



Economic Contributions

University of Colorado Denver



FY 2013 | JUNE 2014



Executive summary



The University of Colorado Denver (CU Denver) is critical to Colorado's economy, directly and indirectly supporting jobs, earnings and spending. For the fiscal year ending June 30, 2013, the economic contributions of CU Denver include:

- ▶ **A total state economic impact of \$720 million** through direct campus expenditures including payroll, operations, and student spending plus indirect earnings and spending. For every \$1 in direct expense by CU Denver, there is up to an additional \$2.88 in purchased goods and services in Colorado.
- ▶ Campus employment of 2,445 jobs creates 4,975 additional jobs for a **total employment impact of 7,420 jobs in Colorado**. On average, each faculty and staff position at CU Denver supports another 2.03 additional jobs in the state.
- ▶ **A total payroll impact of \$355 million in Colorado** based on \$141 million in direct wages, salaries and benefits. For every \$1 in compensation to CU Denver employees, there is up to \$1.52 in additional income generated in the state.
- ▶ Annual campus **operating revenue of \$200 million**. Revenue from tuition and fees represented 59 percent of the total, and governmental grants and contracts accounted for 19 percent. Meanwhile, state-appropriated resources contributed 10.7 percent of total revenue.
- ▶ The state received **more than \$16 million in individual income tax and sales tax revenue** from CU Denver direct and indirect payroll and spending.

Introduction

The University of Colorado Denver | Anschutz Medical Campus is a Colorado educational and research institution, offering comprehensive undergraduate, graduate and professional programs for students on two campuses—CU Denver in downtown Denver and CU Anschutz, the medical campus in Aurora. The university offers over 135 degree programs in 13 schools and colleges and is home to nearly 100 centers and institutes extending the reach of instruction, public service, and research into the community.

This report estimates the economic contributions to the statewide economy by CU Denver. These contributions include jobs and income for Colorado residents, investments in human and physical capital, support for private sector businesses through purchases of goods and services, and tax revenue accruing to state and local governments. Based on the fiscal year ending June 30, 2013 (FY 2012-13), the report examines annual contributions associated with current operations such as payroll, campus expenditures and student spending over and above tuition. This report also analyzes the impact of one-time and multi-year investments in current and planned facility construction.



The university offers over 135 degree programs in 13 schools and colleges and is home to nearly 100 centers and institutes.



Campus profile

- ▶ CU Denver is home to **seven schools and colleges** and confers more master's degrees than any other Colorado public institution of higher education.



The University of Colorado Denver is the best choice for students who want to learn with purpose. CU Denver combines quality academics, driven students, civic consciousness, ambitious research and creative work—no other university unites all this and more in the vibrant setting of a city like Denver. CU Denver includes facilities on the Auraria Campus and a series of university buildings along Lawrence Street, which extend the university into the heart of the city. A five-minute walk from the heart of the civic, financial and cultural districts of downtown Denver, this close proximity facilitates partnerships between the university and the city, enabling students to use the city as a learning laboratory.

In 1973, Colorado made CU Denver an independent university. Now, over 40 years later, CU Denver is home to seven schools and colleges and confers more master's degrees than any other Colorado public institution of higher education. Besides the Graduate School supporting both campuses, CU Denver includes a wide range of academic programs for undergraduate and graduate students:

- ▶ The state's only **College of Architecture and Planning** that offers a full range of degrees in the design and planning of the built environment, from undergraduate through accredited professional masters degrees to the doctorate;
- ▶ The first **College of Arts and Media** in Colorado featuring a state-of-the-art digital animation studio program and a unique media forensics program;
- ▶ An internationally recognized, fully accredited **Business School** that partners with over 300 businesses to bring scholarship, internship and job opportunities to our graduates;
- ▶ A **School of Education and Human Development** offering undergraduate and graduate degrees, licensure tracks, several options for continuing education programs, and a set of extensive partnerships with school districts;
- ▶ A **College of Engineering and Applied Science** with relevant undergraduate and graduate programs in bioengineering, computer science, and civil, electrical and mechanical engineering, which prepare students for success in some of the fastest growing professional fields;
- ▶ A **College of Liberal Arts and Sciences** offering a wide spectrum of degrees in language arts, humanities, and the social and natural sciences, with science career programs focused on pre-medicine, health care and public health; and
- ▶ The state's only **School of Public Affairs** that offers a unique graduate domestic violence prevention program, produces successful graduates such as Denver Mayor Michael Hancock, and is ranked among the top 30 schools in the nation in public administration.

Serving a diverse student population

As of the 2012-13 academic year, CU Denver offered 96 degree programs and served more than 14,000 students on campus. CU Denver attracts mostly Colorado residents, primarily from the Denver metropolitan area. However, students come to the campus from a variety of states (16 percent of fall 2013 enrollment was from out of state) and foreign countries (8 percent of enrollment was international).¹ Including all off-campus programs and online courses, the campus served over 24,000 students in 2012-2013.² The table below illustrates the past five fall terms of CU Denver undergraduate and graduate enrollment on campus.

