Hello Santa Cruz County,

I'm thrilled to bring you a report from the heart of our Workforce Development Board (WDB) here in Santa Cruz County. We've poured our energy and dedication into this project, crafting not just a bundle of numbers and graphs but a story. This story paints a vivid picture of where we stand today—our strengths, the challenges we face, and the boundless potential within our local job market.

Please consider this report a bridge connecting all corners of our community. It sheds light on the jobs scene, unpacks the trends shaping our industries, and highlights the incredible work done to prepare our workforce for the future. It's about pinpointing where we're booming and where we need to beef up our skills, offering a helping hand to educators, decision-makers, and businesses alike. Our goal? To map out a path that leads to more jobs and a sturdy, flourishing economy right here at home.

We've made a conscious effort to ensure that this report is accessible, clear, and straightforward, ensuring that it’s a valuable resource across our community, from students to job hunters and beyond. The future of our workforce is a collective concern.

We've provided suggestions on how everyone can contribute to nurturing our workforce. Whether through cutting-edge educational programs, thoughtful policy tweaks, or grassroots efforts, everyone can play a part.

This report is not the end but the beginning of a collaborative journey. It's an open invitation to all of you to join a broader conversation about shaping a prosperous and sustainable economic future for Santa Cruz County. We invite you to dive in, consider the findings, and join us in this important dialogue. Together, we can shape a workforce ready to meet tomorrow's challenges and opportunities.

Warmly,

Andy Stone, Director of the Santa Cruz County WDB
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Acknowledgements

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1 This WIOA Title I – financially assisted program or activity is an equal opportunity employer/program. Auxiliary aids and services are available upon request to individuals with disabilities.
Executive Summary

Introduction

The Santa Cruz County Workforce Development Board engaged BW Research to develop this 2024 State of the Workforce Report. This report highlights the county's workforce, its growing and declining industries, and what that means for training and education, commute patterns, and workers' everyday lives. In addition, this year's report includes a spotlight on the nonprofit sector, a critical subsector of the Santa Cruz County economy, as well as deep dives into key industries likely to be significant drivers of growth in the region over the next few years. As the industry composition of Santa Cruz County continues to evolve, continued efforts and support will be required to ensure that workers within the county are prepared for the changing employment landscape.
Key Findings

State of the Workforce

**Employment** in Santa Cruz County recovered from pandemic-induced losses slower than nearby San Luis Obispo County, and the state (Figure 1). However, the county’s unemployment rate has remained relatively unchanged over the last year (Figure 2).

**Labor force participation rates (LFPR)** in the county fell by 1 percentage point between 2021 and 2022 (Figure 3). While the county’s LFPR has historically exceeded the state and national average, it is now below the state’s and on par with the national LFPR.

**Job quality** has worsened slightly within the county over the last two years, with the share of lower-paying, lower-skill Tier 3 jobs increasing 1.5 percentage points between 2021 and 2023 (Figure 4), and job quality in the county falling below the statewide average (Figure 5).

**Job growth in high-wage industry clusters** has been concentrated in the Defense, Aerospace, and Transportation (DATM) and Biotechnology and Biomedical Devices (B&BD) industry clusters. The DATM cluster grew by 45.9 percent from 2021 to 2023, while the B&BD cluster grew by 21.7 percent (Table 3).

**Mid-wage industry clusters** exhibited mixed job growth, with the Building and Design industry cluster growing by 10.4 percent and the Healthcare industry cluster, the largest industry cluster employer in the county, growing 7.5 percent from 2021 to 2023. However, the Agriculture and Food and Other Manufacturing industry clusters declined 7.2 percent and 9.2 percent during the same period, respectively (Table 4).

**Low-wage industry clusters** exhibited mixed job growth, with the Tourism, Hospitality, and Recreation industry cluster growing 23.0 percent from 2021 to 2023, driven by growth in the Full-Service and Limited-Service Restaurant subindustries. However, the Retail industry cluster declined by 1.2 percent during the same period, driven by a 7.8 percent employment decline in the Supermarkets and Other Grocery Retailers subindustry (Table 5).
Living in Santa Cruz County

The county’s population has steadily declined since 2015. Between 2020 and 2021, nearly 8,200 residents left Santa Cruz County, representing a 3.0 percent decline in the county’s population. While the county gained nearly 1,700 residents from 2021 to 2022, representing a 0.6 percent population increase, the county lost almost 2,300 residents from 2022 to 2023, reversing the previous year’s growth (Figure 21).

Housing costs in Santa Cruz County continued to increase, with median single-family home prices continuing to exceed the statewide average in 2023 (Figure 19). The percentage of county residents who can afford a median-priced home has also decreased sharply over the last three years (Figure 20). Elevated housing costs contribute to a high cost of living in the county, which induces many high-wage workers to commute to Silicon Valley to earn higher salaries for comparable jobs.

The share of 65+ year-old residents grew by 2.9 percentage points from 2018 to 2022, while the prime-working-age population of 25 to 54-year-olds decreased by 0.4 percentage points (Figure 14). As of 2022, the county had a larger share of 65+ residents than the state (Figure 12). The aging of the county’s population poses significant challenges for the county’s economy and workforce in the years to come. It may contribute to potential shortages of skilled workers in the future.

Remote work in the county more than doubled from 2018 to 2022, increasing from 7.6 percent to 15.9 percent (Figure 22), and nearly one in five north county residents worked from home in 2022 (Figure 23).²

The cost of living in the county exceeds the county’s average annual wages. In county households with two working adults and two children, each adult must earn $86,778 to meet the MIT Living Wage definition, which is nearly 25 percent greater than the county’s average annual wage of $69,700 in 2023 and is equivalent to the income of 1.8 Tier 3 jobs. In households with only one working adult and two children, the adult must work 3.5 Tier 3 jobs to meet the MIT Living Wage definition (Table 2).

² However, it should be noted that residents working from home for a business outside of Santa Cruz County are counted as working outside the county, posing a challenge to accurately measuring remote worker wages.
Deep Dive into the Nonprofit Sector

**Nonprofits are a significant source of jobs** in Santa Cruz County, both as direct employers (generating nearly 1,400 jobs in 2023) and as facilitators of job growth. However, nonprofit employment (excluding religious organizations) has only grown modestly over the last five years, and the sector has added only 22 jobs (+1.6 percent) between 2018 and 2023.

**Nonprofits in Santa Cruz County help connect jobseekers** to the services, training, and support structures they need to access living-wage career opportunities through education, cross-sector partnerships, and advocacy. Nonprofits like Dientes Community Dental and Digital NEST help to empower people in disadvantaged communities to develop the skills they need for the jobs of the future through mentorship, guidance, training, career fairs and expos, internships, tuition forgiveness, and other innovative programs (see Case Studies).

Conclusions and Recommendations

Employment in Santa Cruz County has remained relatively high, but the cost of living has also remained high, largely due to elevated housing prices. In the county, wages have failed to keep pace with the cost of living, with only one in eight county residents able to afford to buy a median-priced home, as compared to one in six California residents, approximately one in nine San Luis Obispo County residents, and approximately one in nine Monterey County residents.

The supply of affordable housing in Santa Cruz County must increase dramatically to meet the projected housing needs of the community. In households with two working adults and two children, each adult must work 1.8 Tier 3 jobs to meet the living wage determination in Santa Cruz County.

Santa Cruz County’s workforce is centered around Healthcare, Tourism, Agriculture, and Education, with these four industries collectively accounting for 6 in 10 jobs in Santa Cruz County. Over the last year, employment in three of these four industries has grown, with the low-wage Tourism, Hospitality, & Recreation industry recording job growth of 23.0 percent, the middle-wage Education industry recording job growth of 10.0 percent, the middle-wage Healthcare industry recording job growth of 7.5 percent, and the middle-wage Agriculture industry reporting job losses of -7.2 percent. It is anticipated that employment in the Healthcare industry will continue to grow as the county’s population ages; seniors represent a large and increasing share of the county’s population.

While county employment has been concentrated in lower-wage industries, it should be noted that many of the county’s high-wage industry clusters performed exceptionally well over the past year in terms of job growth. Within the Defense, Aerospace & Transportation Manufacturing (DATM) industry, jobs grew by 45.9 percent; jobs in the DATM industry are 32 percent more concentrated in Santa Cruz County than in the United States overall. The high-wage Biotech & Biomedical Device industry also performed exceptionally well, reporting a 21.7 percent increase in jobs over the last year. Jobs in the Biotech & Biomedical Device industry are 20 percent more concentrated in Santa Cruz County than in the United States. The only high-wage industry cluster to sustain employment losses was the Information & Communications Technology (ICT) industry, which lost -4.1 percent of jobs over the same period. However, job losses in the ICT industry were consistent with nationwide trends.
Looking to the future, we recommend that the County and local efforts target the following goals:

1. **Expand partnerships with key local nonprofits and wraparound service providers** to ensure that job seekers have access to critical needs such as affordable housing and transportation. Elevated housing costs contribute to a high cost of living in the county, which induces many high-wage workers to commute to Silicon Valley to earn higher salaries for comparable jobs.

2. **Support educational attainment and job quality** by ensuring that vulnerable populations can access the skills they need to find living wage jobs, such as English as a Second Language (ESL), basic digital literacy, interviewing, communication, and leadership. Connect vulnerable populations to critical local nonprofits that can provide focused assistance with upskilling and reskilling.

