



Pennsylvania's Motion Picture and Television Industry:

A Workforce Analysis



THREE RIVERS

WORKFORCE INVESTMENT BOARD

TRWIB, Inc.

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Executive Summary

The Three Rivers Workforce Investment Board conducted a thorough analysis of Pennsylvania's motion picture and television industry to identify key workforce development issues that are essential to the advancement of the industry and its workforce. This analysis includes industry and workforce trends, employment patterns, job growth, critical production skill sets, and educational and training programs.

For this analysis, the Three Rivers Workforce Investment Board (TRWIB) retained The Entertainment Economy Institute (EEI) after a competitive process supported by the Pennsylvania Department of Labor and Industry. EEI, headquartered in Los Angeles California, is recognized as one of the foremost consulting firms in the country specializing in creative sector workforce development and education.

A Workforce Analysis of the Commonwealth's Motion Picture and Television Industry

EEI conducted extensive quantitative and qualitative analyses to examine the workforce needs of the motion picture and television industry. The consensus among the producers interviewed by EEI is that Pennsylvania is an attractive location to make movies and producers are interested in returning. The key element driving producers to the Commonwealth is the state's Film Production Tax Credit, which was enacted in the Commonwealth of Pennsylvania in 2004 to attract production companies to Pennsylvania. The Tax Credit has proved to be a powerful financial incentive to producers scouting potential locations.

The fluctuating budget for this Tax Credit, due to state financial strain, is concerning since the stability of the state's entertainment industry relies heavily on this credit. The Tax Credit was initially authorized in 2004 with a cap of \$10 million. Its budget rose over the years. For this fiscal year, 2009-2010, it was reduced from \$75 million to \$42 million and will be increased to \$60 million in fiscal year 2010-2011. Economic Research Associates (ERA) in a study done on the tax credit for the PA Legislative Budget and Finance Committee, found a net fiscal gain to Pennsylvania of \$4.5 million considering revenues generated by the entire film industry.¹

In addition to the Film Production Tax Credit, Pennsylvania's location diversity, proximity to New York, and the cost of production were cited by producers from out of state as competitive advantages in attracting film and television producers to the Commonwealth. Producers also praised Pennsylvania's crews for their positive work ethic. However, most producers identified an opportunity to increase the supply of experienced local production managers, assistant directors and production accounting staff, in order to strengthen the Commonwealth's workforce.

¹ Legislative Budget and Finance Committee (May 2009). *Pennsylvania's Film Production Tax Credit and Industry Analysis*. It should be noted that while ERA's study analyzed the film industry, different industry clusters were used for this report, *Motion Picture and Television Workforce Analysis*, due to the focus on workforce development.

Study Highlights

- The motion picture and television industry in the Commonwealth currently ranks 6th in the nation with 2.5% of the national motion picture and video employment.
- According to the latest data available, there were 799 motion picture and television industry establishments in the Commonwealth of Pennsylvania in 2007. These establishments created 9,785 jobs and generated \$613 million in payroll.
- Motion picture and television industry wages in Pennsylvania have grown annually by 2.1% as compared to 1.5% wage growth in the private sector. The average annual wage in the industry is relatively high at \$66,676 and in the motion picture and video production sector alone, there was a 17% increase in employment and a 38% increase in wages.
- The production sector in Pennsylvania reported a marked increase in the number of workers between 2001 and 2008, growing by 44% and adding 1,482 workers, making it the sector of the television and motion picture industry with the largest workforce.
- There were about 15,180 workers who held a motion picture and television industry job for at least 1 quarter or more during 2008 in the Commonwealth of Pennsylvania.
- When not working in the motion picture and television industry, workers were employed in a variety of other industries. A large number of workers are recorded as being employed by temporary help services and payroll services.

For example, Entertainment Partners, a major film industry payroll service, reports that they paid over \$25 million in wages to Pennsylvania residents in FY 06. This amount jumped to over \$75 million in FY 08. These employees are not counted in the employment and wage data for motion picture and television production but as payroll service employment.

- The motion picture and television industry in Pennsylvania is concentrated in Pittsburgh and Philadelphia. These two regions accounted for 64% of the industry jobs.

Both metro regions experienced job gains in the motion picture and television industry: Pittsburgh gained 576 jobs or 40% of the industry-wide growth and Philadelphia added 193 jobs, or 6% since 2001. Average annual wages in these two regions were higher than in other regions: \$85,500 in Philadelphia and \$67,200 in Pittsburgh.

- According to the U.S. Bureau of Labor Statistics, the growth forecast for motion picture and television industry occupations is strong. These include multimedia artists, animators and audio and video equipment technicians.
- Pennsylvania has at least 70 post secondary institutions including community colleges, public and private colleges and universities and certificate programs that offer courses in motion picture and video production and related subjects such as technical theater.
- Pennsylvania has a growing Career and Technical Education initiative at the high school level “Arts, A/V Technology and Communications” that includes printing and graphic communications as well as film/video/cinema production. Approximately 74 schools offer approved instructional programs.

The Commonwealth's public secondary schools have 16,160 students enrolled in Drama and Theater, 3,936 students in Film Studies, 6,940 students in Broadcast Communications, as well as thousands of students in related courses such as aesthetics, art criticism, and photography.

Recommendations for Pennsylvania's Motion Picture and Television Industry Workforce Development

Pennsylvania's Workforce Investment Boards and the Commonwealth's education and training system can play an important role in further strengthening the industry's presence in the Commonwealth by addressing educational and training needs of current and future motion picture and television industry workers, with an emphasis on skills applicable in multiple industries. Stronger incentives, educational opportunities, counseling, training and marketing will ensure Pennsylvania stays competitive and continues to play a leading role in the television and motion picture industry.

Selected Recommendations

- Retain and/or expand the current tax incentive program to continue to attract film and television industry production to the Commonwealth and to maintain a competitive position relative to the 42 other states offering similar incentives. Make the incentive multiyear to encourage longer-range planning on the part of filmmakers and encourage investments in facilities and production services.
- Strongly consider an added tax incentive or a carve-out in the current package that is tied to hiring local crew. Fifteen other states have workforce-related aspects to their incentive programs.
- Consider expanding the credit to include firms that produce animation, games and visual effects. Pennsylvania has several exemplary educational institutions working in this area and it would be helpful to include them in the incentive.
- Model the New Mexico program by subsidizing the salaries of Pennsylvania residents working in certain motion picture and television occupations.
- Develop a production assistant training program that will place subsidized production assistants in every below the line production department on film and television projects. Ensure that these participants receive at least two years of counseling and career support to help them transition from production assistants to trained crew by connecting them to programs that allow them to move up.
- Create a short-term certificate program at community colleges in Pittsburgh and Philadelphia in industry specific production accounting software regularly used in film and television projects.

- Replicate the model of Hollywood Cinema Production Resources in having union members teach classes, either as adjunct with the community colleges or in a separate nonprofit organization.
- Identify an initial cluster of high schools, community colleges and four year institutions (and related programs) – start with one of each to begin – and connect them to each other and to industry advisory groups.
- Integrate school counselors into the process of exploring career options in particular industry segments. Counselors are pivotal in designing curriculum and providing a delivery system that meets student needs. Include standards for counselor preparation and certification that include these multiple pathways to college and careers.

FAQs

Why this study period?

The period 2001 – 2008 was selected because it roughly coincides with the latest complete business cycle as defined by the National Bureau of Economic Research, a group that tracks economic recessions and expansions. However, the analysis was also confined by the latest data available. On industry information, the latest annual data available was up to 2007. On worker information, the latest data available was up to 2008. Therefore, data covered in the industry and workforce sections differ by one year.

How did you collect this data?

EI developed a set of custom designed data requests for the Three Rivers Workforce Investment Board (TRWIB, Inc.). TRWIB worked with the Center for Workforce Information and Analysis (CWIA) to facilitate the special tabulation of this labor market data. The Quarterly Census of Employment and Wages (QCEW) data represents the most comprehensive data available. Typically this data is aggregated and made publicly available by the state agency as well as by the U.S. Bureau of Labor Statistics. However, QCEW data can be used in customized analysis of labor market trends. EI designed a methodology to capture labor market trends in the motion picture and television industry. EI requested CWIA to tabulate industry and employee data covering the period between 2001 and 2008 for the motion picture and television industry. EI defined the motion picture and television industry by NAICS codes (NAICS 51211, 51212, 512191, 512199, 51512, 51521). Based on these NAICS codes, CWIA provided data tables which included establishments, jobs and payroll by region and year. EI also defined motion picture and television industry workers by the number of quarters worked in the industry. CWIA provided data tables which included count of workers and earnings. In addition, CWIA tabulated industries where workers were employed. None of this data or analysis has been published previously.

Explain Employment and Jobs?

Jobs and employment are tied to employers. Employment refers to the total number of jobs employers in an industry offer. For example, a production accountant position is a job. However, a job can be filled by more than one worker in a given year (see below).

What is a Workforce and who are these Workers?

A workforce is the total number of individuals (workers) who are available to be employed in a given period and industry. For the purpose of this analysis, EI defined a motion picture and television worker as anyone who had worked at least three quarters in a motion picture or television industry job during the period between 2001 and 2008.

What does “Above the line” mean?

In the motion picture and television industries, “above the line” generally refers to actors, directors, writers, and producers. These are generally expenditures that are negotiated or spent before filming begins. The term stems from the traditional production budget summary sheet that had a line separating these costs from the “below the line” costs (see below).

What does “Below the line” mean?

Below the line costs cover crew, equipment, location rentals and travel, post-production, music recording, and related expenditures.

What does NAICS stand for?

The North American Industry Classification System (NAICS) is the standard code used by the Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

NAICS was developed under the auspices of the Office of Management and Budget (OMB), and adopted in 1997 to replace the Standard Industrial Classification (SIC) system. It was developed jointly by the U.S. Economic Classification Policy Committee (ECPC), Statistics Canada, and Mexico's Instituto Nacional de Estadística, Geografía e Informática, to allow for a high level of comparability in business statistics among the North American countries.

And CAGR?

Cumulative Annual Growth Rate (CAGR) indicates a general annualized growth trend in a given time period. CAGR smoothes out the effects of volatility in growth trends but should be used with caution if there are dramatic and wide fluctuations.

Introduction

Since the early 1900s, Los Angeles and – to a lesser degree – New York have been the bicoastal centers for the motion picture and television industry. While the industry is still firmly rooted in these two centers, production activity is becoming more decentralized. As equipment got lighter, film stocks faster and audiences more sophisticated, productions started going to other locations for principal photography. Whether driven by script demands or lower costs, productions began to leave California in significant numbers in the mid-1980s. This phenomenon was dubbed “runaway production” by California policy leaders and the California Film Commission.

In the early days of runaway production, filmmakers simply took all their cast, crew and equipment with them. As states and locales recognized the benefits of attracting motion picture companies, they began to establish film offices to encourage more production. More production generated specialized services and the development of a local crew base. Infrastructure, in the form of sound stages and post-production services, was the next phase for most locales. With significant production gains, some states and cities saw opportunities to develop a local workforce sufficient to staff the companies that came into the area to film as well as service local television, commercial and feature film production.

Tax incentives, often provided to other industries, started to be considered for motion picture and television production. In fact, British Columbia, Canada, was one of the first to offer production incentives in April 1998. The Canadian Government enacted a national incentive two months later. This followed a long period of encouraging Canadian produced television and motion picture production. With the strong dollar and the incentives, producers flocked to Canada to produce motion pictures and television movies. In the United States, Louisiana was the first to enact a production tax credit in 2002. In 2002, Louisiana recorded \$20 million in production. In 2003, that number jumped to \$335 million. New Mexico followed suit with its incentive program, and the race was on. Now, all but 8 of the 50 U.S. states and the District of Columbia offer direct incentives to film producers. Ten states -- including Connecticut, Georgia, Hawaii, Illinois, Maine, Montana, New Mexico, North Carolina and Wisconsin -- have no annual caps on state funding for these incentives.

As production has expanded geographically, the markets for feature films, television shows and other filmed entertainment continue to grow and evolve with new technologies. U.S. feature films dominate local theatrical markets in most parts of the world. Films produced by independent producers are also gaining market share aided by the proliferation of film festivals and industry associations, such as the American Film Market. For example, the 29th American Film Market held in Santa Monica, CA, was attended by nearly 8,000 buyers, producers, talent and others. Features released by independent production companies now account for more than 70% of the total features, up from 56% in 1999. While studios and producers alike are constantly looking for ways to cut production costs, independent productions tend to be more cost sensitive and are often influenced by incentives in making their location decisions.

In addition, the major studios are diversifying their product line to include original content for new digital platforms and computer and online games. There are significant players in this arena as well, such as Activision, Electronic Arts and Vivendi/Blizzard.