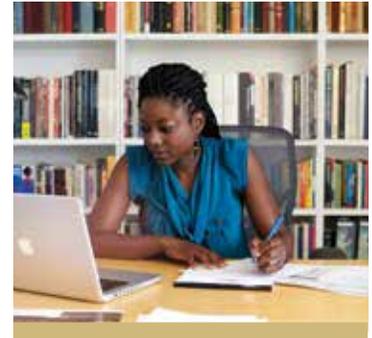
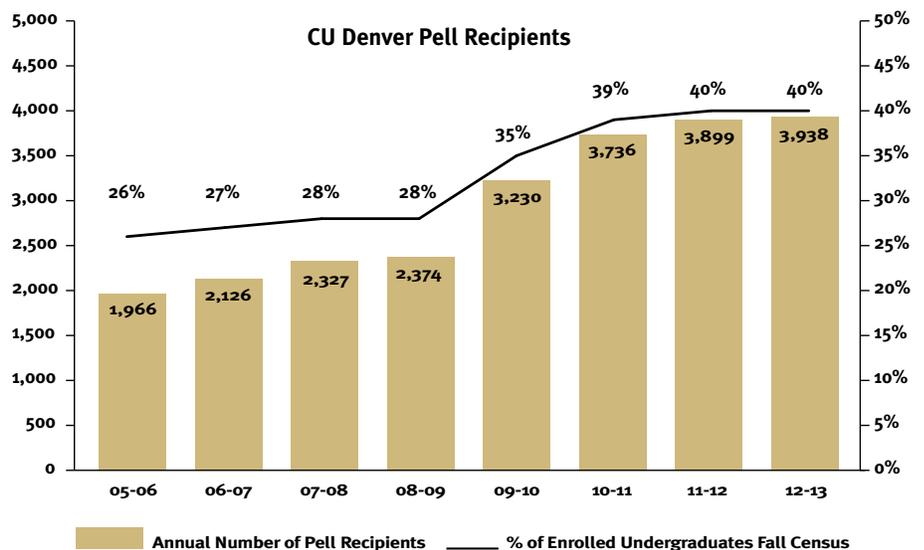


Table 1. University of Colorado Denver Fall Census Enrollment Snapshot

	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
Undergraduate	9,188	9,681	9,727	9,766	9,736
Graduate	4,841	4,938	4,718	4,505	4,287
Total	14,029	14,619	14,445	14,271	14,023
Fall 2013 Enrollment Details	Students of color				4,140 (30%)
	International students				1,139 (8%)
	Average age, undergraduates				24
	Average age, graduates				32
	Part-time students				3,960 (28%)

CU Denver has consistently maintained a heterogeneous student body with respect to ethnicity, age and full-time status. As of fall 2013, students of color made up 30 percent of total enrollment (36 percent of undergraduate students and 15 percent of graduate students). The average age was 24 for undergraduates and 32 for graduate students. Twenty-eight percent of students were enrolled part-time.³ CU Denver also supports a large number of low-income students, as evidenced by the number of undergraduate Pell grant recipients (40 percent in 2012-13).⁴



Supporting the state workforce



► CU Denver provides **more master’s level degrees** than any other public institution in Colorado.

In FY 2012-13, CU Denver conferred a total of 3,730 degrees, including 1,951 bachelor’s degrees, 1,725 master’s and post-master’s specialist degrees, and 54 doctoral degrees. CU Denver conferred more master’s level degrees than any other public institution of higher education in the state and was responsible for nearly 30 percent of all master’s level degrees conferred among state public research institutions. The table below shows the recent history of degrees conferred.

Table 2. History of CU Denver Degrees Awarded⁵

Year	Bachelor’s	Master’s/ Specialists	Doctoral	Total
FY 2007-08	1,480	1,490	30	3,000
FY 2008-09	1,497	1,553	38	3,088
FY 2009-10	1,643	1,606	25	3,274
FY 2010-11	1,819	1,789	29	3,637
FY 2011-12	1,742	1,784	49	3,575
FY 2012-13	1,951	1,725	54	3,730
FY 2012-13 as a Percent of All State Research Institutions⁶	11.8%	28.7%	3.0%	15.4%

The Colorado Department of Labor and Employment projects a 24 percent increase in the state demand in the next ten years for selected occupations. The demand for these occupations is amplified by the need to replace an aging workforce, as half of all job openings are anticipated due to retirement. The combined impact of openings due to occupational growth and replacement creates a need for over 9,000 jobs each year for the next ten years. The table below illustrates the estimated growth and need from 2012 to 2022 of selected occupations aligned with CU Denver academic programs.

