a comprehensive change that focuses on the end user by conducting business differently through the technologies that include mobile, cloud, wireless, predictive analytics, and artificial intelligence. In the case of higher education, the core of the digital transformation is the experience of the end-user, or more specifically, the student.[9]

8 *GeoExchange Systems: Renewable and Ready.* Accessed on January 8, 2021 at https://www.geoexchange.org/library/renewable-and-ready/.

9 D. Christopher Brooks and Mark McCormack, "Six of the top seven major benefits of Dx that respondents identified are directly focused on student success." *Driving Digital Transformation in Higher Education*, June 2020. Accessed December 1, 2020 at https://www.educause.edu/ecar/%20research-publications/driving-digital-transformation-in-higher-education/2020/dx-and-students.

Figure 2: Expansion of Facilities between 2004 and 2020



New Build	Location
Grand Mesa Hall	01
Campus Services Center	02
Dominguez Hall	03
Residence Life	04
Lucero Hall	05
Bunting Hall	06
Orchard Avenue Hall	07
Escalante Hall	08
Wingate Hall	09
Confluence Hall	10
Aspen Apartments	11
Hotel Maverick	12

New Build/Remodel	Location
Maverick Pavilion	13
University Center	14
Garfield Hall	15
Maverick Center	16
Wubben Hall and Science Center	17

Remodel	Location
Admissions Welcome Center	18
Albers Hall	19
Rotary Hall	20
Moss Performing Arts Center	21
Houston Hall	22
Health Sciences Building	23
Student Wellness Center	24
Piñon Hall	25
Tomlinson Library	26
Campus Wellness Center	27

Remodel continued	Location
Outdoor Program	28
Innovation and Cybersecurity Center	29
Little Mavericks Learning Center	30
Mini Mavericks Learning Center	31

New Build Outdoor Spaces	Location
Maverick Field	32
Delta Field	33
Football Practice Field	34
Elliott Tennis Center	35
Alumni Field	36
Basketball Court	37
Plaza	38
Rugby Pitch	39
Sand Volleyball Courts	40
Stampede Practice Field and Band Storage Building	41
Track and Field	42
Pump Track	43
Bergman Field	44
Softball Complex	45

Off Campus	Location
Archuleta Center	Bishop Campus
Bishop Health Sciences	Bishop Campus
Branscome Center	Montrose Campus
Sturm Family Manufacturing Center	Montrose Campus
Forensic Investigation Research Station	Whitewater Facility
Electric Lineworker Training Center	South Facility

See photos of buildings and learn more about the Colorado Mesa University campus at coloradomesa.edu/virtual-tour.

COLORADO MESA UNIVERSITY

A quality technology end-user experience is important to the growth of Colorado Mesa University, not only for increasing enrollments, but also for meeting student expectations for innovative learning opportunities that incorporate digital resources. Equally critical are the implementation of administrative systems that assist students from initial enrollment to graduation, the use of data analytics by staff that result in more effective and efficient University operations, and the priority placed on secure systems that protect student privacy.

CMU's Information Technology (IT) division continues developing online environments — both academic and administrative — that are seamless for the student, regardless of whether the services are delivered online or in person, the support is available by machine or by staff, or the learning environment is offered virtually or in a traditional classroom setting. Crucial to meeting this over-arching and constantly-evolving expectation is 1) investing in an operating budget that covers expenses such as software agreements and licensing, service charges, and staff, and 2) implementing a sustainability plan.

For the past 15 years, the University has invested a portion of its IT budget, not just for replacing outdated equipment, but also for advancing the institution's technologies. This has involved replacing computers and upgrading core information systems and networks as well as maintaining the highest standard for outfitting classrooms with high-definition digital switching, laser projectors, widescreen displays, and wireless presentation equipment. As of FY 2019-20, the institution's sustainability investment was $1.7 million, or 26% of IT's total budget of $6.6 million. Funding has increased incrementally as building or technology projects are finished and equipment is added to inventories.

