



economic contributions

of the Denver Campus



University of Colorado
Denver

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Executive summary



The University of Colorado Denver is an important engine to Colorado's economy and comprised of two campuses, the Denver Campus and the Anschutz Medical Campus. Contributions to the state economy include education, training, research, and community service activities. For the fiscal year ending June 30, 2010, the economic contributions of the Denver Campus include:

- > **Total state economic impact of \$604 million** through direct campus expenditures including payroll, operations, and student spending plus indirect effects. For every \$1 in direct expense by the campus, there is up to an additional \$2.49 in purchased goods and services in Colorado.
- > Direct campus employment of 2,186 jobs create nearly 4,200 additional jobs for a **total employment impact of more than 6,300 jobs in Colorado**. On average, each faculty and staff position at the Denver Campus supports another 1.19 additional jobs in the state.
- > A **total payroll impact of \$283 million in Colorado** based on \$131 million in direct wages, salaries, and benefits. For every \$1 in compensation paid to campus employees, there is up to \$1.16 in additional income provided to the state.
- > Annual campus **operating revenue of nearly \$200 million**. Revenue from tuition and fees represented 54 percent of the total, and governmental grants and contracts accounted for 20 percent. Meanwhile, state appropriated resources in FY 2010, excluding one-time state fiscal stabilization funds, contributed 7.6 percent of total revenue.
- > The state annually received **nearly \$13 million in individual income tax and sales tax revenue** in FY 2010 from Denver Campus direct and indirect payroll and spending. Excluding one-time state fiscal stabilization funds, the state receives more in tax revenue than the operating funds it appropriates to the campus (\$15 million).

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—the Denver Campus and the Anschutz Medical Campus in Aurora. The university is home to more than 90 centers and institutes extending the reach of instruction and research into the community, covering subjects from entrepreneurship and education policy to medical and health concerns across the state. University faculty and researchers provide significant contributions to the national and global reputation for discovery and innovation characteristic of the University of Colorado.

This report estimates the economic contributions to the statewide economy by the Denver Campus. 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, 2010 (FY 2010), 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.



University faculty and researchers provide significant contributions to the national and global reputation for discovery and innovation characteristic of the University of Colorado.

denver campus

Campus profile

collaboration & partnerships

The campus is 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 utilize the city as a learning laboratory.



The Denver Campus includes facilities on the Auraria Higher Education Center in downtown Denver, which occupies 150 acres. The Denver Campus also includes three buildings occupied exclusively by the university on Lawrence Street, contiguous to Auraria. The campus is 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 utilize the city as a learning laboratory.

The Denver Campus is home to eight schools and colleges and enrolls more graduate students than any other Colorado public institution of higher education. The wide range of academic programs for undergraduate and graduate students at the Denver Campus includes:

- > A **College of Architecture and Planning** that offers the only graduate programs in architecture in Colorado and is one of the country's largest colleges of architecture and related design and planning disciplines;
- > 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 **Business School** with undergraduate and graduate programs that merge academic theory with actual business implementation for an advanced, integrated education;
- > The largest graduate **School of Education and Human Development** in Colorado, serving students seeking degrees/licensure and offering many options for continuing education;
- > A **College of Engineering and Applied Science** that, with a new bioengineering department, is bridging instruction and research with the Anschutz Medical Campus;
- > A **College of Liberal Arts and Sciences** offering a wide spectrum of degrees in language arts, humanities, and the social and natural sciences, and recently bolstered its science careers program with a new undergraduate degree in public health; and
- > A **School of Public Affairs** that offers a unique graduate domestic violence prevention program and is one of two programs nationally to partner with the U.S. Office of Personnel Management to provide a master of public administration program for federal managers and senior executives.

Serving a Diverse Student Population

As of the academic year 2009-10, the Denver Campus offered 92 degree programs and served more than 14,000 students—including full- and part-time students receiving education either in classrooms, online, or through extended studies or non-degree programs. The Denver Campus attracts mostly Colorado residents, primarily from the Denver metropolitan area. However, students come to the campus from a variety of countries and states, and enrollment includes 10 percent out-of-state residents and 5 percent international students. While the Denver Campus enrollment has grown, it has maintained a heterogeneous student body with respect to age, ethnicity, culture, and academic credentials.