CU Denver helps meet the statewide need for employment in these occupations as many alumni remain in Colorado. Of the 78,320 active alumni, 73 percent reside in Colorado.⁷



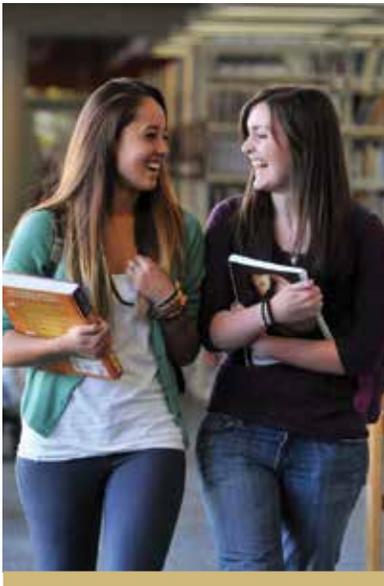
Table 3. Occupational Employment Projections⁸

Selected Occupations	2012 Estimated Employment	2022 Projected Employment	Percent Change	Annual Average Openings due to Growth	Annual Openings due to Growth and Replacement
Architects/Urban Planners	4,894	6,225	27.2%	134	238
Art and Design/Performance Arts	5,299	5,960	12.5%	66	206
Engineers	36,979	46,979	27.0%	1,000	1,880
Financial/Accounting Specialists	60,488	77,803	28.6%	1,732	3,025
Physical/Biological Scientists	8,783	9,542	8.6%	79	301
Social Scientists	5,427	6,722	23.9%	129	311
K-12 School Teachers, including special education	68,513	83,286	21.6%	1,477	3,161
Subtotal, Selected Occupations	190,383	236,517	24.2%	4,617	9,122

With 73 percent of alumni choosing to remain in Colorado, CU Denver plays an important role in educating the state's workforce.

Revenue

- ▶ With annual revenues of nearly **\$200 million**, CU Denver is clearly a major economic enterprise in the state.



Revenue provides an overview of campus operations and also illustrates the diverse set of resources required to successfully operate an academic research institution. With annual revenues of nearly \$200 million, CU Denver is clearly a major economic enterprise in the state.

In FY 2012-13, state-appropriated resources provided operating funds of \$21.2 million, or 10.7 percent, of total campus revenue. State sources of financial aid awards (\$4.5 million in FY 2012-13) were recognized in net student tuition.

Table 4. University of Colorado Denver FY 2012-13 Revenue⁹

	Amount	Percent
Non-State Appropriated Resources	\$177,881,625	89.3%
Student Tuition and Fees, including Scholarships	\$116,541,765	58.5%
Governmental Grants and Contracts	\$37,080,283	18.6%
Gifts, Bequests, etc.	\$7,283,701	3.7%
Sales of Educational Services	\$3,299,984	1.7%
Nongovernmental Grants & Contracts	\$3,340,753	1.7%
Auxiliary Enterprises	\$604,974	0.3%
Other Revenue	\$9,730,165	4.9%
State Appropriated Resources	\$21,204,667	10.7%
State Fee-for-Service Contracts	\$9,364,580	4.7%
State College Opportunity Fund Stipend	\$11,840,087	5.9%
CU Denver Revenue	\$199,086,291	100.0%

Colorado recently ranked 48th among all states in higher education funding per capita.¹⁰ CU Denver's diverse revenue picture illustrates how the campus has had to rely upon other sources for support. For every \$1 appropriated by the state in FY 2012-13, another \$8.39 in revenue comes to CU Denver from other sources. But it is not accurate to suggest the campus does not rely on state funds. In fact, the opposite is true—state funding represents the financial foundation of CU Denver. State funding is critical for campus operations, such as building maintenance, utilities and academic support. The state also supports student financial aid to keep tuition affordable for Colorado residents.

Despite relatively low state funding, CU Denver still makes a large impact on the city and state economy.

Jobs, payroll and expenses

By paying workers and buying goods and services, CU Denver has a significant impact on the direct and indirect economy of the state. CU Denver annually contributes up to \$721 million in total economic activity throughout Colorado.

CU Denver expenses totaled \$186 million in FY 2012-13 including payroll and operations. In addition to payroll and benefits, the campus reported operating expenditures of nearly \$45 million, or 24 percent of all expenses, for goods and outside services. Each \$1 in direct campus expense generates between \$2.01 and \$2.88 in additional economic activity to Colorado. The direct and indirect spending supports between \$559 million and \$721 million in the state.

Table 5. CU Denver Economic Impacts and Multipliers

Direct Impact		Economic Impact Range		Multiplier Range	
		Low	High	Low	High
Jobs	2,445	6,204	7,420	2.54	3.03
Payroll	\$141,199,800	\$293,943,600	\$355,237,000	2.08	2.52
Expenses	\$185,795,500	\$559,015,200	\$720,638,300	3.01	3.88

► **Each \$1** in direct campus expense generates up to \$2.88 in additional economic activity to Colorado.





Jobs

CU Denver not only plays an important role in educating the state workforce, but it also provides the state with thousands of direct and indirect jobs. CU Denver employed 2,445 individuals including faculty, staff and student workers as of June 2013. Based on economic multipliers and salaries earned, this employment supports up to 4,975 indirect jobs throughout the state. Every job at the campus indirectly creates up to two additional jobs in the state.

The tables on the next page illustrate how CU Denver employment compares to other public and private employers. Campus employment was among the top 15 public sector employers in the state and was comparable with some of the top 20 private employers in the metropolitan Denver area.

