

FOUR CAMPUSES UNITED
ALL FOUR:COLORADO

Economic Impact Study

Economic Contribution of the University of Colorado
on the State and Counties of Operations

August 2017



University of Colorado

Boulder | Colorado Springs | Denver | Anschutz Medical Campus

UNIVERSITY OF COLORADO

Economic Contribution of the University of Colorado on the State and Counties of Operations

Prepared for:

Vice President for Budget and Finance and Chief Financial Officer

Conducted by:

BUSINESS RESEARCH DIVISION

Leeds School of Business

University of Colorado Boulder

420 UCB

Boulder, CO 80309-0420

colorado.edu/business/brd

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EXECUTIVE SUMMARY

The University of Colorado is the nexus of teaching, research, and healthcare that reaches far beyond economic statistics that quantify purchases and payroll in the state of Colorado. In addition, the university's economic contributions resonate as an economic engine driven by education, clinical, and research expenditures. In FY2016, The University of Colorado and its affiliates on the CU Anschutz Medical Campus, including University of Colorado Hospital and Children's Hospital Colorado, generated a total economic impact of \$12.35 billion for the state of Colorado.

The University of Colorado, which directly employed 32,386 faculty, staff, and student workers in FY2016, shares the complexity of a large corporation. Funding from tuition, grants, contracts, gifts, and appropriations is turned around and spent, in large part, in private industry. These purchases, ranging from food services to energy to equipment, generated an economic impact of \$8.3 billion on the state of Colorado in FY2016 (nearly \$4 billion from direct university spending) and directly employed or supported 53,442 workers in the state. Of this, research expenditure activities alone had nearly a \$1.7 billion impact. State funding for the university topped \$197 million in FY2016, lending to substantial economic activity generated by the university—a 20-to-1 return based on direct university spending.

CU Anschutz faculty are the primary healthcare providers at the University of Colorado Hospital and Children's Hospital Colorado and maintain a clinical practice billing arm through a 501(c)(3) known as University Physicians Inc. (UPI). In FY2016, the CU Anschutz clinical faculty provided more than 2.6 million treatments to more than 475,000 patients. The additional economic contribution of University of Colorado Hospital and Children's Hospital Colorado is estimated to be \$4.0 billion for the Colorado economy in FY2016.

TABLE 1: ECONOMIC CONTRIBUTION (DIRECT, INDIRECT, AND INDUCED), FY2016

Location	Employment (Direct and Supported)	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
CU Boulder	24,662	\$1,796	\$2,633	\$3,850
UCCS	4,050	\$229	\$356	\$593
CU Denver	5,595	\$369	\$550	\$802
CU Anschutz (including UPI)	17,167	\$1,557	\$2,125	\$2,905
University of Colorado Impact (subtotal)	53,442	\$4,050	\$5,798	\$8,328
University of Colorado Hospital	12,944	\$670	\$1,011	\$2,524
Children's Hospital Colorado	14,072	\$681	\$913	\$1,500
Anschutz Campus Hospitals Impact (subtotal)	27,016	\$1,351	\$1,925	\$4,024
Total Impact	80,458	\$5,401	\$7,722	\$12,352

Note: Campuses do not sum to total due to System activity. Anschutz Campus hospitals are independent enterprises and not reflected on University of Colorado financial statements.

The University of Colorado comprises four campuses—the University of Colorado Boulder (CU Boulder), the University of Colorado Colorado Springs (UCCS), the University of Colorado Denver (CU Denver), and the Anschutz Medical Campus (CU Anschutz). This public university serves “Colorado, the nation and the world through leadership in high-quality education and professional training, public service, advancing research and knowledge, and state-of-the-art health care.” With education as a core element of this mission, the University of Colorado enrolled 61,016 students in the fall of 2015 and awarded 14,479 degrees in FY2016. An estimated 252,000 alumni reside in the state, contributing to Colorado's economic and social fabric. Evidence of the university's educational impact can be found in the leadership of private businesses, teachers in classrooms, health care professionals, and policymakers.

These alumni are an integral part of the Colorado labor force, particularly in the high-tech workforce, and contribute to the state's rank as second in the nation for educational attainment.

The university operated on \$3.5 billion in noncapital revenues in FY2016. A significant portion of this leveraged funding was related to sponsored programs and other restricted fund activity, primarily associated with research activity. Sponsored program awards, totaling \$924 million in FY2016, were concentrated on the CU Anschutz and the CU Boulder campuses, and were predominately funded by the National Institutes of Health, the National Science Foundation, NASA, the Department of Defense, and the Department of Commerce. Some federal research laboratories (e.g., joint institutes) are located in Colorado because of the university, which has helped create the relatively high concentration of federal research laboratories in the state. They are often located on campus, and staff may include university employees.

The Technology Transfer Offices are the conduit for technology commercialization. From CU intellectual property, 114 companies have been formed, 110 of which continue to operate in Colorado. These companies are taking risks to create innovative technological impacts.

Student and visitor spending also have an economic impact. A survey of students found their spending totaled \$797 million in 2016. Spending estimates are based on students who indicated they would not be in Colorado if they were not enrolled at CU. Visitor spending in Colorado related to the campuses was an estimated \$37.3 million.

The University of Colorado collaborates in a research triangle that includes universities, businesses, and federal laboratories. These concerted efforts, with support from state and federal funds, help ensure Colorado's economic vitality. From direct expenditures and spinoff technologies to collaborative research and an educated workforce, the University of Colorado strengthens Colorado's economy.

PROJECT OVERVIEW

The University of Colorado is an economic driver in the state of Colorado, employing thousands of workers, buying from local vendors, importing investment, educating the local workforce, and exporting research discoveries. Aside from the direct impact, the university facilitates company growth and job creation through research, tech transfer, and spinoff companies. This study provides a snapshot of the university's economic contribution to the state. In addition, the economic contribution of the system and the four campuses (CU Boulder, UCCS, CU Denver, and CU Anschutz) to their respective communities is detailed for fiscal years (FY) 2015 and 2016.

METHODOLOGY

This study was conducted in cooperation with the University of Colorado System and the individual campuses. Economic contributions on Colorado were estimated by examining operating expenditures and capital expenditures, including employee salaries and benefits. This approach accounted for the leakage that occurs when research grants lead to a portion of purchases made outside the state. Furthermore, this study estimated the multiplicative impacts of direct expenditures on other industries in the economy through input-output modeling by using IMPLAN, a widely used economic modeling software. Additional estimates were made for student and visitor expenditures. Benefits such as community service, outreach, and fundraisers are described to illustrate additional community benefits derived from the university's presence, but were not directly quantified when determining the overall economic contribution. The study also compared CU to peer institutions through a review of comparable studies. This study did not estimate the economic contributions of alumni working in Colorado, nor did it estimate the economic impacts of spinoff companies or technologies beyond the licensing agreements.

Data requests were made to the University of Colorado System to obtain information on employment, salaries, expenditures, construction, research, and student spending for all campuses. Additional information was sourced from publicly available data on the University of Colorado website.

Employment and salary data were provided by ZIP code and by campus, allowing for the allocation of employee spending to the counties in which they reside. Employees spend their earnings on a broad range of goods and services, including housing, energy, food, clothes, etc. Employment counts and employee residence data based on a point in time in fall for the fiscal year.

Expenditure data were provided by vendor ZIP code in order to identify (1) the in-state versus out-of-state spending (i.e., leakage), and (2) the counties/metropolitan statistical areas (MSAs) where spending occurred. Adjustments were made in instances where local companies provided services but out-of-state parent companies received payments. The "voucher" report contained all expenditures, including construction- and research-related expenditures, but excluded purchasing card transactions made by employees. Purchasing card and travel card transactions were also provided by ZIP code, representing travel and supplies, and accounted for a relatively small overall portion of spending. Given the absence of a public education category in the input-output model, operating expenditures were assigned as Private Education in the IMPLAN model, or in the industries representing purchasing vendors.

Construction projects were identified by campus. The construction expenditures were included in the vendor report with accompanying ZIP codes, and the university identified specific projects and

quantified the value of current construction by campus. Estimated construction expenditures were assigned as Nonresidential Building in the IMPLAN model.

To the extent possible, research expenditures were identified, and the resulting economic contribution was calculated for each campus and for the overall system. This was accomplished by identifying research expenditures by funding type, and apportioning research faculty and staff salaries to research functions. For full, associate, and assistant professors, 40% of salaries were assigned to research in this study; 100% of other research faculty and staff were assigned to research in this study. Research funding and employment were identified by campus, and expenditures were included in the vendor report with accompanying ZIP codes.

For student expenditures and visitation data, the research team relied on a survey conducted by the university in 2016. This survey captured student spending habits and identified the source of funds (in-state versus out-of-state). Expenditures were calculated for students who would not be in Colorado if they were not enrolled at the university. Similarly, survey data estimated Colorado visitation due to students. This information does not include visitation related to visiting professors and researchers, conventions, athletics, or collaborative research visits; thus, this a conservative estimate of visitation impacts. These expenditures were assigned by spending activity in the IMPLAN model.

This study provides an estimate of economic contributions using ZIP codes of vendors and employees in procurement and human resource databases. The research team believes this conservatively estimates the economic contribution of the University of Colorado since some vendors are located in the state, but the parent company's accounting office, where the check is mailed, is located in another state. Likewise, some faculty, staff, and students have a home of record in another state, but they are actually living and working in Colorado. Additional research could be conducted to reclassify these expenditures and residences. Furthermore, contract vendor activity was not captured in this study (e.g., football game vendors, basketball game vendors, etc.), nor did this study estimate the economic contributions of alumni living and working in the state of Colorado.

DEFINITIONS

Gross Domestic Product (GDP): A measure of economic activity, GDP is the total value added by resident producers of final goods and services.

Gross Output (Output): The total value of production is gross output. Unlike GDP, gross output includes intermediate goods and services.

Value Added: The contribution of an industry or region to total GDP, value added equals gross output, net of intermediate input costs.

Colorado Springs Metropolitan Statistical Area (MSA): El Paso County and Teller County.

Boulder MSA: Boulder County.

Denver MSA: Adams, Arapahoe, Broomfield, Denver, Douglas, Jefferson, Clear Creek, Gilpin, Park, and Elbert counties.

CU Boulder: University of Colorado Boulder.

CU Denver: University of Colorado Denver.

UCCS: University of Colorado Colorado Springs.

CU Anschutz: Anschutz Medical Campus.

University of Colorado System: President's Office and administration.

System: The four university campuses and the President's Office and administration.

Fiscal Year: July 1–June 30

LITERATURE REVIEW

By their nature, universities have a profound impact on their respective communities, regions, and states, both in terms of economic contributions and in the area's cultural and social fabric. Economically, direct and indirect spending by the institution, employees, students, and visitors can often total in the billions. A review of recently conducted economic impact studies of peer universities reveals a range of impacts. Although the studies used different methodologies, thus making direct comparisons difficult, the exercise highlights the important role universities play. For a more detailed look at each report, see Appendix 1.