3. **Identify and communicate career pathways and industry clusters** with significant growth opportunities, such as the emerging, high-paying DATM and Biotech and Biomedical Device industries, as well as the mature Healthcare industry, where demand for workers is expected to spike as the growing aging population drives a surge in demand for geriatric care. Increasing awareness amongst local jobseekers can boost retention in these key industries.

4. **Highlight the valuable contributions** to workforce development that the nonprofit sector makes within Santa Cruz County. For example, Santa Cruz Works – a tech-focused nonprofit – has assisted jobseekers with over 5,000 job placements since 2008; has hosted over 400 events aiming at skills-building and entrepreneurship, including a career fair that included 30 local employers and a hackathon with 600 attendees; and has accelerated over 100 local startups.

These recommendations focus not only on the WDB but also the broader community and county. This more comprehensive focus is crucial as many recommendations may have implications beyond the scope of the WDB.
Map of Santa Cruz County

**North**
- Aptos, Ben Lomond, Boulder Creek, Brookdale, Capitola, Davenport, Felton, Mount Hermon, Santa Cruz, Scotts Valley, Soquel
- 95001, 95003, 95005, 95006, 95007, 95010, 95017, 95018, 95041, 95060, 95061, 95062, 95063, 95064, 95065, 95066, 95067, 95073

**South**
- Freedom, Watsonville
- 95004, 95019, 95076, 95077
Economic Profile

This section summarizes key economic indicators such as total employment, labor force participation rate, industry clusters, and job quality across different tiers. The industry cluster analysis sheds light on the county's competitive advantage in specific sectors, and indicators such as job quality provide a more nuanced perspective on the economic well-being of county residents, which other aggregated measures do not necessarily provide.

Employment Growth Rate

Employment in Santa Cruz County recovered from pandemic-induced losses slower than in nearby San Luis Obispo County and the state (Figure 1). Overall employment in Santa Cruz County grew 5.7 percent from 2020 to 2023, outpaced by growth in nearby San Luis Obispo County (9.0 percent) and the state (8.4 percent).

Figure 1 shows employment in Santa Cruz County recovered from COVID-19 employment losses slower than San Luis Obispo County and the state.

Figure 1. Employment Change for Santa Cruz County, San Luis Obispo County, and the State (2020-2023)\(^3\)

Unemployment Rate

The county’s unemployment rate fell steadily from 2020 to 2022, recovering to pre-pandemic levels and remaining steady through 2023. In 2023, the county’s unemployment rate was consistent with the statewide average, though it continued to exceed the national average every year from 2018 to 2023 (Figure 2).

Figure 2 shows unemployment in the county decreased to pre-pandemic levels in 2023 and is now consistent with the statewide average.

\(^3\) California EDD. Local Area Unemployment Statistics (2020 – 2023).
Labor Force Participation Rate

While the county’s labor force participation rate (LFPR)\(^5\) has historically exceeded the statewide and nationwide average, it dropped by approximately 1 percentage point between 2021 and 2022, falling below the state’s LFPR. However, the county’s LFPR was on-par with the national LFPR (Figure 3).

Figure 3 shows Santa Cruz County’s labor force participation rate dropped below the statewide average in 2022.

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\(^5\) The labor force participation rate (LFPR) measures the percentage of the citizen population that is available and willing to work.

Santa Cruz County faces more significant challenges with respect to its LFPR relative to the nation due to three factors:

1. Seniors (65 and up) constitute a relatively large and growing share of the county’s population.

2. The lack of affordable housing, combined with relatively low wages, pushes working-age families out of the county, shrinking the size of the county’s prime working-age population.

3. There are not enough high-paying jobs available in Santa Cruz County.

The drop in the working-age population and its attendant effects on the resident workforce may exacerbate labor shortages for skilled workers in the county. In addition, an elevated share of older adults and retirees may change the demand drivers for local economies (for example, rapidly aging populations have greater demands for healthcare services).

According to the Federal Reserve Bank of San Francisco, the national LFPR was almost a percentage point below pre-pandemic levels as of July 2023 and is predicted to fall by an additional percentage point over the next decade as the share of seniors continues to grow. Since Santa Cruz County’s LFPR will likely continue to decline consistent with nationwide trends, increased investments in the county’s labor force may be merited to ensure that the gap between the county’s LFPR and state and nationwide LFPRs does not continue to widen over time.

**Job Quality**

Job quality—typically measured in tiers—is a crucial measure of a region's economic vitality. For instance, if a region has many jobs, but most of those jobs pay less than a sustainable wage, workers will struggle to live and work there.

*Table 1. Job Tier Description*[^8][^9]

[^8]: Tiers do not include all SOC codes, and therefore may not sum up to total county and statewide employment.
Tier 1 occupations are typically the highest-paying, highest-skilled occupations in the economy. These include managerial positions (e.g., Sales Managers), professional positions (e.g., Lawyers), and highly skilled technology occupations, such as engineers, scientists, and computer programmers.

Tier 2 occupations are typically middle-wage, middle-skill occupations. These occupations include office and administrative positions (e.g., Accounting Clerks and Secretaries), manufacturing operations, and production positions (e.g., Electricians, Machinists).

Tier 3 occupations are typically the lowest-paying, lowest-skilled occupations and tend to account for the largest share of jobs in the County. These occupations include food service and retail jobs, building and grounds cleaning positions, and personal care positions.

As shown in Figure 4, job quality has fallen slightly within the county since 2021, with the share of lower-skill and lower-wage Tier 3 jobs increasing by 1.4 percentage points between the second quarter of 2021 and the second quarter of 2023. In addition, Santa Cruz County’s job quality is lower than the statewide average, with a higher share of Tier 3 jobs compared to California (Figure 5).

Figure 4 shows job quality in the county has worsened slightly since 2021.

Figure 4. Job Quality by Tier in Santa Cruz County (2021Q1 – 2023Q2)\textsuperscript{10}

Figure 5 shows the county has a larger share of lower-paying and lower-skilled jobs than the rest of California.

In county households with two working adults and two children, each adult would need to work 1.8 Tier 3 jobs to meet the living wage determination (Table 2).

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Table 2. Living Wage Determination (2023)\textsuperscript{12}

<table>
<thead>
<tr>
<th>Family Size</th>
<th>Living Wage Annual Salary</th>
<th>Hourly Wages Required to Achieve Salary (Per Working Adult)</th>
<th>Number of Tier 3 Jobs Required to Achieve Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Adult &amp; 2 Children</td>
<td>$163,524</td>
<td>$78.62</td>
<td>3.5</td>
</tr>
<tr>
<td>2 Adults (1 working) &amp; 2 Children</td>
<td>$133,433</td>
<td>$64.15</td>
<td>2.8</td>
</tr>
<tr>
<td>2 Adults (both working) &amp; 2 Children</td>
<td>$86,778</td>
<td>$41.72</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Industry Cluster Employment

The subsequent sections outline the seventeen significant industry clusters in Santa Cruz County, categorized by earnings (high, mid, and low). High-wage clusters offer an average annual wage of more than $75,000, mid-wage clusters provide wages of $50,000 to $74,999, and low-wage industry clusters offer an average annual salary of less than $50,000. Cluster-specific location quotients are also presented in the below tables.\textsuperscript{13}

As described below, major employers in Santa Cruz County include the Healthcare industry, which accounts for approximately one in six jobs (16.9 percent), followed by the Tourism, Hospitality, and Recreation industry (16.3 percent), the Education and Knowledge Creation industry (14.6 percent), and the Retail industry (11.5 percent). Collectively, these four industries accounted for over half of all jobs in Santa Cruz County (59.3 percent).

Industry Clusters

Industry clusters are often used by economists to determine a region's drivers of development. Clusters are closely related industries that often work together in supply chains or create value through other sources of interconnectedness, such as partnerships, business opportunities, or a shared workforce. Cluster analyses allow the county to engage with employers central to regional economic growth, and to create workforce development programs in high-growth clusters.

Highest Earning Clusters

Employment in all highest-earning industry clusters grew between 2021 and 2023, except for Information, Communications, and Technology (ICT). The Defense, Aerospace, and Transportation Manufacturing (DATM) industry cluster, the county's highest-paying industry cluster, exhibited a remarkable 45.9 percent increase in employment from 2021Q2 to 2023Q2, primarily driven by an 81.5 percent increase (+334 jobs) in the Automobile and Light Duty Motor Vehicle Manufacturing subindustry. The Biotech and Biomedical Device industry also

\textsuperscript{12} MIT Living Wage Calculator (2024).
\textsuperscript{13} Location quotients are ratios used to assess the concentration for an industry group in a specific area relative to a larger geographic area (i.e., the United States). Location quotients are valuable in determining if a region specializes in a particular industry cluster compared to the average at the state or national level. For example, a location quotient greater than one signifies an above-average concentration of those jobs in the region, while a location quotient below one indicates a below-average concentration. A location quotient of one indicates that the regional job concentration is on par with the broader region it is being compared to.
exhibited a considerable gain in employment (+21.7 percent), driven by sharp growth in the Pharmaceutical Preparation Manufacturing subindustry (+67.5 percent, +376 jobs).