Table 6a. Denver Area Public Sector Employers ranked by Number Employees¹¹

Rank	Public Sector Employer	Colorado Employees
10	Boulder Valley School District RE-2	4,133
11	Jefferson County	2,820
12	City of Aurora	2,584
	CU Denver	2,445
13	Regional Transportation District (RTD)	2,400
14	Arapahoe County	1,963
15	Boulder County	1,900

Table 6b. Denver Area Private-Sector Employers Ranked by Number of Employees¹²

Rank	Private Sector Company	Product/Service	Colorado Employees
15	Ball Corp	Packaging	3,300
16	Frontier Airlines	Airlines	3,200
17	U.S. Bank	Financial services	2,613
18	Level 3 Communications	Telecommunications	2,609
	CU Denver		2,445
19	Lowe's	Home improvement	2,410
20	Great West Life & Annuity	Insurance	2,220

Every job at the campus indirectly creates up to two additional jobs in the state.

Payroll

CU Denver direct payroll was \$141 million in FY 2012-13. This payroll plus student consumer spending generates up to another \$214 million in additional wages, salaries and compensation in Colorado. The direct and indirect payroll supports up to \$355 million in labor income within the state—an average of \$47,875 per job. This is more than 10 percent higher than the median annual earnings for full-time workers in the nation. Because CU Denver is responsible for producing more master’s degrees than any public institution of higher education in the state and because advanced degree earners have higher average salaries, CU Denver graduates contribute more to the Colorado economy relative to other institutions of higher education. In 2013, the average annual earnings of a worker with a master’s degree exceeded \$69,000, 61 percent higher than the average worker nationally. As earnings increase with educational attainment, unemployment rate decreases. The table below illustrates the national average annual salaries and unemployment rates by education attainment.

Table 7. Annual Average Salaries and Unemployment Rate by Educational Attainment²³

Education Level Attained	Median Annual Earnings	Education Level Attained	Unemployment Rate
Doctoral degree	\$84,396	Doctoral degree	2.2%
Professional degree	\$89,128	Professional degree	2.3%
Master’s degree	\$69,108	Master’s degree	3.4%
Bachelor’s degree	\$57,616	Bachelor’s degree	4.0%
U.S. Average, full-time workers	\$43,004	Associate’s degree	5.4%
Associate’s degree	\$40,404	U.S. Average, 25 years and over	6.1%
Some college, no degree	\$37,804	Some college, no degree	7.0%
High school diploma	\$33,852	High school diploma	7.5%
Less than a high school diploma	\$24,544	Less than a high school diploma	11.0%

► Because advanced degree earners have higher average salaries, CU Denver graduates **contribute more** to the Colorado economy relative to other institutions of higher education.





Student Spending

Student spending is not reflected in CU Denver expenses. However, there is significant spending attributable to those enrolled in the academic programs at the campus which generates secondary impacts in the economy. In addition to tuition, CU Denver students spent an estimated \$174 million in FY 2012-13 for rent, food, entertainment, books, transportation, utilities and other goods and services. This consumer spending was treated as a direct input for purposes of an economic impact estimate and was included in the total economic contribution of the campus.

Planned Construction Impact

In addition to ongoing, annual contributions to the economy, additional stimulus is provided by periodic construction of new facilities. CU Denver is about to complete construction on Academic Building 1 located at Lawrence Street and Speer Boulevard. Construction began March 2013 and is anticipated to be completed by July 2014. This project will add 156,405 gross square feet to the campus at a total cost of \$65.8 million. Based on the direct impact and estimated secondary impacts, this construction project is expected to provide up to 832 additional jobs, \$48.6 million in payroll to Colorado residents, and over \$120 million in additional economic activity to Colorado over the construction time frame.

Students spent an estimated \$174 million in FY 2012-13 that contributed to the CU Denver impact on the Colorado economy.



State tax revenue

Payroll and spending generate significant tax revenue to the state. Included in the total economic activity is \$16.4 million in state taxes. The state received up to \$9.4 million in individual income tax and up to \$7.0 million in sales tax for FY 2012-13¹⁴. Compared with the state appropriated resources of \$21.2 million in FY 2012-13, the state received 77 percent of its appropriation back through estimated income and sales tax revenue. Below is a table of estimated individual income tax revenue and sales tax revenue to Colorado.

Table 8. Estimated State Income and Sales Tax Revenue

Individual Income Tax	Direct	Low Impact	High Impact
Direct by Employees	\$3,740,100		
Indirect through Multiplier		\$4,039,300	\$5,684,900
<i>Subtotal State Income Tax</i>		<i>\$7,779,400</i>	<i>\$9,425,000</i>
Sales Tax			
Direct by Employees and Students	\$3,766,200		
Indirect through Multiplier		\$2,376,200	\$3,176,100
<i>Subtotal State Sales Tax</i>		<i>\$6,142,400</i>	<i>\$6,942,300</i>
Total State Tax Revenue		\$13,921,800	\$16,367,300