The impact of Pac-12 member universities on their state and local economies was examined through various economic impact studies. The total impact of each university includes both direct and indirect/induced impact. Of the four universities in California (UCLA, USC, Stanford, and UC Berkeley), the University of California, Los Angeles (UCLA) had the largest economic impact on the state. During the 2011–12 fiscal year, UCLA accounted for \$12.9 billion in total output, while directly employing over 47,000 people and generating roughly \$1.9 billion in tax revenue. The University of Southern California (USC) was responsible for \$4.9 billion in direct spending during the 2008 fiscal year and generated an additional 63 cents in the local economy for every \$1 spent by the university. The University of California, Berkeley (UC Berkeley) generated an estimated \$4.6 billion in economic impact during the 2009–10 fiscal year. The main campus of UC Berkeley employed more than 21,000 people, and visitors to the university contributed an additional \$30 million to the local economy.

The four Pac-12 universities located in the Pacific Northwest (Washington, Washington State, Oregon, Oregon State) all had substantial impact on their respective state and local economies. The University of Washington (UW) generated \$12.5 billion in economic activity during the 2014 fiscal year, including a direct impact of \$5.7 billion. UW's economic impact accounted for \$1 out of every \$31 of Washington's economy. During FY2014, Washington State University (WSU) generated almost \$19 for every dollar the state invested in the university. WSU contributed \$1 billion in economic impact and employed nearly 18,000 people. The University of Oregon (UO) employed approximately 10,300 employees in 2013–14, while contributing \$2.3 billion to the state economy. UO's spending generated \$42.7 million in tax revenue during the fiscal year. Oregon State University's (OSU) impact to the state economy was \$2.2

billion in 2014 and over 31,000 jobs. Of OSU's total impact, \$973 million was direct while \$1.3 billion was indirect.

Universities located in the Mountain/Southwest region (Arizona, Arizona State, and Utah; excluding Colorado) create substantial output. In 2011, the University of Arizona (UA) accounted for \$3.6 billion in economic impact and \$182.9 million in state and local tax revenue. Directly and indirectly, UA was responsible for 1.1% of jobs in the state of Arizona. Arizona State University (ASU) directly employed approximately 20,000 people in FY2009, and faculty, staff, and student expenditures indirectly created nearly 15,000 more jobs. ASU's total economic impact in 2009 was estimated at \$3.2 billion. The University of Utah did not provide a report detailing its economic impact; however, estimates indicate that research spending created \$525.3 million in economic impact in FY2008. Research supported 2,920 jobs at the university and resulted in tax revenue of \$31.4 million.

Additional CU peer institutions are found within the University of Massachusetts System (UMass) and University of Texas System (UTS). The University of Massachusetts System generated \$6.2 billion in economic activity in FY2015. UMass-Boston, a selected peer of CU Denver and UCCS, calculated its impact at \$1.1 billion and UMass-Lowell, a CU Denver peer, calculates its impact at \$922 million. The University of Texas System comprises nine academic and six health-related institutions within the state of Texas, and its 2017 study estimates its annual impact at \$15.5 billion on the state of Texas. CU peer institutions at UTS include the University of Texas-El Paso (UCCS), The University of Texas Health Science Center at San Antonio (CU Anschutz), and The University of Texas Health Science Center at Houston (CU Anschutz).

THE UNIVERSITY OF COLORADO

The University of Colorado is a research university that educates students, conducts research, commercializes technology, and creates companies. In fall 2015, 61,016 students were enrolled at the University of Colorado, and the institution awarded 14,479 degrees in FY2016. The university's 32,386 faculty, staff, and student employees are responsible for the teaching, research, service, and administration functions of the campuses. The university recorded operating and capital expenses totaling \$3.9 billion in FY2016.¹ The University of Colorado comprises four campuses: the Anschutz Medical Campus (CU Anschutz), the University of Colorado Boulder (CU Boulder), the University of Colorado Colorado Springs (UCCS), and the University of Colorado Denver (CU Denver). A fifth entity includes the President's Office and administration, referred to in this report as the University of Colorado System.

STUDENTS

The University of Colorado recorded 59,667 students in fall 2014 and 61,016 in fall 2015. On a full-time equivalent (FTE) basis, the university enrollment was 54,208 for FY2016. CU Boulder recorded the greatest enrollment, followed by CU Denver, UCCS, and CU Anschutz. On a full-time basis, 77% of students were undergrads, while 23% were graduate students. More than 72% of the student body was Colorado residents. The ratio of nonresident students is limited by Colorado statute.² In FY2016, the

¹Operating and capital expenses include Education and General, Auxiliary, and Restricted funds.

²According to statute 23-1-113.5, nonresident students are limited to one-third of total enrollment. Residents must represent at least 55% of the incoming fall freshmen class.

University of Colorado awarded 14,479 degrees (15,091 degrees including double majors): 9,338 bachelor's, 3,765 master's and specialist degrees, 50 graduate certificates, and 1,295 doctorates. CU Boulder accounted for half of awarded degrees, followed by CU Denver, UCCS, and CU Anschutz.

TABLE 2: ENROLLMENT BY CAMPUS, FALL 2015

Campus	CU Boulder	UCCS	CU Denver	CU Anschutz	Total
Undergraduate - resident	15,746	8,430	8,666	470	33,312
Undergraduate - nonresident	10,118	1188	1372	43	12,721
Graduate - resident	3,363	1,422	3,385	2,873	11,043
Graduate - nonresident	2,073	259	910	698	3,940
Total	31,300	11,299	14,333	4,084	61,016

Notes: Enrollment includes degree and nondegree students, and does not include extended studies.

Source: University of Colorado, Budget and Finance Office, Student Headcount Enrollment.

FIGURE 1: TOTAL ENROLLMENT BY CAMPUS, FALL 1994–FALL 2016

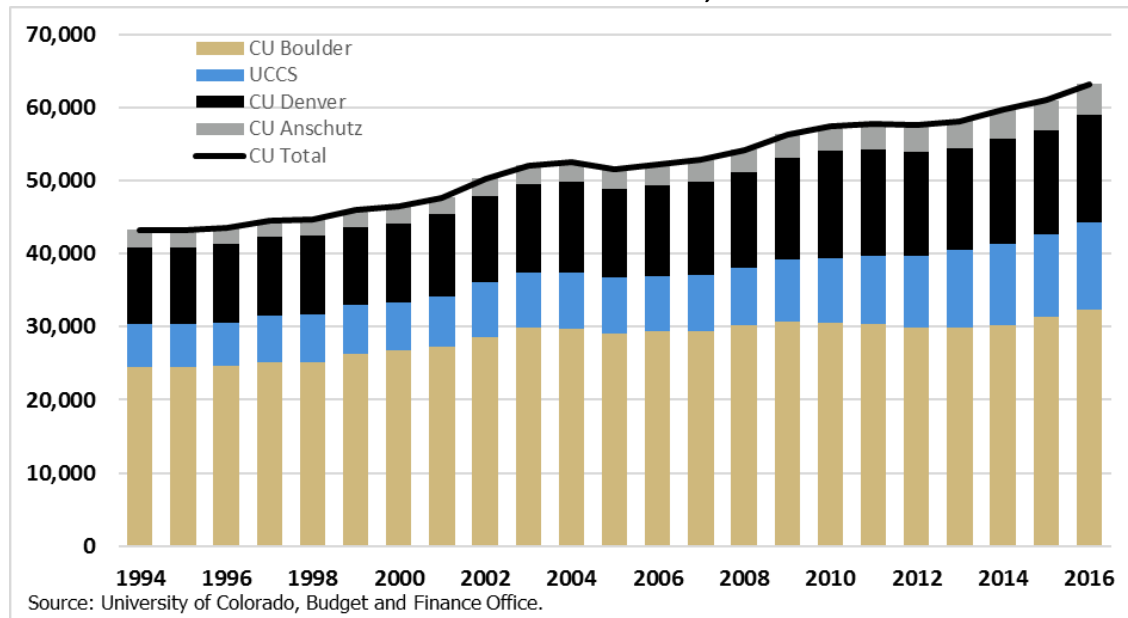


TABLE 3: FTE ENROLLMENT BY CAMPUS, FY2016

Campus	CU Boulder	UCCS	CU Denver	CU Anschutz	Total
Undergraduate - resident	14,917	7,373	7,153	547	29,990
Undergraduate - nonresident	9,677	1,017	1,170	59	11,923
Graduate - resident	2,261	853	2,079	3,876	9,069
Graduate - nonresident	1,426	158	547	1,095	3,226
Total	28,281	9,401	10,950	5,577	54,208

Notes: FTE is based on total credit hours (30=full time for undergraduate students, 24=full time for graduate students).

Totals may not sum due to rounding. Does not include extended studies.

Source: University of Colorado, Budget and Finance Office, Student Headcount Enrollment.

Alumni

The university has a long history of educating students and preparing them to be actively engaged, contributing members of society. Alumni records indicate that nearly 252,000 graduates reside in the state of Colorado, including business leaders, policymakers, educators, health care workers, engineers, and many others. CU Boulder has the largest number of in-state alumni, totaling 127,497, followed by CU Denver (66,620), UCCS (29,961), and CU Anschutz (26,530).

TABLE 4: ALUMNI BY CAMPUS AND LOCATION, 2016

Campus	CU Boulder	UCCS	CU Denver	CU Anschutz	Total
Boulder MSA	39,171	390	3,954	1,766	45,441
Denver MSA	65,758	4,763	56,189	19,739	147,291
Colorado Springs MSA	5,171	22,178	1,500	1,159	30,052
Rest of Colorado	17,397	2,630	4,977	3,866	28,998
State Total	127,497	29,961	66,620	26,530	251,782

Note: An additional 1,174 alumni are counted in Colorado, but unassigned to a campus.
Source: University of Colorado, Office of Advancement.

Noneducation Spending and Visitation

Student spending is similar in nature to offsite employee spending, with expenditures ranging from food and rent to clothing and entertainment. However, spending habits tend to vary from employee spending as do the sources of funds. The University of Colorado System conducts student spending surveys in order to quantify spending habits. The results are for students who would not be in Colorado if they were not enrolled at the university; thus, this is spending that otherwise would not have occurred in the state nor in the metropolitan areas. Statewide, this spending was estimated at \$797 million in 2016, with CU Boulder accounting for 65% of the total, followed by CU Denver and CU Anschutz (24%) and UCCS (11%). Nearly 47% of the spending was identified as housing expenditures (an increase from 38% in 2009), followed by groceries (11.8%) and books (8.5%).

Visitors bring substantial ancillary benefit to university communities. In a survey of students, the university gained insight into the number of visitors and amount of spending related to students (e.g., parents' weekend). In 2016, visitor spending in Colorado related to the four campuses was an estimated \$37.3 million. Most of the visitor spending was related to CU Boulder (69%), followed by CU Denver (14%), CU Anschutz (8%), and UCCS (10%). Other visitor impacts, including those from visiting professors and researchers, have not been quantified in this study, thus, visitor impacts are conservative at best.