The Industry in Pennsylvania

In 2004, the Commonwealth of Pennsylvania enacted a Film Production Tax Credit with a cap of \$10 million. In fiscal year 2007-08, the Pennsylvania Production Tax Credit Program expanded the Film Production Tax Credit to \$75 million per fiscal year. The number of projects awarded under the tax credit programs increased significantly from 9 to 15 projects in FY 06 and FY 07 to 69 projects in FY 08.

These incentives have had a significant impact on the Commonwealth, bringing productions and the money they spend. According to the Internet Movie Database (IMDB), 615 feature films were released between 2002 and 2008 that were produced -- in whole or in part -- in Pennsylvania.

The motion picture and television industry in the Commonwealth of Pennsylvania currently ranks 6th in the nation with 2.5% of the national motion picture and video employment.

A Workforce Analysis of the Commonwealth's Motion Picture and Television industry

In late 2008, the Three Rivers Workforce Investment Board (TRWIB) submitted a proposal to the Pennsylvania Department of Labor and Industry to analyze and convene the motion picture and television industry in the Southwestern Pennsylvania region. The Pennsylvania Department of Labor and Industry responded back to TRWIB with an interest in conducting a full statewide analysis detailing the workforce implications of this industry. Through a Request for Proposal process, TRWIB retained The Entertainment Economy Institute (EEI) to conduct a study of Pennsylvania's motion picture and television industry workforce. EEI is recognized as one of the foremost consulting firms in the country specializing in the creative sector workforce and education.

The aim of this study is to identify key workforce development issues – industry trends, employment patterns, job growth, critical production skills sets and educational and training programs – that are essential to the advancement of the industry and its workforce in the state. The industry data provide the historical and geographical context in which workforce development policies can be examined and addressed. Continued industry growth provides opportunities for incumbent workers and new entrants to build successful careers in one of the nation's leading and burgeoning creative industries. Conversely, a quality workforce attracts new production activities to the Commonwealth and, therefore, facilitates additional rounds of new investments and further development of the industry cluster.

The motion picture and television industry at its core is a labor-intensive industry. According to experienced producers and production managers, an estimated 60-70% of the average U.S. film or television budget goes to salaries. The industry relies on the creative talent, knowledge and skills embodied in hundreds of workers who perform aesthetic, craft, technical, managerial and administrative functions. Production skills are constantly evolving as new technologies and new media platforms are introduced. Feature films are still the cornerstone of the industry. But other products,

including television shows, Internet content, commercials, games and so on are growing in importance to the motion picture and television industry. The production of entertainment content requires two different but interrelated groups of professionals. The first group is comprised of creative talent, or above-the-line professionals, which includes actors, producers, directors and writers. The second group is comprised of production professionals who work behind the camera. In industry jargon, these are “below-the-line” production workers who perform a wide range of functions: they design, construct and light the sets, operate the camera, edit and mix sound, create special effects, design costumes, handle make-up and hair and much more. This study focuses on this second group of production professionals because this group represents the critical skills infrastructure that is necessary to build a sustainable motion picture and television industry and attract new production activities to the state.

This report examines the following areas related to motion picture workforce development.

Industry Trends: the state of the industry and job growth trends.

Production Occupations and Skills Sets: description of production occupations and critical skills sets.

Workforce Trends: employment patterns, frequency of work, classification of workforce and wage trends.

Best Practices in Education and Training: analysis of workforce programs in other states and countries that highlights the best practices.

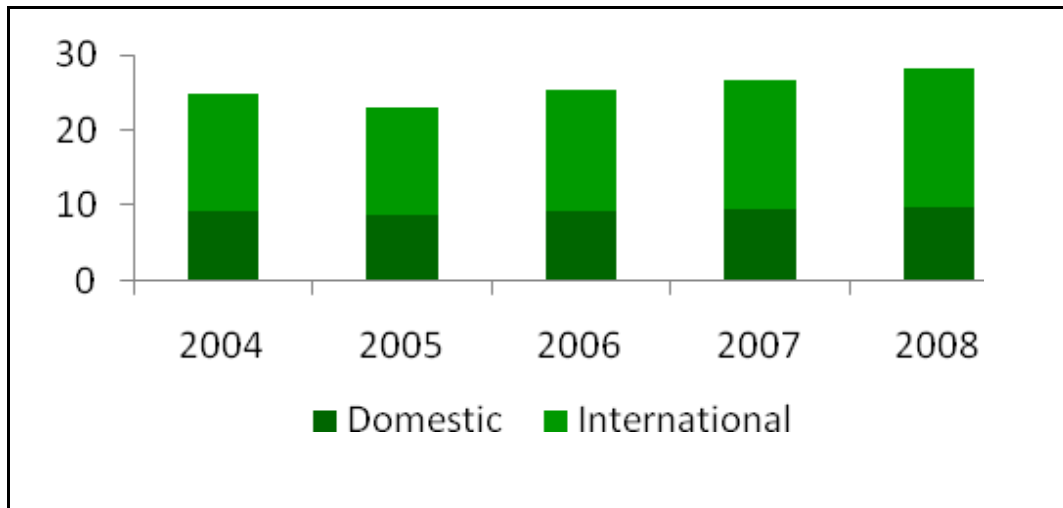
Educational and Training Programs: identification and description of training programs in Pennsylvania.

The motion picture and television industry in the U.S. is still very much concentrated in Los Angeles – and to a lesser extent – in New York. These two markets originate most of the large budget feature and television production projects in the U.S. When producers look for production sites outside of Los Angeles and New York, they consider a variety of factors but primarily the availability of physical production assets (e.g., studios, equipment suppliers) and the availability and quality of below-the-line production workforce. Therefore, to build a sustainable motion picture and television, emerging markets, like Pennsylvania, need to build up their production infrastructure, including the below-the-line workforce, and keep this infrastructure working. Above-the-line talent tends to concentrate near the decision and financial centers of the television and motion picture industry because one of the first decisions made in a project is to secure primary actors, directors, writers and producers.

Overview of the U.S. Motion Picture and Television Industry

The motion picture and television industry is a global industry. Today, U.S. feature films dominate local theatre markets in Europe, South America, Asia and elsewhere. In 2008, the worldwide box office receipts increased 5.2% to reach \$28.1 billion, compared to \$26.7 billion in 2007. The export of feature films and television shows has grown in importance and contributes to the economics of the industry. International box office receipts now account for 65% of the worldwide total, while North America (U.S. and Canada) account for the rest. In the past five years, the international box office receipts in U.S. dollars increased by 17%.² In the midst of a global recession, the motion picture and television industry remains vibrant and has excellent prospects for the future.

Figure 1: Worldwide Box Office Receipts (U.S. \$ Billions)



Source: MPAA

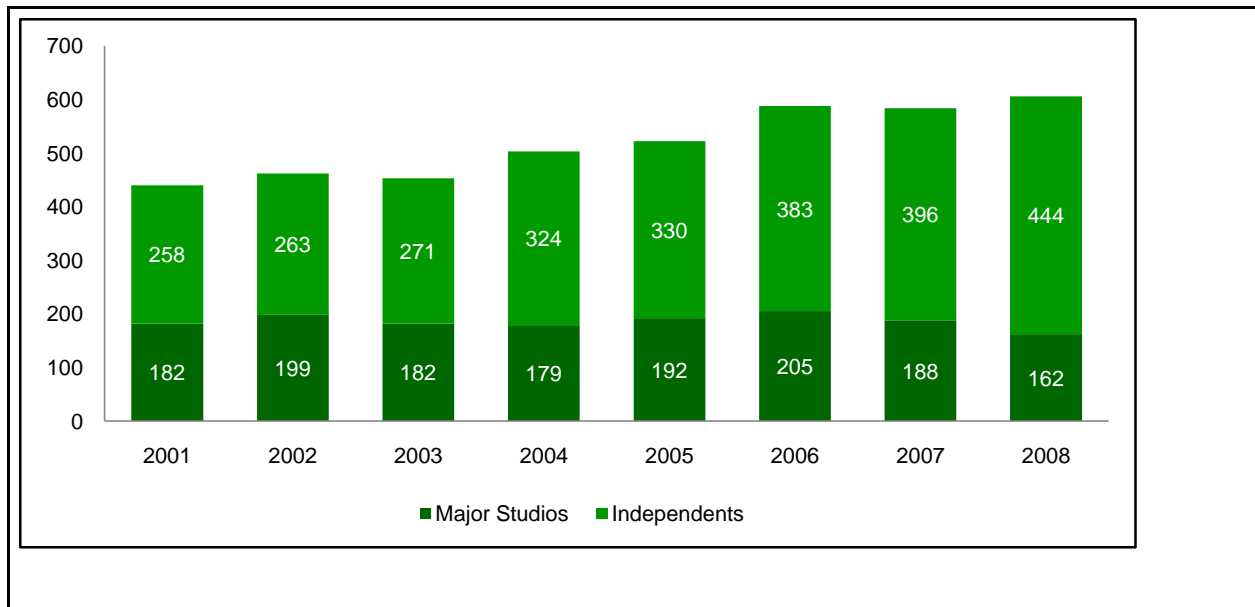
The theatrical market in terms of revenue is dominated by the six major studios: News Corporation/Fox Entertainment Group Inc., General Electric/ NBC Universal Inc., Sony/Sony Pictures Entertainment, Time Warner/Warner Bros., Viacom/Paramount Pictures and The Walt Disney Company. However, the independents have become significant producers of feature films. The total number of feature films released has increased since 2001. In 2008, the number of features released increased 38% over 2001 figures to 610 films. Of the total, the number of features released by independent production companies has overtaken the number of features released by the six major studios. Independent features now account for more than 73% of the total features released, up from 58% in 2001.

² Motion Picture Association of America (MPAA), Theatrical Market Statistics, 2008.

Independent projects usually have smaller budgets than projects from major studios. As a result, independent projects are much more cost-conscious. However, there has been a greater emphasis overall on lowering costs in light of several macro trends in the industry. These include: the increasing cost of marketing and distribution, rising talent costs, the focus on big budget pictures from the major studios which include expensive special effects, and greater competition from other entertainment media and venues.

These trends have influenced the wide spread use of production incentives to lure production activities to localities. There are 42 incentive programs in the U.S., and states are not only competing with other states but also with other countries. Incentives alone, however, are inadequate to build a sustainable motion picture and television industry. Physical infrastructure, favorable operating environments, and the availability of a skilled workforce are also important factors.

Figure 2: Feature Films Released in the U.S., 2001-2008



Source: MPAA

In addition to feature film production, television content has become a growing segment of the industry, largely as a result of growth in cable networks. The “Big Four” television broadcast networks in the U.S. are: ABC (owned by the Walt Disney Co.), CBS (CBS Corp.), FOX (News Corp.) and NBC (General Electric Co.). After a merger of CBS’s UPN and Time Warner’s WB networks, the CW Network debuted in the fall of 2006. In addition to the Big Four, the cable industry has grown by leaps and bounds, segmenting the television business into specialized market niches. According to the National Cable and Telecommunications Association, 64 million customers subscribe to basic cable. There are about 565 cable programming networks, and the industry revenue reached \$86 billion in 2008. Nearly 85% of U.S. households received TV programming via cable or satellite dish, as of December 2008 (compared with about 56% in 1990).³ Top cable channels by number of subscribers include Discovery, TNT, ESPN, CNN, USA Networks, Lifetime Television, Nickelodeon and TBS. Television viewing habits of American households have not waned, even as other digital media, particularly the Internet, video games, iPods, etc., continue to capture greater share of entertainment spending. According to Nielsen Media Research, the average household viewed TV for 8 hours and 18 minutes per day in the 2007-08 broadcast year, the highest on record since the 1950s.⁴

From an industry and workforce development perspective, the health of broadcast television and cable business is significant. One of the more important television trends from a production perspective is the growth of original content, which directly translates into jobs and investments. There are several noteworthy trends in the area of television content. First, television shows have become more cinematic in the last ten years, which means larger production budgets and greater use of location filming. Television projects are going outside the studios and studio lots to film on location to capture and enhance the realistic look. Second, the emergence of reality TV as a genre has affected employment opportunities for production crews. Reality TV initially came on the scene as a response to labor disputes but quickly formed into a permanent trend. Reality TV projects cost less to produce than scripted television shows and often employ fewer above-the-line and below-the-line personnel. Finally, cable networks are investing in and producing original television content. HBO has had enormous success with shows like “Sex and the City,” “The Wire” and “The Sopranos.” Showtime also is engaged in more original programming with series, such as “Weeds,” and Lifetime is creating original content with its own movies and television programs. These are large budget productions that spur job growth and investment. Other cable networks also are producing or acquiring content, often from producers outside the major production centers of Los Angeles and New York.

³ Standard and Poor’s industry report.

⁴ Ibid.