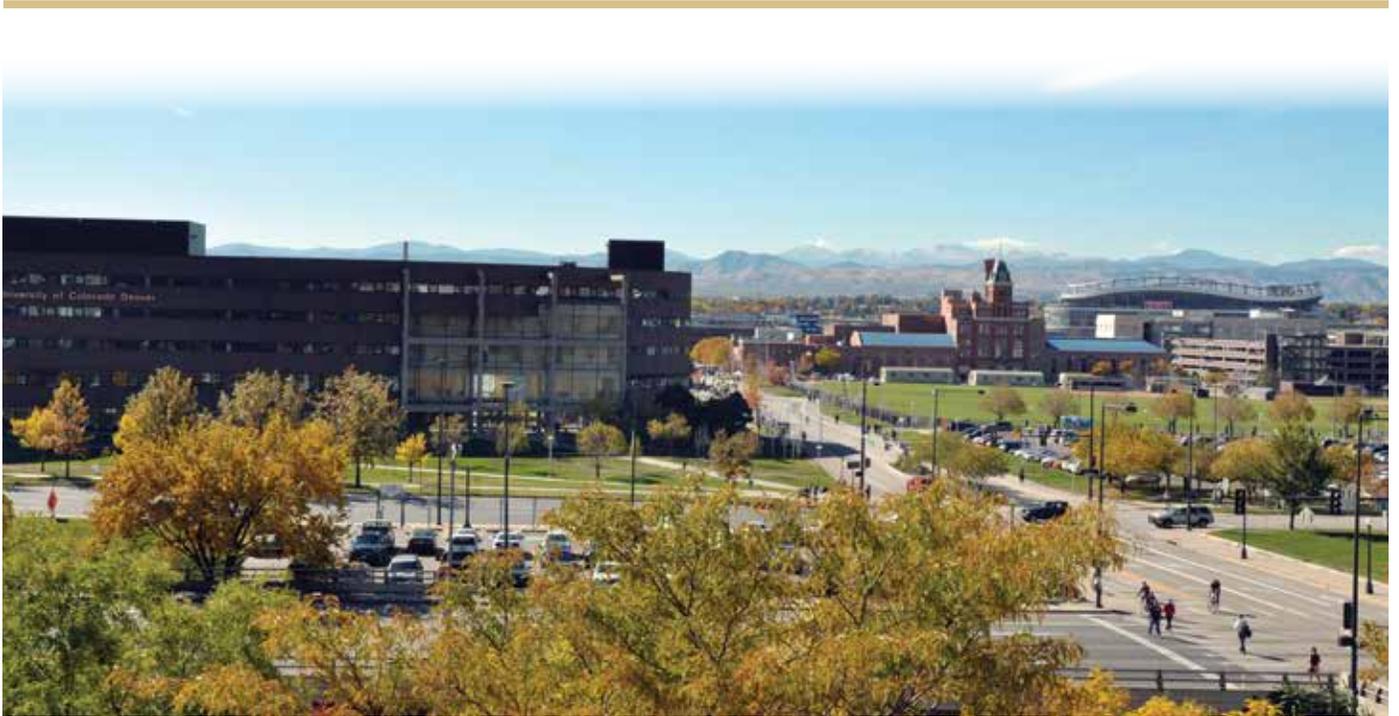
The campus in the community

- ▶ Dedicated faculty and involved students contribute to great programs at CU Denver.



CU Denver schools and colleges offer a broad array of initiatives that amplify and expand the economic contributions outlined above. These programs enrich the health and overall quality of life for Colorado residents and beyond. While some of the economic impact of these activities is incorporated in the payroll and operating expenditures, it is important to recognize the campus contribution of experiential learning opportunities to community service and issue advocacy.

- ▶ The **Urban Citizen Program** in the College of Liberal Arts and Sciences connects students with Denver service-learning projects that are focused on challenging social issues such as poverty, housing, education, crime, and immigration. Students work several hours a week with influential non-profit organizations with the goal of addressing acute problems while also seeking sustainable change. On average, the program's students give 600-800 hours of community service a semester to Denver and the surrounding community. Some of the program's partners have included the African Community Center, Art Reach, Student/Farmworker Alliance, and the Women's Global Empowerment Fund.
- ▶ More than 150 graduate students from the School of Public Affairs complete **Capstone Projects** each year. Collectively they contribute more than 15,000 hours to public and nonprofit clients as they enhance and demonstrate their knowledge and skills. Recent projects have included an examination of citizen satisfaction with the Jefferson County Sheriff's office, an evaluation of the School Finance Partnership for the Colorado Children's Campaign, a study of sustainable development in Denver's District 8, and a review of environmental mitigation compliance for the U.S. Bureau of Reclamation.
- ▶ The School of Education and Human Development's **Professional Development Schools** program is recognized for having one of the most innovative, collaborative teacher preparation models in the nation. Top faculty work side by side with experienced K-12 partner educators to prepare prospective teachers to have a profound impact on the lives of students in Colorado's urban and diverse schools. Students "live the life of a teacher" from day one and enter their first year of teaching with the knowledge, skills, and confidence of second or third year teachers.



- ▶ The **Bridge Repair Partnership** between the College of Engineering and Applied Sciences and the City of Denver offers students the opportunity to participate in bridge repair projects while Denver benefits from sound engineering. Since 1997, the partnership has inspected every one of Denver's 600 bridges either annually or biannually, looking for any kind of change that could affect the safety of the public.
- ▶ The **Learning Landscapes Program** in the College of Architecture and Planning has collaborated with Denver Public Schools to design active play areas with the goal of increasing physical activity at schools across the district. Since 1998 the program has transformed 96 neglected public elementary school yards into attractive and safe multi-use parks tailored to the needs of their communities.
- ▶ The University of Colorado Denver **Food Pantry**, operated under the Office of Student Life, has a partnership with the Food Bank of the Rockies which allows CU Denver students, staff, and faculty to volunteer at the Food Bank in exchange for food items to fill the Food Pantry. For every three hours CU Denver commits to volunteering, the food pantry receives twenty pounds of food to distribute to students in need. This volunteer opportunity has been a highlight of the "CU in the Community" volunteering campaign.

