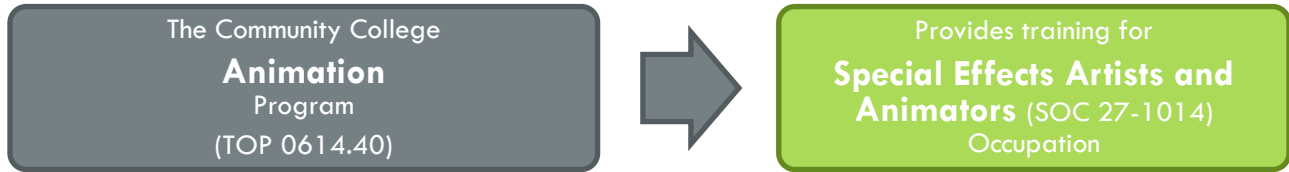


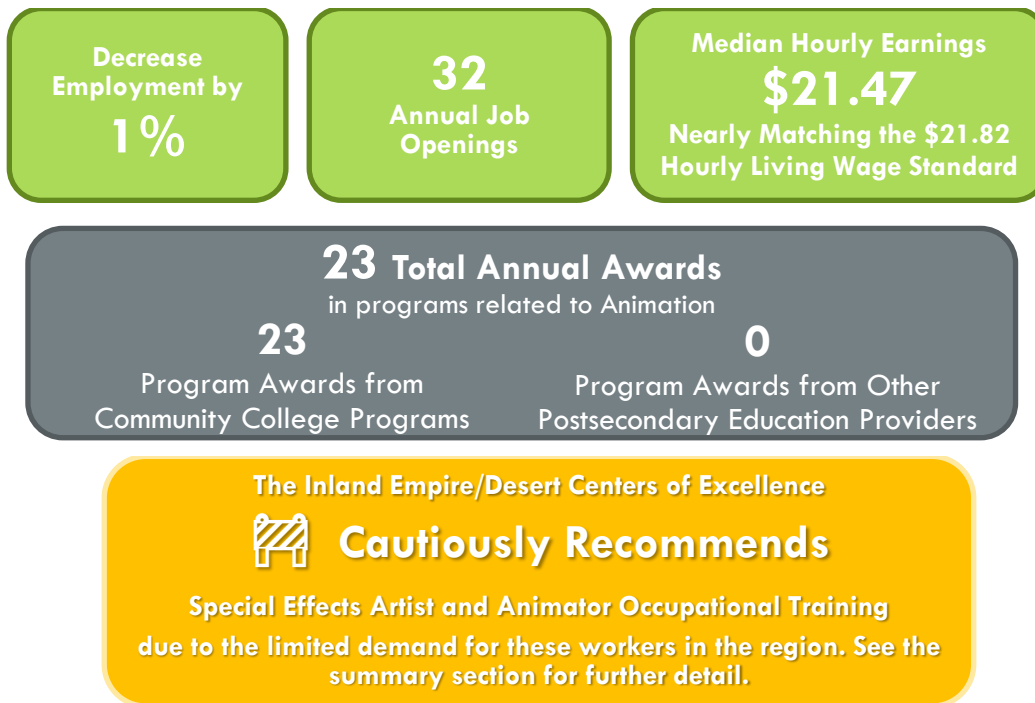
# Animation

*Inland Empire/Desert Region (Riverside and San Bernardino counties)*

## Summary



Over the next five years (2021-2026), special effects artist and animator employment is projected to



## Introduction

California Community College animation programs (TOP 0614.40) prepare students for employment through instruction related to the principles and techniques for creating the visual illusion of motion through sequenced images. These programs include animation using digital technology (Taxonomy of Programs, 2012). The knowledge, skills, and abilities trained by animation programs lead to employment as special effects artists and animators.

### Special Effects Artists and Animators (SOC 27-1014)

Create special effects or animations using film, video, computers, or other electronic tools and media for use in products, such as computer games, movies, music videos, and commercials.