The University's investments over the past decade have been guided by four major trends in the broader evolution of technology that serve as the foundation for future decision-making. They can be summarized as:

1. **Bring Your Own Device (BYOD) and Wireless Connectivity.** The number of students and employees now using their own devices to connect to the wireless network continues to grow from the expansion of consumer devices and explosion of interactive apps and video, all of which have increased demands on wireless networks and bandwidth requirements. To improve access to online content and services, Information Technology deploys the latest WiFi standards to support higher wireless data speeds in high density areas such as large academic buildings and residence halls and, more recently, expanded the number of access points in outdoor spaces where students congregate and/or participate in a wide range of activities. Just since 2012 alone, CMU has doubled the number of access points deployed in 2012, now over 1,000, and over the period of FY 2016-17 to 2019-20, approximately $700,000 was invested to upgrade wireless services.

Ram Basnet, PhD, associate professor of computer science and Scott Kessler, PhD, associate professor of computer science and engineering in a Confluence Hall classroom. The University has invested a portion of its IT budget for advancing the institution's technologies including replacing computers and upgrading core information systems and networks.

2. **Innovative Learning Environments.** The importance of experiential learning was described in a previous section of this report. As it relates to technology, the University has continued investing in digital learning environments that promote student collaboration and increase student-faculty interactions through subscriptions that include Zoom, Microsoft Teams, Panopto, and e-Portfolios. Additionally, new experiential learning spaces have been created in recent years including the Maverick Innovation Center, the Health Sciences Center simulation lab, the Engineering labs, the Mass Communication television studio, and the Electric Lineworker facility. As part of its evolution, experiential learning will increasingly be driven by Extended Reality (XR) technologies such as virtual reality, augmented reality, and mixed reality where virtual and real worlds intersect. These opportunities will advance online STEM labs, hands-on professional training, and skills labs.
3. **Customer Relationship Management (CRM) Solutions, Digitalization, and Business Analytics.** Since 2016, the institution has expanded the use of CRM solutions, and in 2018, CMU began measuring

student engagement by leveraging its wireless infrastructure to analyze student behaviors to better inform teaching and learning, student support, extracurricular activities, and resource planning. Among the implemented projects have been:

- stronger engagement of and more personalized communication for the recruitment and ongoing success of students;
- improved operational efficiencies resulting from the automation of business workflow processes and development of e-forms;
- redesign of the University's portal, MAVzone, to adapt to mobile technologies;
- management of data to measure and strengthen activities, such as student and employee recruitment and retention efforts; and
- the addition of business analytics software to aid in understanding how students use facilities and engage across campus.

4. **Cloud Services.** The use of cloud services is prevalent, making it easy for students, faculty, and staff to have anytime mobile access. The institution leverages software-as-a-service (SaaS) solutions to be more agile in the adoption of technology and has established data protection protocols for vetting vendors and overcoming security and reliability concerns.

Expanding Community Outreach

CMU's relationships with Western Colorado communities have greatly expanded in the last two decades and often led to partnerships with numerous local and regional businesses, nonprofits, government agencies and private donors. As previously described earlier in this report, collaborations with various sectors have resulted in the creation of academic and technical programs that address the region's 21st century workforce needs. But the connections extend far beyond curriculum development.

Many departments have external advisory boards that consist of representatives of local employers and industries. Their input can involve identifying employment trends as well as ensuring that a program's graduates are being prepared through curriculum that is current. These connections can also result in research collaborations such as that with St. Mary's Hospital's Saccomanno Research Institute, a 10-week, internship program for undergraduates in Biological Sciences to conduct research with CMU faculty members and institute researchers.

The University's faculty and staff members have strong commitments to address regional needs by sharing their time and expertise through local and regionally-based research, board service, volunteerism, and various other activities that contribute to the intellectual, social, cultural, and economic life of Western Colorado. Some of the contributions are done by individuals while other projects are conducted through one of CMU's centers. Currently, the Redifer Institute houses four research and policy centers: the Natural Resource Center, the Ruth Powell Hutchins Water Center, the Social Research 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, and numerous consultations for government agencies at all levels.

Finally, higher education campuses are a mix of general-purpose rooms and specialized spaces designed for a singular use, such as science labs, painting studios and clinical labs. Both types of spaces represent significant investments by the University, just as facilities built by other organizations do. When multiple users can share in the use and expense of the same spaces, the pooling of these resources is a more efficient, cost effective use of space and resources, and the sharing frees up funds for investing in a wider range of facilities than could otherwise be built. With the significant expansion and extensive renovation of CMU's campuses, facilities are frequently shared with many organizations and individuals beyond the University's students, faculty, and staff.