Origins of the Pennsylvania Motion Picture and Television Industry

In 1996, the motion picture and television industry celebrated its 100th anniversary, and some have argued that it began in Philadelphia. Siegmund Lubin was a German immigrant who made his home in Philadelphia and began his first film studio in 1897. He was a motion picture pioneer and considered by many as the first movie mogul, building an empire of six studios in five states. His first studio was at 20th and Indiana Streets in Philadelphia. It stood nearly intact until a decade ago, when it burned to the ground in the midst of plans for its restoration. His second big studio, The Betzwood Film Studio, was located in Montgomery County near Valley Forge. Soon after, Pop Lubin, as he was known, joined the rest of the movie industry by moving to Los Angeles for the sunshine. For the most part, filmmaking remained in California until the 1990's.⁵

Pittsburgh and southwestern Pennsylvania also have a direct link to the earliest beginnings of the motion picture and television industry in the United States. In 1905, on Smithfield Street in downtown Pittsburgh, the very first Nickelodeon opened its doors. An amazed public paid 5 cents each to sit in the dark and watch flickering images on a screen. In just a matter of few years, several brothers known as the Warner Brothers, opened their first named theater in New Castle, Pennsylvania, about 45 minutes north of Pittsburgh.⁶

Metro Company (which became MGM) and the first public television station had their beginnings in southwestern Pennsylvania. In the earliest days of the industry, Pittsburgh was a center for distribution and "film exchange" when shipping film long distances was more risky. Until the 1960s, Pittsburgh served as a major regional distribution office for Paramount Pictures.

The motion picture and television industry in the state of Pennsylvania is 6th in the nation, with 2.5% of the national motion picture and video employment. The U.S. motion picture and television industry is highly concentrated in a bi-coastal pattern with the industry firmly anchored in the Los Angeles region and New York. The industry in New York, by employment (12% of total), is about a third of the size of the industry based in Los Angeles (34% of total). All the major movie studios are headquartered in Los Angeles, while the television networks are based in New York. In this context, the motion picture and television industry outside of these two metropolitan areas is comparatively small. Florida ranks third in the nation with slightly less than 5% of the industry employment. There are opportunities for secondary production centers in other states to attract production activities from Los Angeles and New York. While this is a highly competitive landscape, Pennsylvania has thus far had relatively strong success with its production incentive program.

4 From Philadelphia Film Office Director Sharon Pinkenson's Testimony on May 1, 2009.

5 From Pittsburgh Film Office Director Dawn Keezer's Testimony on June 5, 2009.

Summary of Interviews with Industry Professionals

The Philadelphia and Pittsburgh Film Offices respectively provided EEI with the names and contact information for producers and production and location managers who were involved in feature films produced in the Commonwealth over the last two years. All of them were contacted and in depth telephone interviews were conducted with eight individuals. Most interviews lasted over an hour and covered a range of topics and impressions about filming in Pennsylvania. A list of those interviewed is included as Appendix A.

The consensus was that Pennsylvania is a terrific place to make movies, and producers are interested in returning to the state. However, for nearly all of the producers, their desire to return depended on the retention of the tax incentive. Since the incentive is currently in place for a year at a time, producers indicated a reluctance to plan too far in advance, lest the incentive not be available. They also cited that uncertainty as a primary deterrent to investments in physical infrastructure, such as sound stages and equipment rental facilities.

Pennsylvania's scenic diversity, proximity to New York and the cost of production were cited by every interviewee as competitive advantages. Some said Pennsylvania is better for filming than New Mexico (primarily for scenic diversity and urban looks), and the state is definitely better than Michigan because of its proximity to New York. As one producer said: "Distance eats up half your budget."

Interviewees were asked for their recommendations on building a local crew base. The universal response was: "Keep the productions coming." One producer stated: "Continue the incentives and the aggressive marketing. Without those elements, there won't be any jobs to fill." Several suggested an added percentage incentive for hiring local crews. Others cited the amount of time needed for other states to build sufficient crew depth, with most producers estimating it takes five years to develop a sufficient workforce. Interviewees also said more trained production assistants, production coordinators and production management staff (assistant directors, etc.) are needed, along with accounting and payroll staff with training and experience in production accounting. It was noted that many people who left Pennsylvania to find work in the industry in California are returning to the Commonwealth.

The caveat to these recommendations: A larger crew base cannot be sustained without the incentives, adequate marketing and on-the-ground cooperation and support.

Independent producers universally repeated the mantra that "cost is everything." When asked what would happen if all the states repealed their incentives, Declan Baldwin, (Producer, "Adventureland") cautioned: "If all the tax credits went away, production would go back to New York and Los Angeles unless the script demanded it and the financiers were willing to cover the additional costs."

Philadelphia

Philadelphia's proximity to New York is both a blessing and a curse. Because New York is a major production center, cast, crew and equipment are readily available within a few hours' drive. This makes filming in Philadelphia easier and less risky, but it also means that there are fewer reasons to develop a deeper local crew and vendor base.

Crew depth was cited as an issue by all the producers. The ERA Report (2009) reported that Philadelphia has 4 crews. However, the perception is that Philadelphia has 1 ½ to 2 full crews. While producers found a good selection of grips and electric, construction and transportation crews available, a dearth of production managers and assistant directors was noted. Most producers imported their key below-the-line personnel from Los Angeles or New York. Some hired crews from Florida, North Carolina, Maryland and other Eastern states, as well. The quality of the local crews was uniformly praised. Nearly everyone interviewed said they imported camera crews from out of state.

Some equipment, particularly specialty camera equipment, had to be imported from other production centers – most notably New York and North Carolina.

Producers interviewed for this report stated that the permits and other on-location logistics were smooth. Overall, local residents and businesses were mostly cooperative. Experienced and sensitive local location managers, when available, were cited as a major factor in the ease of production.

Most productions returned to Los Angeles or New York for post-production. Increasing the level of post-production in Philadelphia was viewed as problematic because most film directors do not live in the area. Without directors and other above-the-line talent, post-production is difficult but not impossible to develop. Shooters Post and Transfer/DIVE was mentioned often as an excellent post-production facility. While commercials can provide a level of stability in post-production, the current climate for traditional commercials is not favorable.

One or more production service firms would also be beneficial. One producer described a production service company as: "Here I am. Here's my movie. I hire you and you crew and equip me." With the increase in the number of independent films, such a service might be more in demand.

Pittsburgh

Producers love to film in Pittsburgh. One producer dubbed it "a perfect backlot" in terms of the diversity of looks. The positive attitude and strong work ethic of the local crews were often cited. However, crew depth was deemed insufficient to staff multiple productions. The perception is that if three companies try to film in the Pittsburgh area at the same time, the last company to arrive on the scene won't find sufficient crews. This is contrary to the ERA report, which found three crews in Pittsburgh. Most producers indicated that they did not have trouble finding construction,

transportation, grip and electric, or craft service crews. Some had issues with the availability of equipment, particularly specialty camera rigs. However, with New York approximately eight hours away, none cited this as a deterrent to filming in Pittsburgh.

Nearly everyone interviewed referenced the lower cost of International Alliance of Theatrical Stage Employees (IATSE) crew in Pittsburgh as a competitive advantage.

Some concerns were voiced with filming in communities outside of Pittsburgh due to the variations in permit rules. As one person stated: "Every burg is different. You never knew how long anything would take (to get approved)." Several recommended the Film Office develop a comprehensive and regularly updated list of warehouses and similar facilities that could be used as sound stages with rates and contact information. Commercial developers and owners were occasionally mentioned as not being as cooperative or accessible as productions would like.

Air transportation in and out of the Pittsburgh airport was mentioned regularly as a significant problem. The reduction in direct flights to and from Los Angeles causes delays and increases the risk of equipment or baggage problems due to changing planes. Weather in connecting cities was also mentioned.

The departments most often mentioned as areas of improvement were production management (coordinators, supervisors and assistant directors) and production accounting. At least one production service company would be welcome.

Carnegie Mellon's internship program was praised by several producers for the quality of the students and the school's involvement in the process, including follow-up.

The Nature of Employment in the Motion Picture and Television Industry

Jobs in entertainment can be divided into indefinite (or “permanent”) and term employment. Permanent refers to jobs without a set terminal date. Most indefinite and generally longer-term positions are in the front office, maintenance and middle management. Term jobs are related to the production project life and are filled by workers who are “freelance.” Estimates set the number of freelance workers at from half to nearly two-thirds of the total workforce. Freelance workers include most of the skilled occupations in physical production. Jobs also fall into union and non-union positions. The Screen Actors Guild, the Directors Guild and the Screen Writers Guild organize the so-called “above-the-line” or creative workers, while specialized locals of the International Alliance of Theatrical Stage Employees (IATSE), the National Association of Broadcast Electricians and Technicians (NABET), the Teamsters, electricians and others organize the skilled crafts. The unions set basic wage scales and work rules that have the flexibility necessary for the idiosyncrasies of the industry.

High-risk and intense competition has also led to the decentralization of the business into many small, often very specialized production and supplier firms. These pressures added to a project-based production process have generated a flexible network of firms that spreads risk as well as opportunity.

The Motion Picture Production Process

The production of motion pictures – whether for release in theaters or on television – involves a number of phases that affect employment. Phase one is development and involves financing of a concept or script. Given a financial green light, a project moves to pre-production. The producer assembles the core creative team of writer and director. They bring in the designer, director of photography, unit production manager and perhaps star actors. Collectively, they develop the script, budget, locations and identify their “key” crew. A detailed plan is created that involves breaking the script into shots, scheduling, casting and hiring crew. From this follows detailed preparation of sets, locations, wardrobe, props, equipment and supplies.

The process then moves into principal photography where the script is put on film. As soon as photography begins, post-production is initiated as the director and/or the producer screen the shots and confer with the editor on cutting and splicing them into a coherent picture. The sound, music, special effects and titles are added – all of which leads after weeks, or months, to a release print. From there, the film is in the hands of marketing and distribution. Marketing engages in the advertising and publicity aimed at the public, while distribution involves sales and licensing to exhibitors – theaters, home video and TV — as well as actually getting the product to various outlets.

Understanding Occupations in Principal Photography

The occupations in principal photography involve a variety of specific skills, such as carpentry, sewing, make-up and painting – all of which, on initial observation, do not appear unique or peculiar to the motion picture and TV industry. So what distinguishes these occupations as motion picture and TV occupations?

Three types of Skills/Knowledge

There are three types of skills or knowledge in each occupation that set it apart from its counterpart in any other industry.

Cinematic skills are the capacity to visualize the appearance of reality as a filmed image and to enhance or modify reality to make its image comply with the script's or the director's instructions. These skills involve the knowledge of "what works in front of a camera." This involves interpreting the script, visualizing the scene and character, knowing how things are represented on film or video and assessing the level of detail needed. For example, doors on a set need not open, if opening that door is not required in the script. Personal characteristics may be exaggerated or de-emphasized by make-up. The scenic backdrop viewed through a window of the set may need more or less detail. This set of skills seems to be learned largely by experience and, in the best craft workers, it becomes unconscious. Thus, we call this "tacit" knowledge.

Organizational skills are critical to principal photography because each person – from truck driver to camera operator – has to carry out his/her task in a coordinated, timely and effective manner. For instance, if a driver is late in delivering the equipment to the shooting location, the production is delayed. If the assistant director does not prepare the call-sheet in advance and accurately, the right crew and equipment will not be available to do the shoot. Because of the large number of people on a set or location, lost time is costly. Inability to work smoothly with fellow workers in a timely way can jeopardize a career in film.

Technical skills are necessary to perform given tasks but tend to be more generic skills associated with types of occupations, such as a cabinetmaker. Technical skills, however, can also be industry specific when the tools are specific to the industry, e.g. a camera operator or a digital imaging technician. This group of skills also includes the knowledge and practice of specific safety techniques that are extremely important on a set or location.

Skills/Knowledge Mix

Every occupation in different production functions (e.g. camera, lights, sound, costumes, and make-up) requires a mix of cinematic, organizational and technical skills and knowledge. The mix of skills is different for each occupation, but there are general trends.

Occupations that are closer to the above-the-line occupations (director, writer and actor) tend to require more cinematic than technical skills. Still cinematic skills are significant in many production occupations. Central to this skill area is the ability to grasp and generate qualities that actualize “reality” for the camera. Camera and film “see” things differently from the eye. Craft workers must have the skills needed to make an actor, a building, a property or whatever appears in the picture – film or video –as intended in the script. It is the utilization of these particular skills that distinguishes occupations such as wardrobe, make-up, construction and lighting in the film business.

Cinematic –and to some extent organizational – knowledge and skills are acquired largely through experience and on-the-job training, although film school can provide them to a degree. Usually having been acquired in increments of experience, they take on an unconscious quality that makes them tacit. Many people think of them as intuitive and, thus, innate. Our observation, however, suggests that such skills are acquired primarily through experience, although some innate capacity may be involved.

