



## Ensuring the East Bay's Economic Success

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Reversing California's health care "skills gaps"  
through Linked Learning

A report by:



# Acknowledgements

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## Who We Are

The business leaders of AMERICA'S EDGE take a critical look at the knowledge, skills and abilities businesses need their employees to have in the 21<sup>st</sup> century, including the ability to be communicators, collaborators and critical thinkers. Using that analysis, we educate policy-makers and the public about high-quality, proven investments that strengthen businesses, establish a foundation for sustained economic growth, and protect America's competitive edge in a global marketplace, while helping our nation's children get on the right track.

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## Summary

**M**ore than 500,000 job openings are projected in California's health care industry – and employers will struggle to fill them. Too many California workers may not be prepared to meet the educational requirements for jobs in this sector, which is rapidly growing as demand for health care services increases. To ensure East Bay employers are able to fill the anticipated jobs in health care, a sector with many of the highest-growth jobs in the state, the business leaders of America's Edge urge policymakers to expand access to Linked Learning to equip high school students for success in both college and career, including careers in the health care industry. If we expect California to compete and succeed in the global marketplace, we must act now to ensure our businesses have the skilled workforce we need.





# Ensuring the East Bay's Economic Success

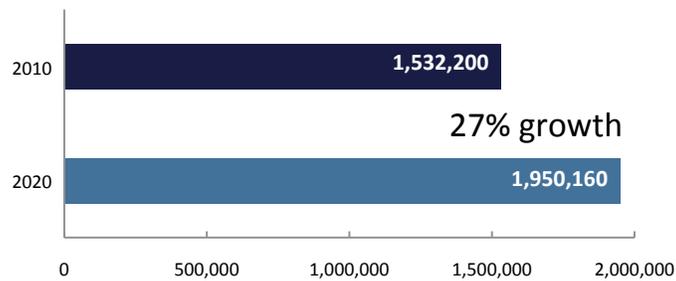
## Reversing California's health care "skills gaps" through Linked Learning

### Rapidly Growing Health Care Jobs

Between 2010 and 2020, growth in California's health care industry is projected to create over half a million job openings, fueling the need for skilled workers that our state may not have.<sup>1</sup> This sector makes up 10 percent of all employment in the state and is expected to grow at a rate of 27 percent, compared to 17 percent for all other industries in the state.<sup>2</sup> A recent analysis of the California labor market shows that 60 percent of the fastest-growing jobs in the state between 2008-2018 are concentrated in health care.<sup>3</sup> In Alameda and Contra Costa Counties, projections show that health care jobs will account for over 10,000 job openings between 2010-2020.<sup>4</sup> In Solano County, 2,900 job openings are projected in the health care sector between 2008-2018.<sup>5</sup> By 2030, California hospitals could need more than one million new allied health professionals.<sup>6</sup>

In the East Bay area, the health care sector continues to grow and create new jobs. Data show that the education and health services sector has grown by 4.1 percent in Alameda and Contra Costa Counties over the past two years. In Solano County, the education and health services sector has grown 6.5 percent over the past two years.<sup>7</sup> Nursing and residential care facilities in the East Bay area have added over 2,900 jobs since 2002, and ambulatory health care services have added over 15,000 jobs since 2002.<sup>8</sup>

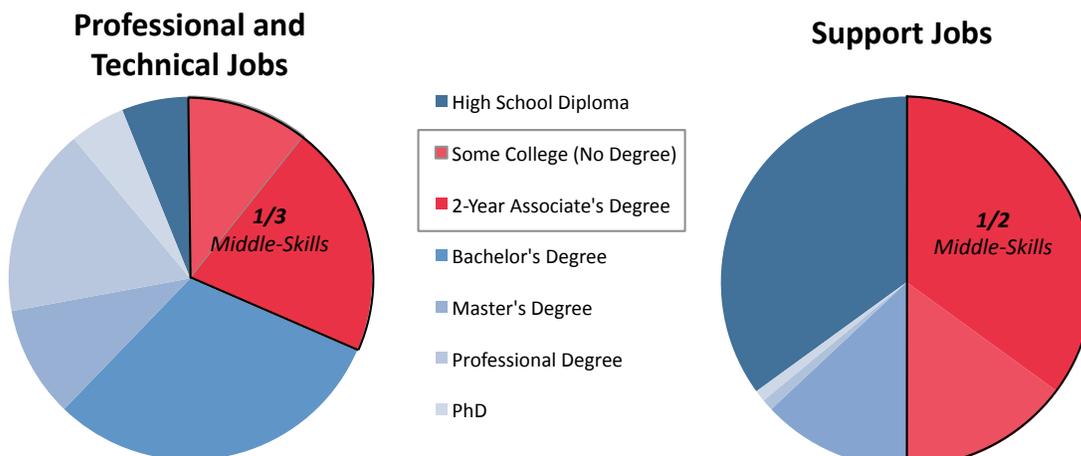
### California's Health Care Job Growth by 2020