The Impact of Colorado Mesa University on the Regional Economy

In their respective communities, institutions of higher education, such as Colorado Mesa University (CMU), are social, economic, and cultural assets. Among an institution's many benefits are that it educates students for a skilled workforce, brings positive visibility, improves the quality of life for residents, offers employment opportunities, and is a major purchaser of goods and services from area businesses. All of the above represent substantial contributions to the economic development of a region, in addition to the fact that universities help stabilize regional economies

as they generally are less susceptible to economic downturns than some other sectors.

Model Overview and Methodology

For this section of the report, the focus shifts to a short-term perspective that describes the effect of Colorado Mesa University's presence on Western Colorado's regional economy. This approach, relying heavily on the American Council on Education model developed by Caffrey and Isaacs,[10] considers the economic contribution of Colorado Mesa University in FY 2019-20. The model examines CMU's direct spending in five expenditure categories: purchases of goods and services; spending by employees, students, and visitors; and capital expenditures. The model then applies a multiplier to calculate indirect spending, thereby producing an estimated total economic impact on the region.

Direct Expenditure Categories

University Expenditures

CMU's expenditures include a wide array of purchases, except capital expenses (see later section), for day-to-day University operations, such as office supplies, furniture, utilities, and maintenance. 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. Total Colorado expenditures for FY 2019-20 exceeded $43.5 million (Table 8). Additional analysis documented that nearly $33.9 million, or 77.9%, of the goods and services were purchased in the 14 Western Colorado counties, with the balance spent elsewhere in Colorado.

Employee Salary/Wage Expenditures

These expenses include items purchased by CMU employees from food to housing payments to entertainment to education and transportation. To determine employee salary/wage expenditure dollar amounts, funds budgeted for employee salaries and wages — $48.7 million — for all University departments and auxiliary accounts were reviewed (Table 9). Note that student employee spending is excluded here as it is accounted for in the next section. Federal and state taxes represented 10.7% of the total, and benefits — including retirement, medical insurance, and life insurance — amounted to another 16.6% of the total. Once taxes and benefits were deducted, net wages amounted to approximately $31.8 million.

In light of the University's location in Western Colorado, it is an appropriate assumption that employees of Colorado Mesa contribute most of their income after taxes into the area economy. The Bureau of Labor Statistics' Consumer Expenditure Survey reports that housing and transportation are the two largest areas of consumer expenditures, and it was assumed that there was a limited amount of dollar leakage out of the region. Some activities, such as vacations and entertainment, however, are examples of dollars that may leave the local economy. Given CMU's location, it is assumed that ten percent adequately accounts for leakage out of the region, resulting in an estimate of $31.8 million in employee disposable income that was added to the Western Colorado economy that multiplies through the economy (See later section on Indirect Effects).

Student Expenditures

Approximately 45% of CMU students originate from outside the 14-county region. Some of these students relocated to Western Colorado to attend the University, while others are residents of the region who would have left if not for the existence of CMU. The money that these students spend locally toward living expenses is attributable to the University.

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, an average of $1,735 per month while enrolled during FY 2019-20. Like that for employee spending, the study assumed that 90% of these dollars remained in the local economy, as shown in Table 10. At that rate,

Table 8: Colorado Mesa University Expenditures, FY 2019–20

Goods and Services Purchased (excluding construction)	Amount	Percent
Total Expenditures	$43,499,816	100.0%
Total Expenditures from Outside the 14 Western Colorado Counties	$9,626,288	22.1%
Total Expenditures from 14 Western Colorado Counties	**$33,873,528**	**77.9%**

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

students infused approximately $128.6 million into the local economy.

Visitor Expenditures

Out-of-region visitors are attracted to Grand Junction for activities at CMU that include events, such as graduation, art exhibits and theatre productions, athletic competitions, and admissions recruitment events. Based on estimates from University departments, attendance totaled 472,751 individuals, which excludes informal campus visits, such as those by prospective students and their families not associated with a specific event (Table 11). In so doing, visitors infuse new dollars into the region's economy through their spending at restaurants, lodging, entertainment, gas stations, and other regional businesses. The calculation for this expenditure uses the standard destination per diem within the continental U.S. from the U.S. General Services Administration, spending at least the daily average of $144 for a minimum of one day.[11] It also assumes that one-third of the visitors came from outside the region, while the remaining two-thirds were "local" and spent the estimated amount for meals only. The resulting estimated contribution to the regional economy by visitors was $38.6 million.