The Public Services and Infrastructure industry exhibited a more minor employment increase of 2.6 percent, and the Finance, Banking, and Insurance industry exhibited a 0.9 percent increase. The Professional and Business Services industry, the largest high-earning industry cluster by employment size, exhibited a 0.7 percent increase, driven by a 22.3 percent increase (+107 jobs) in the Management Consulting Services subindustry. The Information, Communications, and Technology (ICT) industry exhibited a 4.1 percent decline in employment, driven by employment losses sustained in the Other Computer Related Services subindustry (-87.1 percent, -72 jobs); ICT was the only high-earning industry cluster to experience employment declines from 2021Q2 to 2023Q2.

As shown in Table 3, Defense, DATM jobs are more prevalent in Santa Cruz County compared to the rest of the nation. Jobs in this industry cluster are 32 percent more concentrated in Santa Cruz County than in the United States, representing a location quotient (LQ) of 1.32. Biotechnology and Biomedical Devices jobs are also more prevalent in Santa Cruz County than the rest of the nation, with a concentration 20 percent higher than in the United States or an LQ of 1.20. All other high-earning clusters in Santa Cruz County have job concentrations below the national average.

14 Administrative Management and General Management Consulting Services.
15 The ICT industry includes subindustries related to electronics and electronic component manufacturing, telecommunications companies, and computer-related services.
16 This industry comprises establishments primarily engaged in providing computer related services, such as software installation services and data disaster recovery services.
### Table 3. Industry Cluster Overview – Highest Earning Industry Clusters (2021Q2 – 2023Q2)\(^\text{17}\)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Defense, Aerospace, &amp; Transportation Manufacturing (DATM)</td>
<td>2,311</td>
<td>45.9%</td>
<td>$159,811</td>
<td>1.32</td>
<td>Automobile &amp; Light Duty Motor Vehicle Manufacturing</td>
<td>743</td>
<td>81.5%</td>
</tr>
<tr>
<td>Information &amp; Communication Technologies (ICT)</td>
<td>1,697</td>
<td>-4.1%</td>
<td>$122,724</td>
<td>0.48</td>
<td>Other Computer Related Services(^\text{18})</td>
<td>598</td>
<td>36.9%</td>
</tr>
<tr>
<td>Finance, Banking, &amp; Insurance (FBI)</td>
<td>1,999</td>
<td>0.9%</td>
<td>$99,487</td>
<td>0.45</td>
<td>Direct Property &amp; Casualty Insurance Carriers</td>
<td>89</td>
<td>47.4%</td>
</tr>
<tr>
<td>Public Services &amp; Infrastructure</td>
<td>2,233</td>
<td>2.6%</td>
<td>$91,074</td>
<td>0.76</td>
<td>Power &amp; Communication Line Construction(^\text{19})</td>
<td>77</td>
<td>1084.1%</td>
</tr>
<tr>
<td>Professional &amp; Business Services</td>
<td>9,075</td>
<td>0.7%</td>
<td>$82,884</td>
<td>0.69</td>
<td>Management Consulting Services(^\text{20})</td>
<td>589</td>
<td>22.3%</td>
</tr>
<tr>
<td>Biotechnology &amp; Biomedical Devices (B&amp;BD)</td>
<td>2,188</td>
<td>21.7%</td>
<td>$81,386</td>
<td>1.20</td>
<td>Pharmaceutical Preparation Manufacturing</td>
<td>934</td>
<td>67.5%</td>
</tr>
</tbody>
</table>

**DATM Industry Cluster**

In recent years, considerable investments have been made in the DATM industry. In June 2022, more than $178 million in tax credits were extended to qualifying businesses in sectors expected to shape the future, including space exploration. The California Competes Tax Credit was expected to fund more than 7,600 new full-time jobs in California and to bring more than $1.78 billion in new investments to the state over the next five years.

Joby Aviation is one of the key DATM employers in Santa Cruz County. Joby is the designer of an all-electric, vertical take-off and landing (eVTOL) aircraft that has received airworthiness approval from the U.S. Air Force and certification allowing it to operate a commercial air taxi service. Joby has also partnered with Uber and Delta Air Lines to provide commercial air taxi services. Joby’s rapid expansion in Santa Cruz County has created numerous high-wage job opportunities.

In 2023, Joby launched production at its pilot production plant in Marina, California, and cut the ribbon on a $25.5 million headquarters in the former Plantronics building in Santa Cruz. Joby also made its first delivery to the U.S. Air


\(^{18}\) This industry comprises establishments primarily engaged in providing computer related services, such as software installation services and data disaster recovery services.

\(^{19}\) Power and Communication Line and Related Structures Construction.

\(^{20}\) Administrative Management and General Management Consulting Services.
Force as part of a $131 million contract to deliver and operate aircraft for the U.S. Department of Defense. Joby plans to launch commercial air taxi services using its eVTOL aircraft starting in 2024.\textsuperscript{21}

Regionally, significant work is also being done to advance drone, automation, and robotics technology (DART) in neighboring Monterey County. The Monterey DART Initiative brings together industry, government, academia, and practitioners in these industry clusters. It provides a regional coordination and advancement forum targeting workforce development, critical infrastructure and facilities access, innovation and entrepreneurship, and business advocacy.

Figure 6 shows a potential career pathway within the Defense, Aerospace, and Transportation Manufacturing industry cluster.

\textit{Figure 6. Potential Career Pathway – DATM Industry Cluster}\textsuperscript{22}

- **Laborers and Material Movers**
  - $45,900 Annual Salary
  - High School Diploma or Equivalent

- **Electromechanical Equipment Assembler**
  - $61,600 Annual Salary
  - Some College, No Degree

- **Engineering Technician**
  - $82,900 Annual Salary
  - Bachelor’s Degree

- **Electrical or Electronics Engineer**
  - $136,400 Annual Salary
  - Bachelor’s Degree

\textbf{Biotech & Biomedical Devices Industry Cluster}

Researchers at UCSC were the first to assemble the human genome sequence, publish it on the web, and create a human genome browser, which evolved into what is known as the UCSC Genome Browser. The UCSC Genome Browser is an interactive, web-based microscope that allows researchers to view all 23 chromosomes of the human genome at any scale, from an entire chromosome to an individual nucleotide, and receives over a million hits daily. The UCSC Genome Browser has become an essential tool for genomics researchers and is the platform for several large-scale genomics projects. UCSC researchers have continued to pioneer breakthroughs in genomic research, including work in nanopore sequencing, high-throughput genomics, nanopipette technology, and conservation genomics.\textsuperscript{23}

UCSC’s expertise in genomics has facilitated entrepreneurship within Santa Cruz County. For example, biomolecular engineering professor Richard Green has applied UCSC-patented technology to launch three biotech companies: Dovetail Genomics (now part of Cantata Bio), Astrea Forensics, and Claret Bioscience. According to Green, the ability to launch spinoff companies has provided opportunities for his students to stay in Santa Cruz to help build its growing community of biotechnology companies.\textsuperscript{24}

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\textsuperscript{21} https://www.jobyaviation.com/
\textsuperscript{23} https://genomics.ucsc.edu/projects/
\textsuperscript{24} https://news.ucsc.edu/2023/09/innovation-entrepreneurship.html
B&B&D firms with locations in Santa Cruz County include Santa Cruz Biotechnology, a world leader in the development of biomedical research products, including antibodies, biochemicals, and CRISPR products; Capstan Medical, a developer of minimally invasive alternatives integrating surgical robotics with catheter-based technology to treat heart valve diseases; and Unnatural Products, a developer of an AI platform that creates new drugs by engineering synthetic molecules that mimic nature’s macrocycles (see case studies below).²⁵ ²⁶ ²⁷ ²⁸

**BUSINESS CASE STUDY**

**Capstan Medical**

Established in 2020, Capstan Medical is a Santa Cruz-based developer of next-generation heart valve implants and an innovative catheter-based robotic delivery platform. Capstan Medical is a product of Occam Labs, a medical device incubator, which had approximately thirty employees as of September 2023.

Capstan Medical’s solutions target transcatheter-based replacements of the mitral and tricuspid valves, which have historically been treated via open-heart surgery. There are currently no FDA-approved transcatheter mitral or tricuspid valve replacements commercially available. With mitral regurgitation being one of the most common structural heart diseases, it is estimated that minimally invasive approaches to treatment such as Capstan Medical’s could grow to become a multibillion-dollar market.

In August 2023, Capstan Medical announced that it had collected $31.4 million in venture capital funding, which it intended to use to grow its engineering, clinical development, and operations teams. Subsequently, in September 2023, Capstan Medical indicated that it planned to expand its footprint in Santa Cruz’s Wrigley Building to three times the size of its then-current space, and to double its headcount over the next 12 months.

BUSINESS CASE STUDY

Unnatural Products

Unnatural Products (UNP) is a Santa Cruz-based biotech startup co-founded by former UCSC students Cameron Pye and Joshua Schwochert. UNP uses a combination of machine learning and parallel synthesis to engineer a new class of chemical matter, capable of binding intracellular targets with small molecule drug-like properties. UNP’s solutions attempt to “address the complexities of medicinal chemistry in the macrocycle space.”

According to Pye, UCSC’s initiatives provide UCSC students with a support system to spin off companies that draw on innovations developed on-campus. When UNP’s co-founders began working on their doctorate degrees at UCSC, most of their research funding was obtained from pre-competitive collaborations with top-tier pharma firms. This allowed them the opportunity to work directly with R&D teams in the industry, allowing them to better understand how their research could be commercialized. In addition, many of UNP’s employees are UCSC alumni.