Source: Georgetown Center on Education and the Workforce, 2012

Still, the Board of Registered Nursing projects that as the economy improves and the current nursing workforce continues to age there will be an exodus of the current RN workforce, which will result in major shortages of nurses.<sup>9</sup> It is estimated that California will have a shortfall of 116,000 RNs by 2020, meeting only 65 percent of the state's demand for RNs, needing an additional 108,000 to match the benchmark of the national average of RNs per capita by 2020.<sup>10</sup> California also

### California Health Care Job Openings by Education and Occupation, 2010-2020



Source: Georgetown Center on Education and the Workforce, 2012

## Examples of Health Care Jobs California Can't Live Without:



Results from a 2010 California Hospital Association survey found that allied health vacancies in the following occupations had negative impacts on hospital efficiency and access to care:<sup>20</sup>

- Pharmacist
- Physical Therapist
- Respiratory Therapist
- Clinical Laboratory Scientist
- Nuclear Medicine Technologist
- Pharmacy Technician
- Medical Imaging Technologists (including Ultrasound, MRI, CT, and Radiological)

has fewer physician assistants per 100,000 persons (about 21.7) than does the nation as a whole (about 25.0 per 100,000 persons).<sup>11</sup> Further, researchers project that the state's universities and community colleges will only be able to meet between 63 and 79 percent of future demand for allied health professions—such as laboratory scientists, radiological technologists, pharmacy technicians, and respiratory therapists.<sup>12</sup>

This rapid growth in the health care industry is creating demand for a skilled workforce with increasing educational requirements. Currently, only 16 of California's 58 counties have the needed supply for primary care physicians, based on recommendations from the Council on Graduate Medical Education.<sup>13</sup> By 2020, 94 percent of jobs for health care professional and technical staff will require post-secondary education or training; for health care support staff, 54 percent will require that same educational attainment.<sup>14</sup>

Moreover, while 28 percent of all health care jobs, such as doctors, require graduate degrees, a key component of the health care workforce, such as technicians and health aides, are middle-skill jobs – those requiring more than a high school education but less than a bachelor's degree. For California's health care professional and technical jobs, one-third (32 percent) of all jobs require some college or a two-year degree. For the state's health care support jobs, half of all jobs require some college or a two-year degree.<sup>15</sup>

California will also be competing for skilled health care work-

ers with the rest of the country. The health care sector is growing rapidly across the country, representing 18 percent of the U.S. economy.<sup>16</sup> The number of health care workers will have to expand by nearly 30 percent by 2020 to meet growing demand.<sup>17</sup> The Affordable Care Act, passed in 2010, could result in 34 million currently uninsured Americans gaining health insurance, further contributing to the increased demand for health care services.<sup>18</sup> In California, estimates indicate that 4.7 million more state residents will be eligible for health insurance starting in 2014.<sup>19</sup>

Certain jobs within the health care sector are growing even faster. Nursing is the fastest-growing health care occupation,

**IN A RECENT** survey, California CEOs once again put "improving K-12 public education" at the top of their list for how local and state government can strengthen the state's business climate, and those CEOs support increased expenditures for California's K-12 system.<sup>21</sup>

*Silicon Valley CEO Survey:  
Business Climate 2013*



## Career Academies and Pathways Get Results

Career Academies, one model of Linked Learning, is a proven approach found throughout the United States and California. In a well-designed study of Career Academies across America, students were twice as likely as nonparticipants to be working in the computer, engineering or media technology sector eight years after graduation, thus helping to increase the supply of STEM workers. Young people who went through Career Academies earned more and were more productive than those not in the program.<sup>30</sup> One review of data on students in California Partnership Academies, one model of Linked Learning, found that more students completed the California university entrance requirements and the Academies had a higher percentage of seniors graduate compared to the state average.<sup>31</sup>

growing by 26 percent by 2018. Home health aides are the second-fastest growing, expected to grow by 700,000 jobs nationally. Other fast-growing occupations include mental health and substance abuse recovery support.<sup>22</sup>

### Unprepared Students, Unprepared Workforce

A pipeline of skilled workers to fill jobs in the health care sector will be hard to create when 21.5 percent of California high school freshmen do not graduate within four years.<sup>23</sup> In Solano County, the proportion of students not graduating on time is 22.1 percent, and for Alameda and Contra Costa Counties, it is 20.6 percent and 16.5 percent, respectively.<sup>24</sup> Moreover:

- Over 300,000 young men and women leave California schools each year without the skills to compete in a competitive labor market that is global in nature. These students either dropped out of school or, if they graduated, did not meet the entrance requirements for the state universities.<sup>25</sup>
- Only 31 percent of 2012 high school graduates in California taking the ACT admission test met college readiness

**“T**he future prosperity of our community is entirely dependent on the caliber of our workforce. We must start infusing education with relevance so kids can start imagining and preparing for future careers.”