Learn more about CU Denver programs at www.ucdenver.edu.

Pipeline Programs

- ▶ **CU Denver:** reaching out to middle school and high school students, veterans and pre-health students.



CU Denver provides several unique academic outreach programs to prepare future college-bound students for higher education. The goals of these programs are to provide educational access, early outreach, academic guidance, retention and, ultimately, graduation from an institution of higher education. Below are a few examples of CU Denver signature outreach programs.

- ▶ **The Office of Undergraduate Admissions & K-12 Outreach** works with schools, districts and community organizations to develop sustainable relationships between K-12 students and CU Denver. Outreach programs impacted approximately 10,000 students, parents, teachers and school counselors in FY 2012-13. Programs include middle school group visits to campus, district-sponsored 8th grade career fairs, teacher trainings and professional development sessions, faculty and graduate student visits to K-12 schools, and CU Denver-branded lesson plans that are made available to teachers and parents through the Newspapers in Education program.

- ▶ **Pre-collegiate programs for middle school and high school students,** with a particular high school program focused on health careers, prepare students to obtain their college degrees. These enrichment programs are designed to adequately prepare first-generation college-bound students in grades 7 through 12 to enroll in a college preparatory curriculum and successfully complete their secondary school career in a timely fashion with the necessary skills to successfully enter and graduate from the college or university of their choice. During the academic year, students are provided with relevant Saturday Academies in areas such as: the College Access

Process, Basic Study Skills Mastery, Career Exploration and Student Communication Workshops. During the summer, students are provided with either a two-week (sophomores) or five-week (juniors) intensive Summer Academic Program.

- ▶ **The Scholars Program** is an early college enrollment program for high achieving first-generation college-bound students. The program allows students to begin their college studies by taking one course at CU Denver during the fall and spring semesters of their senior year. The credits earned in the courses can be applied toward a bachelor's degree at the CU Denver or at another higher education institution of the student's choice. Prior to and during their enrollment, scholars engage in orientation, admissions and financial aid seminars and other workshops. These workshops are designed to prepare students for full-time college study; some request the presence of a parent or guardian. Assistance with course selection, educational planning and tutoring is provided to students.

- ▶ **The Upward Bound Program** is a federally-funded program providing high school students with opportunities to attend college and prepares students to succeed in post-secondary education. Participants are selected based on their academic performance, motivation for success, recommendations from teachers,



counselors and additional criteria. Students participate in after-school and weekend programs which include supplemental education, academic themed workshops, field trips and college campus tours. Students also participate in a 5-week summer academic program depending on grade level designed to prepare them for their high school classes and the college application process. In addition, all students participate in a shadowing program with current college students and working professionals in the Denver metro area.

- ▶ The **CU Succeed** program promotes collaborative partnerships between high schools and CU Denver, emphasizing mutual learning and professional development. The CU Succeed Silver and Gold programs offer juniors and seniors throughout high schools in Colorado the opportunity to enhance their academic skills while experiencing the rigor of college course work at their high school campuses. CU Denver departments approve qualified instructors to teach university credit courses from a variety of disciplines. Each year, the program serves more than 4,000 students in over ninety

high schools and forty-three school districts throughout Colorado.

- ▶ The **BA/BS-MD Program** is an eight-year combined degree program that offers Colorado students who are underrepresented in medicine admission to the CU School of Medicine after they complete a bachelor's degree at CU Denver and achieve specific program benchmarks. The program provides academic, financial and social support services to its students and delivers a wide variety of co-curricular activities. The program is partially funded by the Colorado Health Foundation.

Serving Veterans

- ▶ The **Boots to Suits Program**, one of several initiatives in the Office of Veteran Student Services, is a career transition assistance program for student veterans in their final two years of college. Students are matched with mentors in the community and in various sectors depending on their career interests. The mentorships introduce students to their desired career, help them position themselves to secure a position with a company in that area, and jump-start the student's

professional network. Recent figures indicate 94 percent of those who completed the program and graduated from CU Denver found employment with 90 days of graduation. Of these graduates, 90 percent remained in the Denver metropolitan area.

- ▶ The **National Veterans' Training Institute** was established at CU Denver in 1986 to develop and enhance the professional skills of veterans' employment and training service providers throughout the United States. The program is funded by the U.S. Department of Labor Veterans' Employment and Training Service with training conducted at CU Denver and at selected regional sites in the U.S. and abroad. To date over 60,000 veterans' employment and training professionals have attended classroom and online training courses.

Centers and institutes

- ▶ Centers focus on special needs and achievements that **benefit the community** through focused thinking, research and unique partnerships.



CU Denver has more than 40 centers and institutes providing research, public service, professional development, outreach and advocacy. While the expenses associated with these units were incorporated into the economic impact, the following initiatives represent large-scale programs making additional significant contributions to the Colorado, national and global communities.