The mix of these three skill areas distinguishes principal photography occupations, to some extent, from similar occupations in other areas of motion picture and TV production (e.g. post-production), as well as other industries. This is because principal photography involves coordinating different expertise, both artistic and technical, in such a way that filming can be carried out efficiently and effectively. While there is a clear chain of command, there also is a sense of self-organization at work that allows all the parts to come together at critical moments, such as when the camera begins running. It is the case that successful workers have what is called a “good eye” or a “good ear:” all share this tacit quality.

Career Paths

Employees in this industry acquire the three skills above through on-the-job training for the most part. Some relevant training or education is offered in schools and colleges, and it can be helpful. However, industry-specific skills are difficult to acquire outside of the context of film production itself.

An individual with primarily technical skills, like carpentry, can start working in the industry in a number of departments, such as set construction, grip, props and special effects. But if technical skills, however valuable, are not combined with cinematic and organizational abilities, people will not be able to move up in the career ladder.

Craft/technical skills are an important element of most production jobs. These are specific to the technique comprised in the occupations. Thus, photography, carpentry, painting, hair dressing, make-up, dress making, tailoring, electrical, plumbing, rigging and the like all have their technical requirements that tend to be shared and the skills are common.

As an individual acquires more experience in motion picture and TV production, s/he learns cinematic and organizational skills. By developing these skills, an individual can move up the career path. Through our research, we found that the higher one moves up the career path, the more cinematic ability is required. For instance, the make-up artist department head will read the script and interpret what the

character in the scene should look like. The make-up artist will frequently interact with the director and producer to define the character. His/her assistant will follow the head make-up artist's instructions in preparing the actor for the scene. Organizational skills are not unique to principal photography, although their value may be higher. On the set, a large number of skilled people are interacting under organizational pressure to cooperate and to meet needs quickly.

Figure 3: Organizational Skills that are Broadly Shared in Principal Photography Occupations

- Teamwork; work effectively with others on shared tasks
- Ability to follow direction
- Willingness to work long and irregular hours
- Meeting deadlines; maintaining schedules/time lines
- Good powers of concentration for long periods of time
- Patience; ability to wait while others are working
- Deal with pressure; ability to remain calm and productive in stressful situations
- Self-motivation and persistence; ability to complete tasks independently
- Oral and written communication with colleagues, superiors, subordinates, clients and vendors
- Analytical skill; ability to see important elements of work and where it fits in process
- Holistic understanding of filmmaking and the film business

Principal photography occupations are organized into 14 families of occupations that cover 84 identifiable occupations. The families (described in charts in Appendix B) cover:

1. Production Management
2. Art Department
3. Location Management
4. Camera
5. Lighting
6. Grip
7. Sound
8. Makeup and Hair
9. Costume and Wardrobe
10. Set Construction
11. Set Dressing and Props
12. Special Effects
13. Catering
14. Transportation

Analysis of Motion Picture and Television Industry Trends

The employment and workforce information presented in this report is primarily based on the Quarterly Census of Employment and Wages (QCEW) data (formerly known as ES-202) provided by the Center for Workforce Information and Analysis (CWIA), Pennsylvania Department of Labor & Industry.⁷ QCEW data is a comprehensive tabulation of employment and wage information by employers covered by Pennsylvania's unemployment insurance (UI) laws.

Publicly available QCEW files include data on the number of establishments, monthly employment and quarterly wages by North American Industry Classification System (NAICS) industry, and by geography. Employment data represent the number of covered workers who worked during, or received pay for, the pay period including the 12th of the month.⁸ Any worker may be employed with one or more employer at the time of the survey, therefore, when the count of workers is aggregated for an industry; the sum represents the total number of jobs in that industry.

In collaboration with CWIA, EEI developed a methodology for tabulating establishment, employment and wage data by industry subgroups that fall within the definition of the motion picture and television industry under NAICS. The QCEW data is available down to the 6-digit NAICS industry level and, where possible, sub-industry levels were maintained. However, in some cases, particularly at the regional level, the broader industry categories had to be used to meet disclosure restrictions. Therefore, the regional data may not correspond to the industry totals at the state level.

In addition to industry data, which are based on employer records, EEI worked with CWIA to extract and tabulate workforce-based employment and earnings data. This data set is customized for this particular study based on the methodology developed by EEI. It uniquely defines the motion picture and television industry workforce in terms of three categories of workers based on their frequency of employment in the motion picture and television industry. The industry workforce should not be confused with the number of motion picture and television jobs discussed above. The industry workforce includes individual workers defined by frequency of employment in the motion picture and television industry and those workers who held one or more jobs in the motion picture and television industry as well as in other industries between 2001 and 2008.

The workforce data allows EEI to analyze intensity of employment in the motion picture and television industry, as well as in other industries, and earnings associated with those employment patterns. It reveals the intermittent nature of motion picture production jobs, as well as unique hiring practices in

⁷ The Three Rivers Workforce Investment Board (TRWIB, Inc.) facilitated the data processing requests to the Center for Workforce Information and Analysis.

⁸ Excluded are members of the armed forces, the self-employed, proprietors, domestic workers, unpaid family workers and railroad workers covered by the railroad unemployment insurance system.

the motion picture and television industry. From a workforce development perspective, an understanding of fluctuating employment and earnings trends among the motion picture and television industry workforce will be helpful in shaping workforce training programs. For example, traditional employer-based training programs may not reach intended workers who work on a temporary basis and, in some cases, are hired by payroll services companies that are not eligible for training program benefits.

The QCEW data pull generated a large amount of data points. In order to present as much of this data as possible without burdening the reader, each section begins with highlights of key findings interpreted from the data. Brief observations on the data points are then provided.

Motion Picture and Television Industry Definition

For the purposes of this report, EEI worked with the Pennsylvania Film Office and Economic Research Associates (ERA), which completed a study on the Film Production Tax Credit in May 2009⁹, to determine a common definition for the industry to be used by both studies. However, since the main focus of this study is employment patterns in the motion picture and television industry, EEI includes all components of the motion picture and video industry and excludes industries that have little formal training opportunities for workforce development¹⁰. The following NAICS codes define the film industry:

NAICS 51211 Motion Picture and Video Production

Establishments primarily engaged in producing, or producing and distributing, motion pictures, videos, television programs or television commercials.

NAICS 51212 Motion Picture and Video Distribution

Establishments primarily engaged in acquiring distribution rights and distributing film and video productions to motion picture theaters, television networks and stations and exhibitors.

NAICS 51219 Postproduction Services and Other Motion Picture and Video Industries

Establishments primarily engaged in providing post-production services and other services to the motion picture industry, including specialized motion picture or video post-production services, such as editing, film/tape transfers, titling, subtitling, credits, closed captioning and computer-produced graphics, animation and special effects, as well as developing and processing motion picture film.

⁹ Legislative Budget and Finance Committee (May 2009). *Pennsylvania's Film Production Tax Credit and Industry Analysis*.

¹⁰ EEI's analysis includes NAICS 512199, Other Motion Picture and Video Industries and excludes NAICS 7115, Independent Artists, Writers, and Performers.

NAICS 51512 Television Broadcasting

Establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public. These establishments also produce or transmit visual programming to affiliated broadcast television stations which, in turn, broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network or from external sources.

NAICS 51521 Cable and Other Subscription Programming

Establishments primarily engaged in operating studios and facilities for the broadcasting of programs on a subscription or fee basis. The broadcast programming is typically narrowcast in nature (e.g., limited format, such as news, sports, education or youth-oriented). These establishments produce programming in their own facilities or acquire programming from external sources. The programming material is usually delivered to a third party, such as cable systems or direct-to-home satellite systems, for transmission to viewers.

NAICS 7115 Independent Artists, Writers and Performers

Comprises independent (i.e., freelance) individuals primarily engaged in performing in artistic productions, in creating artistic and cultural works or productions, or in providing technical expertise necessary for these productions. This industry also includes athletes and other celebrities exclusively engaged in endorsing products and making speeches or public appearances for which they receive a fee.

According to the latest QCEW data available, there were 417 motion picture and television industry establishments in the state of Pennsylvania in 2007.¹¹ These establishments created 8,494 jobs and generated \$566 million in payroll. The average annual wages in the industry was relatively high at \$66,673.

Table 1: Pennsylvania Motion Picture and Television Industry, 2007

	NAICS	Firms	Jobs	Payroll (\$ Mil)	Average Annual Wages
Motion Picture and Video Production	51211	269	2,162	\$132.93	\$61,485
Motion Picture and Video Distribution	51213	8	19	\$0.88	\$46,127
Post-production Services	512191	18	265	\$14.74	\$55,664
Other Motion Picture and Video Industries	512199	7	15	\$0.80	\$53,711

¹¹ 2007 was the latest annual data available.

Television Broadcasting	51512	75	3,999	\$267.40	\$66,867
Cable and Other Subscription Programming	51521	40	2,034	\$149.57	\$73,536
Total		417	8,494	\$566.32	\$66,673

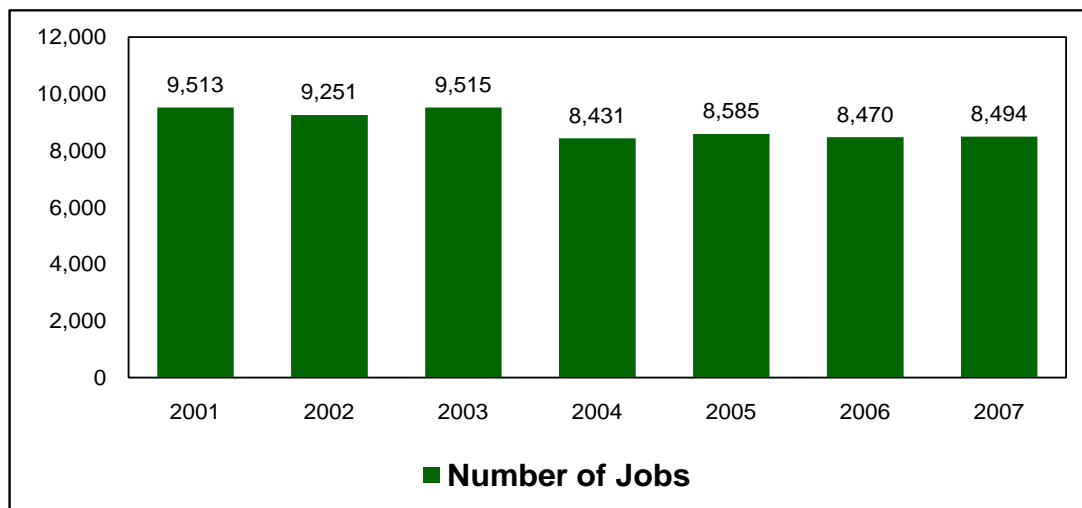
Source: Center for Workforce Information and Analysis, EEI.

Industry Employment Trends 2001 to 2007

- *The number of motion picture and television industry jobs over the 2001 to 2007 period ranged from a low of 8,400 jobs to 9,500 jobs.*
- *In 2004, there was a sudden loss of about 1,000 jobs. The loss was mostly concentrated in the cable sector, which may have been affected by the bankruptcy of Adelphia.*
- *Production and post-production sectors were the only two sectors that gained jobs, which suggests the industry is taking on a more production-oriented structure as a greater number of movies and television programs are filmed in Pennsylvania.*

The motion picture and television jobs in Pennsylvania underwent a shift in 2004. Between 2001 and 2003, the industry averaged about 9,400 jobs. In the subsequent period, between 2004 and 2007, the industry averaged about 8,500 jobs. The loss of jobs was concentrated in the cable sector and it coincided with the bankruptcy of Adelphia, one of the state’s largest cable companies.

Figure 4: Pennsylvania Motion Picture and Television Industry Jobs, 2001-2007



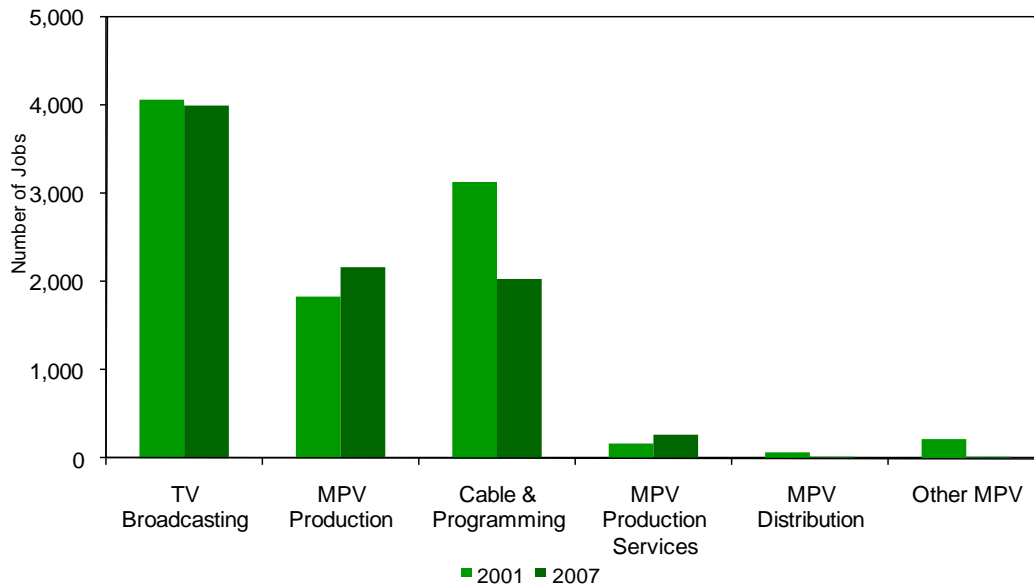
Source: Center for Workforce Information and Analysis, EEI.