Over the last five years, the number of full-time undergraduate students enrolled at the Denver Campus has increased each year and grown by 16 percent since fall 2005. Several student populations have increased from fall 2005 to fall 2009:

- > The number of undergraduates rose 23 percent while graduate enrollment increased 6 percent.
- > The number of first-time, full-time, degree-seeking undergraduates rose 36 percent.
- > The number of students reporting themselves as members of an ethnic minority increased 29 percent.
- > While the number of full-time students has grown over 20 percent, part-time students represented a significant portion of total student population (28 percent for undergraduates, 64 percent for graduates).
- > The proportion of Pell Grant recipients has risen from 22 percent to 25 percent.
- > The number of international students has grown 64 percent, with as many undergraduate as graduate international students at the campus.

Tables 1 illustrates the past five fall terms of Denver Campus undergraduate and graduate enrollment.

Table 1. Fall Census Enrollment Snapshot

	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009
Undergraduate	7,491	7,872	8,188	8,577	9,188
Graduate	4,579	4,453	4,538	4,512	4,841
Subtotal	12,070	12,325	12,726	13,089	14,029
Fall 2005 to Fall 2009 Growth					16%

As of fall 2009, the student body at the Denver Campus was 54 percent female and comprised of 65 percent undergraduate and 35 percent graduate students. Over 40 percent of students were part-time. In 2009, students of color comprised 29 percent of undergraduate students and 13 percent of graduate students at the Denver Campus.



Supporting the state workforce

a vital workforce



The campus is responsible for over a quarter of the master's level degrees conferred among the state public research institutions.

Denver Campus graduates are responsible for meeting a significant portion of the state's workforce needs.

In FY 2010, the Denver Campus conferred a total of 3,274 degrees, including 1,643 bachelor's degrees and 1,631 graduate degrees, providing more master's degrees than any other public institution of higher education in the state. The campus is responsible for over a quarter of the master's level degrees conferred among the state public research institutions. The table below shows the recent history of degrees conferred.

Table 2. History of Degrees Awarded^a

Year	Bachelor's	Master's/ Post MA Specialists	Doctoral	Total
FY 2005	1,352	1,673	21	3,046
FY 2006	1,356	1,786	30	3,172
FY 2007	1,402	1,575	34	3,011
FY 2008	1,480	1,490	30	3,000
FY 2009	1,497	1,553	38	3,088
FY 2010	1,643	1,606	25	3,274
FY 2010 as a Percent of All State Research Institutions	10.6%	28.2%	1.6%	14.5%

The Colorado Department of Labor and Employment projects a 6.7 percent increase in the state demand for selected occupations in the next ten years. The need for these selected occupations is amplified by the need to replace an aging workforce as more than two-thirds of job openings are anticipated due to retirement. The combined impact of openings due to occupational growth and replacement create a need nearly 5,600 jobs each year for the next ten years. The table below illustrates the estimated growth and need of selected occupations aligned with Denver Campus academic programs from 2009 to 2019.

Table 3. Occupational Employment Projections, 2009 - 2019²

Occupation Detail	2009 Estimated Employment	2019 Estimated Employment	Total Percent Change	Annual Average Openings due to Growth	Annual Openings due to Growth and Replacement
Architects/Urban Planners	5,689	6,044	6.2%	44	161
Art and Design/ Performance Arts	7,756	8,083	4.2%	43	252
Engineers	38,237	38,658	1.1%	175	1,079
Financial/Accounting Specialists	57,659	62,346	8.1%	523	1,490
Physical/Biological Scientists	8,783	9,542	8.6%	79	300
Social Scientists	7,906	8,743	10.6%	70	192
K-12 School Teachers, including special education	67,538	73,135	8.3%	566	2,125
Subtotal, Selected Occupations	193,568	206,551	6.7%	1,500	5,599

The projected workforce need in Colorado illustrates the importance of the Denver Campus, and many graduates remain in Colorado—73 percent of alumni live in Colorado and contribute further to the educated work force that helps to fuel the economy and enhance the quality of life of the state.



Revenue

\$200 million

The Denver Campus is clearly a major economic enterprise in the state, with annual revenues of nearly \$200 million.



Revenue provides an overview of campus operations and also illustrates the diverse set of resources required to successfully operate an academic research institution.

As measured by revenue, the Denver Campus is clearly a major economic enterprise in the state, with annual revenues of nearly \$200 million. State appropriated resources provide nearly 17 percent of the campus revenue. Excluding the one-time state fiscal stabilization funds, the state provided a base funding of \$15 million or 7.6 percent of total operating revenue in FY 2010. State appropriated resources excluded state funding for capital projects, including the Auraria science building, as these funds were not received by the campus.