In December 2023, UNP announced $32 million in Series A funding, led by Merck Global Health Innovation Fund and ARTIS Ventures. Subsequently, in January 2024, UNP signed a deal with Merck & Co. to develop a macrocyclic peptide against an undisclosed oncology target, potentially valued at up to $220 million.

As outlined in the industry cluster analysis, the B&BD industry exhibited a significant gain in employment (+21.7 percent) in 2022, driven by sharp growth in the Pharmaceutical Preparation Manufacturing subindustry (+67.5 percent, +376 jobs).

Figure 7 below illustrates a potential career pathway within the Biotech and Biomedical Devices industry cluster.

Figure 7. Potential Career Pathway – Biotech and Biomedical Devices Industry Cluster

<table>
<thead>
<tr>
<th>Position</th>
<th>Annual Salary</th>
<th>Education Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging and Filling Machine Operators</td>
<td>$41,700</td>
<td>High School Diploma or Equivalent</td>
</tr>
<tr>
<td>Chemical Equipment Operators</td>
<td>$54,200</td>
<td>Some College, No Degree</td>
</tr>
<tr>
<td>Engineering Technologist or Technician</td>
<td>$79,200</td>
<td>Bachelor’s Degree</td>
</tr>
<tr>
<td>Biochemist or Biophysicist</td>
<td>$128,900</td>
<td>Bachelor’s Degree</td>
</tr>
</tbody>
</table>

ICT Industry Cluster

Santa Cruz County’s proximity to, and relationships with, Silicon Valley provides opportunities to access a large and highly skilled talent pool of tech workers and innovations developed by a network of market-leading tech firms, some of which operate branches or subsidiaries in Santa Cruz County. However, the disparity in wages between

Santa Cruz County and Santa Clara County serves as a powerful motivator for Santa Cruz County residents to seek employment in and commute to the Bay Area to earn higher wages for comparable jobs.

Historically, some of the major tech subsectors in Santa Cruz County have included Software Publishers, Computer and Electronic Manufacturing, Computer Systems Design and Related Services, and Management and Technical Consulting Services. Some of the major ICT employers in the county include Amazon (whose Santa Cruz office comprises members of the Alexa team and Seller services), Poly (a developer of unified communications technologies headquartered in Santa Cruz that was acquired by HP in 2022), and Looker (a software developer headquartered in Santa Cruz, that was acquired by Google in 2019). Other emerging tech companies in Santa Cruz County include Ambient Photonics, a developer of low light energy harvesting photovoltaic technology, and fullpower-AI, a developer of a deep learning generative AI sensing platform backed by over 135 patents.

Figure 8 illustrates a potential career pathway in the ICT industry cluster.

Figure 8. Potential Career Pathway – ICT Industry Cluster

Electromechanical Equipment Assemblers
- $47,400 Annual Salary
- High School Diploma or Equivalent

Computer User Support Specialist
- $72,900 Annual Salary
- Some College, No Degree

Computer Systems Analyst
- $113,700 Annual Salary
- Bachelor’s Degree

Software Developers
- $145,500 Annual Salary
- Bachelor’s Degree

As previously noted, the ICT industry exhibited a 4.1 percent decline in employment in 2022, driven by employment losses sustained in the Other Computer Related Services subindustry (-87.1 percent, -72 jobs). The ICT industry was the only high-earning industry cluster in Santa Cruz County to experience employment declines from 2021Q2 to 2023Q2.

Employment losses in Santa Cruz County’s tech sector mirrored national trends, as large tech companies, including Google, Amazon, and Meta, laid off thousands of workers in 2022 and 2023 due to growing unease spurred by rising interest rates, inflation, and slowing revenue growth. While the pandemic boosted revenues and profits for many ICT companies selling cloud-based apps and services and spurred hiring sprees, it was not possible to sustain such growth indefinitely, and some firms sought to “right-size” their workforce via layoffs to restore productivity as fears of an impending recession grew. Layoffs.fyi, which tracks employment losses in the tech industry, estimated that layoffs affected more than 400,000 tech jobs in 2022 and 2023.

In 2024, the deployment of artificial intelligence (AI) is expected to continue to affect the ICT industry, with some tech companies aggressively pursuing the integration of AI technology into their product offerings and workflows. AI implementation is expected to fuel productivity gains as existing workers increasingly delegate lower-level tasks to AI and shift efforts toward higher-value tasks.

As the nature of work in the ICT sector continues to evolve, it will be critical for educational institutions and training providers to ensure that entry-level and transitioning workers have the digital skills necessary to navigate the

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31 This industry comprises establishments primarily engaged in providing computer related services, such as software installation services and data disaster recovery services.
32 https://www.washingtonpost.com/technology/2024/02/03/tech-layoffs-us-economy-google-microsoft/
33 https://www.dice.com/career-advice/tech-layoffs-spiked-in-january-2023
34 https://www.wired.com/story/tech-layoffs-2024-amazon-google-discord-twitch/
industry's changing requirements. The case studies that follow outline examples of workforce support provided by local nonprofits to the ICT sector.

**ORGANIZATION CASE STUDY**

**Santa Cruz Works**

Santa Cruz Works is a nonprofit founded in 2012, whose mission is to make Santa Cruz County a great place to start, sustain, and grow a business. Santa Cruz Works has over 12,000 members, including CEOs, executives, networkers, and entrepreneurs. The nonprofit supports local workforce development by:

- Hosting three events per month, ranging from showcasing local businesses who are hiring as well as skills-building classes and re-skilling/up-skilling clinics.
- Hosting CEO Works luncheons for C-level executives, which helped establish and maintains a network for executive-level peer-to-peer discussions on best practices for hiring and operating a business in Santa Cruz County.
- Hosting job fairs, including the largest job fair in the county, serving 30+ local employers.
- Hosting a hackathon, an annual event where approximately six hundred attendees can learn new skills over the course of a 3-day period.
- Hosting an accelerator program, which supports local innovators and entrepreneurs.

In addition, Santa Cruz Works has partnered with Santa Cruz Ventures to offer a $10 million venture capital fund aimed at providing seed funding to startups focused on sustainability and planetary health in Santa Cruz and along the Central Coast.
ORGANIZATION CASE STUDY

Digital NEST

Digital NEST is a Watsonville-based nonprofit that focuses on underserved Latinx youth ages 14-24 in vulnerable communities. Digital NEST supports workforce development by:

- Hosting technology centers in vulnerable communities.
- Providing training in Web and information technology services, programming languages, IT support, and digital arts (including graphic design and videography).
- Providing training in soft skills such as project management, marketing, and communications.
- Providing peer collaboration, coaching, and professional mentorship opportunities.
- Providing career exploration services, including coordinating field trips, workshops, and other events targeted at high school students.
- Hosting an alumni career services program.
- Hosting an internship program for 22 interns (growing to 50 interns in 2024).

According to Jacob Martinez, Founder and CEO, Digital NEST’s internship program fills a gap in the local job market, because local employers have been reluctant to invest in internship programs due to transiency, as numerous students leave the county after completing an internship program. Thus, Digital NEST employs interns on its own staff to work on real-world projects, such as building websites for UC Santa Cruz, doing branding work for the county Public Defender’s Office, and supporting the IT needs of the Santa Cruz Superior Court.

Furthermore, according to Jacob, most workforce development programs only support K-12 students and then pass on the educational responsibilities to higher learning institutions; then, after college, support ends. However, unlike traditional programs, Digital NEST aims to expand its support services to youth ages 14 and up all the way through retirement, supporting diverse needs along the career path, especially for people of color, who are often first-generation career professionals.

Public Services & Infrastructure Industry Cluster

As documented in the prior year report, opportunities in the Public Services & Infrastructure industry cluster are expected to be driven by an influx of funding for infrastructure projects mandated by the U.S. Infrastructure Investment and Jobs Act (IIJA), the Inflation Reduction Act (IRA), and the US CHIPS and Science Act. This influx of funds will present a significant opportunity for Santa Cruz County to improve its transportation infrastructure, water infrastructure, climate change resilience, and housing stock.

Furthermore, the County of Santa Cruz has significantly invested in road repair and improvement projects, allocating over $119 million from its FY 2023-24 adjusted budget. These funds have been directed towards more
than 180 projects, including repairing storm damage, enhancing traffic control, replacing bridges, and implementing other improvements.\textsuperscript{35}

Between 2022 and 2025, three phases of work on Highway 1 have been planned to add auxiliary lanes, bus-on-shoulder areas, new bridges for cyclists and walkers, and segment 12 of the Coastal Rail Trail. In addition, an 8-mile pipeline is being constructed underground to connect the Santa Cruz Wastewater Treatment Facility to the Chanticleer Water Purification Center in the Live Oak area and then on to Aptos.\textsuperscript{36} Investments in the transportation infrastructure have been welcomed by county residents and workers alike, as a good portion of the county’s high-wage resident population commutes to the Bay Area to work, and many of the county’s low-wage jobs are staffed by residents of neighboring counties with lower housing costs, who commute into the county to work.

Moreover, following a three-year legal battle, the Santa Cruz City Council voted to approve plans to renovate the Santa Cruz Municipal Wharf. Deferred maintenance on the wharf was expected to cost $14 million. The renovations will include the construction of an East Promenade for pedestrians and cyclists, to be completed over the next two to five years, an events pavilion, additional shops, an expanded lifeguard headquarters, two new boat landings, and a welcome center.\textsuperscript{37}

The substantial investment in infrastructure and housing improvements is expected to generate a sizeable number of jobs throughout the county, ranging from hundreds to thousands and possibly exerting a significant strain on existing workforce and training pipelines. This section of the report provides an update on the current state of relevant labor pools to identify which areas may need support to keep up with the anticipated demand.