TABLE 5: VISITOR SPENDING AND STUDENT SPENDING (IN MILLIONS) FOR STUDENTS ATTRACTED AND RETAINED BY CU^a

Spending	CU Boulder	UCCS	CU Denver	CU Anschutz	Total
Students					
Housing	\$249.9	\$41.1	\$56.8	\$23.2	\$371.0
Groceries	\$62.5	\$8.2	\$14.7	\$8.9	\$94.4
Restaurants	\$38.8	\$5.4	\$8.7	\$4.6	\$57.6
Personal Goods	\$22.4	\$3.9	\$6.5	\$3.4	\$36.1
Personal Services	\$10.8	\$2.1	\$3.1	\$1.8	\$17.8
Transportation	\$15.8	\$4.7	\$5.0	\$3.4	\$28.9
Luxury Items	\$18.7	\$2.9	\$4.1	\$2.1	\$27.8
Medical Expenses	\$9.8	\$1.7	\$2.8	\$1.7	\$16.0
Hotels	\$2.2	\$0.4	\$0.9	\$0.4	\$3.9
Recreation	\$8.4	\$1.1	\$1.3	\$1.1	\$11.9
Books	\$45.0	\$8.3	\$10.0	\$4.8	\$68.1
Childcare	\$4.3	\$1.7	\$1.6	\$2.7	\$10.4
Utilities	\$32.0	\$6.8	\$9.7	\$4.6	\$53.1
Total Student Expenditures	\$520.7	\$88.3	\$125.2	\$62.8	\$797.0
Visitors^b					
Hotels	\$9.1	\$1.3	\$1.8	\$1.0	\$13.2
Recreation	\$8.0	\$1.1	\$1.7	\$1.0	\$11.8
Restaurants	\$8.5	\$1.1	\$1.7	\$0.9	\$12.2
Total Visitor Expenditures	\$25.7	\$3.6	\$5.1	\$2.9	\$37.3

Note: Conferences, events, and athletics not included. Based on 2016 survey by the University of Colorado System.

^aIncludes nonresidents and resident students who indicated that they would have left Colorado had they not attended CU (based on survey responses). ^bIncludes only students' visitors.

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EMPLOYMENT

In FY2016, the University of Colorado was the second-largest employer in the state of Colorado,³ and is among the largest employers in each county of operations. Differentiating between employee work location and residence is important for assigning employee spending to home MSAs.

Together, the faculty and staff of the University of Colorado form a collaborative community that supports CU's pillars of excellence and impact—learning and teaching, discovery and innovation, community and culture, and health and wellness. A wide range of employees with a variety of skills is needed to support these pillars, including faculty researchers, scientists, and instructors; administrators; and support staff. Inherent in this range is an array of educational attainment. Most tenured/tenure-track faculty hold a doctorate or other terminal degree.

The University of Colorado employed 20,250 regular faculty and staff in FY2016 and 12,136 student and temporary workers, with salaries and wages of nearly \$1.8 billion. Including student workers, average earnings were \$55,260. CU Anschutz recorded the largest number of employees and the highest total

³Excludes student and temporary workers.

and average wages (excluding student workers), followed by CU Boulder. Benefits were estimated systemwide to total \$788 million.⁴

TABLE 6: TOTAL EMPLOYMENT, FY2016

Campus	Regular Faculty and Staff	Student and Temporary Workers	Total Employment
CU Boulder	7,696	8,186	15,882
UCCS	1,581	1,428	3,009
CU Denver	2,449	1,538	3,987
CU Anschutz	8,046	920	8,966
System	478	64	542
Total	20,250	12,136	32,386

Note: Total Employment based on fall snapshot.

TABLE 7: TOTAL REGULAR FACULTY AND STAFF EMPLOYMENT, FALL 2014 AND FALL 2015

Occupation	Fall 2014			Fall 2015		
	Full-Time	Part-Time	Total	Full-Time	Part-Time	Total
Faculty						
Instructional Faculty	5,170	1,494	6,664	5,384	1,640	7,024
Tenured/Tenure Track	3,406	34	3,440	3,516	46	3,562
Full Professor	1,057	15	1,072	1,094	22	1,116
Associate Professor	1,125	12	1,137	1,173	11	1,184
Assistant Professor	1,224	7	1,231	1,249	13	1,262
Non-Tenure Track	1,764	1,460	3,224	1,867	1,594	3,461
Instructor/Sr. Instructor	1,617	15	1,632	1,742	40	1,782
Other	147	1,445	1,592	125	1,554	1,679
Research Faculty	1,285	278	1,563	1,443	312	1,755
Public Service Faculty	73	246	319	48	260	308
Total Faculty	6,528	2,018	8,546	6,875	2,212	9,087
Staff						
Officers	107	1	108	111	4	115
Management/Other Professionals/Support Staff	9,942	1,040	10,982	10,083	965	11,048
Total Staff	10,049	1,041	11,090	10,194	969	11,163
Total Faculty and Staff	16,577	3,059	19,636	17,069	3,181	20,250

Note: Excludes temporary workers and student employees.

Source: University of Colorado, Budget and Finance Office, Fall 2015 Faculty and Staff Headcount.

Resident Communities

Employees have incredible economic impacts on their local communities. Aside from where they reside—own their home or pay rents—they spend a great deal of their disposable income close to their place of residence. These purchases range from regular spending on fuel and groceries to less frequent spending on clothing, at restaurants, and on vehicles. Their activity supports local business,

⁴Fringe benefits include dental insurance, disability insurance, FICA contribution, health insurance, life insurance, Medicare, other retirement plans, PERA, EcoPass, annuitants insurance, unemployment compensation claims, workers' compensation insurance, and termination annual and sick leave.

employment, and wages. It also funds public activities ranging from police and fire protection to schools and infrastructure through the payment of property taxes, sales taxes, income taxes, and fees.

Additionally, employees make important community contributions through volunteerism and charitable giving. They are generally economic and societal stewards who positively impact the communities in which they reside and in which they work. The university's employees are dispersed across the state, but concentrated in the metropolitan areas where they work. The CU System provided employee counts by ZIP code in Colorado in order to assign off-site economic benefits to their respective metropolitan areas. The data, which include student employees, show that 49% of CU employees live in the Denver Metro region, 29% reside in the Boulder MSA, and 9% live in the Colorado Springs MSA.⁵

TABLE 8: RESIDENCE OF EMPLOYEES (INCLUDING STUDENTS), FY2016

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	Total
CU Boulder	8,758	263	3,949	2,912	15,882
UCCS	8	2,483	215	303	3,009
CU Denver	205	34	3,445	303	3,987
CU Anschutz	335	105	7,967	559	8,966
System	101	7	378	56	542
Total	9,407	2,892	15,954	4,133	32,386

Notes: Number of employees based on fall snapshot. Some "All Other" home of record addresses, notably for students, refer to an out-of-state residence.

Most University of Colorado employees (excluding students) live in the same metropolitan area in which they work (82%); however, given the proximity and integration of communities and economies within the state, 18% live and work in two different places. Of the Colorado-based employees, most University of Colorado employees (60%) live in the Denver MSA, and 29% live in the Boulder MSA.

TABLE 9: RESIDENCE OF EMPLOYEES BY MSA, FY2016

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	Total
CU Boulder	5,113	21	2,081	480	7,696
UCCS	2	1,452	78	48	1,581
CU Denver	171	19	2,191	68	2,449
CU Anschutz	304	99	7,460	183	8,046
System	85	7	354	31	478
Total	5,676	1,598	12,165	811	20,250

Notes: Number of employees based on fall snapshot. Employees with out-of-state mailing addresses were apportioned to Colorado counties. Employee residence data based on a point in time in fall 2015.

⁵Some home of record addresses, notably for students, refer to an out-of-state residence.

TABLE 10: RESIDENCE OF EMPLOYEES BY MSA, FY2015

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	Total
CU Boulder	5,228	14	2,158	514	7,914
UCCS	4	1,336	93	54	1,487
CU Denver	165	18	2,069	79	2,331
CU Anschutz	292	103	6,911	204	7,509
System	73	7	284	31	395
Total	5,762	1,477	11,515	882	19,636

Notes: Number of employees based on fall snapshot. Employees with out-of-state mailing addresses were apportioned to Colorado counties. Employee residence data based on a point in time in fall 2014.

Salaries, like employment, were concentrated in the metropolitan areas where the university has a presence. Of the \$1.8 billion in salaries, an estimated \$1.2 billion in salaries were paid to employees living in the Denver MSA, \$508 million to workers residing in the Boulder MSA, and \$103 million to employees in the Colorado Springs MSA. In addition to salaries, employee benefits summed to \$800 million in FY2016.

TABLE 11: TOTAL SALARIES BY MSA, FY2016 (IN MILLIONS)

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	Total
CU Boulder	\$453	\$1	\$152	\$39	\$645
UCCS	\$0	\$85	\$4	\$2	\$91
CU Denver	\$15	\$1	\$164	\$5	\$185
CU Anschutz	\$31	\$15	\$804	\$18	\$869
System	\$8	\$1	\$30	\$3	\$42
Total	\$508	\$103	\$1,154	\$67	\$1,831

Note: Excludes benefits.

TABLE 12: TOTAL SALARIES BY MSA, FY2015 (IN MILLIONS)

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	Total
CU Boulder	\$424	\$1	\$142	\$36	\$603
UCCS	\$0	\$77	\$5	\$2	\$85
CU Denver	\$12	\$1	\$139	\$5	\$157
CU Anschutz	\$30	\$16	\$754	\$20	\$819
System	\$8	\$1	\$26	\$3	\$37
Total	\$473	\$95	\$1,066	\$66	\$1,701

Note: Excludes benefits.

CONSTRUCTION

As of June 30, 2016, the University of Colorado continued progress on construction projects valued in excess of \$427 million. Nearly 60% of this activity was related to CU Boulder. The two largest projects systemwide included Alpine Village at UCCS and the Williams Village Dining and Community Center at CU Boulder. External construction outlays (performed by in-state and out-of-state companies) were estimated at \$255 million and are nested in the vendor procurement data. More than half of construction expenditures were to Colorado companies.

TABLE 13: CURRENT CONSTRUCTION PROJECTS AS OF JUNE 30, 2016 (IN THOUSANDS)

Campus/Project Description	Financing Sources	Value ^a
CU Boulder		
Engineering Center Complex Renovation	Campus cash resources	\$24,750
Wilderness Place ACQ & Renovation	Campus cash resources	27,143
Campus Utility System (capped \$85.6 mm)	Bond proceeds and campus cash resources	5,500
Geosciences Building (SEEC) (capped \$83.4 mm)	Bond proceeds and campus cash resources	28,049
Euclid Autopark Addition (Center for Academic Success)	Campus cash resources	43,000
Ekeley Sciences Middle Wing Renovation	Campus cash resources	14,362
Williams Village Dining and Community Center	Campus cash resources	48,900
Housing Bathroom Upgrades	Campus cash resources	9,563
Ketchum Renovation (RAP029/P07)	State appropriation and campus cash resources	21,892
Jennie Smoly Caruthers Biotech Bldg (5th Wing)	Governmental grants and contracts, bond proceeds, and campus cash resources	32,266
CU Denver		
Denver Wellness Center	Bond proceeds and capital student fee	42,322
Campus Support Building Renovation	Campus cash resources	8,085
North Classroom Building Renovation	Campus cash resources	33,472
UCCS		
Alpine Village	Bond proceeds	68,000
ENT Center for the Arts	State, gift, and campus cash resources	
North Nevada Infrastructure	Campus cash resources/System cash resources/gift	20,000

^aValue represents budgeted costs for project in thousands.