**Sample job titles:** 3D Animator (Three-Dimensional Animator), 3D Artist (Three-Dimensional Artist), Animator, Artist, Digital Artist, Graphic Artist, Illustrator, Motion Graphics Artist, Multimedia Producer

*Entry-Level Educational Requirement: Bachelor's degree*

*Work Experience Required: None*

*Training Requirement: None*

*Incumbent workers with a Community College Award or Some Postsecondary Coursework: 27%*

## Job Counts and Projections

In 2021, an estimated 299 special effects artist and animator jobs were located in the Inland Empire/Desert region. Employment for this occupation is expected to be flat over the next five years, shrinking by 1%.

Despite the projected decrease in employment, there are 32 job openings expected annually over the next five years, mostly due to replacement job opportunities. Exhibit 1 displays the job counts, projected job growth, job openings, and the share of incumbent workers aged 55 years and older in the region.

*Exhibit 1: Five-year projections, Inland Empire/Desert Region, 2021-2026*

| 2021 Jobs | 2026 Jobs | 5-Yr % Change | 5-Yr Openings (New + Replacement Jobs) | Annual Openings (New + Replacement Jobs) | % of workers age 55+ |
|-----------|-----------|---------------|--|--|----------------------|
| 299       | 298       | (1%)          | 158                                    | 32                                       | 33%                  |

Source: Lightcast 2022.3

An online job advertisement (ad) search for special effects artists and animators was conducted to reveal the employers seeking these workers, including the time it takes to fill positions, earnings information, and in-demand skills. Over the previous 12 months, six (6) job ads were posted for special effects artists and animators in the region. The search for special effects artists and animators job ads was expanded to include all of California over the last 12 months to ensure the job ad data contained in this report is generalizable and actionable.

Over the last 12 months, there were 1,382 job ads posted for special effects artists and animators in the state. Nearly two-thirds of statewide employer job ads were posted in the Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area (MSA) (896 job ads). Exhibit 2 shows the number of job ads posted during the last 12 months in California and the statewide average time to fill this job. On average, statewide employers spend 44 days filling open positions for this occupation. The Appendix section of this report contains a California map of job ad counts county over the last year.

*Exhibit 2: Job ads and time to fill, California, October 2021 – September 2022*

| Job Ads | Statewide Average Time to Fill (Days) |
|---------|---------------------------------------|
| 1,382   | 44                                    |

