

WANTED

The need for individuals with college degrees is still substantial, but companies are increasingly requiring more of their job candidates in terms of requisite skills.

Both the quantitative survey and the Burning Glass Technologies data (Figure 7) confirm that the majority of positions in the industry require a college degree of four years or higher (55% and 23%, respectively, based on the survey; 62% and 23%, respectively, based on online job postings.). Though not specifically measured in this study, this does not reflect the number of community college biotech program hires that already possess a 4-year degree, but who go back to these college biotech programs to pick up additional technical skills.

Importantly, at the community college level, industry continues to vet skill-based certificate programs, which is key for developing technician-level talent. More than 60% of companies surveyed claimed that industry-vetted certificates will “assist in hiring decisions,” and half of the companies expect they will “reduce training costs.”

HIRING INDIVIDUALS

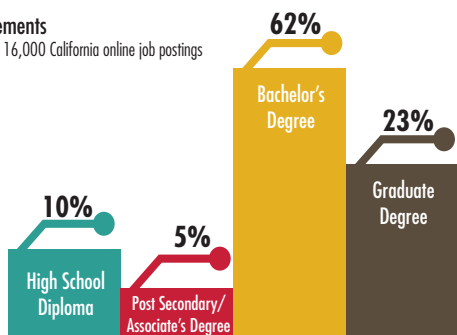
As a result of the shift from in-company training to hiring individuals with the requisite skills, companies are requiring more from their job candidates:

- 1 Greater depth of knowledge, especially in emerging disciplines, e.g. genomics, new therapeutic modalities, precision medicine. There is also a developing need for people with expertise in data modeling and information management.
- 2 Cross-disciplinary training e.g. mechanical engineering and chemistry, microbiology and toxicology.
- 3 A blend of classroom experimental work with practical industry experience. Companies are looking for “a better balance between hands-on lab training and a didactic education.”

Figure 7

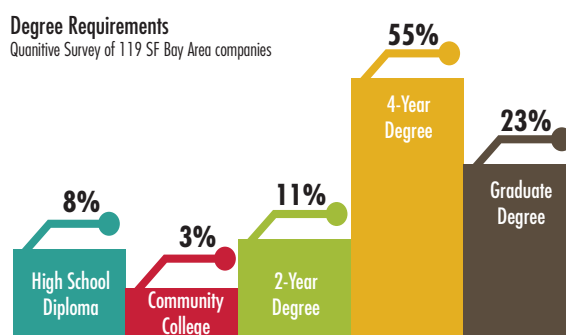
Degree Requirements

Sample Size approx. 16,000 California online job postings



Degree Requirements

Quantitative Survey of 119 SF Bay Area companies



“Know your field [engineering, finance or marketing] well, we can teach the biologics.”

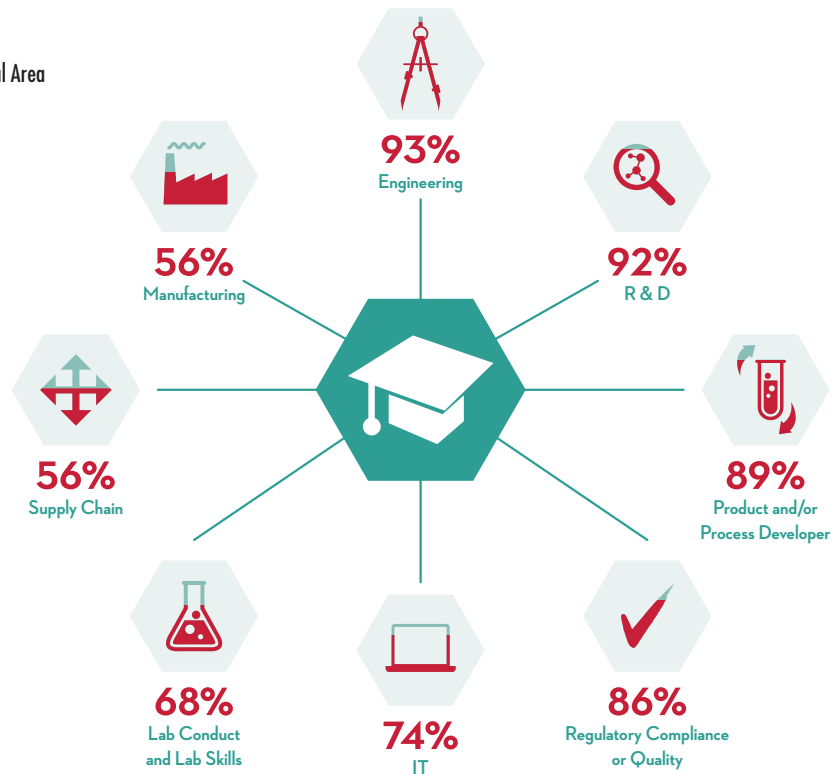
Those big companies that are still relying on in-company training and internship programs are more likely to form long-term alliances with educational institutions to establish a pipeline of talent. Anecdotally, many small companies are yet to realize the benefit of internships over the cost of increased bureaucracy and time spent for onboarding and initial training, though there are indications that this is changing. Based on the quantitative survey, over half of the internships are offered to college students, including graduate students. In-house training and job shadowing are most likely to be offered by companies with more than 50 employees, and companies prefer interns who possess cross-functional skills and cross-discipline expertise.

Figure 8

Jobs Requiring College Degree by Functional Area

Quantitative Survey of 119 SF Bay Area companies

Figure 8 profiles the functional areas in which companies require a 4-year or graduate college degree. 93% of the companies interviewed require a college degree for their engineering positions. In R&D, more and more emphasis is given to the skills associated with the “D”, which can be more broadly defined as the development of the value proposition defined by the market.



SMALL vs BIG

Workforce tactics by small (fewer than 50 employees) versus big (50 or more employees) companies differ based on their corresponding companies' competitive strategies: focus and flexibility for small companies, and scalability and efficiency for big companies.

Small companies tend to tap into their existing skill set and, when hiring, rely on ready access to a trained workforce, rather than developing talent internally. They practice flexibility and expandability across business functions, e.g. HR, Accounting, IT, and cultivate a “Silicon Valley” entrepreneur mindset.

For big companies, the demand for knowledge workers is coupled with the demand for professionals who can execute innovation, development, and commercialization programs through external collaborations.

Both small and large companies are building leaner infrastructures and look to hire the best-in-class in specialized knowledge, especially at the intersection of technical disciplines.