Table 4. Denver Campus, FY 2010 Revenue³

	Amount	Percent
Non-State Appropriated Resources		83.3%
Student Tuition and Fees, including Scholarships	106,587,668	53.9%
Governmental Grants and Contracts	40,386,069	20.4%
Other Revenues	9,291,222	4.7%
Gifts, Bequests, etc.	3,780,562	1.9%
Sales of Educational Services	2,505,816	1.3%
Nongovernmental Grants & Contracts	1,651,746	0.8%
Auxiliary Enterprises, Net	593,890	0.3%
State Appropriated Resources		16.7%
One-time State Fiscal Stabilization	18,080,483	9.1%
State Fee-for-Service Contracts	5,758,437	2.9%
State College Opportunity Fund Stipend	9,192,519	4.7%
Campus Revenue	197,828,412	100.0%

Compared with Colorado businesses, this revenue places the campus among the top publicly-traded companies based on 2009 sales.⁴ Note that this is based on companies that have headquarters, not just a presence, in Colorado.

Table 5. Denver Campus Revenue Comparison to Colorado Public Companies

2010 Rank	Name	2009 Sales (000)	Industry
45	Venoco Inc.	272,196	Oil and gas exploration/production
46	Penford Corp.	255,556	Grain mill products
47	DCT Industrial Trust Inc.	244,006	Financial services
	Denver Campus	197,828	
48	Advanced Energy Industries Inc.	186,395	Manufacturing
49	Delta Petroleum	182,442	Oil and gas development /production
50	Dynamic Materials Corp.	164,898	Metal heat-treating
51	CoBiz Financial Inc.	157,077	Bank holding company

For every \$1 appropriated by the state in FY 2010, another \$5 in revenue comes to the Denver Campus from other sources. But it is not accurate to conclude the campus does not rely on state funds. In fact, the opposite is true—state funding represents the financial foundation of the campus. State funding is critical for campus operations, such as building maintenance, utilities and academic support, and helps keep tuition affordable for Colorado residents.



Expenditures



creating jobs

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

Expenditures, including payroll and campus operations, provide the basis for campus direct and indirect economic impacts in the state. The Denver Campus annually contributes up to \$603 million in total economic activity throughout Colorado.

Table 6. Campus Economic Impacts and Multipliers

	Direct Input	Economic Impact Range		Multiplier Range	
		Low	High	Low	High
Employees	2,186	6,019	6,344	2.75	2.90
Labor income	131,002,800	266,844,600	283,018,000	2.04	2.16
Total output	172,871,900	417,649,500	603,467,700	2.42	3.49

Denver Campus expenses totaled over \$172 million in FY 2010 including payroll and operations. In addition to payroll and benefits, the campus reported operating expenditures of \$41.9 million, or 24 percent of all expenses, for goods and outside services. The economic impact analysis concludes that each \$1 in campus expense generates between \$1.42 and \$2.49 in additional economic activity to Colorado. The direct and indirect spending supports between \$417 million and \$603 million within the state.

Jobs

The Denver Campus not only plays an important role in educating the state workforce, but it also provides the state with thousands of direct and indirect jobs. The Denver Campus employed 2,186 individuals including faculty, staff, and student workers as of June 2010. Campus employment was comparable with some of the top private employers in the metropolitan Denver area.

Table 7. Comparison of Employees with Metropolitan Denver Companies⁵

Rank Among Private Employers	Company	Employees	Industry
22	FedEx	2,300	Shipping & Freight Services
22	Sprint Nextel Corporation	2,300	Cellular & Wireless Phones
24	Raytheon	2,200	Aerospace Systems & Software
	Denver Campus	2,186	

The campus employment supports between 6,019 and 6,344 direct and indirect jobs throughout the state. Every job at the campus indirectly creates almost two additional jobs in the state.

Payroll

The Denver Campus direct payroll of \$131 million, along with the corresponding share of student consumer spending, generates up to another \$152 million in additional wages, salaries and other labor income in Colorado. The direct and indirect payroll supports up to \$283 million in labor income within the state—an average of \$44,500 per job. This is more than 10 percent higher than the median annual earnings for full-time workers in the nation.

Because the Denver Campus is responsible for producing more master's degrees than any public institution of higher education in the state, Denver Campus graduates contribute significantly more to the Colorado economy because of the higher average salaries of degree earners. In 2009, the average annual earnings of a worker with a master's degree exceeded \$65,000, 62 percent higher than the average worker. As earnings increase with educational attainment, unemployment rate decreases. The table below illustrates the average annual salaries and unemployment rates by education attainment for persons 25 years of age and older.