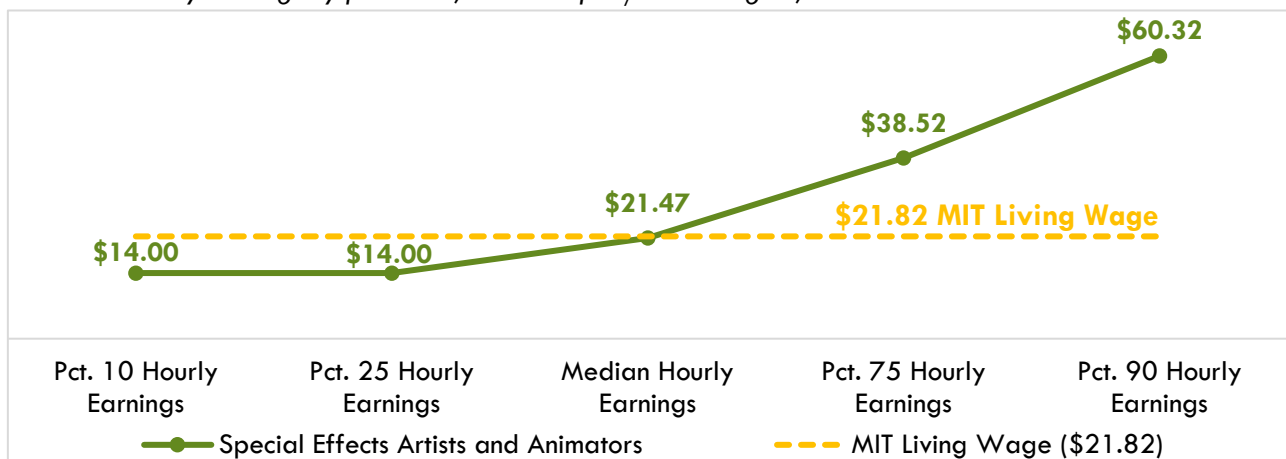
Source: Burning Glass – Labor Insights

## Earnings

Community colleges should ensure their training programs lead to employment opportunities that provide a living wage. The MIT living wage calculator estimates that an individual must earn \$21.82 per hour or \$45,386 annually in California to be self-sufficient (Glasmeier, 2022).

Exhibit 3 displays the hourly earnings for special effects artists and animators. The median hourly earnings for special effects artists and animators, \$21.47 per hour, nearly matches the hourly living wage standard at \$21.82 per hour.

*Exhibit 3: Hourly earnings by percentile, Inland Empire/Desert Region, 2021*

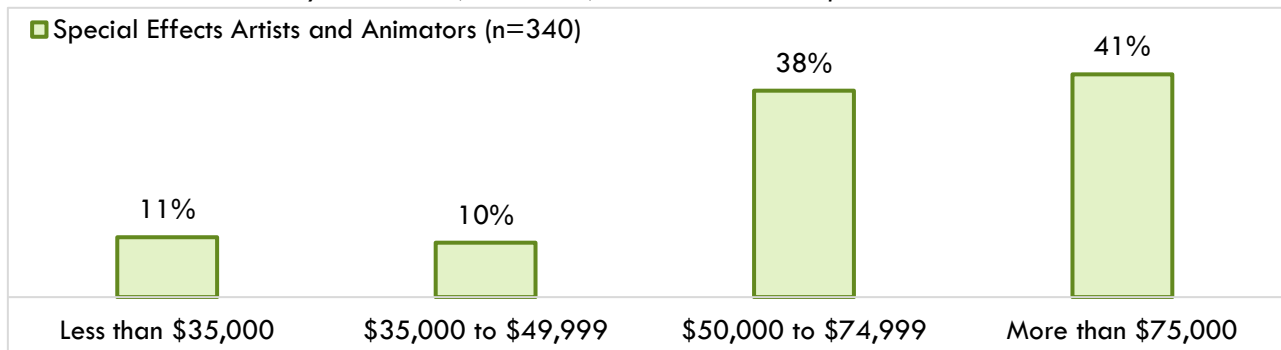


Source: Lightcast 2022.3

## Advertised Salary from Online Job Ads

Exhibit 4 displays online job ad salary data for special effects artists and animators over the last 12 months. Online job ad salary information reveals employers willing to pay special effects artists and animators an average annual salary of \$76,000, above the region's \$45,386 annual (\$21.82 hourly) MIT living wage standard. Consider the salary information with caution since only 25% (340 out of 1,382) of online job ads for this occupation provided salary information.

*Exhibit 4: Advertised salary information, California, October 2021 – September 2022*



Source: Burning Glass – Labor Insights

## Job Titles, Employers, Skills, Education, and Work Experience

Exhibit 5 displays the job titles most frequently requested by employers seeking special effects artists and animators in California over the last 12 months. The most frequently requested job title for special effects artists and animators over the previous 12 months was motion graphic designer.