Source: University of Colorado Financial and Compliance Audit June 30, 2016 (page 29).

TABLE 14: CURRENT CONSTRUCTION PROJECTS AS OF JUNE 30, 2015 (IN THOUSANDS)

Campus/Project Description	Financing Sources	Value ^a
CU Boulder		
Carlson Gym Renovations	Campus cash resources	\$31,075
Engineering Center Complex Renovation	Campus cash resources	24,750
Wilderness Place ACQ & Renovation	Campus cash resources	17,949
Housing Stearns Fan Coil Units	Campus cash resources	9,562
Campus Utility System	Bond proceeds and campus cash resources	91,100
Geosciences Building (SEEC)	Bond proceeds and campus cash resources	111,500
Athletics Complex	Bond proceeds and campus cash resources	155,198
Euclid Autopark Addition (Center for Academic Success)	Campus cash resources	43,000
Quadrangle Residential Hall Redevelopment	Bond proceeds and campus cash resources	62,400
Ekeley Sciences Middle Wing Renovation	Campus cash resources	15,700
Williams Village Dining and Community Center	Campus cash resources	48,900
Housing Bathroom Upgrades	Campus cash resources	9,463
Jennie Smoly Caruthers Biotech Bldg (5th Wing)	Governmental grants and contracts, bond proceeds, and campus cash resources	201,458
Athletics Complex Parking Garage	Bond proceeds	24,825
Ketchum Renovation (RAP029/P07)	State appropriation and campus cash resources	22,550
CU Denver		
AHEC Academic Building 1, backfill	Campus cash resources	9,296
BioScience 2	Bond proceeds and campus cash resources	37,643
Denver Wellness Center	Bond proceeds and capital student fee	42,322
UCCS		
Alpine Village	Bond proceeds	83,000
Recreation Center Expansion & Student Wellness Center	Bond proceeds	17,000
ENT Center for the Arts	State, Gift and campus cash resources	60,000

^aValue represents budgeted costs for project in thousands.

Source: University of Colorado Financial and Compliance Audit June 30, 2015 (page 18).

OPERATIONS

The University of Colorado recorded operating and nonoperating revenues of \$3.3 billion in FY2015 and \$3.5 billion in FY2016. More than half of these noncapital revenues are generated from tuition and fees (28.7%), and grants and contracts (26.8%). The university recorded \$3.5 billion in operating expenditures in FY2016, though some of this included noncash activity (e.g., depreciation) or activities related to health care enterprises, which were not included in the scope of work.

**TABLE 15: OPERATING AND NONOPERATING REVENUES
(EXCLUDING CAPITAL), FY2015 AND FY2016 (IN THOUSANDS)**

Revenues	FY2015	FY2016
Operating Revenues		
Student tuition and fees, net	\$884,810	\$932,656
Fee-for-service	\$104,745	\$121,440
Grants and contracts	\$807,092	\$872,665
Sales and services of educational departments	\$191,520	\$191,590
Auxiliary enterprises, net	\$241,415	\$259,826
Health services	\$707,198	\$781,257
<u>Other operating</u>	<u>\$82,150</u>	<u>\$93,638</u>
Total Operating Revenues	\$3,018,930	\$3,253,072
Nonoperating Revenues		
State appropriations	\$13,008	\$12,429
Gifts	\$142,176	\$174,926
Investment income (loss), net	\$34,680	\$18,516
Royalty income, net	\$2,873	\$2,851
<u>Other nonoperating, net</u>	<u>\$8,408</u>	<u>\$7,422</u>
Total Nonoperating Revenues	\$249,658	\$264,527
Total Noncapital Revenues	\$3,268,588	\$3,517,599

Source: University of Colorado Financial and Compliance Audit
June 30, 2016 and 2015 (page 24).

**TABLE 16: EXCERPT FROM STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN
NET POSITION, FY2015 AND FY2016 (IN THOUSANDS)**

	FY2015		FY2016	
	University	Component Units	University	Component Units
Operating Expenses				
Education and general				
Instruction	\$874,923	\$-	\$949,007	\$-
Research	547,036	-	601,354	-
Public service	99,512	-	106,366	-
Academic support	172,990	-	177,806	-
Student services	109,452	-	113,266	-
Institutional support	186,344	150,637	232,184	136,461
Operation and maintenance of plant	134,295	-	132,818	-
Student aid	20,181	-	19,610	-
Total Education and General Expenses	2,144,733	150,637	2,332,411	136,461
Depreciation	180,843	2,506	181,191	2,309
Auxiliary enterprises	202,682	-	224,523	-
Health services	646,439	-	724,324	-
Total Operating Expenses	3,174,697	153,143	3,462,449	138,770

Source: Excerpt from University of Colorado Financial and Compliance Audit June 30, 2016 and 2015 (page 34).

The university’s nonlabor expenditures occur primarily through vendor purchases and through university travel and procurement cards. Combined, nonlabor expenditures totaled \$1.3 billion in both FY2015 and FY2016. More than 46% of FY2016 expenditures were in-state purchases. While this leakage includes the purchase of some supplies and equipment out-of-state, it also includes payments to partnering research institutions that contribute unique capabilities to research projects—collaboration that runs both directions in research. Without these collaborations, many of the grants would otherwise not be awarded to the University of Colorado. Vendor purchases recorded a higher rate of in-state transactions than purchases made on travel and procurement cards.⁶

CU Boulder accounted for 44% of nonlabor expenditures in FY2016, totaling \$591 million. CU Anschutz vendor spending accounted for 34%, or \$447 million, followed by CU Denver, UCCS, and the CU System.

TABLE 17: TOTAL VENDOR, PROCUREMENT CARD, AND TRAVEL CARD SPENDING, FY2016 (IN MILLIONS)

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	CO Total	Total
CU Boulder	\$64	\$22	\$154	\$9	\$248	\$591
UCCS	\$0	\$22	\$59	\$1	\$81	\$112
CU Denver	\$3	\$1	\$68	\$2	\$74	\$136
CU Anschutz	\$7	\$1	\$161	\$15	\$185	\$447
System	\$3	\$0	\$23	\$0	\$27	\$44
Total	\$77	\$46	\$466	\$27	\$616	\$1,330

TABLE 18: TOTAL VENDOR, PROCUREMENT CARD, AND TRAVEL CARD SPENDING, FY2015 (IN MILLIONS)

Campus	Boulder MSA	Colorado Springs MSA	Denver MSA	All Other	CO Total	Total
CU Boulder	\$54	\$6	\$118	\$7	\$184	\$548
UCCS	\$0	\$23	\$71	\$1	\$96	\$118
CU Denver	\$3	\$1	\$57	\$1	\$61	\$118
CU Anschutz	\$6	\$1	\$190	\$13	\$211	\$432
System	\$2	\$0	\$14	\$0	\$16	\$38
Total	\$65	\$32	\$449	\$23	\$568	\$1,253

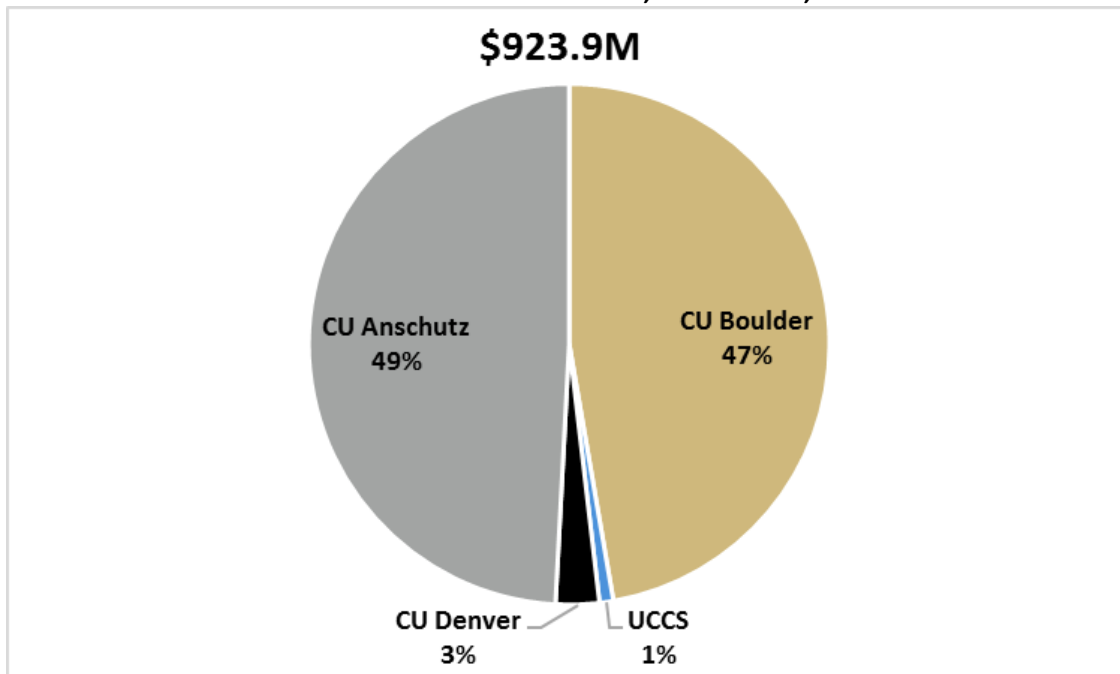
⁶Procurement card purchases are made by university staff, faculty, and students to purchase items up to \$5,000.

SPONSORED PROGRAMS

Each campus has an office that reviews, negotiates, and administers externally funded sponsored research for its respective campus. Responsibilities also include ensuring campus, university, and sponsor policies are being followed; providing award management assistance; preparing subcontracts; and managing government property. These services are provided by the Office of Contracts and Grants for CU Boulder, by the Office of Grants and Contracts for CU Denver and CU Anschutz, and by the Office of Sponsored Programs for UCCS.

In FY2016, of the \$924 million in sponsored research, 96.4% of sponsored research was conducted on two University of Colorado campuses: CU Anschutz and CU Boulder. Sponsored research increased 1.7% across the System in 2015 and 5.2% in 2016. In 2016, CU Anschutz recorded both the greatest dollar amount of sponsored research (\$454.1 million) and the greatest year-over-year increase (8.1%).