Within the Public Services & Infrastructure industry cluster, Santa Cruz County’s transportation workforce\textsuperscript{38} saw a 6.0 percent increase (+33 jobs) in employment from 2021 to 2023. However, Santa Cruz County’s water workforce\textsuperscript{39} experienced no significant change between 2021 and 2023, gaining just 4 jobs during the period. In contrast, Santa Cruz County’s residential construction workforce\textsuperscript{40} grew 6.5 percent (+105 jobs) between 2021 and 2023.

\textsuperscript{35} https://www.santacruzcountyca.gov/VisionSantaCruz/OperationalPlan.aspx
\textsuperscript{36} https://www.soquelcreekwater.org/597/PWS-Conveyance-Project
\textsuperscript{37} https://santacruzlocal.org/2024/01/10/santa-cruz-wharf-renovation-plan-approved/
\textsuperscript{38} Includes Highway, Street, and Bridge Construction, and Other Heavy and Civil Engineering Construction employment.
\textsuperscript{39} Includes Water Supply and Irrigation Systems, Water and Sewer lines and Related Structures Construction, and Sewage Treatment Facilities employment.
\textsuperscript{40} Includes New Single Family Home Construction, New Multi-Family Home Construction, Residential Remodelers, and New Housing For-Sale Builders employment.
Figure 9 shows Santa Cruz County’s growing infrastructure industry employment, with the Residential Construction sector experiencing 6.5 percent growth since 2021.

**Figure 9. Infrastructure Employment by Sector in Santa Cruz County (2021Q2 – 2023Q2)**

Within the Energy sector, employment in Santa Cruz County is concentrated in the Motor Vehicles sector, representing over one-third (38.8 percent) of total energy employment in the county as of 2022. The Energy Efficiency sector is the next largest energy employer, representing 31.5 percent of total energy employment. In contrast, the Electric Power Generation and Transmission, Distribution, and Storage sectors represent approximately 12.0 percent of total energy employment each. The Fuels sector is the smallest energy sector in the county, representing just 5.7 percent of total energy employment in 2022.

Figure 10 shows the Motor Vehicles sector is the largest clean energy employer in the county.

**Figure 10. Clean Energy Employment by Sector in Santa Cruz County (2022)**

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43 Includes High Efficiency HVAC and Renewable Heating and Cooling, Traditional HVAC, ENERGY STAR and Efficient Lighting, and Advanced Materials.
44 Includes Solar, Wind, Hydroelectric, Low-Impact Hydroelectric, Natural Gas Generation, and Other Power Generation employment.
45 Includes Traditional TDS, Storage, Smart Grid, Microgrid, and Other Grid employment.
46 Includes Coal, Petroleum, Natural Gas, Woody Biomass, Corn Ethanol, Other Clean Fuels, and Other Traditional Fuels employment.
While there are significant opportunities for growth in the Public Services & Infrastructure industry cluster, there are also significant challenges. Thus, Bonnie Lipscomb, Director of Economic Development at the City of Santa Cruz, supports investments in workforce development in the skilled trades, as well as efforts to pool resources for apprenticeship programs, such as those offered by the Buildings Trades Council and the Nor Cal Carpenters Union (described in the case studies that follow).

**ORGANIZATION CASE STUDY**

**Building Trades Council**

While Construction jobs offer high wages, according to Manny Pinheiro, CEO of the Building Trades Council, it has been difficult to recruit workers into the trades. Thus, the Building Trades Council has developed and implemented a pre-apprenticeship program available to both entry-level and mid-career jobseekers. Pre-apprenticeships help recent college graduates start a career in the Construction industry right after graduating without having to accumulate tens of thousands of dollars in student debt, and pre-apprenticeships help jobseekers considering changing careers to determine whether Construction would be a suitable career track without fully committing to an apprenticeship program.

In addition, the Council is working with the California Department of Education to restore industrial arts curricula, such as wood shop, metal shop, and hospitality, in county schools. Manny emphasizes the importance of targeting students starting from the middle school level, to ensure that they are aware of opportunities for high-paying jobs in the trades, that do not require a college degree.
ORGANIZATION CASE STUDY

Nor Cal Carpenters Union

The Nor Cal Carpenters Union has implemented multiple measures to support regional workforce development.

For example, the union operates a regional training center that has a waitlist of over 1,000 people for its apprenticeship program. According to Sean Hebard, District Manager of the Nor Cal Carpenters Union, “We don’t have a worker shortage; we have an opportunity shortage.”

The main carpenter’s apprenticeship program is four years long and requires 480 hours of classroom instruction and 4,800 hours of paid on the job training. Classes are held at the school or, occasionally, at building sites for safety certifications and new technologies. The pre-apprenticeship program provides training on soft skills and construction skills and is unpaid; however, it offers a travel stipend, and completion of the pre-apprenticeship provides for automatic entry into the apprenticeship program.

The Building Trades Council has its own pre-apprenticeship program, which does not provide direct entry into the Carpenter’s Union apprenticeship program. However, those who complete the program may receive priority status on the waiting list. There is no program in Santa Cruz that meets the requirements for carpenter craft training hours in Santa Cruz, so completion does not qualify for direct entry.

The Carpenters Union operates an international training facility in Las Vegas that provides leadership training to its third-year apprentices. The facility also provides courses on collaborative learning, cooperation, and communication targeted toward foremen, supervisors, project managers, and company executives. The training campus has dorm-style lodging, and the union covers the cost of travel and lodging.

In addition, the union provides training on operation of emerging technologies such as modular construction technologies and robotic layout machines and drones/ROVs.

The Carpenters Union has also sought to increase workforce diversity by creating a committee/mentoring program for women in the trades, instituting a grant program for maternity leave ($2,500/month for 9 months), as well as a childcare subsidy program.

Mid-Earning Clusters

The county’s mid-earning clusters exhibited mixed employment growth. The Building and Design subindustry saw the highest growth rate of all mid-earning clusters, at 10.4 percent, driven by a 16.5 percent increase (+61 jobs) in the Engineering Services subindustry. The Education and Knowledge Creation subindustry experienced similarly robust growth of 10.0 percent, driven by a 11.4 percent increase (+654 jobs) in the Elementary and Secondary Schools subindustry. This increase in subindustry employment is likely attributable to school closure mandates being lifted post-pandemic.
The Healthcare industry experienced employment growth of 7.5 percent, driven by 11.7 percent growth (+232 jobs) in the General Medical and Surgical Hospitals subindustry, and jobs in the Logistics industry grew by 7.1 percent.

Employment in the Real Estate industry cluster declined by less than 1.0 percent. The Information and Communications industry experienced a 3.4 percent decline, driven by a 45.3 percent decline (-28 jobs) in the Newspaper Publishers subindustry. The Agriculture and Food industry experienced a 7.2 percent employment decline, driven by losses in the Confectionery Manufacturing subindustry (-99.5 percent, -256 jobs). In comparison, the Other Manufacturing industry sustained the largest declines (-9.2 percent) of all mid-earning clusters, driven by significant employment losses (-56.1 percent, -471 jobs) in the Spring Manufacturing subindustry.

As shown in Table 4, Education and Knowledge Creation is the most concentrated mid-earning cluster in Santa Cruz County, 34 percent more concentrated in the county than in the nation. Agriculture and Food is also 27 percent more concentrated in the county relative to the United States, while Healthcare is slightly more concentrated (8 percent) in the county relative to the United States. All other mid-earning clusters are less concentrated than the national average.

**Table 4. Industry Cluster Overview – Middle Earning Industry Clusters (2021Q2 – 2023Q2)**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>17,026</td>
<td>7.5%</td>
<td>$74,393</td>
<td>1.08</td>
<td>General Medical and Surgical Hospitals</td>
<td>2,206</td>
<td>11.7%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>1,587</td>
<td>-0.9%</td>
<td>$72,553</td>
<td>0.86</td>
<td>Real Estate Credit</td>
<td>31</td>
<td>-54.5%</td>
</tr>
<tr>
<td>Building &amp; Design</td>
<td>3,297</td>
<td>10.4%</td>
<td>$72,242</td>
<td>0.85</td>
<td>Engineering Services</td>
<td>428</td>
<td>16.5%</td>
</tr>
<tr>
<td>Other Manufacturing</td>
<td>2,235</td>
<td>-9.2%</td>
<td>$70,192</td>
<td>0.56</td>
<td>Spring Manufacturing</td>
<td>369</td>
<td>-56.1%</td>
</tr>
<tr>
<td>Education &amp; Knowledge Creation</td>
<td>14,737</td>
<td>10.0%</td>
<td>$70,039</td>
<td>1.34</td>
<td>Elementary and Secondary Schools</td>
<td>6,364</td>
<td>11.4%</td>
</tr>
<tr>
<td>Logistics</td>
<td>4,007</td>
<td>7.1%</td>
<td>$69,839</td>
<td>0.63</td>
<td>Couriers and Express Delivery Services</td>
<td>662</td>
<td>18.9%</td>
</tr>
<tr>
<td>Information &amp; Communications</td>
<td>733</td>
<td>-3.4%</td>
<td>$63,036</td>
<td>0.59</td>
<td>Newspaper Publishers</td>
<td>34</td>
<td>-45.3%</td>
</tr>
<tr>
<td>Agriculture &amp; Food</td>
<td>3,751</td>
<td>-7.2%</td>
<td>$62,402</td>
<td>1.27</td>
<td>Nonchocolate Confectionery Manufacturing</td>
<td>1</td>
<td>-99.5%</td>
</tr>
</tbody>
</table>

48 The Information and Communication industry includes subindustries related to media and media distribution (TV, books, music, motion pictures).