*Exhibit 5: Most frequently used job titles in employer job ads, California, October 2021 – September 2022*

| Job Titles              | Job Ads      |
|-------------------------|--------------|
| Motion Graphic Designer | 93           |
| Animator                | 43           |
| 3D Animator             | 37           |
| VFX Artist              | 29           |
| 3D Designer             | 26           |
| VFX Producer            | 24           |
| Senior Animator         | 23           |
| Storyboard Artist       | 19           |
| Technical Animator      | 18           |
| Lead Animator           | 17           |
| Senior VFX Artist       | 15           |
| Gameplay Animator       | 15           |
| All other job titles    | 1,023        |
| <b>Total</b>            | <b>1,382</b> |

Source: Burning Glass – Labor Insights

Exhibit 6 displays the employers that posted the most job ads for special effects artists and animators in the state over the last 12 months. Showing employer names provides insight into where students may find employment after completing a program. Activision Blizzard posted the most job ads in the state for special effects artists and animators over the last 12 months.

*Exhibit 6: Employers posting the most job ads for special effects artists and animators over the last 12 months, California, October 2021 – September 2022*

| Top Employers (Industry & NAICS4 code)                                | Job Ads      |
|---|--------------|
| Activision Blizzard (Software Publishers 5112)                        | 87           |
| Disney (Motion Picture and Video Industries 5121)                     | 79           |
| Electronic Arts Incorporated (Software Publishers 5112)               | 64           |
| Sony Electronics Incorporated (Software Publishers 5112)              | 31           |
| Nickelodeon Animation Studio (Radio and Television Broadcasting 5151) | 30           |
| NBC (Radio and Television Broadcasting 5151)                          | 23           |
| Amazon (Electronic Shopping and Mail-Order Houses 4541)               | 19           |
| The Mill (Motion Picture and Video Industries 5121)                   | 18           |
| Zoic Studios (Not listed)   | 15           |
| The Third Floor (Not listed)  | 15           |
| Scanline VFX (Not listed)   | 15           |
| Method Studios (Not listed)   | 15           |
| <i>All other employers</i>  | 971          |
| <b>Total</b>  | <b>1,382</b> |

Source: Burning Glass – Labor Insights

Exhibit 7 lists a sample of specialized, employability, and software and programming skills employers seek when looking for workers to fill special effects artist and animator positions. Specialized skills are occupation-specific skills that employers request for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is often referred to as "soft skills." The skills requested in job ads may be utilized to guide curriculum development.

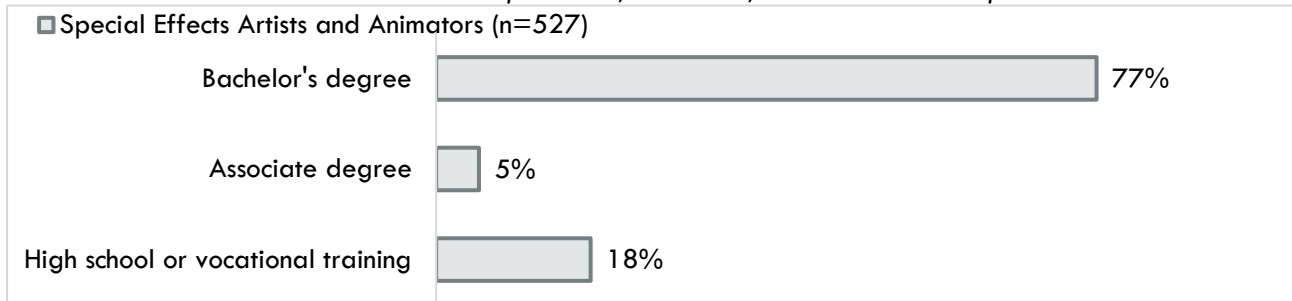
*Exhibit 7: Sample of in-demand skills from employer job ads, California, October 2021 – September 2022*

| Specialized skills (n=1,297)   | Employability skills   | Software and Programming skills  |
|--|--|--|
| <ul style="list-style-type: none"> <li>• Motion Graphics</li> <li>• Graphic Design</li> <li>• Game Development</li> <li>• Scheduling</li> <li>• Art Direction</li> </ul> | <ul style="list-style-type: none"> <li>• Creativity</li> <li>• Teamwork/Collaboration</li> <li>• Communication Skills</li> <li>• Problem Solving</li> <li>• Organizational Skills</li> </ul> | <ul style="list-style-type: none"> <li>• Autodesk Maya</li> <li>• Adobe Creative Suite</li> <li>• Python</li> <li>• Cinema 4D</li> <li>• Microsoft Office</li> </ul> |

Source: Burning Glass – Labor Insights

Exhibit 8 displays the minimum advertised education requirements for special effects artists and animators. Approximately 77% of job ads for special effects artists and animators sought candidates with a bachelor's degree.