FIGURE 2: SPONSORED RESEARCH, BY CAMPUS, FY2016



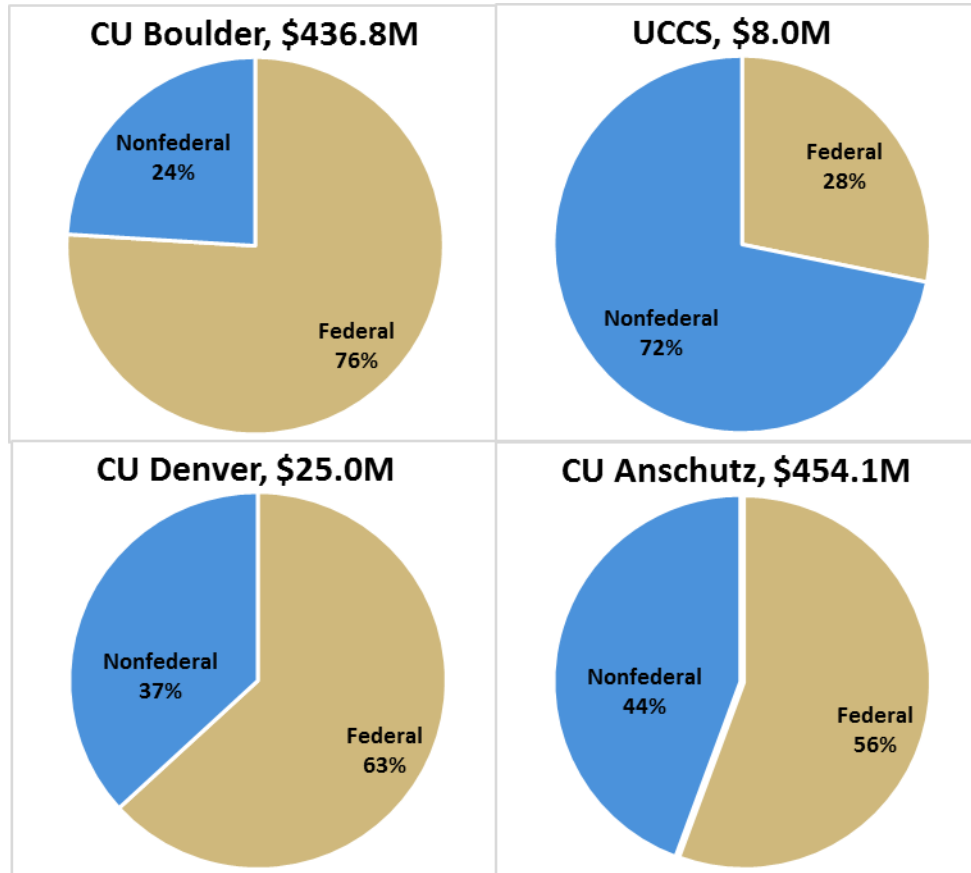
Source: University of Colorado, <http://www.cu.edu/sponsored-research>.

TABLE 19: UNIVERSITY OF COLORADO SPONSORED RESEARCH, BY CAMPUS, IN MILLIONS

Spending	CU Boulder	UCCS	CU Denver	CU Anschutz	Total
FY2000	\$214.2	\$3.0	\$18.7	\$224.0	\$459.9
FY2001	\$219.0	\$2.8	\$16.7	\$260.1	\$498.6
FY2002	\$229.0	\$1.9	\$20.3	\$294.6	\$545.9
FY2003	\$250.4	\$5.2	\$19.1	\$286.1	\$560.9
FY2004	\$259.7	\$6.1	\$22.8	\$299.8	\$588.4
FY2005	\$257.6	\$8.7	\$18.6	\$341.8	\$626.7
FY2006	\$256.5	\$10.3	\$22.0	\$349.8	\$638.5
FY2007	\$266.1	\$7.9	\$19.8	\$343.6	\$637.4
FY2008	\$279.9	\$9.2	\$17.9	\$353.6	\$660.6
FY2009	\$339.7	\$8.7	\$22.8	\$342.4	\$713.5
FY2010	\$454.4	\$8.3	\$22.2	\$399.2	\$884.1
FY2011	\$359.1	\$12.4	\$21.8	\$400.1	\$793.5
FY2012	\$380.7	\$5.0	\$22.4	\$411.7	\$819.8
FY2013	\$351.9	\$7.8	\$20.1	\$390.8	\$770.5
FY2014	\$412.1	\$9.4	\$18.5	\$423.3	\$863.3
FY2015	\$425.6	\$10.3	\$22.2	\$420.3	\$878.3
FY2016	\$436.8	\$8.0	\$25.0	\$454.1	\$923.9

Source: University of Colorado, <http://www.cu.edu/sponsored-research>.
 Note: Values are in nominal dollars, and are not adjusted for inflation.

FIGURE 3: SPONSORED RESEARCH, BY SOURCE AND CAMPUS, FY2016



Source: University of Colorado, <http://www.cu.edu/sponsored-research>.

TECHNOLOGY TRANSFER

The University of Colorado's Technology Transfer Office (TTO) works to assist with the commercialization of university technology.⁷ According to the FY2015 Tech Transfer Annual Report, TTO recorded expenses totaling \$5.8 million in FY2015, providing the following services:

- Advises faculty on intellectual property issues
- Supports intellectual property management and commercialization planning for major federal grant proposals
- Advises campus researchers about the technology transfer process through a variety of means including seminars, newsletters, and special events
- Solicits and analyzes invention disclosures from faculty, students, and staff
- Engages students and commercialization partners in market assessment
- Prepares and manages the transfer of "tangible research property" such as biological materials
- Licenses patents and copyrights for commercial use and manages those licenses

According to the report, research conducted at the university reaches the community through commercialization, with 114 companies formed based on University of Colorado intellectual property:

- 110 have an operational footprint in Colorado,
- 19 have received Proof of Concept investments from the TTO,
- 9 went public through an initial public offering or reverse merger, and
- 23 have been acquired.

CU FOUNDATION

Created in 1967 by volunteers and community leaders, the University of Colorado Foundation raises, manages, and invests private support for the benefit of the university. Fundraising efforts supplement state funding, tuition, and other revenue sources by funding student scholarships, faculty support, academic programs, and building improvements. In 2014, the University of Colorado Foundation recorded \$204 million in revenue. Most of the revenue was derived from contributions and grants (\$132 million) and investment income (\$68.8 million). The impact of these gifts touches all four campuses in the areas of learning and teaching, discovery and innovation, community and culture, and health and wellness.

⁷The Tech Transfer Office was decentralized in July 2016.

ECONOMIC CONTRIBUTION

The University of Colorado's direct expenditures led to \$8.3 billion in economic activity in the state of Colorado in FY2016, resulting from the work of 20,250 regular faculty and staff. This reflects growth from the \$7.9 billion impact estimated for FY2015. These faculty and staff participate in activities ranging from teaching and research to administrative and support, operating one of the largest institutions in the state of Colorado. The majority of economic activity is, in fact, driven off employee compensation (salaries and benefits). Sliced by function, sponsored programs expenditures (i.e., research) accounted for nearly \$1.7 billion in total economic activity (\$1 billion in direct activity) in Colorado, excluding the long-term benefits of scientific discoveries and technology commercialization via licenses, patents, and spinoff companies.

TABLE 20: UNIVERSITY OF COLORADO ECONOMIC CONTRIBUTION, FY2016

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	20,250	\$2,620	\$3,197	\$3,950
Indirect Effect	13,476	\$503	\$963	\$1,513
Induced Effect	19,715	\$927	\$1,638	\$2,865
Total Effect	53,442	\$4,050	\$5,798	\$8,328

TABLE 21: SUMMARY OF RESEARCH EXPENDITURE CONTRIBUTIONS, FY2016

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	7,768	\$516	\$649	\$1,038
Indirect Effect	874	\$51	\$79	\$131
Induced Effect	3,524	\$166	\$293	\$512
Total Effect	12,166	\$732	\$1,022	\$1,681

Note: Many employees participating in research activities are also involved in teaching activities.

TABLE 22: UNIVERSITY OF COLORADO ECONOMIC CONTRIBUTION, FY2015

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	19,636	\$2,411	\$2,948	\$3,664
Indirect Effect	13,939	\$527	\$988	\$1,592
Induced Effect	18,421	\$861	\$1,521	\$2,661
Total Effect	51,996	\$3,799	\$5,457	\$7,917

TABLE 23: SUMMARY OF RESEARCH EXPENDITURE CONTRIBUTIONS, FY2015

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	7,425	\$465	\$602	\$950
Indirect Effect	793	\$46	\$72	\$118
Induced Effect	3,254	\$152	\$269	\$470
Total Effect	11,471	\$663	\$942	\$1,538

Note: Many employees participating in research activities are also involved in teaching activities.

CONCLUSION

The University of Colorado remains an economic engine in the state of Colorado through educational, research, operational, and ancillary activities. Students enroll at the university to earn an education, many of whom will enter the Colorado workforce. This labor force not only fills local employment and entrepreneurial needs, but also becomes a draw for businesses looking to locate in Colorado. Likewise, while research is driven off the interests and expertise of faculty, it also provides competitive economic attributes that differentiate Colorado from other states—as seen in such industry concentrations as the Professional, Scientific, and Technical Services Sector; the Information Sector; and in aerospace, cleantech, and biotechnology clusters. This research activity exists in a collaborative triangle of universities, businesses, and federal research facilities in the state, occasionally resulting in the creation of companies and the licensing of technologies from the university.

The economic impacts of the university are ultimately driven by the education and research missions of the university, which result in both operating and capital expenditures in the state of Colorado. The nearly \$4 billion in direct spending related to the university operations and capital projects, in addition to student spending, resulted in economic activity of \$8.3 billion. Comparatively, state funding for the university topped \$197 million in FY2016, lending to the substantial economic activity generated by the university. This is not to say that additional dollars invested by the state will result in similar returns on investment. While state funding is often times a match for federal dollars, the amount of additional federal funding is limited, and may even decline in coming years.

This operating and capital spending occurs primarily with private companies in the state, ranging from utilities to food suppliers. The 20,500 faculty and staff, and the 12,136 student and temporary workers, accounted for more than 53,400 workers in the state related to the supplier companies and household spending of employees.

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APPENDIX 1: LITERATURE REVIEW OF UNIVERSITY ECONOMIC IMPACT STUDIES

Arizona State University (Center for Competitiveness and Prosperity Research 2009)

Arizona State University (ASU) directly employed about 20,000 faculty, students, and staff in FY2009 and accounted for a total of 54,800 Arizona jobs and almost \$2.3 billion in total labor income. ASU faculty, staff, and student expenditures were directly responsible for 11,040 jobs and \$714 million in gross state product. Faculty, staff, and student expenditures were indirectly responsible for 14,790 jobs and \$1 billion state gross product. The total economic impact of ASU in FY2009 was estimated at \$3.2 billion.

Oregon State University (Oregon State University News and Research Communications 2015)

Oregon State University (OSU) economic impact in the state of Oregon in 2014 was \$2.2 billion and 31,660 jobs. The university's worldwide economic impact was estimated at about \$2.4 billion. OSU directly accounted for \$973 million to the Oregon economy as well as \$424.2 million in indirect and \$834.8 million in induced impacts. The economic impact for Benton and Linn counties was \$1.3 billion and 25,110 jobs. The university accounted for \$401.9 million and 2,350 jobs in Portland alone.

Stanford (The Pacific Partners Consulting Group, Inc. 2008)

Stanford University, which consists of seven schools, employed 1,807 faculty and over 20,000 total employees in 2006, making it the largest employer in the region. The university also brought in revenue of \$4.5 billion and spent more than \$1.6 billion the local area in 2006 according to the economic impact study conducted in 2008. The study estimated that Stanford employees spent \$1.2 billion in the surrounding communities. Stanford University contributed \$2.1 billion in direct expenditures to Santa Clara and San Mateo counties, \$609 million of which was from Stanford hospitals. Students and visitors spent a combined \$348 million in the surrounding communities as well.

