

Creating Pathways for Two-Year College Transfer

White Paper on CU Boulder's Academic Futures Initiative

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The *Academic Futures Initiative* could enhance Colorado's two-year student transfers to consider CU Boulder as their number one choice for baccalaureate pursuit. By integrating and engaging departments and faculty in the Academic Futures endeavor, we would be closing the gap in creating a more coherent, strategic pathway to *recruit and support Colorado community college transfer students*—a population that largely goes untapped by CU Boulder.

Today's millennials make up the largest share of the U.S. population—they are racially diverse, optimistic, and the most educated generation of students thus far, yet many remain underemployed. With 34% of millennials having a Bachelor's degree, the earning potential of high school graduates has decreased; it is much more challenging than ever before for students who try to enter the workforce with only a high school diploma to find gainful employment (NPR, 11/18/2014). Also, because our millennials are optimistic about their futures and actively research and seek education to further their pursuits, student loan debt is very high. It makes sense then that many students chose to attend a two-year college after high school instead of—or before—paying the higher cost of tuition at a four-year institute.

Historically, the five Denver-area community colleges (Arapahoe Community College, Community College of Aurora, Community College of Denver, Front Range Community College, and Red Rocks Community College) enroll the bulk of Colorado's community college population; in 2015-2016, these five Denver-area colleges comprised roughly 68% of the 120,635 enrolled community college students.

In 2014-2015 only 6.9% of the 6,267 two-year students who went on to pursue a baccalaureate degree at a public four-year university chose to attend CU Boulder—a number that has remained relatively flat for the past 12 years. Thousands of potential two-year transfer students each year do not choose our state's flagship university. Thousands of students do not feel compelled to continue their academics at CU Boulder, yet they do choose other four-year institutions to attend. Why?

The Facts About Two-Year Transfer

During the period from 2005-2017, there have been 5,433 Colorado community college students who have transferred to CU Boulder—with a record high of 472 students enrolled this past fall 2017 (Office of Data Analytics, CU Boulder, fall 2017). In 2015, the Colorado Department of Higher Education reported that more than 6,000 Colorado community college students transferred to a Colorado four-year university. Again CU Boulder enrolled roughly 7% of these students (see Table 1 for a year-by-year breakdown).

Table 1. Number of Colorado Community College transfers to UCB, during the period 2005-2013.

Year	Number of 2-year transfers to UCB	Year	Number of 2-year transfers to UCB
2005	363	2012	421
2006	441	2013	427
2007	440	2014	461
2008	388	2015	380
2009	439	2016	403

Year	Number of 2-year transfers to UCB	Year	Number of 2-year transfers to UCB
2010	385	2017	472
2011	413	Total	5,433

CU Boulder is an institution rooted in research and innovation. Furthermore, the advancements in the STEM field, particularly, is at its peak at CU Boulder—our cutting edge research in many areas is revolutionary and renowned in its field across the nation. Our campus consistently awards STEM Bachelor’s degrees at rates far higher (27%; Office of Data Analytics, 2016) than the national average (17%; National Science Foundation Center for Science and Engineering Statistics, 2016).

Community colleges nationwide enroll large proportions of low-income and first-generation students and serve the majority of Hispanic, Native American, and African American undergraduates (American Association of Community Colleges, 2016). Nearly half of all students in the U.S. who receive STEM Bachelor’s degrees complete some undergraduate training in community colleges (Tsapogas, J., 2004). Because the first two years of college are considered critical to the recruitment into STEM and retention of STEM majors, community colleges have been recognized for their enormous potential to influence undergraduate learning and inclusivity in STEM (President’s Council of Advisors on Science and Technology, 2012; National Academies Press, 2011).

Nearly 52% of current Colorado community college STEM transfers to CU Boulder are Pell eligible, a quarter are first-generation college students, and almost 20% are underrepresented minority (Office of Data Analytics, 2016). Armed with Bachelor’s degrees, and particularly in STEM fields, these graduates will access opportunities and careers not obtainable by many of their parents. A young adult from this population who earns a Bachelor’s degree can positively impact siblings, extended family members, future generations, the local economy, and the broader community.

Both the numbers and the facts point to CU Boulder, the state’s flagship university, as a logical transfer point for community college students; yet it is illogical that we are not able to attract more two-year transfers to our university. How can we increase the number of transfer students who choose CU Boulder and thusly increase their retention and graduation rates?

By further broadening our institution’s foundational tenets to enfold our student body in CU Boulder’s prominent research and innovation will strengthen our student’s learning and enhance our faculty stewardship. In short, the direction that an *Academic Futures Initiative* would propel our university could stimulate changes in the demographic landscape of our campus. By offering students the opportunity to participate in research, discovery and cutting-edge scholarship means that two-year community college students are afforded a broader education when choosing CU Boulder; we transform their opportunity for learning, and we transform the state of Colorado.