Table 8. Annual Average Salaries by Education Attainment, 2009⁶

Education Level Attained	Median Annual Earnings	Unemployment Rate
Doctoral degree	\$79,664	2.5%
Professional degree	\$79,508	2.3%
Master's degree	\$65,364	3.9%
Bachelor's degree	\$53,300	5.2%
U.S. Average, all workers	\$40,248	7.9%
Associate degree	\$39,572	6.8%
Some college, no degree	\$36,348	8.6%
High-school graduate	\$32,552	9.7%
Less than a high school diploma	\$23,608	14.6%

Student spending

Student spending is not reflected in Denver Campus expenses. However, there is a significant expense attributable to those enrolled in the academic programs at the campus. In addition to tuition, Denver Campus students spent an estimated \$175 million in FY 2010 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.

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direct impact





Auraria Campus Impact

The schools and colleges of the Denver Campus are conveniently located on the shared Auraria Campus with the Community College of Denver and Metropolitan State College of Denver. While not included in this FY 2010 study, the spending by these adjacent institutions supplements the economic impact by the Denver Campus. Based on a FY 2009 Auraria Campus study and assuming a similar multiplier from this study, the Auraria institutions including the University of Colorado Denver had a combined impact of:

- > Expenses of \$339 million for a total economic impact of nearly \$1.2 billion in the state;
- > Employment of 4,050 for a total employment impact of 11,745 in the state; and
- > Payroll of more than \$216.3 million for a total state personal income impact of more than \$467 million.

The Campus

The Auraria Campus was initially designed to accommodate up to 15,000 students, but today serves at least three times that number. Although the recently completed Science Building has provided some additional space, the rate of construction and renovation has not kept pace with the growth in the student population, leading to a current shortage of classrooms, laboratories, and office space.

In light of the current economic climate, it is unlikely there will be state funding available for the construction of new buildings at the Auraria Campus in the near future. Therefore each of the three institutions is cooperating to enable each to construct new buildings that serve the educational needs of only their institution. The Denver Campus is developing a program plan for an academic building adjacent to the North Classroom building on the Auraria Campus.

The growth in the number of academic programs and students at the Denver Campus has been enabled in part by the acquisition of three buildings adjacent to the Auraria Campus. These buildings currently house most of the Business School, the College of Architecture and Planning, the School of Education and Human Development, the School of Public Affairs, and several programs in the College of Arts and Media and the College of Liberal Arts and Sciences. This has established an “education corridor” for the campus into downtown Denver that has enhanced not only the visibility of the university, but also the experiential learning opportunities for students.

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Planned Construction Impact

In addition to ongoing, annual contributions to the economy, additional stimulus is provided by periodic construction of new facilities. Currently, there are two significant facility projects at the Denver Campus:

- > The renovation of the new Business School at 1475 Lawrence Street at a total cost of \$25.7 million, with the first phase at a total cost of \$9.1 million; and
- > The Denver Campus contribution to the recently completed Auraria science building at a total contribution of \$10.3 million.

Using the methodology as the annual operation impacts described above, it is estimated these construction projects will provide up to 430 additional jobs and \$24.6 million in payroll to Colorado residents. This supports \$64.1 million in additional economic activity.⁷

Tax Revenue

Included in the total economic activity is nearly \$13 million in state taxes—up to \$6.9 million in individual income taxes and nearly \$5.7 million in sales tax, including both the direct payments by university employees and students, and the indirect multiplier effects.

Other tax revenues were recognized in the total economic impact, such as business income tax, vehicle registration, and licensing fees that are not highlighted in this section.

Compared with the state appropriated resources of \$33 million in FY 2010, the state received as much as 38 percent back in estimated income and sales tax revenue. Excluding the one-time state fiscal stabilization funds, the state received nearly as much in tax revenue as the funds it appropriated to the campus in FY 2010. State funding of \$15 million returned up \$12.6 million, or 84 percent, back to the state in tax revenue.

Table 9. Estimated State Income and Sales Tax Receipts

	Direct	Low Impact	High Impact
Individual Income Tax			
Direct by Employees	\$3,202,900		
Indirect through Multiplier		\$3,331,000	\$3,715,300
Subtotal		\$6,533,900	\$6,918,200
Sales Tax			
Direct by Employees and Students	\$3,346,300		
Indirect through Multiplier		\$2,097,600	\$2,356,300
Subtotal		\$5,443,900	\$5,654,900
Total State Tax Revenue	\$6,549,200	\$11,977,800	\$12,573,100

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tax impact



Other Contributions

The Denver Campus 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 contribution of these enterprises upon research, public service, community outreach, and issue advocacy.