University of Arizona (Tripp Umbach 2014)

The University of Arizona (UA) accounted for a total economic impact of \$3.6 billion through its employees, students, and visitors in 2011 according to an impact study conducted by Tripp Umbach. It directly contributed \$1.5 billion in output and \$2.1 billion in indirect/induced output. The economic output generated by the university accounted for 1.4% of the Arizona economy. UA directly employed 17,590 people in the 2010–11 fiscal year and was indirectly responsible for additional 16,546 indirect/induced employees, totaling 1.1% of jobs in the state of Arizona. The total direct and indirect/induced impact of UA labor income was \$1.6 billion. The university also accounted for \$182.9 million in state and local tax revenue, of which \$20.4 million was directly attributed to the university.

University of California Berkeley (UC Berkeley News 2007; Economic & Planning Systems, Inc. 2011)

The University of California, Berkeley employed 21,229 people on the general campus in 2010 according to a 2011 study conducted by the Economic & Planning Systems, Inc. Berkeley's main campus accounted for 43,600 jobs in the 2009–10 fiscal year. The total economic impact was roughly \$4.6 billion, adding about \$3.2 billion in value added. An earlier study, using 2005–06 data, found that the university had

\$1.4 billion in revenue and spent about \$800 million on salaries. The local economy also benefited from the roughly 1 million visitors to UC Berkeley, contributing about \$30 million annually.

University of California Los Angeles (Center for Strategic Economic Research 2013)

The impact of UCLA on the Southern California region equated approximately 1% of the overall economy, including accounting for about 95,000 jobs in the region and 103,000 jobs statewide according to a 2013 study conducted by the Center for Strategic Economic Research. UCLA directly employed 47,453 people in California in the 2001–12 fiscal year and accounted for \$5.6 billion in output. The university also accounted for about \$1.9 billion in tax revenue, of which about two-thirds was collected by state and local communities. Statewide, UCLA was responsible for \$12.9 billion in output, roughly 34 times what the state invests in the university.

University of Massachusetts (UMass Donahue Institute Economic and Public Policy Research 2015)

The University of Massachusetts (UMass) system generated \$6.2 billion in economic activity in FY 2015. This includes one-time building and infrastructure project expenditures consisting of \$502 million in direct expenses plus \$421 million in additional economic activity, as well as 5,013 jobs supported. In FY 2015, the State of Massachusetts invested \$621 million in the UMass system, which led to \$6.2 billion of in-state economic activity. The UMass system consists of UMass Amherst, UMass Boston, UMass Dartmouth, UMass Lowell, and UMass Medical School. These generated economic activity of \$2.1 billion, \$1.1 billion, \$466 million, \$922 million, and \$1.6 billion, respectively. UMass System revenues are 79% operating revenues and 21% state revenues.

University of Oregon (Duy 2015)

The University of Oregon (UO) contributed \$2.3 billion to Oregon's economy in 2013–14 according to a study conducted by UO economics professor Tim Duy. A total of \$1.3 billion of this amount was new economic activity that would not have happened without the university. In 2013, UO directly employed approximately 10,300 employees, and the university's direct and indirect spending supported more than 24,500 jobs in Oregon. The total amount of spending associated with the university grew by 16.5% year-over-year. The household earnings generated from the UO's payroll and spending generated \$42.7 million in tax revenue.

University of Southern California (Economic Research Associates 2009)

The University of Southern California (USC) was responsible for about \$4.9 billion in direct expenditures in the region in the 2008 fiscal year. USC accounted for roughly \$2.1 billion in direct expenditures, with \$1.7 billion of that spent in Los Angeles County alone according to the economic impact study conducted in 2009 by Economic Research Associates. The university also employed about 27,000 people, equating to \$1 billion in payroll. The study concluded that USC-related activities accounted for an additional 19,100 full-time equivalent jobs in Los Angeles County with an average salary of \$34,900. An additional 63 cents was generated in the local economy for every \$1 that the university spent.

University of Texas (Bureau of Business Research 2017)

The University of Texas System (UTS) comprises nine academic and six health-related institutions within the state of Texas. UTS creates \$15.5 billion in economic activity annually. Direct economic activity totals \$5.3 billion, \$3.7 billion of which is spent by UTS. The remaining \$1.6 billion is student spending on books, supplies, transportation, room and board, and personal expenses. UTS accounts for total student enrollment of 151,833, 88.5% of which are in-state students. Within the \$3.7 billion of UTS annual expenditure is the direct creation of 56,000 jobs. Through its total economic activity, UTS creates

158,000 jobs. In addition, the university creates \$3.1 billion in direct personal income and \$4 billion in direct personal income, creating total personal income of \$7.1 billion. UTS completes \$835 million of research and student teaching per year, creating \$2.4 billion in total Texas business activity annually.

University of Utah (University of Utah News Center 2010)

Because no public reports that examine the University of Utah's economic impact are available, the following information is the economic impact created by sponsored research at the University of Utah. In FY2009, the University of Utah collected a record \$354.7 million in research funding according to the university's vice president for research. The study calculated that the economic impact to Utah from university's research spending in FY2008 totaled \$525.3 million in gross state product (GSP). Research supported 2,920 jobs at the university and 4,380 jobs not directly connected to campus, with wages totaling \$310 million and resulting tax revenue of \$31.4 million. The study estimated that every \$1 million spent on research supports 20 jobs in Utah, generates approximately \$849,450 in earnings from Utah workers, contributes \$1.4 million in GSP, and provides \$86,135 in state and local tax revenue.

University of Washington (Tripp Umbach and University of Washington 2014)

The University of Washington (UW) generated \$12.5 billion in FY2014 according to an economic impact study conducted by Tripp Umbach. The direct impact of UW in the state of Washington was \$5.7 billion while the indirect/induced impact was \$6.8 billion, which equates to \$1 of every \$31 of the state economy. The university directly employed 34,668 people, making UW the third-largest nonfederal employer in the state. Overall, UW was responsible for 79,331 jobs across the state, or roughly 2.1% of total jobs in Washington. UW accounted for \$152.5 million in direct tax revenue and \$413.2 million in indirect/induced tax revenue to state and local governments.

Washington State University (CAI Community Attributes 2015)

In FY2014, Washington State University (WSU) employed 17,970 workers, with an average annual employment of 11,900 direct jobs. There are economic impacts through all major sectors of Washington's economy. Producer and transport services received the largest labor income impact, and consumer services was impacted mainly through employment. In FY2014, WSU employee compensation totaled \$598 million, including both wage and salary, and employer contributions to benefits. Through indirect impacts, the university supported an additional 8,700 jobs and \$101 million in labor income. Another \$311 million was generated in induced effects. WSU generated almost \$19 for every \$1 the state invested in the university.

APPENDIX 2: UNIVERSITY OF COLORADO IMPACT ON THE BOULDER MSA

The Boulder Metropolitan Statistical Area (MSA) recorded 185,000 employees in 2016 and \$23.4 billion in total output in 2015 (most current data). University of Colorado faculty and staff (nonstudents) accounted for 4.2% of total employment in the Boulder MSA and 5.7% of direct value added. Funding for university operations and capital spending is by and large nonlocal, resulting in an infusion of investment into the local economy.

Enrollment

In fall 2015, CU Boulder enrolled 31,300 students (headcount), 60% of whom were Colorado residents and 83% of whom were undergraduate students. On a full-time equivalent (FTE) basis, CU Boulder enrolled 28,281 students in FY2016.

Alumni

CU Boulder accounts for nearly 127,500 alumni living in the state of Colorado, including business leaders, policymakers, educators, health care workers, engineers, and others.

Employment and Wages

CU Boulder employed 15,900 faculty, staff, and students in FY2016. Based on employment records, 13,884 (87%) of these employees live in Colorado, with some of the nonresident employment attributable to student workers citing their parents' out-of-state home address. CU Boulder employees living and working in the Boulder MSA totaled 8,758 in FY2016, with an additional 649 individuals living in the Boulder MSA, but working on other campuses. Excluding the number of student workers (e.g., work-study recipients), CU Boulder was estimated to employ 7,696 individuals in FY2016. Employment totals are based on a snapshot in the fall.

Nonlabor Operating and Capital Spending

Direct nonlabor spending by the University of Colorado in the Boulder MSA totaled \$75.9 million in FY2016, with \$64.2 million attributable to CU Boulder. CU Boulder made \$591.1 million in purchases (including construction) in FY2016, 41.8% of which occurred in Colorado.

TABLE 24: UNIVERSITY OF COLORADO SYSTEM VENDOR AND PURCHASING CARD EXPENDITURES, BOULDER MSA, FY2016 (IN MILLIONS)

Campus	Boulder MSA
CU Boulder	\$64.2
UCCS	\$0.2
CU Denver	\$1.5
CU Anschutz	\$7.1
System	\$3.0
Total	\$75.9

**TABLE 25: CU BOULDER VENDOR AND PURCHASING
CARD EXPENDITURES, BY LOCATION,
FY2016 (IN MILLIONS)**

Campus	CU Boulder
Boulder MSA	\$64.2
Colorado Springs MSA	\$21.3
Denver MSA	\$152.5
All Other	\$353.1
Total	\$591.1

Note: Total and All Other includes out-of-state and other in-state purchases.

Construction

Budgeted costs for construction projects as of the end of FY2016 for CU Boulder were estimated at \$255 million. FY2016 construction expenditures for CU Boulder totaled \$181 million, but only a portion of this was sourced locally in the Boulder MSA. Given the in-flow of labor and materials for construction, local construction expenditures on buildings were estimated at \$14 million in FY2016.

TABLE 26: CU BOULDER CURRENT CONSTRUCTION PROJECTS AS OF JUNE 30, 2016 (IN THOUSANDS)

Campus/Project Description	Financing Sources	Value ^a
CU Boulder		
Engineering Center Complex Renovation	Campus cash resources	\$24,750
Wilderness Place ACQ & Renovation	Campus cash resources	27,143
Campus Utility System (capped \$85.6 mm)	Bond proceeds and campus cash resources	5,500
Geosciences Building (SEEC) (capped \$83.4 mm)	Bond proceeds and campus cash resources	28,049
Euclid Autopark Addition (Center for Academic Success)	Campus cash resources	43,000
Ekeley Sciences Middle Wing Renovation	Campus cash resources	14,362
Williams Village Dining and Community Center	Campus cash resources	48,900
Housing Bathroom Upgrades	Campus cash resources	9,563
Ketchum Renovation (RAP029/P07)	State appropriation and campus cash resources	21,892
Jennie Smoly Caruthers Biotech Bldg (5th Wing)	Governmental grants and contracts, bond proceeds, and campus cash resources	32,266

^aValue represents budgeted costs for project in thousands.

Source: University of Colorado Financial and Compliance Audit June 30, 2016 (page 29).

Student Spending and Visitors

Based on a biannual survey of students, CU Boulder recorded \$546.4 million in nonlocal student and visitor spending in Colorado. This includes nonresident and resident students who indicated that they would have left Colorado had they not attended CU, as well as students' visitors. Spending included rents, groceries, transportation, child care, recreation, health care, and other.