Capital Expenditures

Colorado Mesa University spends millions of dollars on construction each year to maintain its facilities and build additional spaces to meet its growing educational and residential demands. Because capital expenditures vary annually due to their dependency on the availability of construction funds, they typically are separated from all other CMU expenditures, but nonetheless, represent a significant short-term infusion of income and jobs into the regional economy.

During FY 2019-20, the University initiated, continued, and/or completed projects resulting in a total of $40.8 million for this expenditure category. Of that total, University data indicate that the proportion of capital expenditures that went to businesses in the 14-county region in FY 2019-20 was 90% (Table 12). Funds were spent on projects such as classroom and residence hall construction, technology upgrades for classrooms and labs, parking lots and garage, and controlled maintenance, resulting in $36.5 million of the total spent within the 14 Western Colorado counties.

Table 9. Estimated Colorado Mesa University Employee Salaries, Taxes, and Benefits, FY 2019–20

Gross Wages	**$48,675,910**
Less Federal & State Taxes	$5,201,897
Less Benefits	$8,100,484
Net Wages	**$35,373,529**
Less 10% non-local spending	$3,537,353
Estimated Total Employee Local Spending	**$31,836,176**

Table 10. Estimated Colorado Mesa University Student Spending, FY 2019-20

Term	Term Enrollment	Term Length (in months)	Average Monthly Student Expense	Total
Summer 2019 Enrollment	2,111	1	$1,735	$3,662,585
Fall 2019 Enrollment	9,373	4	$1,735	$65,048,620
Spring 2020 Enrollment (including January Term)	8,552	5	$1,735	$74,188,600
Estimated Annual Student Spending				**$142,899,805**
Less than 10% Non-Local Spending				$14,289,980
Estimated Total Student Local Spending				**$128,609,825**

11 U.S. General Services Administration, FY 2020 Per Diem Rates for zip code 81501. Accessed on November 24, 2020 at https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup.

Table 11. Colorado Mesa University Estimated Visitors by Activity, FY 2019-20*

Activity	Estimated Visitors
Tomlinson Library	18,173
Performing Arts	14,159
University Center	325,033
Athletics	88,524
Admissions	14,462
Graduation	12,400
TOTAL	**472,751**

*Estimates based on March 1, 2019 - February 29, 2020.

Table 12. Colorado Mesa University Capital Expenditures, FY 2019-20

Capital Expenditures	Amount	Percent
Total Capital Expenditures	$40,781,916	100.0%
Total Capital Expenditures from Outside the 14 Western Colorado Counties	$4,229,403	10.4%
Total Capital Expenditures from 14 Western Colorado Counties	**$36,552,513**	**89.6%**

Direct Expenditures Summary

By combining the five expenditure categories, Colorado Mesa University's direct impact on the regional economy was an estimated $269,491,071 for FY 2019-20 (Table 13). The largest share of that year's spending was associated with students attending CMU (47.7%), with the balance spread across the other four expenditure categories. Thus the University clearly creates a significant economic benefit to the businesses, households, and local governments in Western Colorado. To more accurately reflect the total contribution of the University to the regional economy, however, indirect expenditures also must be considered and are discussed in the next section.

Indirect Spending Effects

A multiplier reflects 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 an indirect impact on the economy beyond the original dollar, and hence, dollars "grow," or multiply in their effect as they circulate through the economy. As examples, the ripple effect of the wages paid to CMU faculty and staff members is the employees' "re-spending" on housing, food, clothing, entertainment, etc. Similarly, the revenues generated by area businesses who supply goods and services to the University are paid out in wages and material purchases, which in turn are spent on living costs. Thus 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. In theory, this process continues through several rounds of activity with diminishing increments at each stage, but this study is limited to only the secondary effects of spending.

Generally speaking, higher education studies that include multipliers reflect a re-spending factor that varies rather widely. For this study, a multiplier of 2 was chosen, one which is conservative compared to many other studies. Applying this multiplier to the University's direct expenditures, the total infusion into the economy was estimated to be $538,982,142 due to the presence of Colorado Mesa University (Table 14). Put differently, without the spending by CMU, as well as its faculty, staff, students, and visitors, the income flowing into Western Colorado would be $539 million less each year.