**Dr. Sean Wright, President**  
Antioch Chamber of Commerce

benchmarks in the four core areas tested – English, algebra, social science, and biology.<sup>26</sup>

- Barely one-third of all students who graduate high school (36 percent) complete all the A-G courses necessary for admission to a University of California (UC) or California State University (CSU) school.<sup>27</sup>
- While remedial education helps students get on track for higher education, it is costly. Remedial education costs students and the state of California an estimated \$780 million annually, and up to \$1.1 billion annually after factoring in the reduced lifetime wages of students taking remedial courses.<sup>28</sup>
- Many adults in the East Bay are lacking the educational background to compete for skilled health care jobs: 38 percent of adults aged 25-44 in Solano County have only a high school education or less. For Alameda and Contra Costa Counties, the number of adults aged 25-44 who have a high school education or less is 31 percent and 32 percent, respectively.<sup>29</sup>

## Changing Course Through Linked Learning

### Developing Skills Businesses Need

One of the best—and proven—ways to impact the skills gap is to equip high school students for success in college and career. Students need to understand how their education is relevant to a career, understand their options and what is expected in the workplace, and develop communication, collaboration and critical-thinking skills. Linked Learning achieves this goal in California.

The career-themed Linked Learning approach, based upon the proven Career Academies model, helps high school students stay engaged in school and graduate on time with a concrete understanding of what they will need to succeed in the workforce and academically after high school, thus better ensuring

California businesses have a workforce armed with the appropriate skills set to succeed on the job.

Linked Learning integrates rigorous academics, relevant career education, support services for students and real-world, work-based learning experiences supported by industry and community partners over a three- or four-year period. This educational approach helps students understand why they need to know what they are being taught, stay engaged in school and develop the 21st-century skills employers expect them to have. Linked Learning students opt-in to industry-themed pathways in a wide range of fields, such as engineering, arts and media, biomedicine and health. These pathways prepare high school students for future careers and a full range of post-secondary options, including two- or four-year college, apprenticeships, the military or formal employment training.

Linked Learning can be found in a number of existing models, such as small theme-based learning communities, California Partnership Academies (CPA), National Academy Foundation (NAF) academies and other career academies and regional occupation centers and programs. Although Linked Learning can be found at stand-alone schools, including charter and magnet schools, most Linked Learning pathways exist within larger comprehensive high schools. Often called a “school-within-a-school,” pathways typically comprise no more than 200 students who stay together with the same teachers for the duration of their high school experience. That continuity helps create close relationships among the students, their peers and their teachers. It creates the kind of “team player” mentality employers too often find lacking in their younger employees.<sup>32</sup>

## Four Core Components of Linked Learning

1. **Rigorous academics.** An academic component that includes college preparatory English, mathematics, science, history, and foreign language courses.
2. **Real-world skills.** A challenging career-based component of three or more courses that help students gain the knowledge and skills that can give them a head start on a successful career.
3. **Work-based learning.** A series of work-based learning opportunities that begin with mentoring and job shadowing and evolve into intensive internships, school-based enterprises, or virtual apprenticeships.
4. **Personalized support.** Support services including counseling and supplemental instruction in reading, writing, and mathematics that help students master the academic and technical learning.

## Spotlight on: Dozier-Libbey Medical High School

One Linked Learning pathway in Antioch has emerged as a true model for success. Serving 650 students in grades 9-12, Dozier-Libbey Medical High School offers health care education curricula while preparing students for a variety of careers in the medical industry. This intensive four-year program meets all A-G coursework requirements, with a heavy focus on math and science.

Frequent, hands-on educational activities are key to the program's success. Students are prepared academically with rigorous coursework and are simultaneously exposed to the technology, equipment and terminology commonly used in the health care industry. During the 2010-2011 school year, it is estimated that Dozier-Libbey students had 18,000 interactions with health care professionals, which is an average of 38 encounters per student.

Strong commitment from business leaders and local employers, such as John Muir Health, Sutter Delta Medical Center and Kaiser Permanente, helps students establish a crucial link between high school, post-secondary education and the workforce. The school pairs students with mentors and appropriate internships, and often invites guest speakers to share details on their own career paths and offer perspective on industry trends. Job shadowing programs and service learning opportunities are also available.

By engaging in work-based learning experiences with local employers, students at Dozier-Libbey High School are uniquely prepared for a career in health care and they graduate ready for college and career success.