- ▶ The **Jake Jobs Center for Entrepreneurship** in the Business School is a new idea laboratory that educates and empowers graduates to act entrepreneurially. The center fosters an open and diverse environment that emphasizes multidisciplinary experiential learning. The Jake Jobs Center's curriculum incorporates instruction, mentoring and support from faculty, as well as from outside professionals with expertise in new business development. Center courses explore legal issues, social sector initiatives, new venture design, finance structuring, strategic web development, leadership, new product development and business plan creation. The center has hosted an annual Business Plan Competition since 2002, promoting new business development. It has helped launch over 20 new businesses, over half of which are still in business generating employment and sales dollars that contribute to the Colorado economy. The Jake Jobs Center also offers consulting services and venture capital opportunities through student-created organizations.
- ▶ The **Buechner Institute for Governance** in the School of Public Affairs provides evaluation and leadership training to Colorado state and local government agencies and nonprofit organizations to enhance public decision making and governance. Within the institute, several centers bring faculty and professional staff resources to focus on local government, education policy, criminology and criminal justice, and collaborative governance. The institute also features outreach events to inform leaders and citizens about Colorado policy issues, including the monthly Buechner Breakfast First Friday series. Health News Colorado provides journalism coverage of health policy and a platform for a wide range of opinion writers. National funders, such as the Walton Family Foundation, the Ford Foundation, the Bill and Melinda Gates Foundation and, the Robert Wood Johnson Foundation and numerous local foundations generously support the institute.



► The **Evaluation Center** in the School of Education and Human Development strives to make program evaluation a widely accepted and valued practice. The center's mission is to use rigorous, innovative evaluation processes to promote evidence-informed programs, practices and policies in schools, institutions of higher education, health care and in our communities. The center provides evaluation services to schools and school districts, the nonprofit sector, higher education and medical education.

► The **Center for Sustainable Infrastructure Systems** in the College of Engineering and Applied Science brings together engineers with professionals from public policy, public affairs, public health and business development for the rapid diffusion, review and redesign of resilient and sustainable infrastructure systems in society. In addition to conducting research, the center provides educational programs; conducts outreach for development of sustainable infrastructure projects and activities; and develops and disseminates a body of knowledge related to sustainable infrastructure systems to communities throughout the state.

► Since 1967, the **Colorado Center for Community Development** in the College of Architecture and Planning has completed over 2,000 projects across Colorado, working in partnership with cities, towns and neighborhoods to provide design and planning services. Often, communities need this preliminary work to apply for funds or gain local support for a project. Students in architecture, landscape architecture, planning and other disciplines gain the valuable experience of working on real-world projects with community clients, while the community saves money in design and community engagement.

► The **National Center for Media Forensics** in the College of Arts and Media investigates the application of scientific methods to aid the criminal and civil justice systems in the areas of audio, video and computer evidence data gathering and authentication. The center is dedicated to fostering innovation in media forensics research and education through the creation of new knowledge, applications, methodologies and services. The center is focused on designing and adapting cutting-edge techniques and technologies that can strengthen forensic science in the United States and abroad, and the center annually hosts several forensic media workshops for local, state and federal law enforcement. The center is also active in the federal scientific working groups by promoting new solutions and best practice guidelines for forensic media analysis.

Methodology



The CU Denver economic impact analysis is based on the fiscal year 2012-13 expenditures of the university, as well as expenditures of students. Expenditures were taken from the university's financial records, while estimated student spending was based on annual housing, transportation and living expenses provided by the university's Office of Financial Aid. These data were analyzed, adjusted to net out social security taxes, retirement contributions and other payroll deductions that do not result in current expenditures, and consolidated into categories compatible with the economic impact model's requirements.

Economic Impact Analysis

This analysis was conducted using IMPLAN, an economic impact model that predicts how changes in one industry affect all other industries within the same region. The model estimates how the impact of one dollar or one job affects the local economy by creating additional expenditures or jobs (the multiplier effect). The campus "purchases" goods and services from other organizations in order to operate.

Direct impact refers to the initial value of these goods and services. Indirect impact measures the value of labor, capital and other inputs of production needed to produce the goods and services required, while induced impact measures the change in spending by local households due to increased earning by employees who produce these goods and services. In this presentation the indirect and induced impacts are combined as "secondary" impacts.

Economic activity is the total value of goods and services produced, both directly and indirectly, by campus operations and spending. It includes the value added, as well as the profits, payrolls, taxes, costs of materials and other inputs associated with meeting increased consumer demands and changes in demands by vendors and suppliers.

The economic impact multipliers indicate there is a range of secondary impacts on the economy. The range of the total impacts and multipliers reflects different assumptions about the extent to which purchases of goods and services are made in-state. The low range assumes fewer goods and services produced in-state while the high range assumes more goods and services are produced in Colorado.

Expenditures versus Revenues

Revenues provide one measure of the economic stimulus associated with campus operations. Revenues, however, relate only to the direct economic stimulus, failing to capture the secondary impacts, including indirect impacts (e.g., goods and services consumed by the campus) and induced effects (e.g., additional income generated and spent by those providing goods and services to the campus) associated with the economic linkages between various sectors of Colorado’s economy. Each link increases the overall economic contribution, even as portions of subsequent iterations of expenditures are lost to the local economy. To capture these secondary effects, it is necessary to focus instead on the amount and type of expenditures.