When interpreting job trends, it is important to recognize that jobs are associated with employers. It is generally known that motion picture and television industry employers often hire below-the-line production workers through payroll services companies and, therefore, these jobs will not be counted as motion picture and television industry jobs in the QCEW database. Likewise, jobs in supplier industries will be undercounted because many supplier companies providing goods and services to movie production may not be classified under the motion picture and television industry NAICS codes.

In addition, the number of jobs does not necessarily equal the size of the industry workforce. To illustrate, a production company has an editor position and that counts as one job. However, that job may be filled by several different editors at different times. The number of editors hired on that one job represents the industry workforce. As described in detail in the later part of the report, the size of the motion picture and television workforce in the state is well over 10,000 industry professionals.

By industry sub-sector, between 2001 and 2007, job gainers were motion picture and video production and post-production services sectors. This signals a positive outlook particularly in the production segments of the industry. The motion picture production and production services sectors respectively added 321 and 93 jobs from 2001 to 2007.

Figure 5: Motion Picture and Television Industry Jobs by Sector, 2001 and 2007



Source: Center for Workforce Information and Analysis, EEI.

Job growth in the production related sectors indicates that production activity in the state has been growing. The state's tax credit program designed to attract production activities may be partly responsible for the growth. The majority of the incentive programs targeting film production projects in other states were enacted after 2002. In Pennsylvania, the Pennsylvania Film Production Tax Credit was enacted in 2004 with an annual cap of \$10 million. During the first year, the credits were awarded on a pro-rata basis, meaning producers would not know at the outset how large a credit their project might receive. This made Pennsylvania less of a "sure bet" for producers struggling to control costs. The following year, the legislation was amended and credits were awarded on a "first-come, first-served basis." The \$10 million cap was reached in 22 days. The number of projects awarded under the tax credit program increased significantly from 9 projects in FY 06 to 15 projects in FY 07. In FY 08, the number rose to 69 projects. That year the program was revised with an annual cap of \$75 million. This combination of factors - relatively small size and uncertainty of the initial incentive program, as well as several subsequent changes to the program - in an environment of increased inter-state competition may have affected overall job growth in the state.

A significant job loss was seen in the cable sector, which lost about 1,100 positions. However, much of this jobs loss may be attributed to the Adelphia bankruptcy. This employer shed about 1,000 jobs through the transition from bankruptcy to buy-out by Time Warner Cable. Job losses in other sectors were relatively small. Job losses outside of the cable sector represented only 4% of total 2007 industry jobs. It is important to note that while cable has gained tremendous market share in recent years, the market is reaching saturation and facing competition from satellite and other entertainment media. These trends affect business models and profitability, creating consolidation pressures. The cable outlets such as HBO and Showtime have recently begun producing original programming, which has been highly successful.

Industry Establishment Trends

- *There were 417 motion picture and television industry establishments in the state in 2007, down 19% from 2001.*
- *Motion picture and video production establishments represented 65% of the total number of establishments in 2007, followed by television broadcasting (18%) and cable and other programming (10%).*
- *The motion picture and television industry's relatively smaller post-production and production services sectors indicate potential challenges to supporting production activities.*

Industry establishments represent industry related business operations in localities and not business ownership. A firm may own and operate several establishments in the same or different industry sectors. Establishment data can reveal important trends related to anchoring of the industry in a state

and industry cluster development (the variety of related business operations) that is critical to attracting production activity.

There were 417 motion picture and television industry establishments in the state in 2007, down 19% from 2001. The motion picture and video production establishments represented 65% of the total number of industry establishments in 2007, followed by television broadcasting (18%) and cable and other programming (10%). Industry establishments in these three sectors accounted for 92% of the total motion picture and television industry establishments in the state in 2007.

Table 2: Motion Picture and Television Establishments by Industry, 2001-2007

	Production	Distribution	Post-Production	Other Production Services	TV Broadcasting	Cable & Programming
2001	326	18	23	10	73	62
2002	284	19	19	10	71	63
2003	289	18	20	10	75	64
2004	269	21	21	13	66	58
2005	258	7	23	10	71	48
2006	265	6	20	7	70	46
2007	269	8	18	7	75	40
CAGR	-3.2%	-12.6%	-4.0%	-5.8%	0.5%	-7.0%

Source: Center for Workforce Information and Analysis, EEI.

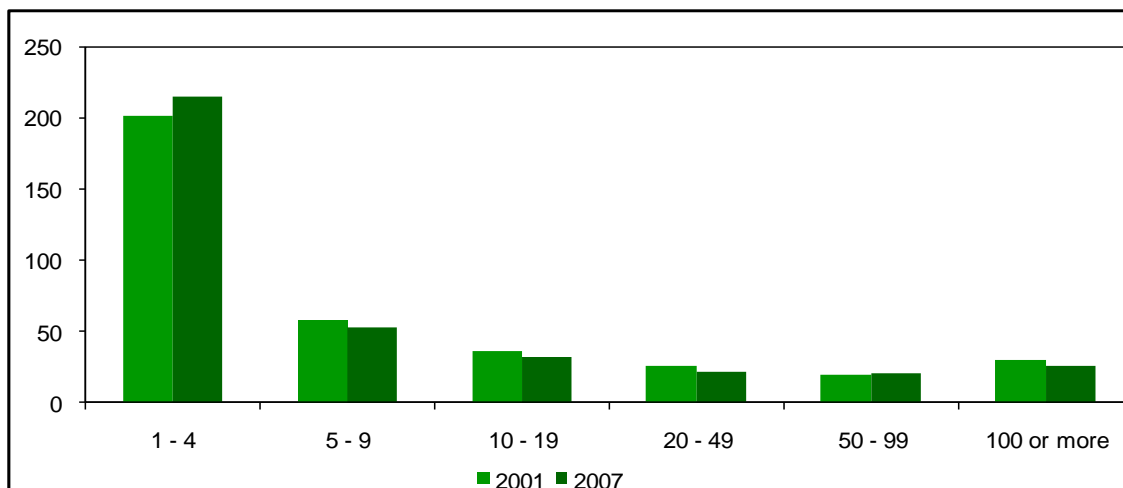
While the structure of the industry, as evidenced by the large representation of production establishments, demonstrates that the industry is well-positioned to support production activities, the low number of establishments in production support sectors, particularly in production services, distribution and post-production services, could pose challenges in terms of the number of productions the state can actually support in any given period. In interviews conducted by EEI, producers stated that Pennsylvania is a great place to film, but there were inadequate equipment suppliers, particularly in specialty camera. This is not a unique situation in that production centers outside of Los Angeles and New York face similar challenges. In order for production services (e.g., camera rental, motion picture catering, costume rental, props, etc.) and post-production services (e.g., editing, digital special effects) to become sufficiently specialized to cater primarily to film production, there has to be a sustained volume of production activity. As business opportunities grow with Pennsylvania attracting more production activities, the production services will become more stable and specialized. According to a recent economic impact study released by the Motion Picture Association of America (MPAA), in 2008, with 52 movies and television shows filmed in Pennsylvania, the Commonwealth ranked 8th in the nation

in terms of production activity.¹² California (480), New York (351), Nevada (264), Texas (115), Arizona (106), Georgia (92) and Louisiana (56), Montana (51), and Utah (47) rounded out the top 10 states.

It is also important to note that equipment suppliers and other production services businesses are generally undercounted in QCEW tabulations because these businesses may not be classified under the motion picture and television industry NAICS. This is particularly pronounced in localities where film production activities are generally low. If production services companies are less specialized for movie or television production, these companies would be less likely classified as motion picture and television production services.

Similar to most other industries, the motion picture and television industry is largely populated by small establishments. In fact, the largest increase in the number of establishments occurred within the group of establishments with 1 to 4 employees. This signals that there are opportunities for entrepreneurs to enter the industry and build a business where gaps exist in the production supply chain. While establishments employing 1 to 4 persons grew by 13 establishments from 2001 to 2007, a total of 16 establishments were lost in the remaining categories.

Figure 6: Motion Picture and Television Industry Establishments by Size, 2001 and 2007

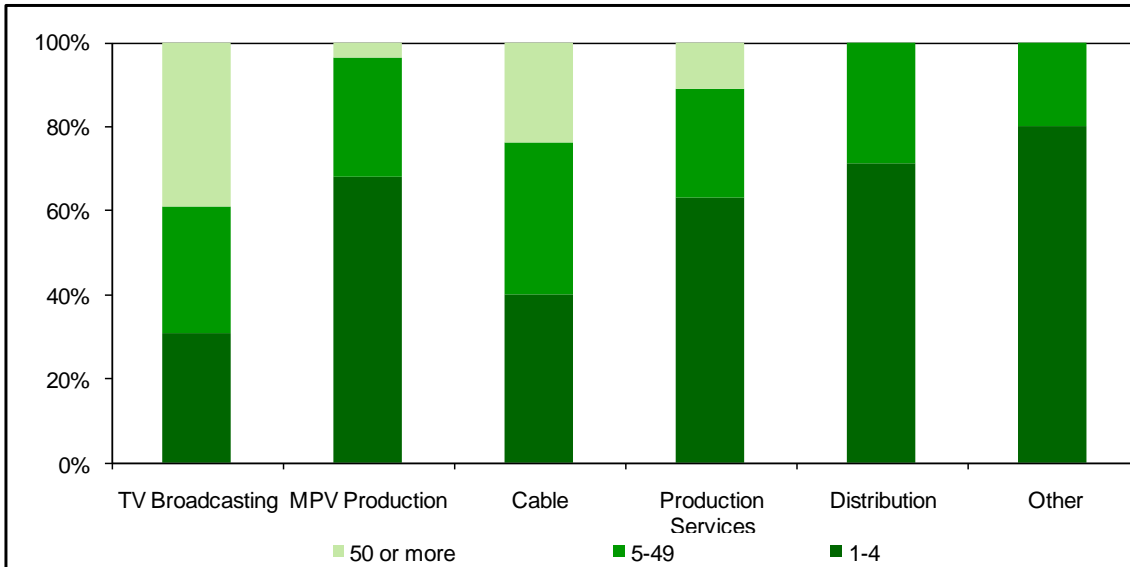


Source: Center for Workforce Information and Analysis, EEI.

In TV broadcasting, 31% of the establishments employed 1-4 persons, while 40% of cable establishments employed 1-4 persons. Motion picture and video production had 68% of establishments employing 1-4 persons. Post-production services had 63% of establishments employing 1-4 persons.

¹² Motion Picture Association of America (April 2009). *The Economic Impact of the Motion Picture & Television Industry on the United States*.

Figure 7: Distribution of Motion Picture and Television Establishments by Size and Sector, 2007



Source: Center for Workforce Information and Analysis, EEI.