Healthcare Industry Cluster

The healthcare industry is expected to provide significant opportunities for growth in Santa Cruz County over the next several years, given the expanding share of residents aged 65 and older, which will drive demand for senior care.

According to the U.S. Bureau of Labor Statistics, the nationwide healthcare industry will thrive over the next several years, with nurse practitioner jobs expected to rise by 44.5 percent and physician assistant jobs expected to increase by 26.5 percent between 2022 and 2032, driven primarily by demographic trends as the share of individuals ages 65 years and older increases due to rising survival rates caused by the development of vaccines and antibiotics, enhancements in surgical technology, and improvements in disease treatment regimes.

In fact, according to the National Council of State Boards of Nursing (NCSBN), there is already a nationwide shortage of nurses. According to the NCSBN's 2022 National Nursing Workforce Study, approximately 100,000 registered nurses (RNs) and 34,000 licensed practical and vocational nurses (LPNs and LVNs) have exited the workforce over the last two years due to stresses caused by the COVID-19 pandemic. An additional 20 percent of respondents indicated that they were likely to leave nursing by 2027.\textsuperscript{50,51}

Further exacerbating the projected nursing shortage is a drop in enrollment rates for nursing programs. According to the American Association of Colleges of Nursing (AACN), the number of students in entry-level baccalaureate nursing programs fell by 1.4 percent in 2022, ending 20 years of enrollment growth in programs designed to prepare new registered nurses. Declines were also recorded in master's degrees (-9.4 percent) and Ph.D. programs (-4.1 percent).

Thousands of qualified applicants were turned away from nursing programs due mainly to a shortage of faculty and clinical training sites. AACN was concerned that the rejection of thousands of graduate school applications could further limit the pool of potential nurse educators.\textsuperscript{52} Thus, investments in developing the pipeline for healthcare workers in the county will be crucial to ensuring that there will be an adequate supply of workers to meet the coming surge in demand over the next few years.

Figure 11 illustrates a potential career pathway in the Healthcare industry cluster.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{potential-career-pathway.png}
\caption{Potential Career Pathway – Healthcare Industry Cluster\textsuperscript{53}}
\end{figure}

According to Ray Cancino, CEO of Community Bridges, a nonprofit, since the supply of medical service providers in Santa Cruz County is insufficient, numerous residents travel to the Bay Area or Monterey County to seek healthcare services.

\textsuperscript{50} Sixty-two percent of respondents reported an increase in workload during the pandemic.
\textsuperscript{51} https://www.ncsbn.org/research/recent-research/workforce.page
services. Ray believes that there will be “huge opportunities for growth” in linking nonprofits and healthcare in coming years as nonprofits begin to offer clinical health management case services to county residents.

However, for this to occur, Ray believes that it will be important to identify the largest gaps in the availability of healthcare services, healthcare education programs, and healthcare jobs and to target county residents who are most likely to fill those healthcare positions in the future (possibly south county residents, who tend to be younger than north county residents).

ORGANIZATION CASE STUDY
Watsonville Community Hospital

Watsonville Community Hospital has been regarded as a model of how communities can successfully save a distressed hospital from closure, but challenges remain.

For over two decades, the hospital struggled under changing owners, and incurred more than $20 million in annual losses in 2021 and 2022. The hospital's previous owner, Halsen Healthcare, filed for Chapter 11 bankruptcy in December 2021.

To avert the 106-bed hospital's closure, local government agencies and community organizations formed the nonprofit Pajaro Valley Healthcare District Project, which worked with state Senator John Laird to purchase the hospital out of bankruptcy in September 2022, with no layoffs. The hospital has since renegotiated more favorable rates with major insurance companies, switched vendors, and shifted more nurses to full-time positions, saving hundreds of thousands of dollars.

However, the hospital continues to lose millions of dollars a year. Its financial future remains precarious, as it continues to struggle with inflation, rising labor costs, and low reimbursement rates from Medicare and Medi-Cal. Attracting specialist doctors to bring in more privately insured patients may help boost profitability – which will be an important step to ensuring that the hospital can continue to support the needs of the community, given that healthcare demands are expected to continue to rise as the share of the senior population continues to grow in the years to come.

Lowest Earning Clusters

The Tourism, Hospitality, and Recreation industry cluster, the county's second-largest employer, experienced growth of 23.0 percent from 2021Q2 to 2023Q2, fueled by gains in the Full-Service Restaurants (+11.2 percent, +488 jobs) and Limited-Service Restaurants (+19.2 percent, +563 jobs) subindustries. The Other Services industry grew by 6.7 percent. The Retail industry cluster experienced employment declines of 1.2 percent, spurred by losses sustained in the Supermarkets and Other Grocery Retailers subindustry (-7.8 percent, -245 jobs).

54 See the case study below, which outlines challenges faced by a local hospital in Santa Cruz County. https://lookout.co/watsonville-community-hospital-survived-bankruptcy-will-it-survive-next-few-years/
As shown in Table 5, Tourism, Hospitality, and Recreation is 23 percent more concentrated in the county relative to the United States, or 1.23 times the national average. The Other Services industry is 9 percent more concentrated in the county, while the concentration of the Retail industry is on par with national averages.

**Table 5. Industry Cluster Overview – Lowest Earning Industry Clusters (2021Q2 – 2023Q2)**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Other Services</td>
<td>6,064</td>
<td>6.7%</td>
<td>$44,762</td>
<td>1.09</td>
<td>Grantmaking Foundations</td>
<td>184</td>
<td>118.0%</td>
</tr>
<tr>
<td>Retail</td>
<td>11,568</td>
<td>-1.2%</td>
<td>$41,613</td>
<td>0.99</td>
<td>Supermarkets and Other Grocery Retailers</td>
<td>2,918</td>
<td>-7.8%</td>
</tr>
<tr>
<td>Tourism, Hospitality, &amp; Recreation</td>
<td>16,417</td>
<td>23.0%</td>
<td>$31,060</td>
<td>1.23</td>
<td>Limited-Service Restaurants</td>
<td>3,493</td>
<td>19.2%</td>
</tr>
</tbody>
</table>

**Strategies for Declining Industry Clusters**

As mentioned previously, some of the industry clusters that exhibited job losses in 2022 included the high-wage ICT industry (-4.1 percent), the mid-wage Other Manufacturing (-56.1 percent), Agriculture & Food (-7.2 percent), and Information & Communications (-3.4 percent) industries; and the low-wage Retail industry (-1.2 percent).

Declines in most of these industry clusters reflect national hiring trends:

- As previously described, within the ICT industry, hundreds of thousands of tech workers were laid off nationwide in 2022 and 2023 due to economic uncertainty spurred by general macroeconomic conditions and the need for employers to “right-size” workforces following a slowdown of growth stemming from the winding-down of an explosion of demand for cloud-based services that occurred during the pandemic.

- Within the Information & Communications industry, employment in newspaper publishing has dropped precipitously over the last 20 years as more Americans began to primarily consume news digitally. As circulation and revenues have fallen, employment has also plummeted. According to the Pew Research Center, U.S. newsroom employment fell by 26 percent between 2008 and 2020, and a third of prominent U.S. newspapers laid off workers in 2020.56 The U.S. media industry exhibited mixed performance in 2021 and 2022 but sustained dramatic job losses in 2023, shedding more than 20,000 jobs in the first 11 months of 2023 alone.57

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Within the Retail industry, declines in supermarket jobs mirror nationwide trends as consumers continue to shift purchases online and to specialty physical retailers. According to industry trade group PYMNTS, less than half of all consumers reported buying 50 percent or more of their center aisle grocery store purchases at a brick-and-mortar grocery store in 2022, as compared to 2019, when nearly all consumers purchased most of their center aisle groceries at a brick-and-mortar store. More than a third of customers now report purchasing none of these items from a brick-and-mortar grocery store. PYMNTS reports a consistent shift from grocery stores to digital channels across every demographic group and grocery product category partly due to the rising popularity of online subscription services, including Amazon Subscribe & Save. According to PYMNTS, purchases of canned goods and cleaning supplies by subscription grew by at least 35 percent between 2019 and 2022.\(^{58}\)

Since job losses in the newspaper publishing and supermarket industries reflect structural changes due to shifting consumer preferences, these sectors should be deprioritized, as any investment in obsoleting markets could be more effectively shifted to supporting mature or emerging clusters with significant growth potential, such as the ICT industry, a mature industry with substantial growth potential that has exhibited a downturn in employment due primarily to general macroeconomic trends.

Workforce Profile

Demographics

This section summarizes the demographic characteristics of Santa Cruz County’s residents, including race, ethnicity, age, and educational attainment. These metrics provide valuable information to characterize the region’s potential workforce and talent pipeline and can help inform the allocation of available education and training resources.