Inputs to the Model

CU Denver payroll and benefits totaled \$141.2 million in FY 2012-13. Of that amount, \$108.5 million was the basis for estimating the secondary economic effects. The remainder was treated as “leakage” from the state in the form of federal taxes and other non-current expenditures or represented the non-cash component of the reported benefits. CU Denver reported total operating expenditures of \$44.6 million for goods and outside services in FY 2012-13. A portion of this total (\$388,000) was in the form of research collaborations with entities located outside Colorado, and was excluded from the impact analysis.

The remaining expenses were assigned to one or more of IMPLAN’s 440 industrial sectors (e.g., legal services, office supplies, computer equipment or utilities). Each sector has different labor, capital, transportation, material and subsequent multipliers. In the case of student expenditures, an adjustment was made to the total expenditures to avoid double counting the expenditures of students who were employees or received cash aid. Below is a table illustrating the total expenses and inputs to the model.

Table 9. Summary of Direct Expenditures and Input to Model

	Direct Expenditures	Input to IMPLAN	Remainder
Wages, Salaries, and Benefits	\$141,199,800	\$108,540,300	\$32,659,500
Other Operating Expenses	\$44,595,700	\$44,207,700	\$388,000
Student Spending	--	\$173,757,000	
Total	\$185,795,500	\$326,505,000	\$33,047,500





Construction

Construction cost detail was provided by the university facility projects office and aggregated into several categories corresponding to IMPLAN sectors—such as professional fees, hard construction, furniture and equipment, utilities and other public fees. These direct expenditures were inputs to the IMPLAN model. The model estimates secondary impacts, including indirect and induced impacts, using the sector multiplier associated with the nature of the expense. The IMPLAN model considers all construction activity to be local and therefore no range is provided in this analysis. Construction projects occur during a number of years; therefore, the impacts of these projects are distributed throughout the years in which they occur. Given the nature of construction work with many trades working for a short period of time, the actual number of individuals employed will be greater than the number of jobs estimated.

Tax Revenue

The calculation of state tax collections was built upon the inputs and results of the IMPLAN economic analysis, but with specific assumptions based on university records and data from the Colorado Department of Revenue. For individual income taxes, the amount withheld from wages and submitted to the state was used as a reasonable measure of the taxes eventually paid, and the labor income multiplier was used to generate an indirect income tax impact. In the case of sales taxes, two separate calculations were made. For students it was possible to estimate the portion of the expenditures likely to be taxable and the state sales tax rate was applied to this tax base. For employees and other labor income, the relationship of statewide income and sales tax collections from the Department of Revenue was used to establish the effective share of income that went to taxable sales. Other tax revenues were recognized in the total economic impact, such as business income tax, vehicle registration, and licensing fees. However, these sources are small relative to income and sales tax revenue and were not highlighted in this report.

Endnotes

¹ University of Colorado Denver Campus, fall 2013 Census Student Enrollment Report, September 2013.

² University of Colorado Denver | Anschutz Medical Campus, Office of Institutional Research and Effectiveness. Query of unduplicated enrolled students, March 2014.

³ University of Colorado Denver Campus, fall 2013 Census Student Enrollment Report, September 2013.

⁴ University of Colorado Denver | Anschutz Medical Campus, Office of Financial Aid, Student Unit Record Data System (SURDS) Financial Aid submission for academic year 2012-13.

⁵ University of Colorado Denver | Anschutz Medical Campus Office of Institutional Research and Effectiveness, Degrees Awarded Report, Fiscal Year 2008-2013.

⁶ Colorado Department of Higher Education, Degrees Awarded, FY 2013. <http://highered.colorado.gov/Data/Search.aspx>, retrieved April 2014. Includes state institutions classified as research institutions: University of Colorado Denver | Anschutz, University of Colorado Boulder, Colorado School of Mines, Colorado State University Fort Collins, and University of Northern Colorado.

⁷ University Office of Alumni Relations and University of Colorado Foundation, March 2014.

⁸ Colorado Department of Labor and Employment, Labor Market Information, 2012 – 2022 Occupational Employment Projections, retrieved April 2014.

⁹ University of Colorado Denver | Anschutz Medical Campus Finance Office, Economic Contribution Statement, November 2013; Excludes revenue from administrative indirect cost recoveries, inter-departmental or inter-campus sales, internal service centers, and gain (loss) on disposal of fixed assets.

¹⁰ State Higher Education Executive Officers Association, State Higher Education Finance FY 2013, April 2014. <http://www.sheeo.org/shef13>, retrieved May 2014.

¹¹ Denver Business Journal 2013-14 Book of Lists, Denver Area Public Sector Employers, December 2013.

¹² Denver Business Journal 2013-14 Book of Lists, Denver Area Private Sector Employers, December 2013.

¹³ U.S. Department of Labor Bureau of Labor Statistics, 2013 Current Population Survey, March 2014. Unemployment rate for people age 25 and over; wage and salary earnings for full-time workers.

¹⁴ Based on employee withholding figures, student spending patterns and multiplier effects. See methodology section for details (page 22).

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Economic Contributions