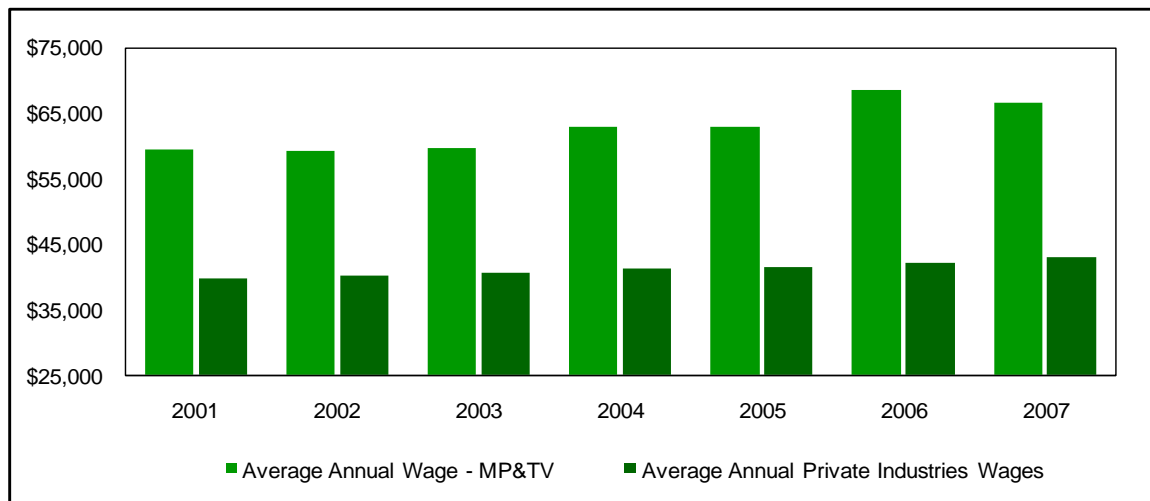
Industry Payroll Trends

- *The motion picture and television industry in Pennsylvania offers well-paid jobs with an average annual wage around \$66,676, or about 1.5 times higher than average wages in the private sector in Pennsylvania.*
- *In 2007, the real average annual wages in the motion picture and television industry were about \$7,300 higher than they were in 2001. This represented an increase of 12%. In comparison, the average wages of private sector jobs increased by about 8% between 2001 and 2007.*
- *In current dollars, the average annual wages in the production sector increased by about \$2,000 from 2001 to reach \$61,485 in 2007. However, when adjusted for inflation, the real average wages declined by 11% over the same period.*
- *Real average annual wages in production services increased almost \$9,000 from 2001 to reach \$55,670 in 2007. This trend may also signal a greater level of specialization in the production services sector.*

One of the reasons why states and countries court motion picture production is because the motion picture and television industry offers well-paid jobs. The industry's real average annual wages in 2007 was \$66,676, significantly higher than the state's private sector average annual wage of \$42,945. The industry wages (adjusted in 2007 dollars) have also increased over time. In 2007, the real average annual wages in the motion picture and television industry were about \$7,300 higher than they were in

2001. This represented an increase of 12%. In comparison, the average wage of private sector jobs, increased by about 8% between 2001 and 2007.

Figure 8: Real Average Annual Wages for Motion picture and Television Industry and Pennsylvania Private Industry (in 2007 \$)

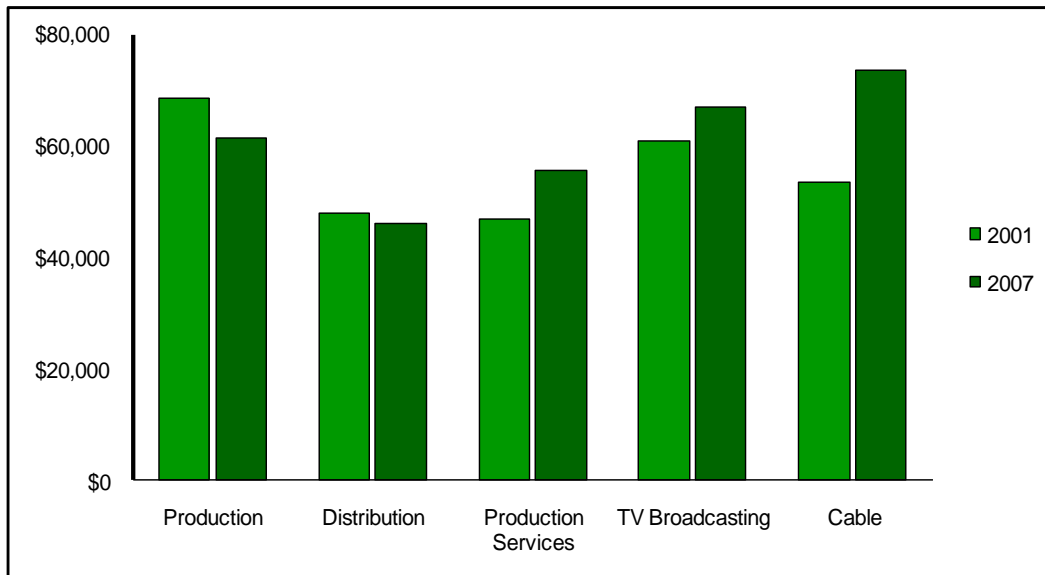


Source: Center for Workforce Information and Analysis, EEI.

A sector-by-sector comparison of real wage trends reveals that the largest gains in average annual wages were in the cable sector. The real average annual wages in the cable sector increased 27% or almost \$20,000 in 2007 from 2001. Combined job reduction and real wage growth in the cable sector suggests that cable is going through a consolidation and cable jobs may be becoming more highly specialized. The production services sector, which includes businesses that supply goods and services to movie and television production, also experienced higher real wages in 2007 compared to 2001. Real average annual wages in production services increased almost \$9,000 from 2001 to reach \$55,670 in 2007. This trend may also signal a greater level of specialization in the production services sector. TV broadcasting also saw an increase in real average annual wages, which grew by 9%.

The production sector, however, experienced a decline in real average annual wages. In current terms, wages in the sector increased by about \$2,000 from 2001 to reach \$61,485 in 2007. However, when adjusted for inflation, the average annual wages in 2007 were \$7,000 less than the 2001 wage level, reflecting an 11% decline. Increased competition for jobs in the production sector might be a factor in the slightly softening wages. The average annual wages in the distribution sector also declined in real terms. The wages in that sector however declined only about 4%: \$47,842 in 2001 to \$46,127 in 2007.

Figure 9: Real Average Annual Wages by Motion picture and Television Industry Sector, 2001 and 2007 (in 2007 \$)



Source: Center for Workforce Information and Analysis, EEI.

Regional Analysis

- *The motion picture and television industry in Pennsylvania is concentrated around industry hubs located in Pittsburgh and Philadelphia. These two regions accounted for 66% of the industry jobs.*
- *Both metro regions experienced jobs gains: Pittsburgh gained 576 and Philadelphia added 193 jobs.*
- *Average annual wages in these two regions were higher than in other regions: \$85,500 in Philadelphia and \$67,200 in Pittsburgh.*
- *Philadelphia's proximity to New York gives it a slight competitive edge over Pittsburgh.*

The workforce investment areas were the basis for the regional definition since the Center for Workforce Information and Analysis collects data by these areas. The regions were defined as shown below:

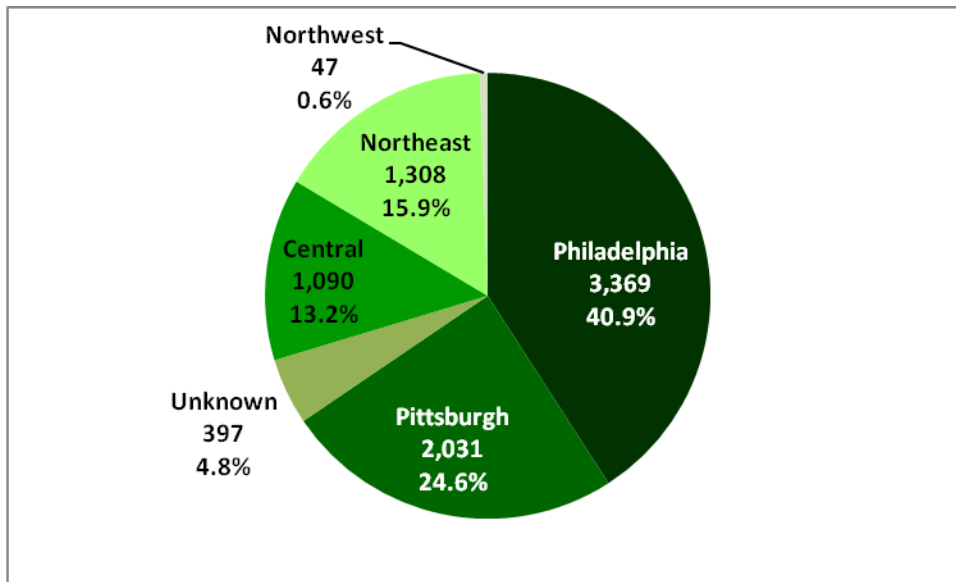
Table 3: Regional Definition

Region	WIA Name
Pittsburgh Region	Three Rivers Workforce Investment Area
	Southwest Corner Workforce Investment Area
	Westmoreland and Fayette Workforce Investment Area
	Tri-County Workforce Investment Area
Philadelphia Region	Montgomery County Workforce Investment Area
	Philadelphia County Workforce Investment Area
	Chester County Workforce Investment Area
	Delaware County Workforce Investment Area
	Bucks County Workforce Investment Area
Northwest Region	West Central Workforce Investment Area
	Northwest Workforce Investment Area
	North Central Workforce Investment Area
Northeast Region	Luzerne-Schuylkill Counties Workforce Investment Area
	Lackawanna County Workforce Investment Area
	Pocono Counties Workforce Investment Area
	Northern Tier Workforce Investment Area
	Lehigh Valley Workforce Investment Area
	Berks County Workforce Investment Area
Central Region	Southern Alleghenies Workforce Investment Area
	Central Workforce Investment Area
	South Central Workforce Investment Area
	Lancaster County Workforce Investment Area

Unfortunately, regional employment and wage data is somewhat limited due to confidentiality issues that occur when there is a small amount of data in a particular region. The Pittsburgh and Philadelphia regions account for 57% of 417 motion picture and television industry establishments in the state.¹³ While it is clear that the Pennsylvania motion picture and television industry is concentrated in two metropolitan areas – Pittsburgh and Philadelphia; the central and northeast regions each account for 13% and 15% of motion picture and television industry establishments, respectively. The Philadelphia and Pittsburgh regions account for 66% of the 2007 motion picture and television industry jobs in Pennsylvania. The central and northeast regions combined account for 29% of jobs in 2007.

¹³ The total number of establishments by region does not correspond exactly to industry totals. According to the Center for Workforce Information and Analysis, this discrepancy results from the method by which establishments are recorded and counted.

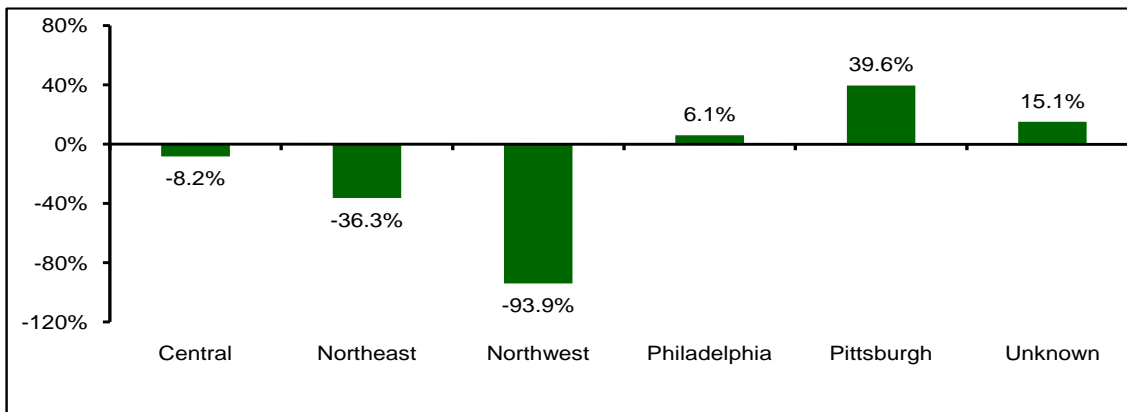
Figure 10: Motion Picture and Television Industry Employment by Region, 2007



Source: Center for Workforce Information and Analysis, EEI.

Both Philadelphia and Pittsburgh regions have gained motion picture and television industry jobs since 2001. The largest increase in jobs occurred in the Pittsburgh region. From 2001, employment in Pittsburgh increased by 576 jobs (40%). Philadelphia gained 193 jobs over the same time period, representing a 6% increase.

Figure 11: Change in Employment by Region, 2001-2007



Source: Center for Workforce Information and Analysis, EEI.

Philadelphia and Pittsburgh regions lead the state in terms of annual wages. Philadelphia’s annual average wage in 2007 in the motion picture and television industry was \$85,500 – more than \$15,000 higher than the industry average in Pennsylvania and \$40,000 higher than private industries average. Average annual wages in Pittsburgh were \$67,200. While still above the state’s average for private industries, Pittsburgh’s wages were lower than the industry’s average, which most likely was skewed by high wages in Philadelphia.

Table 4: Average Annual Payroll Wages, by Region

Region	2001 Average Annual Wages (adjusted to 2007 \$)	2007 Average Annual Wages
Central	\$45,652	\$47,472
Northeast	\$42,371	\$48,416
Northwest	\$64,652	\$36,963
Philadelphia	\$78,835	\$85,504
Pittsburgh	\$60,398	\$67,208
Unknown	\$30,591	\$34,277

Source: Center for Workforce Information and Analysis, EEI.