Santa Cruz County’s demographic composition has changed significantly from 2018 to 2022. The share of White residents in the county decreased by 10.2 percentage points during this period, while the share of Multiethnic residents increased by 7.5 percentage points (Figure 12). However, compared to California, Santa Cruz has a higher proportion of White residents and a lower proportion of all other demographic groups as of 2022 (Figure 13).

Figure 12 shows Santa Cruz County’s multiethnic population has increased significantly since 2018.

Figure 13 shows Santa Cruz County is less diverse than the overall state.

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The share of county residents 65 years or older increased by 2.9 percentage points from 2018 to 2022, while the share of county residents 18-24 decreased by 0.9 percentage points (Figure 14). The county’s prime-working-age population of 25 to 54-year-olds decreased by 0.4 percentage points. The county has a larger 18 to 24-year-old population and 65 years or older population compared to the state, while the proportion of 25 to 64-year-olds is below state averages (Figure 15).

Figure 14 shows the county’s population growth is driven by residents 65 years or older.

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61 Per the 2-month rule, anyone who is currently living or staying at an address for more than 2 months is considered a current resident of that address. A person away from their address for more than 2 months is considered not to be a resident. However, for residents in group quarters, all people residing in the facility at the time of the interview, regardless of the length of stay, are eligible to be selected to be interviewed in the ACS. Thus, students of UC Santa Cruz are typically considered residents by the U.S. Census Bureau.
Figure 15 shows the county has a larger share of residents 18-24 years old and 65 years or older than California.

**Figure 15. Age Composition of Santa Cruz County Residents (2022)**

Santa Cruz County has announced plans to create a local master plan for aging and is conducting a public survey between January and March 2024 to identify emerging needs and gaps in services for seniors.

The educational attainment of Santa Cruz County residents increased between 2018 and 2022, with the proportion of residents holding a bachelor’s degree or higher rising by 2.9 percentage points and the proportion of residents holding less than a high school diploma decreasing by roughly the same amount (-2.7 percentage points) (Figure 16). County residents exhibit significantly higher levels of educational attainment than the statewide average, with nearly one in two (45.7 percent) county residents holding a bachelor’s degree or higher, compared to roughly one in three (39.0 percent) California residents (Figure 17).

**Figure 16 shows county residents have gained higher levels of educational attainment since 2018.**

**Figure 16. Educational Attainment of Populations Aged 25 and Older (2018 – 2022)**

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Figure 17 shows county residents possess higher educational attainment than statewide averages.

**Figure 17. Educational Attainment of Populations Aged 25 and Older (2022)**

In November 2023, the office of the governor of California announced that $72.5 million would be awarded across four regions within the state to provide students with more job opportunities in their local communities, improving access to higher education and worker outcomes. The Central Coast K-16 Regional Collaborative was awarded an $18.1 million, 3-year grant through California’s Community Economic Resilience Fund (CERF) to address longstanding systemic educational inequities and structural barriers along the education-to-employment pathways in the region.

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Over the next decade, the Collaborative aims to:

1. Increase the number of students transitioning from K-12 to postsecondary institutions.
2. Increase the number of students transferring from regional community colleges to regional California State University and University of California campuses.
3. Decrease the time to transfer from community college to university.
4. Increase the number of students who earn a community college credential in 2/4 years and/or earn a bachelor’s degree in 4/6 years.
5. Eliminate disparities in educational attainment for historically underrepresented students in the Central Coast region.66

The Collaborative is a collective impact initiative of K-12, Community College, California State University, University of California, and industry partners, and spans six counties – Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara, and Ventura. UC Santa Cruz, Cabrillo College, UC Santa Barbara, and the Santa Cruz County Office of Education provide leadership and function as the operational backbone for the collaborative.67 68

According to Desha Staley-Raario, Director of Career Development at Cabrillo College, and Annabelle Rodriguez, Dean of Career and Workforce Education at Cabrillo College, Cabrillo College’s educational programs are targeted at meeting local labor market demand and not duplicating education/training programs that already exist. Furthermore, at Cabrillo College, academics are entwined with Career and Technical Education, emphasizing stackable certificates that will enable students to “earn and learn” while working towards an associate degree or a transfer to a four-year college.

Cabrillo College currently offers apprenticeship programs in CIS (Computer Information Systems), CHW (Community Health Worker), and Education (Teaching Assistants). Cabrillo College is also exploring apprenticeships in Nursing, Early Childhood Education, and Construction and Energy Management. In addition, Cabrillo College is developing internship programs that serve stakeholders throughout the county, including Nonprofits.

66 About — Central Coast K-16 Regional Collaborative (centralcoastk16collab.org)
68 https://news.ucsc.edu/2023/11/k-16-grant.html
Working Residents & Jobs in the Region

This section examines the flow of workers in and out of the county. Figure 18 shows Santa Cruz County has more resident workers than jobs available, making the county a net exporter of talent.

Figure 18 illustrates the “resident workforce,” which represents the total number of workers in each occupational category residing in the county. The dark blue bar highlights workers in these occupations who work within the county. The difference between the two indicates whether the region is a net importer or exporter of talent.

Overall, the county is a net exporter of talent across all occupational categories. Management, Business, Science, and Arts occupations have the highest number of exported workers, with nearly 5,000 more residents working in these fields than positions available in the county. This means there are more residents who commute outside of the county for work compared to those who both live and work within the region.69

Figure 18 shows Santa Cruz County has more resident workers than jobs available, making the county a net exporter of talent.

Figure 18. Working Residents and Jobs in Santa Cruz County (2023)70

Housing Costs & Net Migration

Housing

Since 2013, median single-family home prices in Santa Cruz County ($1,242,909) have exceeded those in the state ($814,793). Home prices in Santa Cruz County also exceed those in nearby San Luis Obispo County and Monterey County, which are 30.2 percent and 26.6 percent lower than in Santa Cruz County as of September 2023, respectively (Figure 19).

Data from the California Association of Realtors also shows the percentage of county residents who can afford to

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69 Individuals working from home for a business located outside of Santa Cruz County are counted as working outside the county.
purchase a median-priced home sharply decreased from 2021 to 2023. Only one in eight (13.0 percent) county residents can afford to purchase a median-priced home, as compared to one in six (16.6 percent) California residents (Figure 20).

Figure 19 shows median home prices in Santa Cruz County are significantly higher than other Central Coast regions and the state.

**Figure 19. Median Price of Single-Family Detached Homes (2013 – 2023)\(^7\)**

![Median Price of Single-Family Detached Homes](image)

Figure 20 shows just one in eight county residents can afford to purchase a median-priced home in the county.

**Figure 20. Percentage of Residents who can Afford to Purchase a Median-Priced Home (2013 – 2023)\(^8\)**

![Percentage of Residents who can Afford to Purchase a Median-Priced Home](image)

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\(^7\) California Association of Realtors Historical Housing Data (2013 – 2023).

\(^8\) California Association of Realtors Housing Affordability Index (2013 – 2023).
In November 2023, the County of Santa Cruz Board of Supervisors adopted the 2023 Housing Element, one of the seven required elements of the General Plan, which guides land use planning and development activities in Santa Cruz County. Every eight years, the county must update its Housing Element to ensure that its housing supply will be adequate to meet the community’s needs.

According to California’s Regional Housing Needs Allocation (RHNA) for 2023-2031, Santa Cruz County is required to plan for 4,634 additional housing units in the unincorporated county, a whopping increase of 353 percent from the previous cycle. The 2023 Housing Element outlines Santa Cruz County’s goals to provide the programs, policies, and appropriate zoning measures to incentivize the county’s housing stock growth to meet RHNA targets.

**Net Migration**

Between 2020 and 2021, nearly 8,200 residents left Santa Cruz County, representing a 3.0 percent decline in the county’s population, representing higher population loss than the state. In 2022, the county’s population grew by 0.6 percent, partially offsetting the large losses from the prior year. However, the county’s population declined by 0.9 percent in 2023 (Figure 21).

*Figure 21 illustrates the county’s continued population decline after the COVID-19 pandemic.*

**Transportation & Commute Patterns**

Driving alone is the primary mode of transportation in Santa Cruz County, with nearly two in three (64.8 percent) of workers driving alone in 2022 (Figure 22). Residents of the southern region are the most likely to drive alone or carpool to work, with over 85 percent of residents utilizing those modes of transportation (Figure 23).

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73 https://www.sccoplanning.com/PlanningHome/Housing/2023HousingElement.aspx
74 https://www.sccoplanning.com/Portals/2/County/Planning/policy/2023HousingElement/SCCO%202023%20Housing%20Element%202014-24%20COMPLETE.pdf?ver=H-zXR7sxGck4rCDnxezAow%3d%3d
75 California Department of Finance. https://dof.ca.gov/forecasting/demographics/estimates/estimates-e2-2010-2021/
Figure 22 shows the share of remote workers in the county more than doubled since 2018.

**Figure 22. Typical Means of Transportation to Work (2018 – 2022)**

As shown, the prevalence of remote workers in the county more than doubled from 2018 to 2022, increasing from 7.6 percent to 15.9 percent (Figure 22). As of 2022, nearly one in five north county residents worked from home, compared to one in fifteen south county residents.77

Figure 23 shows that north county residents are more likely to work remotely than south county residents.

**Figure 23. Typical Means of Transportation to Work by Sub-Region (2022)**


77 However, it should be noted that residents working from home for a business located outside of Santa Cruz County are counted as working outside the county, posing a challenge to accurately measuring remote worker wages.