The school also boasts one of the highest attendance rates and the highest (97 percent) graduation rate in the Antioch Unified School District. Additionally, 97 percent of the school's first graduating class went on to pursue post-secondary education in 2012, compared to just 75 percent of graduates statewide.<sup>33</sup>



Through hands-on learning, Linked Learning students gain the practical skills that cannot be taught from a manual or learned through a classroom lecture. For example, students in a health careers academy can learn how to measure a patient’s blood pressure, administer shots, perform blood-typing, examine x-rays and apply casts. Through internships, students may have the opportunity to work with doctors and nurses, and learn how to express compassion and empathy for patients. Students in some pathways also have the opportunity to become certified in venipuncture, injection training, EKG, CPR and first aid.

## Increased School Success

Increasing both California’s high school graduation rates and enrollment in post-secondary education and training programs are keys to cultivating a skilled workforce. One review of data on students in California Partnership Academies found that more students completed the California university entrance requirements and the Academies had a higher percent of seniors graduate than the state average.<sup>34</sup>

In Contra Costa County, Dozier-Libbey Medical High School maintains the highest attendance rate among high schools in the Antioch Unified School District (97 percent compared to the district average of 95 percent). The school also continuously exceeds the state norms by keeping the California High School Exit Exam (CAHSEE) pass rate around 95 percent in English language arts and math. Additionally, enrollment in advanced placement (AP) classes is increasing, such that almost one-half of the sophomore, junior and senior class was

**IN JANUARY 2013,** the California Department of Education selected 63 local education agencies (LEAs) to participate in the first year of the State Linked Learning Pilot Program – an initiative to develop and support systemic, district-wide systems and policy for the delivery of Linked Learning. Combined, the selected LEAs serve approximately 600,000 high school students across the state.<sup>36</sup>

“John Muir Health partners with many area schools to provide work-based learning for students, as we understand the value to not only the students, but also to the future of health care in our community. Adding relevance to their curriculum helps to prepare a future workforce that is culturally competent, diverse and reflects the population of the communities we serve.”

**Amy Anderson, RN**  
John Muir Health

enrolled in at least one AP class during the 2010-2011 school year. Furthermore, the school has about 65 percent fewer disciplinary incidents than the other high schools in the district, despite the highest student to administrator ratio in the district.<sup>35</sup>

Through Linked Learning, California high school students understand the skills they will need in a particular occupation and can make more informed decisions about post-secondary education and training. Whether they go directly into the workforce or pursue advanced education, these students will ultimately enter the workforce much more prepared to hit the ground running, potentially reducing the time and cost of on-the-job training for businesses and the state.

## The Bottom Line

California—and the East Bay—run the risk of falling behind when it comes to preparing the future health care workforce to compete successfully. The future of our businesses and California’s economy depends upon ensuring that the caliber of our workforce will meet the requirements for our jobs. We must address the anticipated growth in our health care sector by helping students understand career opportunities in this industry and the skills they will need for those jobs. As we continue the debate on meaningful education reform, the conversation must include greater access to rigorous, relevant education strategies like Linked Learning, to help us achieve those goals. Simultaneously, business and industry leaders must seize the opportunity to help shape our future workforce by partnering with Linked Learning pathways to inform curriculum and provide those essential hands-on learning experiences for students.

## Health Care Career Pathways in the East Bay

### Alameda County

Fremont – Irvington High School  
*Science, Health, Athletics, and Psychology  
Education (SHAPE) Academy*

Oakland – LIFE Academy  
*Health and Bioscience Academy*

Oakland – Oakland High School  
*Public Health and Policy Academy*

Oakland – Oakland Technical High School  
*Health and Biotechnology Academy*

San Lorenzo – Arroyo High School  
*Academy of Health and Medicine*

### Contra Costa County

Antioch – Dozier-Libbey Medical High  
School

Concord – Mt. Diablo High School  
*Medical and Bio-Tech Academy*

Concord – Ygnacio Valley High School  
*Health Science Academy*

Pinole – Pinole Valley High School  
*Health Academy*

Richmond – DeAnza Senior High School  
*Health Sports Medicine Academy*

Richmond – Richmond High School  
*Health Science Academy*

### Solano County

Vallejo – Jesse M. Bethel High School  
*Bio Medical Academy*

Vallejo – Vallejo High School  
*Biotechnology Academy*

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- 36 The State Linked Learning Pilot Program was authorized in 2011 with the passage of Assembly Bill 790, authored by Assemblymember Warren Furutani and sponsored by the Los Angeles Area Chamber of Commerce. Linked Learning Alliance. (n.d.). Retrieved May 29, 2013 from <http://linkedlearning.org/policy/pilot-program/>.





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