Analysis of Motion Picture and Television Industry Workers

The motion picture and television industry workers (hereinafter referred to as “industry workers”), especially below-the-line production crew, typically face a greater degree of employment fluctuations than workers in other industries. This is because production companies, instead of keeping a staff of employees on hand, hire workers for specific projects. Project-based employment is temporary employment that terminates with the completion of a movie, television or commercial project. A large amount of resources – capital, labor, and equipment – are mobilized to produce a movie or a television show. The movie or television production is typically organized on a project-by-project basis. In other words, each movie represents a project with its own production inputs (i.e., crew, materials, equipment, and money), timeline and objectives. When a movie is completed – i.e. the project has accomplished its objective – the production crew, and sometimes even the production company that produced the movie, is dissolved. Therefore, projects are, by definition, time-bound and temporary. The participants in the project move on to other projects, sometimes as a team, but more often individual participants end up on different projects. Project-based employment is by no means unique to the motion picture and television industry. Construction, advertising, automobile design, and the like organize projects to complete specific tasks. In general, projects are used to implement complex, non-routine tasks that require the collaboration of diversely skilled specialists.

Because below-the-line production workers are typically hired on a project basis, industry workers are prone to periods of unemployment and underemployment. Industry workers also depend on non-industry jobs to supplement their income. Therefore, it is important to examine to what extent industry workers rely on industry jobs versus non-industry jobs to meet their career objectives, as well as their livelihood. Fluctuations in employment opportunities influence the size and quality of the workforce. Simply put, without sufficient employment opportunities, workers will seek employment elsewhere. Without qualified workers, Pennsylvania will likely lose a competitive edge to other states with a larger pool of qualified production workforce.

Moreover, declining job opportunities lead to competition among production professionals. If competition for jobs persists while the availability of jobs continues to shrink, those workers who are not able to land a production job will permanently shift their employment to other industries or relocate to states with more production activity. This will reduce the size of the qualified workforce, which will in turn decrease the attractiveness of the state as a place for production. Rebuilding the industry workforce will be difficult and costly.

With assistance from the Center for Workforce Information and Analysis, EEI developed a methodology to better understand Pennsylvania's motion picture and television industry workforce, specifically below-the-line production workers. The analysis focused on determining the size of the industry workforce, the level of attachment or the frequency of employment in the industry, and the pattern of employment and earnings in the motion picture and television industry as well as in other industries. The workforce is the total number of individual workers who are or have been employed in the motion picture and television industry. The figures for industry workforce in any given year include those workers who may not be employed in that year in the film and television industry, but have been employed in the industry at some point during the study period. The analysis covers the period from 2001 to 2008, with the latest data available.

It is also important to note that the number of industry workers may not correspond to industry jobs. In any given year there may be more industry jobs than industry workers or vice-versa. The following examples can illustrate the difference between these two indicators of the workforce. Jane Smith is a sound technician in Pennsylvania who worked in a 2005 movie production. In 2005 she also worked for a television station. In this example, in 2005 there was one worker, Jane, and 2 jobs, one in Production and another in TV Broadcasting. In 2007, her brother Joe Smith, who worked for the last 5 years as a sound technician was laid off by the local TV station where he worked. He remains in Pennsylvania and takes a clerical job in a local bank. In this case, in 2007, there were 2 motion picture and television workers in Pennsylvania: Jane and Joe, but only one industry job (Jane's). As these examples illustrate, while the number of workers and jobs is accurate and internally consistent, these two indicators represent different universes. Accordingly, the actual counts of workers and jobs should not be used in conjunction with one another. Rather, each of these two types of counts should be examined to gain insights into their distinct sub-components such as sectors, regions, levels of attachment, and over time.

Pennsylvania's Motion Picture and Television Industry Workforce

- *The industry workforce includes workers who were employed 3 quarters or more in the motion picture and television industry during the 2001 to 2008 period.*
- *The size of industry workforce between 2001 and 2008 averaged about 11,700 workers.*
- *The size of the industry workforce peaked in 2002 with 13,399 workers and it was the smallest in 2008 with 10,297 workers.*

In 2008, there were about 15,184 workers who held a motion picture and television industry job for at least 1 quarter or more during the period between 2001 and 2008 in the state of Pennsylvania. Of these workers, about 24% worked less than 3 quarters in the industry in the 8-year period. These workers were excluded from the workforce analysis since their employment history suggests their participation in the industry may be incidental.

Table 5: Motion Picture and Television Industry Workers, 2001-2008

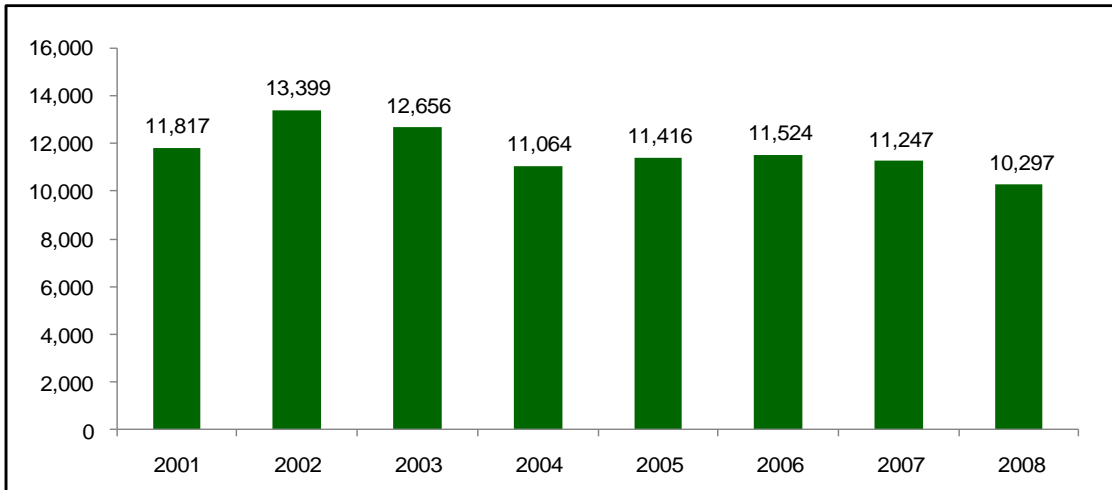
	All Workers (Employed in the Motion Picture and Television industry for 1 Quarter or more 2001-2008)	Excluded Workers (Less than 3 Quarters Employed in the Motion Picture and Television industry 2001-2008)	Percent of Excluded Workers	Annual Number of Motion Picture and Television Industry Workers
2001	17,374	5,557	32.0%	11,817
2002	17,520	4,121	23.5%	13,399
2003	15,246	2,590	17.0%	12,656
2004	12,371	1,307	10.6%	11,064
2005	15,875	4,459	28.1%	11,416
2006	14,100	2,576	18.3%	11,524
2007	15,748	4,501	28.6%	11,247
2008	15,184	4,887	32.2%	10,297

Source: Center for Workforce Information and Analysis, EEI.

Between 2001 and 2008, the average number of industry workers was 11,678. It peaked in 2002 with 13,399 workers. The size of the industry workforce was the smallest in 2008 with 10,297 workers. A significant drop was recorded in 2004 when industry workforce size decreased by 1,592 workers or 12.5%. However, this could be attributed to the workforce definition, which requires a minimum of three active quarters in the study period. This definition provides a conservative estimate of the size of the industry workforce for the study period. For example, the threshold of three quarters may exclude some of the newly entering workers, who may appear in subsequent years once they have reached the threshold of three quarters. For example, someone who entered the industry during 2008 but only worked for six months would not be included in the industry workforce count. Similarly, a worker who ended his or her career in the first years of the study and did not account for three active quarters in the

motion picture and television industry would also be excluded. As a result, the years 2001 and 2008 reflect a lower-bound estimate of the industry workforce size.

Figure 12: Number of Workers in Motion Pictures and Television, 2001-2008



Source: Center for Workforce Information and Analysis, EEI.

Workforce by Industry Sector

- *Production sector gained about 1,500 workers between 2001 and 2008 – more than any other sector; and its share of the industry workforce went up from 28% in 2001 to 47% in 2008.*
- *The production services workers increased by 102, or 46% between 2001 and 2008.*
- *The Cable sector experienced the largest decrease in number of workers dropping from 3,200 workers in 2001 to less than 660 in 2008.*

The production sector reported a marked increase in the number of workers between 2001 and 2008. The sector grew by 44%, adding 1,482 workers and replacing TV broadcasting as the sector with the largest workforce. In fact, the TV broadcasting workforce remained relatively stable during the same period. A similar rate of growth was reported in production services, which grew by 46% and 102 workers. On the other hand, the cable sector experienced a significant decline of almost 80% and went from 3,261 workers to just 658.

Table 6: Total Motion Picture and Television Workers by Sector

	Production	Production Services	Distribution	Other	TV & Broadcast	Cable Programming
2001	3,347	221	68	346	4,574	3,261
2002	4,032	262	17	344	4,804	3,940
2003	3,837	257	12	489	4,717	3,344
2004	4,237	321	13	105	4,667	1,721
2005	4,682	327	12	27	4,646	1,722
2006	4,841	320	21	23	4,592	1,727
2007	5,476	321	25	19	4,661	745
2008	4,829	323	27	18	4,442	658

Source: Center for Workforce Information and Analysis, PA Department of Industry and Labor, EEI

The increase in the number of workers in the production and production related sectors is positive from an overall industry and workforce development perspective. Compared to 2001, production companies making movies or television shows in Pennsylvania are now able to draw from a larger pool of qualified production workers. Production services, which includes post-production services such as film editing and digital special effects jobs, also has a larger pool of workers in 2008 than it did in 2001. As the state attracts more production activities and the local industry grows in scope and specialization, the employment opportunities are likely to expand and reinforce the positive growth trends in the industry.

Levels of Industry Attachment among Motion Picture and Television Workers

- *Based on number of active quarters employed in the motion picture and television industry during the 8-year period between 2001 and 2008, workers were categorized as core, intermittent, and peripheral groups.*
- *The size of the “core” motion picture workforce is relatively stable and its share has increased. The make-up of the workforce has fewer peripheral and intermittent workers in 2008 than in 2001.*
- *The 2004 contraction in motion picture and television industry jobs appears to have affected almost exclusively peripheral and intermittent workers.*

As discussed above, movie and television production is typically project-based. Therefore, industry workers who work in production related jobs depend on industry jobs as well as non-industry jobs. In order to better understand this employment pattern among Pennsylvania’s industry workforce, the analysis categorized workers into three different groups based on the frequency of employment in the motion picture and television industry.

The workers were grouped by the number of active quarters employed in the motion picture and television industry during the 8-year period between 2001 and 2008. Workers were categorized as core, intermittent, and peripheral groups. The core group represents those workers who were most consistently employed in motion picture and television jobs. The core group consists of workers who were employed in the motion picture and television industry for more than 75% of their active quarters between 2001 and 2008. For the same period, the peripheral group represents workers with less than 25% of active quarters employed in the motion picture and television industry. Finally, the intermittent group represents workers employed at least 8 quarters and up to 24 quarters in the motion picture and television industry.

Table 7: Motion Picture and Television Groups of Workers by Level of Industry Attachment

Worker Group	Level of Industry Attachment (Quarters Employed 2001-2008)
Core	75% to 100% of active quarters
Intermittent	25% to <75% of active quarters
Peripheral	10% to <25% of active quarters

The changes in the size of the workforce over time demonstrate the fluctuations in the labor market and how these fluctuations impact different worker groups. The percentage of core workers as a share of all workers increased from 33% in 2001 to 38% in 2008. In turn, the shares of both intermittent and peripheral workers dropped from 40% to 36% and from 27% to 26% respectively during the same time period.¹⁴ The number of workers in the core group remained relatively stable, with no significant variation in workforce numbers from 2001 to 2008. Core workers engaged in production jobs tend to fare better during downturns than other groups. This is because core workers typically have a strong network of professionals upon which they rely for employment opportunities. Successful production professionals typically spend a significant amount of time contacting other professionals with whom they have previously worked.

¹⁴ The fact that only workers with three active quarters in the film and television industry are included in the workforce analysis may account for part of the decrease in number of Peripheral Group and Intermittent Group workers in 2008 because these workers tend to work fewer quarters in the film and television industry, by definition. However, the decrease in the number of peripheral and intermittent workers is observable in preceding years, which leads us to believe that the adopted methodology did not skew the general trend.