Economic Contribution

CU Boulder had the largest economic contribution on the Boulder MSA, but businesses in the metropolitan area also supply goods and services to the other University of Colorado campuses. Additionally, some employees live in the Boulder MSA but work on another campus, which creates an economic boost from their household spending. Through research, teaching, operations, construction, student spending, and visitation, the University of Colorado is an economic driver in the Boulder MSA,

contributing nearly \$2.6 billion in local economic activity driven off direct expenditures in the Boulder MSA in FY2016. University funding is by and large nonlocal, thus leveraging outside investment for the local economy.

**TABLE 27: UNIVERSITY OF COLORADO SYSTEM,
IMPACT ON BOULDER MSA, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	7,696	\$1,088	\$1,331	\$1,679
Indirect Effect	4,522	\$133	\$248	\$327
Induced Effect	4,405	\$185	\$330	\$569
Total Effect	16,623	\$1,406	\$1,910	\$2,575

The economic contribution of CU Boulder on the state of Colorado totaled nearly \$3.9 billion in FY2016. This includes \$181 in construction activity for the year.

**TABLE 28: CU BOULDER,
IMPACT ON COLORADO, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	7,696	\$1,088	\$1,331	\$1,679
Indirect Effect	8,361	\$304	\$587	\$921
Induced Effect	8,605	\$405	\$715	\$1,250
Total Effect	24,662	\$1,796	\$2,633	\$3,850

Research

Research draws federal, state, and private funding. University research leads to immeasurable scientific discoveries and societal benefits that range from medicine and energy to space and weather. To understand just a slice of the benefits, one could look to licensed technologies in the CU Tech Transfer portfolio, or to the spinoff companies that dot the Colorado landscape. However, by the nature of the work, research begets research, and is thus a perpetual building block of knowledge that propels the next scientific discovery. CU Boulder research expenditures were estimated at \$500 million in FY2016. The economic contribution of these research activities totaled \$765 million on the Colorado economy in 2016.

APPENDIX 3: UNIVERSITY OF COLORADO IMPACT ON THE COLORADO SPRINGS MSA

The Colorado Springs Metropolitan Statistical Area (MSA) recorded 279,100 employees in 2016 and \$29.9 billion in total output in 2015 (most current data). University of Colorado faculty and staff (nonstudents) accounted for 0.5% of total employment in the Colorado Springs MSA and 0.6% of direct value added. Funding for university operations and capital spending is by and large nonlocal, resulting in an infusion of investment into the local economy.

Enrollment

In fall 2015, UCCS enrolled 11,299 students (headcount), 86% of whom were Colorado residents and 85% of whom were undergraduate students. On a full-time equivalent (FTE) basis, UCCS enrolled 9,401 students in FY2016.

Alumni

UCCS accounts for 30,000 alumni living in the state of Colorado, including business leaders, policymakers, educators, health care workers, engineers, and others.

Employment and Wages

UCCS employed 3,009 faculty, staff, and students in FY2016. Based on employment records, 2,838 (94%) of these employees live in Colorado, with some of the nonresident employment attributable to student workers citing their parents' out-of-state home address. UCCS employees living and working in the Colorado Springs MSA totaled nearly 2,500 in FY2016; an additional 400 individuals lived in the Colorado Springs MSA, but worked on other campuses. Excluding the number of student workers (e.g., work-study recipients), UCCS was estimated to employ 1,581 individuals. Employment totals are based on a snapshot in the fall.

Nonlabor Operating and Capital Spending

Direct nonlabor operations spending by the University of Colorado in the Colorado Springs MSA totaled \$45.5 million in FY2016, with \$21.7 million attributable to the Colorado Springs campus. UCCS made \$112.4 million in purchases in FY2016, 72.5% of which occurred in Colorado.

TABLE 29: UNIVERSITY OF COLORADO SYSTEM VOUCHER AND PURCHASING CARD EXPENDITURES, COLORADO SPRINGS MSA, FY2016 (IN MILLIONS)

Campus	Colorado Springs MSA
CU Boulder	\$21.3
UCCS	\$21.7
CU Denver	\$0.7
CU Anschutz	\$1.4
System	\$0.3
Total	\$45.5

**TABLE 30: UCCS VENDOR AND PURCHASING
CARD EXPENDITURES, BY LOCATION,
FY2016 (IN MILLIONS)**

Campus	UCCS
Boulder MSA	\$0.2
Colorado Springs MSA	\$21.7
Denver MSA	\$58.7
All Other	\$31.7
Total	\$112.4

Note: Total and All Other includes out-of-state and other in-state purchases.

Construction

Budgeted costs for construction projects as of the end of FY2016 for UCCS were estimated at \$160 million. FY2016 construction expenditures for UCCS totaled \$51 million, but only a portion of this was sourced locally in the Colorado Springs MSA. Given the in-flow of labor and materials for construction, local construction expenditures on buildings were estimated at \$27 million in FY2016.

TABLE 31: UCCS CURRENT CONSTRUCTION PROJECTS AS OF JUNE 30, 2016 (IN THOUSANDS)

Campus/Project Description	Financing Sources	Value ^a
UCCS		
Alpine Village	Bond proceeds	\$83,000
Recreation Center Expansion & Student Wellness Center	Bond proceeds	17,000
ENT Center for the Arts	State, gift and campus cash resources	60,000

^aValue represents budgeted costs for project in thousands.

Student Spending and Visitors

Based on a biannual survey of students, UCCS recorded \$91.9 million in nonlocal student and visitor spending in Colorado. This includes nonresident and resident students who indicated that they would have left Colorado had they not attended CU, as well as students' visitors. Spending included rents, groceries, transportation, child care, recreation, health care, and other.

Economic Contribution

UCCS had the largest economic contribution on the Colorado Springs MSA, but businesses in the metropolitan area also supply goods and services to the other University of Colorado campuses. Additionally, some employees live in the Colorado Springs MSA but work on another campus, which creates an economic boost from their household spending. Through research, teaching, operations, construction, student spending, and visitation, the University of Colorado is an economic driver in the Colorado Springs MSA, contributing \$431 million in local economic activity driven off direct expenditures and student spending in the Colorado Springs MSA in FY2016. Much of this funding is nonlocal, thus leveraging outside investment for the local economy.

**TABLE 32: UNIVERSITY OF COLORADO SYSTEM,
IMPACT ON COLORADO SPRINGS MSA, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	1,581	\$121	\$157	\$234
Indirect Effect	1,162	\$35	\$61	\$101
Induced Effect	761	\$30	\$54	\$96
Total Effect	3,503	\$186	\$272	\$431

The economic contribution of UCCS on the state of Colorado totaled \$593 million in FY2016.

**TABLE 33: UCCS,
IMPACT ON COLORADO, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	1,581	\$121	\$157	\$234
Indirect Effect	1,321	\$54	\$104	\$192
Induced Effect	1,148	\$54	\$95	\$167
Total Effect	4,050	\$229	\$356	\$593

Research

Research draws federal, state, and private funding. University research leads to immeasurable scientific discoveries and societal benefits that range from medicine and energy to space and weather. To understand just a slice of the benefits, one could look to licensed technologies in the CU Tech Transfer portfolio, or to the spinoff companies that dot the Colorado landscape. Research expenditures for UCCS in FY2016 totaled \$14.5 million. These research activities had a \$28 million economic contribution on the state in 2016.

APPENDIX 4: UNIVERSITY OF COLORADO IMPACT ON THE DENVER MSA

The Denver Metropolitan Statistical Area (MSA) recorded 1.4 million employees in 2016 and \$193.2 billion in total output in 2015 (most current data). University of Colorado faculty and staff (nonstudents) accounted for 0.8% of total employment in the Denver MSA and 0.9% of direct value added. Funding for university operations and capital spending is by and large nonlocal, resulting in an infusion of investment into the local economy.

Enrollment

In fall 2015, CU Denver enrolled 14,333 students (headcount), 84% of whom were Colorado residents and 71% of whom were undergraduate students. On a full-time equivalent (FTE) basis, CU Denver enrolled 10,950 students. CU Anschutz enrolled 4,084 students (headcount), 82% of whom were Colorado residents and 11% of whom were undergraduate students. On an FTE basis, CU Anschutz enrolled 5,577 students.

Alumni

CU Denver (66,620) and CU Anschutz (26,530) accounted for more than 93,000 alumni living in the state of Colorado, including business leaders, policymakers, educators, health care workers, engineers, and others.

Employment and Wages

CU Denver, CU Anschutz, and the system administration employed nearly 13,500 faculty, staff, and students in FY2016. Based on employment records, 96% of these employees live in Colorado, with some of the nonresident employment attributable to student workers citing their parents' out-of-state home address. CU Denver, CU Anschutz, and System employees living and working in the Denver MSA totaled 11,790 in FY2016, with an additional 4,160 individuals living in the Denver MSA, but working on other campuses.

Excluding the number of student workers (e.g., work-study recipients), CU Denver, CU Anschutz, and system administration were estimated to employ 10,973 individuals in FY2016. CU Denver had 2,449 employees, CU Anschutz had 8,046 employees, and the system offices accounted for 478 workers. Employment totals are based on a snapshot in the fall.

Nonlabor Operating and Capital Spending

Direct spending (including construction) by the University of Colorado in the Denver MSA totaled \$468.1 million in FY2016, with \$69.1 million attributable to CU Denver and \$164.4 million to CU Anschutz. University of Colorado System offices are also located in the Denver MSA, recording \$23.4 million in expenditures in the Denver metropolitan region. CU Denver, CU Anschutz, and the system administration made \$626.6 million in purchases in FY2016, 45.9% of which occurred in Colorado.

TABLE 34: UNIVERSITY OF COLORADO SYSTEM VOUCHER AND PURCHASING CARD EXPENDITURES, DENVER MSA, FY2016 (IN MILLIONS)

Campus	Denver MSA
CU Boulder	\$152.5
UCCS	\$58.7
CU Denver	\$69.1
CU Anschutz	\$164.4
System	\$23.4
Total	\$468.1

TABLE 35: CU DENVER AND CU ANSCHUTZ VENDOR AND PURCHASING CARD EXPENDITURES, BY LOCATION, FY2016 (IN MILLIONS)

Campus	CU Denver and CU Anschutz
Boulder MSA	\$11.6
Colorado Springs MSA	\$2.4
Denver MSA	\$256.9
All Other	\$355.7
Total	\$626.6

Note: Total and All Other includes out-of-state and other in-state purchases.

Construction

Budgeted costs for construction projects as of the end of FY2016 for the Denver campuses were estimated at \$84 million in FY2016. FY2016 construction expenditures for the Denver campus totaled \$23.2 million, but the Denver MSA benefits from regional construction spending by the other campuses. Total university construction spending in the Denver MSA in FY2016 is estimated at \$93 million.

TABLE 36: CU DENVER CURRENT CONSTRUCTION PROJECTS AS OF JUNE 30, 2016 (IN THOUSANDS)

Campus/Project Description	Financing Sources	Value ^a
CU Denver		
Denver Wellness Center	Bond proceeds and capital student fee	\$42,322
Campus Support Building Renovation	Campus cash resources	8,085
North Classroom Building Renovation	Campus cash resources	33,472

^aValue represents budgeted costs for project in thousands.