The *Academic Futures Initiative* is one approach to addressing the challenges of increasing transfer of Colorado’s two-year students at CU Boulder and would scaffold existing efforts on campus, including the NSF-funded INCLUDES project, *Creating Academic Pathways in STEM (CAPS): A Model Ecosystem for Supporting Two-Year Transfer* (see attached CAPS Summary for more information). Focused on—but not limited to—STEM pathways, CAPS aims to create a holistic process for recruiting, retaining and graduating Colorado community college transfers to pursue baccalaureate degrees. Two-year students—men and women who immediately face cultural and financial challenges upon entering a four-year university—who choose to attend their state’s flagship university will benefit from all systemic systems in place that support their success. The *Academic Futures Initiative* is a win-win for our university.



An NSF INCLUDES Effort:



A Model Ecosystem for Supporting Two-Year Transfer

By creating coordinated partnerships among 2-year colleges and the 4-year research universities in Colorado, we will create pathways that increase the number of students, and the quality of their

Program Strategy

A Strategy for Regional STEM Education Collaboration Promoting Strategic 2-Year College Pathways and

- **Student/Scholarship Pathways**—link 2-year colleges, national laboratories, industry, and CU Boulder with explicitly designed courses, pathways and authentic, hands-on research opportunities and relevant internships in industry and national labs;
- **Faculty Pathways**—partner faculty and educational leads from each of the relevant disciplines and offer support for joint course development, articulating courses, advising and mentoring of 2-year college students and serving as a human bridge to research universities;
- **Advising Pathways**—establish joint advising among core programs (2-year colleges, CU, industry, and national laboratories);
- **Administrative Pathways**—provide easy, transparent credit transfer; create reverse transfer agreements between institutions;
- **Policy/State Legislative Pathways**—link with Colorado Commission of Higher Education, Colorado Community College System, and the state’s STEM Education Roadmap initiative to create sustained forms of collaboration and collective outcomes.

Partners

CAPS is an NSF-funded project of the University of Colorado Boulder and the Colorado Community College System, managed and run through the Center for STEM Learning (CSL) [hyperlink](#).

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Layer / Partner	CU Boulder	2-Year Colleges	Industry/Labs	Government
Student/ Scholarship	<ul style="list-style-type: none"> Targeted majors, defined courses, named pathway/ identity (disciplinary cohorts) Accessible faculty/ advisors in major Summer REUs, and broad array of programs Group cohort/ support 	<ul style="list-style-type: none"> Recruiting (from advisors, faculty and intro courses), established paths from courses to transfer Credit for courses/ efforts in industry, labs or CU 	<ul style="list-style-type: none"> Summer research experiences Internships (credit bearing) during term Provide hands-on research opportunities 	<ul style="list-style-type: none"> Recognition by state pathways Advance through Reverse Transfer, or Degree Within Reach (degreewithinreach.org)
Faculty	<ul style="list-style-type: none"> Discipline-based, to: <ul style="list-style-type: none"> advise students link students to CAPS activities form working group in discipline to create articulated courses & coherent paths 	<ul style="list-style-type: none"> Discipline-based to: <ul style="list-style-type: none"> recruit advise students link students to CAPS activities form working group to create articulated courses & coherent paths 	<ul style="list-style-type: none"> Tie internship opportunities to specific courses Help identify where/ how to offer credit Communicate with lead advisors in 2YC and CU Boulder 	<ul style="list-style-type: none"> Reverse transfer, i.e., degreewithinreach.org
Advising	<ul style="list-style-type: none"> Discipline-based, to: <ul style="list-style-type: none"> advise students form working groups to create articulated academic guides & coherent paths 	<ul style="list-style-type: none"> Discipline-based to: <ul style="list-style-type: none"> recruit advise students form working groups to create articulated academic guides & coherent paths 	<ul style="list-style-type: none"> Tie internship opportunities to specific courses Help identify where/ how to offer credit Communicate with lead advisors in 2YC and CU Boulder 	<ul style="list-style-type: none"> Reverse transfer, i.e., degreewithinreach.org
Administrative	<ul style="list-style-type: none"> Establish joint advising Provide easy, transparent credit transfer Advance student support; financial aid Create/broaden reverse-transfer agreements; registrar Promote private/public partnerships Advocate for CAPS 	<ul style="list-style-type: none"> Promote and advance CAPS Provide incentives for 2YC faculty participation Support reverse articulation efforts 	<ul style="list-style-type: none"> Promote their education staff / programs Fund or sponsor interns Advocate for programs 	<ul style="list-style-type: none"> Promote at legislature (consider options for state-based scholarships) Promote private-public partnership Advance regional partnerships Reverse transfer, i.e., degreewithinreach.org
Policy/ Legislative	<ul style="list-style-type: none"> Create student-centered and linked academic advising guides Create/broaden reverse-transfer agreements; 	<ul style="list-style-type: none"> Support reverse transfer efforts Support student-centered and linked academic advising guides 	<ul style="list-style-type: none"> Advocate for CAPS programming via industry connections 	<ul style="list-style-type: none"> Common data system Link to STEM education roadmap and advance regional partnerships

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