The money spent by CMU on goods and services generates jobs in Western Colorado in several ways. First is the direct employment of 2,192 faculty, staff, and students in positions at the University and their accompanying spending. Second, non-payroll, regional expenditures create employment for workers who supply the goods and services to the University. A labor multiplier estimates the number of jobs created by the influx of the institution's spending in the surrounding community. Using a conservative labor multiplier of 0.4 to estimate the additional number of jobs due to CMU expenditures resulted in an additional 877 jobs.

Table 13. Direct Economic Impact of Colorado Mesa University by Expenditure Category, FY 2019-20

Expenditure Category	Direct Impact	Percent of Total
College	$33,873,528	12.6%
Employees	$31,836,176	11.8%
Students	$128,609,825	47.7%
Visitors	$38,619,029	14.3%
Capital	$36,552,513	13.6%
Total	**$269,491,071**	**100.0%**

Table 14. Total Economic Impact of Colorado Mesa University by Expenditure Category, FY 2019-20

Expenditure Category	Direct Impact	Multiplier (Indirect Impact)	Total Economic Impact
College	$33,873,528	2.0	$67,747,056
Employees	$31,836,176	2.0	$63,672,352
Students	$128,609,825	2.0	$257,219,650
Visitors	$38,619,029	2.0	$77,238,058
Capital	$36,552,513	2.0	$73,105,026
Total	**$269,491,071**	**2.0**	**$538,982,142**

Concluding Remarks

Colorado Mesa University's most significant role is to educate graduates who are prepared and competitive for employment in the ever-changing work environment of the 21st century. Further, the importance of the growth and success of the University in its first 100 years also lies, in part, in its contribution to advancing the region's educational and economic development. The University has been at the core of the progress outlined in this report, but its collaborations with government bodies, businesses, community organizations, and P-12 educators have been critical linkages for institutional and regional success. By collaborating with its many partners, CMU's ability to deliver an excellent educational experience is both broadened and enhanced.

To meet its responsibilities, CMU has undertaken a series of efforts over the past two decades that lays the foundation for the University's next century. As described in this report, the University has made sustained commitments to:

- extend educational and financial access to a wide diversity of students;
- develop academic and technical programs that support the career needs of students and the economic development of the region;
- update curricula to ensure currency and integrate the professional and technological tools of the trade;
- broaden instructional delivery modes to meet student needs;
- build on student learning outcomes that are aligned with expectations of employers;
- offer students structured pre-professional learning experiences, both in and outside the classroom;
- implement policies and practices to enhance revenues while controlling costs;
- rebuild and expand facilities on CMU's three campuses;
- invest in sustainable technology systems, infrastructure, and applications that meet the needs of students, faculty, and staff; and
- extend the University's outreach of faculty and staff expertise to support various regional interests, initiatives, and issues.

Finally, this report has documented that CMU has a profound impact on the economy of the 14 Western Colorado counties. This study estimates that in FY 2019-20, the University was responsible for infusing more than $269.5 million directly into the regional economy, and when indirect spending is considered, the total exceeds $539 million. Further, approximately 877 additional jobs beyond the 2,192 employed full- or part-time by Colorado Mesa University are due to the institution's spending in the region.

COLORADO MESA UNIVERSITY

Change … Nimbleness … Commitment … The Foundation for Colorado Mesa's Future

Since the early 2000s, Colorado Mesa University has enjoyed a period of remarkable growth and transformation during which time CMU has expanded in size, strength, complexity, and impact on Western Colorado. The institution has more than doubled its enrollment, diversified its student body, and greatly expanded its degrees and fields of study. An accomplished and dedicated faculty and staff offer excellent instruction and support a wide array of programs, services, and athletic teams. New and modernized academic facilities, along with significant investments in technology, are home to 21st century teaching, learning, research, and creative activities and are accompanied by the addition of numerous residence halls and outdoor spaces. A broader revenue stream, a sustained fund-raising effort, and collaborations with a wide range of private and public partners have also played a major role that has led to CMU's accomplishments.

Amidst all of the change, however, the University has remained true to the philosophy on which it was founded in 1925: a commitment to student access and success through the delivery of an excellent, rigorous, affordable education that prepares graduates for productive and successful lives in the 21st century. That is CMU's foundation for its second century.

2004 Spring Commencement, 419 graduates

2019 Spring Commencement, 1,169 graduates

2004, 292 Student-athletes on 11 teams

2020, 717 Student-athletes on 26 teams