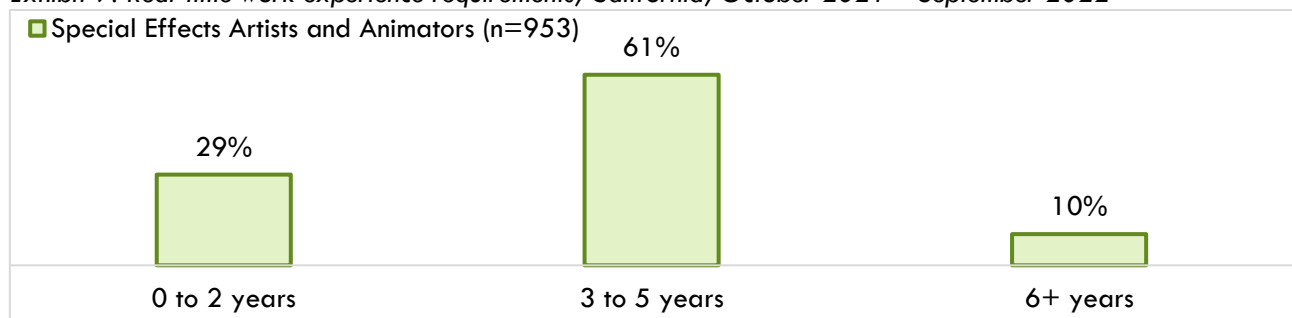
*Exhibit 8: Minimum advertised education requirements, California, October 2021 – September 2022*



Source: Burning Glass – Labor Insights

Exhibit 9 displays the real-time work experience requirements from employer job ads for special effects artists and animators. Most employers sought candidates with three to five years of previous work experience, indicating that employers value special effects artists and animators with previous work experience.

*Exhibit 9: Real-time work experience requirements, California, October 2021 – September 2022*



Source: Burning Glass – Labor Insights

## Student Completions and Programs Outcomes

Five community colleges in the region currently offer programs related to animation. Regional community colleges utilize three different program codes when coding their animation programs. Exhibit 10 displays each of the regional animation programs and award types students earn upon completing the program.

*Exhibit 10: Animation-related programs, Inland Empire/Desert Region, 2022-23 academic year*

| College       | TOP Program (TOP Code)  | Local Program Title            | Award            |
|---------------|-------------------------|--------------------------------|------------------|
| Crafton Hills | Digital Media (0614.00) | Digital Animation              | Certificate      |
|               |                         | Multimedia: Digital Animation  | Associate degree |
| Norco         | Digital Media (0614.00) | 3D Game Modeling and Animation | Certificate      |
|               |                         | 3D Game Modeling and Animation | Associate degree |
| Palo Verde    | Digital Media (0614.00) | 3D Computer Animation          | Certificate      |

| College        | TOP Program (TOP Code)           | Local Program Title                                   | Award       |
|----------------|----------------------------------|---|-------------|
| Riverside City | Animation (0614.40)              | Animation   | Certificate |
|                | Graphic Art and Design (1030.00) | Motion Graphics and 3D Animation                      | Certificate |
| Victor Valley  | Digital Media (0614.00)          | Digital Media - Animation and Motion Graphics Maya    | Certificate |
|                | Animation (0614.40)              | Digital Media - Animation and Motion Graphics 3ds Max | Certificate |
|                | TOP Unknown                      | Digital Animation Artist 3DS Max                      | Certificate |
|                |                                  | Digital Animation Artist Maya                         | Certificate |
|                |                                  | Digital Animation I Maya                              | Certificate |
|                |                                  | Digital Animation Technicians I 3DS Max               | Certificate |
|                |                                  | Expanded Animation Technician 3DS Max                 | Certificate |
|                |                                  | Expanded Animation Technician Maya                    | Certificate |

