

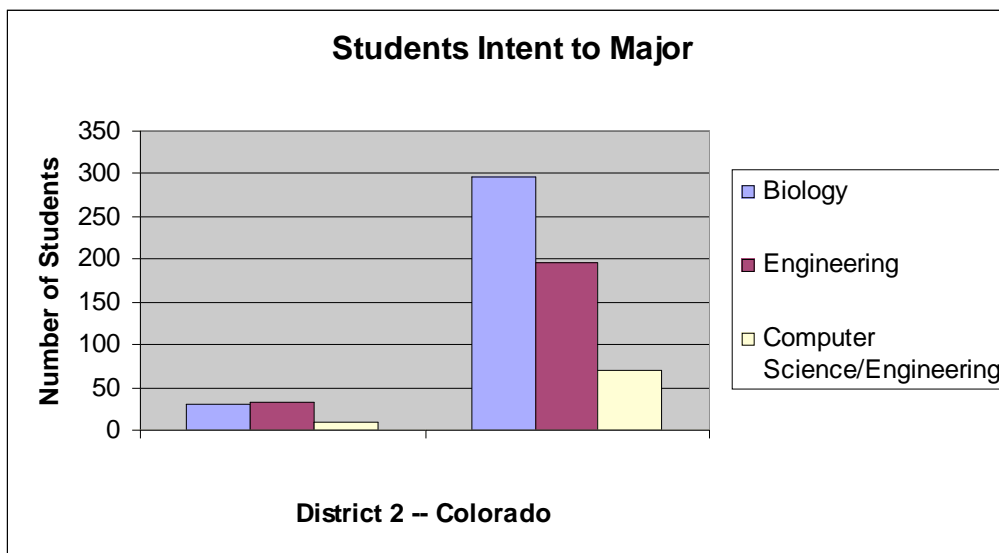
Computer Science Education & Workforce Data: District 2

Computer Science Education Lags Despite Increasing Number of Jobs

Computing-related jobs are among the fastest-growing jobs in District 2 and in Colorado. ¹

- Five of the top 20 professional, fastest-growing, “hottest jobs” in the Denver-metro area are computing-related.²
- Three of these jobs (computer and information systems managers, computer hardware engineers, and computer and information scientists) are also among the highest paid with entry level salaries between \$45-70,000 and annual average salaries around \$100,000.
- Computer and Information systems managers are the 2nd fastest-growing, high-paying jobs next to senior level management positions.
- For the next decade, Boulder will have 500 computing-related job openings per year; Denver will have more than 2,000 per year.

Despite these promising job prospects, computer science lags behind other sciences in attracting students. In 2007-08, only 10 students in District 2 and only 70 students in all of Colorado intended to major in Computer Science or Computer Engineering.



Source: *The Freshman Survey*, Higher Education Research Institute, 2007-08

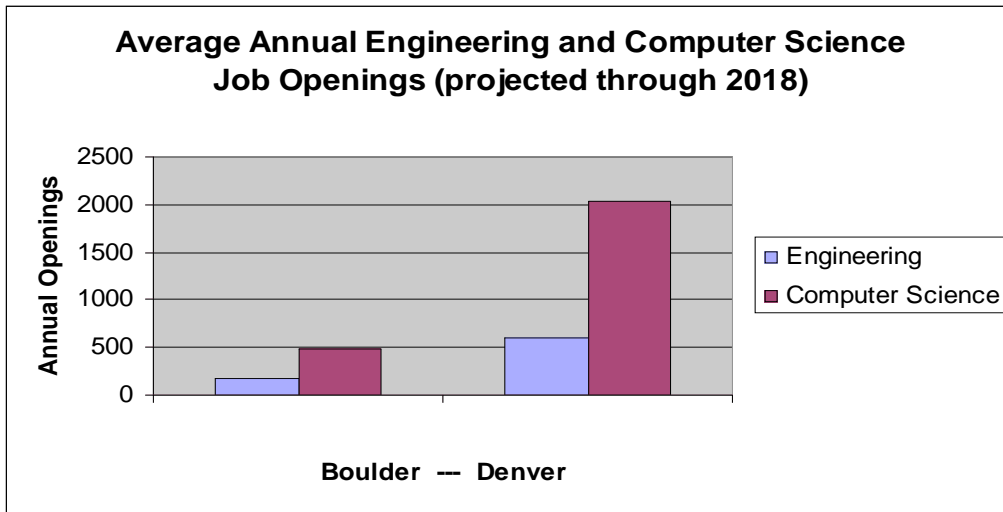
Although more than 27,000 Colorado students took AP exams, only 250 – less than 1% -- of these students took the Computer Science AP exam.³ (District-specific data coming soon –College Board)

The picture grows even bleaker when considering college graduates.