Source: University of Colorado Financial and Compliance Audit June 30, 2016 (page 29).

Student Spending and Visitors

Based on a biannual survey of students, CU Denver and CU Anschutz recorded \$130.3 million and \$65.7 million, respectively, in nonlocal student and visitor spending in Colorado. This includes nonresident and resident students who indicated that they would have left Colorado had they not attended CU, as well as students' visitors. Spending included rents, groceries, transportation, child care, recreation, health care, and other.

Economic Contribution

CU Denver and the Anschutz Medical Campus had the largest economic contribution on the Denver MSA, but businesses in the metropolitan area also supply goods and services to the other University of Colorado campuses. Additionally, some employees live in the Denver MSA but work on another campus, which creates an economic boost from their household spending. Through research, teaching, operations, construction, student spending, and visitation, the University of Colorado is an economic driver in the Denver MSA, contributing \$4.1 billion in local economic activity driven off direct expenditures in the Denver MSA in FY2016. Much of this funding is nonlocal, thus leveraging outside investment for the local economy.

**TABLE 37: UNIVERSITY OF COLORADO SYSTEM,
IMPACT ON DENVER MSA, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	10,973	\$1,411	\$1,718	\$2,038
Indirect Effect	4,184	\$192	\$355	\$561
Induced Effect	9,838	\$500	\$874	\$1,466
Total Effect	24,995	\$2,103	\$2,948	\$4,064

The economic contribution of CU Denver on the state of Colorado exceeded \$800 million in FY2016, and CU Anschutz's calculated impact was \$2.9 billion.

**TABLE 38: CU DENVER,
IMPACT ON COLORADO, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	2,449	\$238	\$293	\$365
Indirect Effect	1,340	\$47	\$107	\$175
Induced Effect	1,805	\$85	\$150	\$262
Total Effect	5,595	\$369	\$550	\$802

**TABLE 39: CU ANSCHUTZ,
IMPACT ON COLORADO, FY2016**

Impact	Employment	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	8,046	\$1,130	\$1,369	\$1,585
Indirect Effect	1,440	\$66	\$118	\$204
Induced Effect	7,681	\$361	\$638	\$1,116
Total Effect	17,167	\$1,557	\$2,125	\$2,905

Research

Research draws federal, state, and private funding. University research leads to immeasurable scientific discoveries and societal benefits that range from medicine and energy to space and weather. To understand just a slice of the benefits, one could look to licensed technologies in the CU Tech Transfer portfolio, or to the spinoff companies that dot the Colorado landscape. Research expenditures for CU Anschutz and CU Denver in FY2016 totaled \$480 million and \$43 million, respectively. The economic

contribution of these activities on the Colorado economy totaled \$801 million and \$76 million, respectively, from CU Anschutz and CU Denver.

Additional Economic Impacts from the Anschutz Medical Campus

CU Anschutz faculty maintains a clinical practice billing arm through a 501(c)(3) known as University Physicians, Inc. (UPI). The Anschutz Medical Campus is also the location of University of Colorado Hospital (UCH) and Children’s Hospital Colorado (CHCO) with CU Anschutz faculty providing patient care at these facilities. While operations are concentrated on the Anschutz Medical Campus, the economic contribution extends well beyond the Denver MSA and across Colorado. These hospitals on the CU Anschutz Campus collectively reported \$2.1 billion in direct spending in the state, over 14,000 employees, and \$675 million in salaries. The economic contribution of these entities is estimated to be \$4.0 billion to the Colorado economy in FY2016.

**TABLE 40: TOTAL UCH AND CHCO
IMPACT ON COLORADO (DIRECT, INDIRECT, AND INDUCED), FY2016**

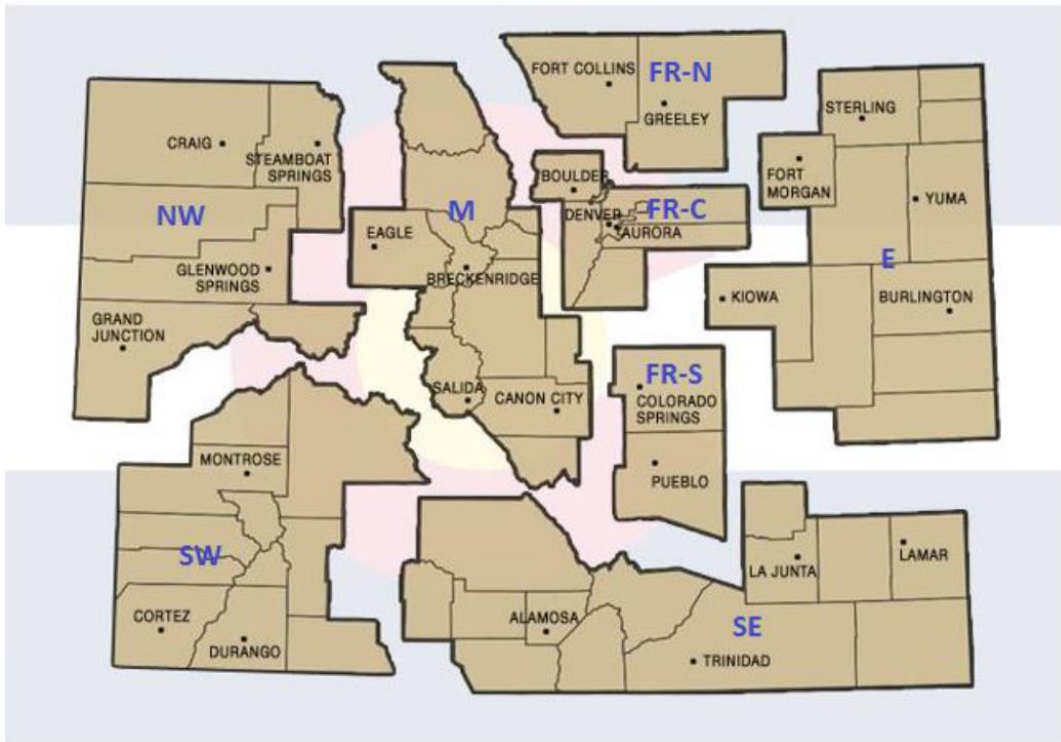
Impact	Employment (Direct and Supported)	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
Direct Effect	14,022	\$675	\$821	\$2,063
Indirect Effect	6,210	\$357	\$540	\$975
Induced Effect	6,784	\$319	\$564	\$986
Total Effect	27,016	\$1,351	\$1,925	\$4,023

**TABLE 41: UCH AND CHCO
IMPACT ON COLORADO (DIRECT, INDIRECT, AND INDUCED), FY2016**

Impact	Employment (Direct and Supported)	Labor Income (In Millions)	Value Added (In Millions)	Output (In Millions)
UCH	12,944	\$670	\$1,011	\$2,524
CHCO	14,072	\$681	\$913	\$1,500
Total Effect	27,016	\$1,351	\$1,925	\$4,023

While the specific economic impact related to the patients served by CU Anschutz clinical faculty is not included in this report, there is a benefit to the state’s economy. In FY 2016, the CU Anschutz clinical faculty provided more than 2.6 million treatments to more than 475,000 patients through the University of Colorado Hospital and Children’s Hospital Colorado. Of the 2.6 million treatments, about 2 million were seen at the CU Anschutz campus. Detail on the number of patients served by region and county of residence is on the following pages.

FIGURE 4: COLORADO BY REGION



Source: University of Colorado, Budget & Finance Office

**TABLE 42: PATIENTS SERVED BY CU ANSCHUTZ CLINICAL FACULTY
(BY REGION OF RESIDENCE)**

Region	FY 2015 Patients	FY 2016 Patients	FY 2017 Patients
Front Range Central (FR-C)	335,814	350,358	381,290
Front Range South (FR-S)	40,834	44,205	50,447
Front Range North (FR-N)	26,453	27,775	30,065
Mountain (M)	7,215	7,222	7,887
Eastern (E)	5,396	5,595	5,976
Northwest (NW)	5,185	5,276	5,650
Southeast (SE)	3,404	3,520	3,909
Southwest (SW)	2,874	3,046	3,355
Out-of-state or unknown	27,684	28,016	29,696
Grand Total	454,859	475,013	518,275

Source: University of Colorado Medicine, August 2017

**TABLE 43: PATIENTS SERVED BY CU ANSCHUTZ CLINICAL FACULTY
(BY COUNTY OF RESIDENCE)**

By County	FY 2015 Patients	FY 2016 Patients	FY 2017 Patients
ADAMS	64,181	64,639	67,801
ALAMOSA	444	466	471
ARAPAHOE	86,402	89,358	96,424
ARCHULETA	155	175	169
BACA	120	106	131
BENT	135	157	168
BOULDER	25,353	27,331	29,333
BROOMFIELD	2,260	2,342	2,574
CHAFFEE	552	575	652
CHEYENNE	83	83	91
CLEAR CREEK	268	277	330
CONEJOS	210	227	230
COSTILLA	111	102	127
CROWLEY	107	110	114
CUSTER	150	169	195
DELTA	424	454	483
DENVER	86,215	92,242	102,829
DOLORES	23	29	30
DOUGLAS	30,020	32,071	36,254
EAGLE	1,354	1,350	1,395
EL PASO	36,123	39,205	44,977
ELBERT	1,626	1,767	1,888
FREMONT	928	1,032	1,124
GARFIELD	1,274	1,317	1,416
GILPIN	284	272	315
GRAND	609	638	704
GUNNISON	506	562	627
HINSDALE	18	22	18
HUERFANO	166	192	193
JACKSON	40	35	34
JEFFERSON	41,383	42,375	46,075
KIOWA	61	52	70
KIT CARSON	404	353	391
LA PLATA	654	741	821
LAKE	247	250	264
LARIMER	8,604	9,107	10,007
LAS ANIMAS	428	430	507
LINCOLN	286	310	315

**TABLE 43 (CONTINUED): PATIENTS SERVED BY CU ANSCHUTZ CLINICAL FACULTY
(BY COUNTY OF RESIDENCE)**

By County	FY 2015 Patients	FY 2016 Patients	FY 2017 Patients
LOGAN	842	868	916
MESA	2,235	2,158	2,255
MINERAL	23	18	28
MOFFAT	293	310	371
MONTEZUMA	271	290	335
MONTROSE	651	589	678
MORGAN	1,205	1,254	1,328
OTERO	602	637	733
OURAY	66	56	63
PARK	680	703	750
PHILLIPS	242	217	244
PITKIN	460	462	527
PROWERS	498	512	586
PUEBLO	4,711	5,000	5,470
RIO BLANCO	114	104	104
RIO GRANDE	458	469	524
ROUTT	809	925	977
SAGUACHE	102	94	97
SAN JUAN	8	11	12
SAN MIGUEL	98	117	119
SEDGWICK	100	109	129
SUMMIT	836	923	993
TELLER	1,267	998	1,131
WASHINGTON	181	221	199
WELD	17,849	18,668	20,058
YUMA	366	361	405
Out-of-state or unknown	27,684	28,016	29,696
Grand Total	454,859	475,013	518,275

Source: University of Colorado Medicine, August 2017