According to the Harvard Business Review, remote work represented approximately 28 percent of full workdays in the U.S. as of 2023. Employers nationwide expected the share of fully remote and hybrid work to continue to grow over the next five years as a permanent culture shift arose during the COVID-19 pandemic, where employers became more willing to accept remote and hybrid work arrangements. Workers became increasingly accustomed to the perks of remote work, such as a reduction in transportation costs, and collaborative technologies supporting remote work continues to improve.\(^7^9\)

Building partnerships with Bay Area/Silicon Valley companies that offer hybrid or remote work opportunities will allow the county to match resident jobseekers better to open jobs.
Nonprofit Industry Deep Dive

In the United States, over 3,000 workforce development nonprofits play a critical role in supporting social and economic growth in their communities by providing job-related services and/or vocational postsecondary training. Nonprofits act as a bridge between schools and employers, helping the workforce develop and refine skills not covered in classrooms, such as communication and leadership. Nonprofits may provide or coordinate training and certification programs for those looking to reskill, upskill, or re-enter the workforce.

In addition, some nonprofits offer wraparound services to support workers and remove barriers to employment, such as lack of affordable housing, childcare, or transportation, and nonprofits may provide mentorship and career guidance. In addition, workforce development nonprofits often establish partnerships with employers or governments to assist with worker placement. Nonprofits also offer employment opportunities and may offer paid or unpaid internships within their organizations.

Furthermore, nonprofits may be contracted by a local workforce development board to deliver workforce-based programs in a community-based model. Nonprofits can leverage their expertise working with specific communities—immigrants, refugees, returning citizens, people with disabilities, and others—to deliver accessible programs well suited to the unique needs of these populations.

Additionally, nonprofits may act as referral partners to America's Job Center of California (AJCC), a network of private and public organizations offering no-cost employment and training services for employers and job seekers. AJCC staff may refer jobseekers to nonprofits to obtain support services, such as assistance in applying for affordable housing programs. AJCC staff may also refer jobseekers to training classes provided by nonprofits, such as vocational ESL classes or work readiness classes.

Nonprofits can also maximize their impact in their communities by participating in local planning processes or holding seats in local workforce development boards, subcommittees, or working groups. By engaging with local governments, nonprofits can help ensure that the workforce development needs of their target community groups are being met, particularly with respect to addressing barriers to employment. Various nonprofits have developed innovations in workforce development programming, and best practices from such programs can inform the delivery of services across the workforce ecosystem.\footnote{Klein, Liese. “Nonprofits play key role in workforce development.” January 27, 2020. Retrieved from the Hartford Business Journal: https://www.hartfordbusiness.com/article/nonprofits-play-key-role-in-workforce-development}
Examples of Nonprofits’ Contributions to Workforce Development

* In Los Angeles, nonprofits working with gang-involved, foster system involved, homeless, and out of school youth were key voices in shaping the region’s strategy to focus youth funds heavily on these populations through a one-stop, neighborhood-based model.

* In 2018, the Humboldt County Workforce Development Board included members of a nonprofit serving Native Americans, which helped to ensure that the workforce development board was responsive to the needs of this population.

* California’s English Language Learner (ELL) Navigator Project drew heavily on successful program models, practices, and input developed and implemented by nonprofits that served immigrant and refugee populations.

* San Diego County partners with nonprofits focused on refugees and immigrants, and justice-involved populations to deliver Title I services, including job training and career services, in a community-based model.

* California’s Workforce Accelerator Fund, an initiative focused on designing, developing, and implementing projects that accelerate employment and re-employment strategies for California jobseekers, partners with several nonprofits.

However, funding remains a challenge for nonprofits. According to the National Skills Coalition, federal funding for adult education and training programs has been cut by more than $1 billion since 2001, and state funding has declined in recent years as lawmakers have cut spending to balance chronic budget deficits. In addition to helping nonprofits identify relevant funding opportunities, the WDB can help support local nonprofits’ workforce development efforts by:

1. Invite nonprofits to contribute at WDB-sponsored meetings and/or community engagement and listening sessions open to the public, when nonprofits have valuable information about the size and/or needs of a specific population in need of workforce development supports or where nonprofits can advise on how to serve populations with barriers to employment best.

2. Invite nonprofits to participate in committees or working groups focused on workforce development.

3. Invite nonprofit members to join the WDB.81

In Santa Cruz County, nonprofit employment (excluding religious institutions) remained relatively constant from 2018 to 2023, with employment growing by just 1.6 percent (+22 jobs).

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Figure 24 shows Nonprofit organizations employ nearly 1,400 workers in Santa Cruz County as of 2023.

Figure 24. Nonprofit Employment (Excluding Religious Organizations) in Santa Cruz County (2018 – 2023)\textsuperscript{82,83}

Nonprofits have played a crucial role in the development of Santa Cruz County’s workforce. As described in the previous section, nonprofits such as Santa Cruz Works and Digital NEST offer training and workshops, host internships, skill-building competitions, and networking events, and provide mentorship services to support the needs of local jobseekers in the tech sector. In addition, nonprofits such as Dientes Community Dental have implemented innovative program models to boost local employment of dentists and dental assistants, as described in the case study on the following page.

\textsuperscript{82} Includes Grantmaking and Giving Services, Social Advocacy Organizations, Civic and Social Organizations, and Business, Professional, Labor, Political, and Similar Organizations employment. Religious Organizations employment is excluded.

Dientes Community Dental is a nonprofit organization that provides dental services to low-income individuals through four clinics and a mobile dental outreach program. Most of Dientes’ staff is comprised of young Latina women who are not college-educated and came into dental care via a dental assisting program or some other non-college path.

According to Laura Marcus, CEO of Dientes, Cabrillo College has the only dental hygiene program in the region, and it is small, with a cohort of only approximately 22 graduates every two years. There are no affordable local options for education: the dental assisting program costs $6,000 and requires hundreds of hours of training to earn a dental assistant certificate.

As local educational opportunities for dental assisting remain limited, Dientes has implemented several innovative measures to support workforce development within the community:

1. Coordinated with the County Office of Education to develop an apprenticeship program, the first in the community for dental assistants, with 8 apprentices starting in fall 2024 that may eventually be hired full-time; the apprentices will initially be paid $18.50 per hour on the job and will be eligible to be hired at $24-25 per hour following completion of the 8-month program.

2. Eliminated the requirement for a bachelor’s degree to move into a management role, so employees can earn salaries of $90,000 without a college degree.

3. Provides scholarships to its employees to attend a registered dental hygiene or a registered dental assistant program ($20,000-25,000 tuition), funding up to half of the tuition costs and forgiving these costs after 2 years of service.

4. Started an EGD general residency program for dentists in partnership with NYU Langone in 2022, whereby Dientes hosts 2-4 residents per year who may choose to remain in Santa Cruz County for full-time work after their residencies end.

5. Qualified as a National Health Center, making its dentist employees eligible to seek loan repayments ranging from $30,000 to $50,000 per year from the government for each year they work at a community health clinic.

6. Offers training to staff, such as sending its supervisors to Cabrillo College to obtain training on front office and customer service skills.

Dientes has also creatively partnered with another community health organization to run a fundraising campaign for both organizations, minimizing total costs and maximizing efficiency of its existing staff.
According to every nonprofit interviewed for this study, the main barrier to nonprofits’ success is insufficient funding. Other barriers cited by respondents include:

- Difficulty managing data to effectively track worker outcomes.
- Complex legal/reporting requirements
- Challenges associated with demonstrating nonprofits’ impact on current and potential funders.

Furthermore, according to the representatives of the nonprofits interviewed for this study, potential measures that Santa Cruz County can adopt to address these challenges include:

- Promote awareness of nonprofits’ contribution to the county’s economy.
- Provide mentorship/training on navigating legal and regulatory requirements, auditing, and contracts.
- Coordinate and maintain a database of local jobseekers to help match candidates to open positions.
- Quantify and spread awareness among potential funders and the public about the nonprofit sector’s financial contribution to the local economy.
- Provide one-stop navigation centers for wraparound services targeted at jobseekers.
- Inform entrepreneurs of available venture capital and seed funding opportunities.
- Advocate for Santa Cruz to be included in the “Bay Area/Silicon Valley” regional definitions.
- Promote UC Santa Cruz as a good candidate for higher learning to local students.

BUSINESS CASE STUDY
Your Future is Our Business (YFIOB)

Your Future is Our Business (YFIOB) is a Santa Cruz-based nonprofit that partners with local businesses to provide experiences such as internships and job tours and provides a menu of work-based learning experiences, including an annual Trades Day and Health Career Expo.

According to Yvette Brooks, Executive Director of YFIOB, while there are substantial resources available to support workforce development, including scholarships, apprenticeships, and internships, the key is to make these opportunities accessible and feasible for all students in the county.

Furthermore, while existing programs largely focus on high school or college students, YFIOB uniquely supports children starting from elementary school through high school to ensure that local students are aware of the job opportunities available in Santa Cruz County, so that they can live and thrive and be successful in their own communities.

Thus, YFIOB examines the educational-employment ecosystem organically, starting from the elementary-school level, where there are no clearly defined pathways, and seeks to identify the needs of county students and to fill any gaps to improve access and awareness. All in all, YFIOB serves more than 6,000 students per year, helping to grow the county’s next generation of workers.