Students in the Community

The Denver Campus Experiential Learning Center works with students, faculty, employers and community partners to provide quality experiential learning opportunities that enhance academic learning, integrate theory and practice, and promote professional development and active citizenship. The center has a relationship with approximately 160 nonprofit organizations in Denver and the surrounding area and sponsors 34 volunteer programs. The center estimates students spent nearly 4,000 hours in 2010 in Denver community service learning projects.



In coordination with the AmeriCorps UCAN Serve program, Denver Campus students are required to complete a certain number of unpaid volunteer hours with a nonprofit organization in the community in order to receive a scholarship. AmeriCorps students provided nearly 25,000 hours in service to the Denver metropolitan community.⁸

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College Pipeline Programs

The Denver Campus pre-collegiate initiative includes several unique academic outreach programs to prepare first-generation college-bound students for higher education. The goals of these programs are to provide educational access, early outreach, academic guidance and retention, and ultimately, graduation from an institution of higher education. Below are a few examples of these programs.

- > **Pre-collegiate programs for middle school and high school students**, with a particular high school program focused on health careers preparation. These enrichment programs are designed to adequately prepare first-generation college-bound students in grades 7 and 8 or grades 9 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 a 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 on the Denver Campus 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 University of Colorado Denver or at another higher education institution of the student's choice. Prior to and during their enrollment, scholars engage in orientation, admissions, financial aid seminars, and other workshops. Some workshops request the presence of a parent or guardian. These workshops are designed to prepare students for full-time college study. Assistance with course selection, educational planning, and tutoring is provided to students.
- > The **CU Succeed Silver and Gold programs** are a partnership between the Denver Campus and Colorado high schools. The programs provide high school juniors and seniors the opportunity to enhance their academic skills while experiencing the rigor of college course work at their high school campuses. The programs offer Denver Campus lower-division courses that students may take for dual credit during regularly scheduled periods throughout the school day.
- > The **Denver Transfer Initiative** is a cooperative project between the Community College of Denver and the Denver Campus to increase the graduation rate and completion of baccalaureate degrees for traditionally underserved populations, specifically first-generation, low-income and Hispanic/Latino heritage. The project is designed to provide assistance and support to students throughout their coursework and educational career while attending their first two years at the community college, through the transfer process, and completing their last two years of coursework at the University of Colorado.



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preparing graduates

Centers and Institutes

a better Colorado

The Bard Center has helped launch 23 new businesses, 13 of which are still in business and collectively employ several hundred employees while generating millions of dollars in sales that contribute to the Colorado economy.



The Denver Campus 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 centers and institutes illustrate the contributions to the Colorado, national, and global communities:

The **Bard Center for Entrepreneurship** at the Business School contributes to the growth and robustness of Colorado's economy by supporting new ventures and small business expansion. The Bard Center hosts an annual Business Plan Competition to encourage the creation of new businesses that benefit Colorado. More than 400 graduate students are enrolled in courses focused on entrepreneurship. The Bard Center has helped launch 23 new businesses, 13 of which are still in business and collectively employ several hundred employees while generating millions of dollars in sales that contribute to the Colorado economy. Six companies started by alumni are presently operating in the on-site incubator that fosters the development of many new companies. The Bard Center also manages the Rutt Bridges Venture Capital Fund which provides seed capital for proposed projects.

The **Buechner Institute for Governance** was established in the School of Public Affairs to provide facilitation, strategic planning, and conflict resolution services to a range of state agencies, local government, and nonprofit organizations to enhance decision making in Colorado. Within the Buechner Institute two centers—the **Center for Education Policy Analysis and the Center on Reinventing Public Education**—focus on research and analysis of the effectiveness of existing public education programs. They also examine a range of alternatives that rethink and challenge current systems in urban school systems. One particularly high profile project, conducted in collaboration with the School of Education and Human Development, is an evaluation of a pay-for performance system for teachers in Denver Public Schools that has attracted national attention and is a component of President Obama's education agenda.

The programs and mentoring activities of the **Positive Early Learning Experiences Center** in the School of Education and Human Development have been recognized nationally for their impact on families and children. The center investigates, refines, and disseminates inclusive models and curricula for educating preschool children with autism alongside their peers. This model of early intervention, known as LEAP Preschool, is the only approach demonstrated to impact all of the characteristics of autism. Similar research by the regional intervention program for children with behavioral challenges in the School of Education educates and encourages parents to work with their children in addressing their children's challenging behavior.