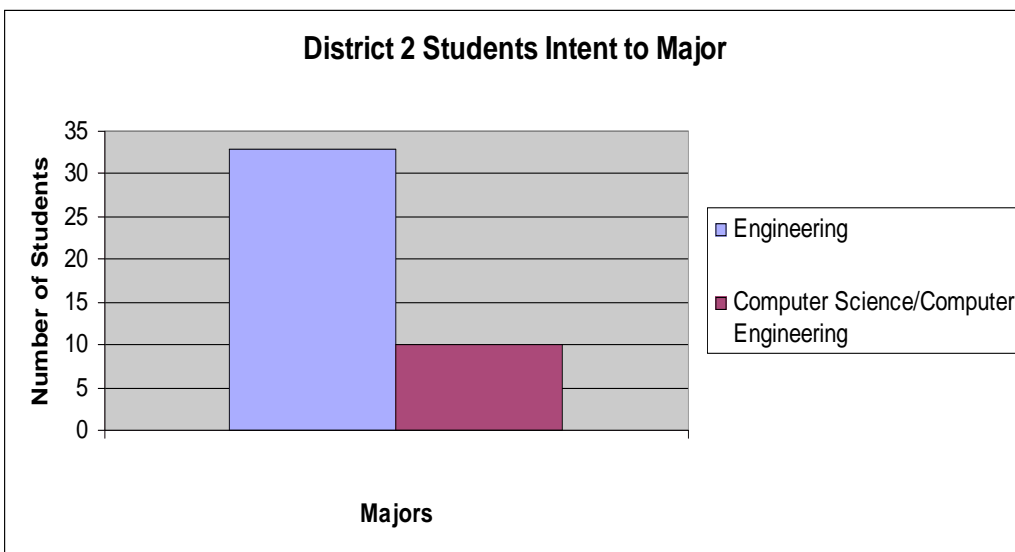
- In 2008, only 368 students completed bachelor’s degrees in Computer and Information Sciences in District 2 colleges and universities.
- When considering graduate degrees, this number climbs to 507 – barely enough to fill one-quarter of the 2,500 computing jobs available each year in Boulder and Denver.⁴

The Mismatch Increases

Each year, in Boulder and Denver, there are three times as many openings for computing-related jobs as there are engineering jobs. Yet three times as many District 2 students intend to major in engineering than in computer science.

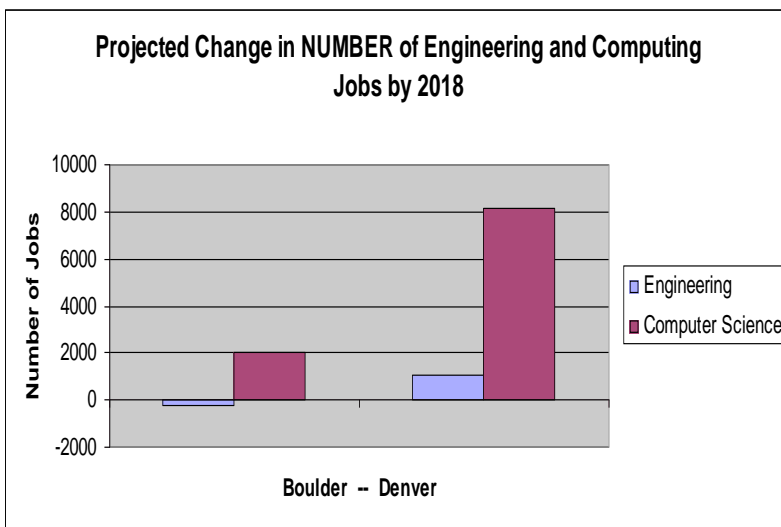
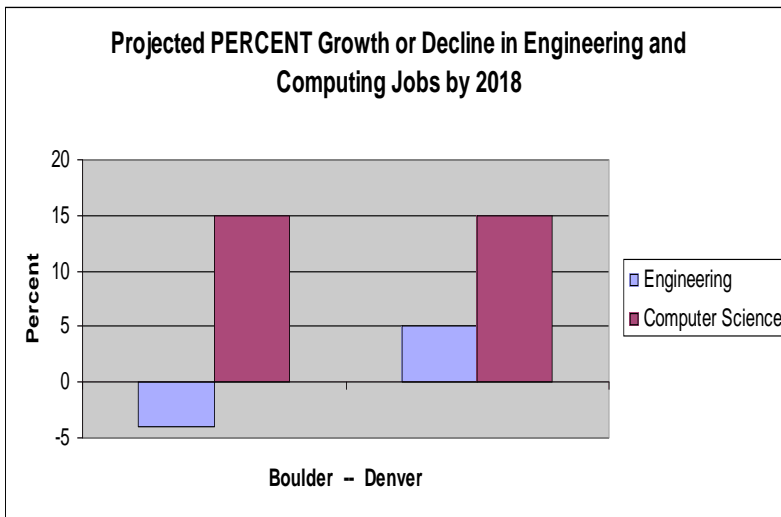


Source: Colorado Department of Labor



Source: The Freshman Survey, Higher Education Research Institute, 2007-08

This mismatch between education and job openings increases when considering total job growth projected by 2018 (both in terms of percent and number of new jobs added).



- When considering specific occupations, almost all computing jobs are expected to grow by at least 10%. The fastest-growing occupation, computer software engineers, expected to grow by 33% in Boulder and 28% in Denver. This equates to more than 3,900 new jobs by 2018.
- In contrast, most engineering occupations are expected to either grow or decline by 1-2%. The primary exceptions are Aerospace Engineers in Boulder, expected to grow by 15.8% (55 new jobs) and Chemical Engineers in Denver, expected to grow by 11% (30 new jobs) – a total of 88 new jobs.

Computing jobs are also expected to add much larger total numbers of jobs than are engineering jobs.

The Bottom Line

Computing-related occupations are among the fastest-growing occupations in Colorado. Meanwhile interest in computing among Colorado students is low and declining.

This mismatch limits students’ opportunities and impedes Colorado’s role in technical innovation.

¹ Colorado Department of Labor

² Colorado Department of Labor, Denver Metro Area’s Hottest Jobs, 2009

³ College Board, The 5th Annual AP Report to the Nation, February 4, 2009

⁴ National Center for Education Statistics, Integrated Postsecondary Educational Data System, 2007-08