Source: COCI, 2022-23 Community College Catalogs

Exhibits 11 and 12 display student completions for animation (TOP 0614.40) and digital media (0614.00) programs over the last three academic years, 2019-2022. Regional community colleges have issued nine awards annually in animation programs and 13 awards in digital media programs over the previous three academic years (2019-22). Combined, regional community college programs related to animation have issued 22 awards annually over the last three academic years. Program completion and student outcome methodologies can be found in the appendix.

*Exhibit 11: Annual average community college awards for animation programs, Inland Empire/Desert Region, Academic Years 2019-2022*

| TOP 0614.40 - Animation<br>(Local Program Title)                                | Academic<br>Year<br>2019-20 | Academic<br>Year<br>2020-21 | Academic<br>Year<br>2021-22 | Total CC Annual<br>Average Awards,<br>Academic Years<br>2019-22 |
|---|-----------------------------|-----------------------------|-----------------------------|---|
| <b>Mt. San Jacinto</b><br>(After Effects)                                       |                             |                             |                             | <b>0</b>  |
| Certificate 6 < 18 semester units   | 1                           | 0                           | 0                           | 0   |
| <b>Riverside City</b><br>(Animation)  |                             |                             |                             | <b>7</b>  |
| Certificate 8 < 16 semester units   | 0                           | 0                           | 22                          | 7   |
| <b>Victor Valley</b> (Digital Media – Animation and<br>Motion Graphics 3DS Max) |                             |                             |                             | <b>2</b>  |
| Certificate 16 < 30 semester units  | 0                           | 0                           | 5                           | 2   |
| <b>Total</b>  | <b>1</b>                    | <b>0</b>                    | <b>27</b>                   | <b>9</b>  |

Source: MIS Data Mart, COCI

*Exhibit 12: Annual average community college awards for digital media programs related to animation, Inland Empire/Desert Region, Academic Years 2019-2022*

| <b>TOP 0614.00 – Digital Media</b><br>(Local Program Title)                  | <b>Academic<br/>Year<br/>2019-20</b> | <b>Academic<br/>Year<br/>2020-21</b> | <b>Academic<br/>Year<br/>2021-22</b> | <b>Total CC Annual<br/>Average Awards,<br/>Academic Years<br/>2019-22</b> |
|--|--------------------------------------|--------------------------------------|--------------------------------------|---|
| <b>Crafton Hills</b><br>(Digital Animation/Multimedia: Digital Animation)    |                                      |                                      |                                      | <b>1</b>  |
| Associate Degree   | 0                                    | 0                                    | 2                                    | 1   |
| <b>Palo Verde</b><br>(3D Computer Animation/Graphic Design & Web Content)    |                                      |                                      |                                      | <b>10</b>   |
| Certificate 6 < 18 semester units  | 11                                   | 0                                    | 20                                   | 10  |
| <b>Victor Valley</b><br>(Digital Media – Animation and Motion Graphics Maya) |                                      |                                      |                                      | <b>2</b>  |
| Certificate 16 < 30 semester units   | 0                                    | 0                                    | 5                                    | 2   |
| <b>Total</b>   | <b>11</b>                            | <b>0</b>                             | <b>27</b>                            | <b>13</b>   |

Source: MIS Data Mart, COCI

California program outcome data may provide useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP code and region is provided in Exhibits 13 and 14.