The **Sustainable Urban Infrastructure Center** in the College of Engineering and Applied Science has teamed up with the Colorado Municipal League, an association of all Colorado cities, towns, and villages, to provide rural towns with the resources needed to determine and monitor their carbon footprint. Funded through a federal grant, municipal league donations, and private philanthropy, the center brings together faculty and students to provide monitoring and suggest sustainable measures within the financial capability of small towns.

The faculty-led, student-operated **Colorado Center for Community Development** in the College of Architecture and Planning, partners with rural and urban Colorado communities through diverse teaching, research, and learning settings for an array of projects to improve the built environment. With environmental health and community development as the focal points, the center employs collaboration, civic engagement, and a multi-disciplinary to improve the places where people live, work, and play.

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 NCMF is also active in the federal scientific working groups by promoting new solutions and best practice guidelines for forensic media analysis.

The **Colorado Center for Public Humanities** in the College of Liberal Arts and Sciences focuses on enriching public discussions about art, ideas, the historical past, and the diverse cultures of the world through the humanities disciplines. The Center investigates the public value of the humanities disciplines in relation to historical change by sponsoring programs that help clarify the roles that humanities-based scholarship can play within the U.S. and abroad. The Center also directs the engagements of humanities scholars toward extra-academic communities.

The **National Veterans' Training Institute** provides employment training for individuals who assist the nation's veterans and transitioning service members in finding jobs and careers. This program, developed by the university in 1986, has trained more than 50,000 service providers and achieved national recognition. The institute now has 27 courses focused on intensive employment services for disabled and hard-to-place veterans, effective transition from military to civilian careers, and a partnership with the private sector and the community to maximize job development. The institute continues to train some 2,000 providers annually, including 1,200 who come to the institute and 800 throughout the U.S. and abroad.



Methodology

creating jobs



The Denver Campus economic impact analysis is based on the fiscal year 2010 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 impacts 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.

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.

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

The Denver Campus payroll and benefits totaled \$131 million in FY 2010. Of that amount, \$100.5 million is the basis for estimating the secondary economic effects. The remainder is treated as leakage from the state in the form of federal taxes and other non-current expenditures or is the non-cash component of the reported benefits.

The Denver Campus reported total operating expenditures of \$41.9 million for goods and outside services. A portion of this total (\$464,000) 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 400+ 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.

Table 10. Summary of Direct Expenditures and Input to Model⁹

	Total Direct	Input to IMPLAN	Remainder
Wages, Salaries, and Benefits	\$131,002,800	\$100,492,400	\$30,510,400
Other Operating Expenses	\$41,869,100	\$41,416,200	\$452,900
Student Spending	--	\$172,321,000	
Total	\$172,871,900	\$314,229,600	\$30,963,300

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 deemed to be a reasonable measure of the taxes eventually paid, and that same ratio was applied to the total labor income generated by the model. In the case of sales taxes two separate calculations were made. For students it was possible to estimate the portion of the expenditures that was likely to be taxable and the current state sales tax rate was applied to this taxable base. For the 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.



ENDNOTES

¹ Office of Institutional Research Planning and Analysis Degrees Awarded Summary FY 2006-2010, and CDHE Degree Report FY 2006-FY 2010.

² Colorado Department of Labor and Employment, Colorado Labor Market Information, 2009-2019 Employment Projections. Totals may not add due to rounding.

³ Finance Office Statement of Revenues, Expenses, and Changes in Net Assets, and Budget Office Budget Data Book. This excludes revenue collected from campus sources such as administrative indirect cost recoveries, interdepartmental transfers, internal service centers, and intercampus sales.

⁴ ColoradoBiz Magazine. Top 100 Colorado-based public companies, June 2010.
<http://www.cobizmag.com/lists/>

⁵ Metro Denver Economic Development Corporation, May 2010.

⁶ Bureau of Labor Statistics, Current Population Survey. Data are 2009 annual averages for persons age 25 and over. Earnings are for full-time wage and salary workers.

⁷ Construction projects occur during a number of years; therefore, the impacts of these projects are distributed throughout the years in which they occur.

⁸ Experiential Learning Center, February 2011.

⁹ Source: University of Colorado Denver | Anschutz Medical Campus and Sammons/Dutton LLC