*Exhibit 13: 0614.40 – Animation strong workforce program outcomes, Inland Empire/Desert Region, Academic Year 2019-2020 (Unless Noted)*

| <b>Strong Workforce Program Metrics:</b><br><b>0614.40 – Animation</b><br><b>Academic Year 2019-20, unless noted otherwise</b> | <b>Inland<br/>Empire/Desert<br/>Region</b> | <b>California</b> |
|--|--|-------------------|
| Unduplicated count of enrolled students (2020-21)  | 276  | 4,374             |
| Completed 9+ career education units in one year (2020-21)  | 36%  | 33%               |
| Perkins Economically disadvantaged students  | 83%  | 74%               |
| Students who attained a noncredit workforce milestone in a year (2020-21)  | -  | 68%               |
| Students who earned a degree, certificate, or attained apprenticeship (2020-21)  | -  | 160               |
| Transferred to a four-year institution (transfers)   | -  | 242               |
| Job closely related to the field of study (2018-19)  | -  | 46%               |
| Median annual earnings (all exiters)   | \$21,494                                   | \$24,950          |
| Median change in earnings (all exiters)  | 15%  | 35%               |
| Attained a living wage (completers and skills-builders)  | 23%  | 25%               |



Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

*Exhibit 14: 0614.00 – Digital media strong workforce program outcomes, Inland Empire/Desert Region, Academic Year 2019-2020 (Unless Noted)*

| <b>Strong Workforce Program Metrics:<br/>0614.00 – Digital Media<br/>Academic Year 2019-20, unless noted otherwise</b> | <b>Inland<br/>Empire/Desert<br/>Region</b> | <b>California</b> |
|--|--|-------------------|
| Unduplicated count of enrolled students (2020-21)  | 1,044                                      | 9,238             |
| Completed 9+ career education units in one year (2020-21)  | 28%  | 31%               |
| Perkins Economically disadvantaged students  | 81%  | 73%               |
| Students who attained a noncredit workforce milestone in a year (2020-21)  | 33%  | 78%               |
| Students who earned a degree, certificate, or attained apprenticeship (2020-21)  | 30   | 284               |
| Transferred to a four-year institution (transfers)   | 33   | 665               |
| Job closely related to the field of study (2018-19)  | 61%  | 51%               |
| Median annual earnings (all exiters)   | \$23,202                                   | \$28,148          |
| Median change in earnings (all exiters)  | 54%  | 25%               |
| Attained a living wage (completers and skills-builders)  | 39%  | 31%               |

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Other postsecondary institutions may utilize the animation, interactive technology, video graphics, and special effects CIP code (10.0304) for their animation programs. However, over the last three academic years, no other regional postsecondary education institution issued awards using this program code. The following is the program description for animation, interactive technology, video graphics, and special effects CIP programs.

*A program that prepares individuals to use computer applications and related visual and sound imaging techniques to manipulate images and information originating as film, video, still photographs, digital copy, soundtracks, and physical objects in order to communicate messages simulating real-world content. Includes instruction in specialized camerawork and equipment operation and maintenance, image capture, computer programming, dubbing, CAD applications, and applications to specific commercial, industrial, and entertainment needs (IPEDS, 2022).*

## Summary of Findings

Employment for special effects artists and animators is expected to decrease by 1% through 2026. Despite the projected decrease in employment, there are 32 job openings expected annually over the next five years. The median hourly earnings for special effects artists and animators is \$21.47 per hour, nearly match the hourly living wage standard (\$21.82 per hour). Only six job ads were posted for special effects artists and animators in the Inland Empire/Desert Region over the last 12 months. Nearly two-thirds of statewide

employer job ads were posted in the Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area (MSA) (896 job ads). Approximately 77% of job ads for special effects artists and animators sought candidates with a bachelor's degree.

Regional animation programs (TOP 0614.40) have issued nine awards annually over the last three academic years. Digital media programs (0614.00) related to animation have issued 13 awards annually. Combined, community college programs related to animation have issued 22 awards annually. Other postsecondary education institutions in the region have not issued awards in animation, interactive technology, video graphics, and special effects (CIP 10.0304) programs.

The Centers of Excellence cautiously recommends expanding occupational training for special effects artists and animators due to the few employment opportunities in the region. Job ads indicate that there are significantly more employment opportunities for students willing to travel out of the local region. Colleges considering this program should partner with applicable employers to document their demand for special effects artists and animators exiting a community college animation program.

### Contact

Michael Goss  
Paul Vaccher  
Centers of Excellence, Inland Empire/Desert Region  
[michael.goss@chaffey.edu](mailto:michael.goss@chaffey.edu)  
October 2022

### References

Burning Glass Technologies. (2022). *Labor Insights/Jobs*. Retrieved from <https://www.burning-glass.com/>

California Community Colleges Chancellor's Office. LaunchBoard. (2022). *California Community Colleges LaunchBoard*. Retrieved from <https://www.calpassplus.org/Launchboard/Home.aspx>

California Community Colleges Chancellor's Office. LaunchBoard. (2022a). *Strong Workforce Program Metrics Data Element Dictionary*. Pg. 3. Retrieved from <https://www.calpassplus.org/MediaLibrary/calpassplus/launchboard/Documents/SWP-DED.PDF>

California Community Colleges Chancellor's Office. (2022). *Chancellor's Office Curriculum Inventory (COCI)*, version 3.0. Retrieved from <https://coci2.ccctechcenter.org/programs>

California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. (2022). *Data Mart*. Retrieved from <https://datamart.cccco.edu/datamart.aspx>

California Community Colleges Chancellor's Office, Curriculum and Instructional Unit, Academic Affairs Division. (2012). *Taxonomy of Programs, 6<sup>th</sup> Edition, Corrected Version*. Retrieved from <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Research/Files/TOPmanual6200909corrected12513.ashx?la=en&hash=94C709CA83C0380828415579395A5F536736C7C1>



## Methodology

Exhibits 11 and 12 display the average annual California Community College (CCC) awards conferred during the three academic years between 2019 and 2022 from the California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. Awards are the combined total of associate degrees and certificates issued during the timeframe, divided by three in this case to calculate an annual average. This is done to minimize the effect of atypical variations that might be present in a single year.

Community college student outcome information is from LaunchBoard and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from California's Employment Development Department's Unemployment Insurance database records. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the web link for LaunchBoard's Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2022a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS), administered by Santa Rosa Junior College (LaunchBoard, 2022a).

Job ad data is limited to the information provided by employers and the ability of artificial intelligence search engines to identify this information. Additionally, preliminary calculations by Georgetown Center on Education and the Workforce found that "just 30 to 40 percent of openings for candidates with some college or an associate degree, and only 40 to 60 percent of openings for high school diploma holders appear online" (Carnevale et al., 2014). Online job ads often do not reveal employers' hiring intentions; it is unknown if employers plan to hire one or multiple workers from a single online job ad or collecting resumes for future hiring needs. A closed job ad may not be the result of a hired worker.

Table 1. 2021 to 2026 job growth, wages, entry-level education, training, and work experience required for special effects artists and animators in the Inland Empire/Desert Region (Riverside and San Bernardino counties combined)

| Occupation (SOC)                                | 2021 Jobs | 5-Year Change | 5-Year % Change | Annual Openings (New + Replacement Jobs) | Entry-Experienced Hourly Wage (10 <sup>th</sup> to 90 <sup>th</sup> percentile) | Median Hourly Wage (50 <sup>th</sup> percentile) | Average Annual Earnings | Entry-Level Education & On-The-Job-Training | Work Experience Required |
|---|-----------|---------------|-----------------|--|---|--|-------------------------|---|--------------------------|
| Special Effects Artists and Animators (27-1014) | 299       | 298           | (1%)            | 32                                       | \$14.00 to \$60.32  | \$21.47  | \$63,500                | Bachelor's degree & None                    | None                     |

Source: Lightcast 2022.3