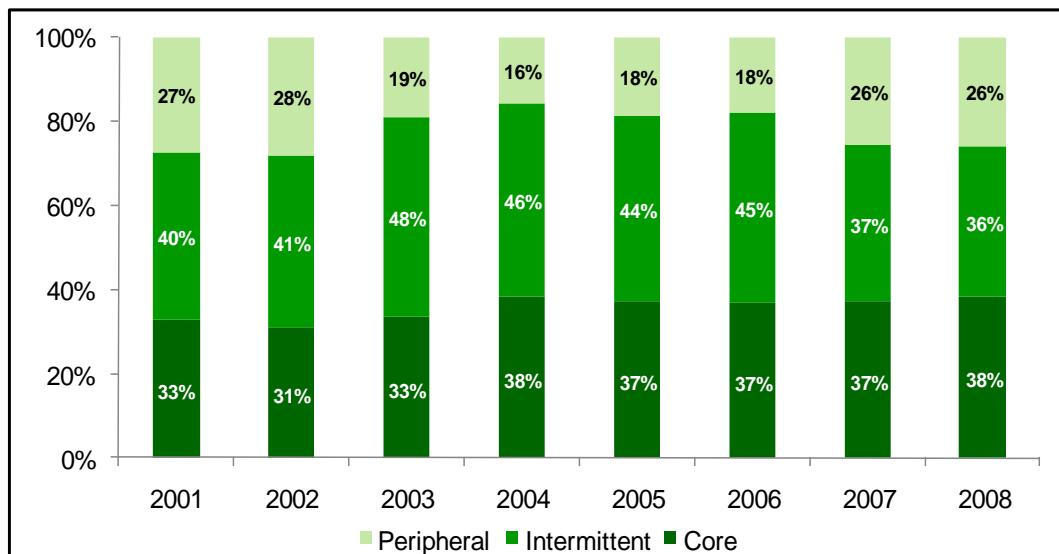
Table 8: Motion Picture and Television Workers, 2001-2008

Year	Core Group	Intermittent Group	Peripheral Group	Total
2001	3,889	4,712	3,216	11,817
2002	4,169	5,463	3,767	13,399
2003	4,235	6,026	2,395	12,656
2004	4,232	5,110	1,722	11,064
2005	4,239	5,066	2,111	11,416
2006	4,243	5,209	2,072	11,524
2007	4,193	4,170	2,884	11,247
2008	3,948	3,692	2,657	10,297

Source: Center for Workforce Information and Analysis, EEI.

The 2004 contraction in the number of motion picture and television industry jobs appeared to have affected almost exclusively peripheral and intermittent workers. The size of the peripheral group shrank in 2003 and 2004. Some of the peripheral workers may have moved into the intermittent status as they acquired more active quarters in motion picture and television jobs, while other peripheral workers may have exited the industry as a result of limited employment opportunities. By 2007 and 2008, the size of the peripheral group has returned to 2001 level. The number of intermittent workers reached a peak of over 6,000 workers in 2003. In 2008, the number of intermittent workers was reduced to slightly less than 3,700 workers, marking a drop of 22% from the 2001 level.

Figure 13: Motion Picture and Television Workers by Share of Core, Intermittent and Peripheral Groups 2001 - 2008



Source: Center for Workforce Information and Analysis; EEI.

These changes in the core, intermittent, and peripheral workforce suggest that core workers constitute the largest and most stable group in the motion picture and television workforce: this is positive from the standpoint that a large share of industry workers is engaged in stable and relatively high paying jobs. However, the decline in the share and absolute number of intermittent workers, along with the stable size of core workers, suggest that opportunities for intermittent workers to move up the hierarchy and become core workers with a more consistent pattern of employment may be limited without additional production.

The analysis also examined workers by level of attachment according to the sector where they worked predominately. Workers in the core group were mostly employed in TV broadcasting, which included a total of 4,442 workers. In 2008, for every core worker primarily employed in Production, there were almost two workers in TV Broadcasting. These proportions were reversed for workers in intermittent and peripheral groups, who were primarily employed in production.

As a result, and because of the comparable size of the three groups, more than half of TV broadcasting workers were from the Core group. In terms of number of workers, TV broadcasting is one of the two largest sectors in Pennsylvania and among sectors with the highest average annual wages. However, TV broadcasting has not been a growing sector in Pennsylvania and, in general, does not stimulate a large demand in production activities.

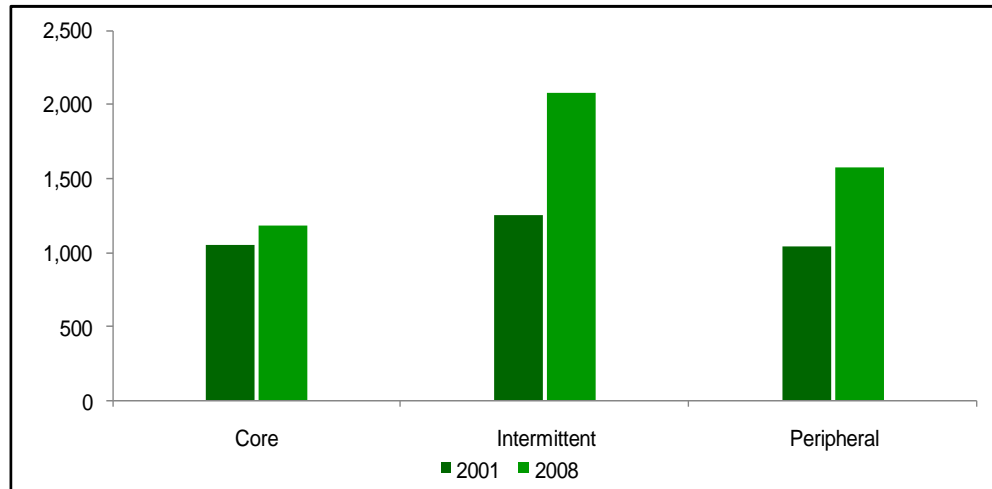
Table 9: Distribution of Motion Picture Workers by Sector and Group, 2008

	Core	Intermittent	Peripheral
Production	1,181	2,078	1,570
Production Services	125	131	67
Distribution	7	10	10
Other Film	10	5	3
TV Broadcasting	2,274	1,283	885
Cable & Other Programming	351	185	122
Total	3,948	3,692	2,657

Source: Center for Workforce Information and Analysis; EEI.

With a total of 4,829 workers in 2008, the production sector is the largest in terms of total number of workers. As discussed above, it is mostly comprised of workers from intermittent and peripheral groups, with core workers make up less than one quarter of production workers in 2008. For every production worker in the core group, there was one peripheral worker and two intermittent workers. With almost half of the production workers coming from the intermittent group, which comprised of workers with at least 8 quarters in the motion picture and television industry, Pennsylvania is well positioned to receive additional movie and television production activities.

Figure 14: Number of Motion Picture and Video Production Workers, By Workforce Group, 2001 and 2008



Source: Center for Workforce Information and Analysis; EEI.

Production activities stimulate secondary and support businesses. The MPAA reported, in 2007, the production activities in the U.S. generated \$38.2 billion in payments to vendors and suppliers, small businesses, and entrepreneurs.¹⁵ These businesses provide a wide variety of goods and services directly related to production, including catering, props, animal handling services, costumes and wardrobe, security, transportation, shooting locations, and payroll management. Secondary impact to local businesses consists of local goods and services purchased by production personnel and employees of supplier businesses. States and cities also capture revenue through fees and sales taxes. In Pennsylvania, the production of *Marley and Me* spent \$2.2 million over 36 days in production, and 480 people were hired locally.¹⁶

¹⁵ Motion Picture Association of America (April 2009).

¹⁶ Ibid.

Earnings Analysis

- *Average annual wages of motion picture and television workers are increasing overall, suggesting that the quality of the workforce may be contributing to wage increases as well as rising demand for workers.*
- *Core workers earned twice as much as intermittent workers and more than three times more than peripheral workers.*
- *Core and intermittent workers' average annual wages from motion picture jobs increased during the 2001-2008 period, while peripheral workers experienced a 20% drop in wages.*

Core workers with stable motion picture and television industry jobs earned, on average, \$65,168 a year in 2008, while other groups, who worked less often in the industry, earned significantly less. Intermittent workers, however, have seen their average annual wages increase over time, most likely as a result of the increase in the number of motion picture jobs held versus non-motion picture jobs held. The volatility in earnings among peripheral workers demonstrates this group's marginal attachment to the industry.

Table 10: Average Annual Wages from MP & TV Jobs, By Worker Group, 2001-2008

Year	Core	Intermittent	Peripheral
2001	\$50,286	\$26,708	\$22,966
2002	\$50,705	\$34,869	\$16,097
2003	\$53,632	\$28,447	\$11,259
2004	\$59,201	\$31,073	\$11,661
2005	\$60,020	\$31,523	\$11,334
2006	\$63,478	\$30,684	\$13,518
2007	\$65,110	\$29,890	\$8,550
2008	\$65,168	\$30,956	\$18,324
CAGR	3.8%	2.1%	-3.2%

Source: Center for Workforce Information and Analysis; EEI.

The core and intermittent groups had the least fluctuation in average annual earnings during the 2001 to 2008 period. In 2008, average annual wages among core workers increased 30% over what they earned in 2001. Similarly, average annual wages of intermittent workers increased by 16%. In contrast, peripheral workers experienced a sharp decline in their average annual wages. Peripheral workers experienced greater wage volatility and their wages were down by 20% in 2008 from the 2001 level.

Wage trends further illustrate the differences in labor market experiences between core, intermittent, and peripheral workers.

The average annual wages by sector show a wide variation between sectors and worker groups. Core workers with regular employment in the motion picture and television industry earned more than other two groups. Their average annual wages were relatively higher regardless of sector. Among the core workers, those employed in distribution earned the highest average annual wages, around \$82,000. The average annual wages in the two sectors where core workers were predominately employed – production and TV broadcasting – were \$60,300 and \$67,543 respectively. Among intermittent workers, those working in TV broadcasting and cable sectors earned higher average annual wages than intermittent workers employed in other sectors. Peripheral workers with the least stable employment history in the industry earned consistently lower average annual wages than the other two groups. Peripheral workers employed in TV broadcasting and cable sectors earned relatively higher wages than those employed in other sectors. TV and cable sectors tend to hire permanent and regular employees and therefore the average annual wages tend to be higher across the worker groups.

Table 11: Average Annual Wages from MP & TV Jobs, By Sector and Worker Group, 2008

Sector	Core	Intermittent	Peripheral
Production	\$60,300	\$19,553	\$11,251
Distribution	\$82,059	\$15,661	\$20,901
Production Services	\$74,689	\$37,668	\$25,256
Other Film	\$35,469	\$16,079	Not avail.
TV Broadcasting	\$67,543	\$47,040	\$28,806
Cable & Programming	\$63,280	\$43,978	\$29,733

Source: Center for Workforce Information and Analysis; EEI.

The average annual wages in the production sector, where project-based employment is more prevalent, were highest among core workers. Core workers employed in the production sector earned \$60,300 compared to \$19,553 for intermittent and \$11,251 for peripheral workers. Core workers employed in the production sector are likely to be seasoned production professionals who land jobs more consistently than intermittent or peripheral workers. Production jobs are highly variable and short-term. Below-the-line production professionals are constantly looking for jobs and spend significant amount of time maintaining and expanding their professional networks. Production crew is typically assembled by keys within specific craft. For example, the director of cinematography will assemble the camera crew, including camera operators, camera assistants, and film loaders. Often the same camera crew will move from one movie project to another. This allows the director of cinematography to ensure

the quality of work is consistent which would influence his/her reputation in the industry. In the motion picture and television industry, reputation is highly valued and it is vital to advancing one's career.

Motion Picture and Television Industry Occupations and Crossover Skills

Project-based production in the motion picture and television industry has a significant impact on employment and labor market dynamics. Because projects have a limited duration, industry workers must constantly move from one project to another. However, it is important to note that while movement from project to project is a norm, especially for production workers who work on principle photography (or filming), there is greater job stability in some traditional employment situations in areas, such as studio operations, financing, marketing, distribution and post-production. Individuals employed on a project basis typically face greater employment uncertainty, shorter tenure and more regular episodes of unemployment than individuals who work under more traditional employment arrangements.

From a workforce development perspective, it is important to recognize the fluctuations in the nature of employment in the motion picture and television industry. In previous studies¹⁷, EEI identified “cross-over” skills that allow motion picture and television industry workers to successfully compete for jobs in other industries. Similarly, workers from other industries with relevant skills could find employment opportunities in the motion picture and television industry. For example, computer graphic artists, who produce visual effects in the motion picture and television industry, may also work in other industries, such as video and computer online games, architectural design services and web site development and design. In these other industries, the visual effects artist may be called by a different title, such as a “game developer” or a “web site designer.” But many of the skills they use may be directly transferable. Similarly, a growing number of computer systems administrators and technicians – who provide support services to the studios, visual effects and post-production firms – may work in other industries where computer systems are an integral business tool.

The key findings from this previous EEI report with relevance to the motion picture and television industry workforce development in the Commonwealth of Pennsylvania are summarized below.

¹⁷ The Entertainment Economy Institute and The PMR Group, 2004. “California’s Entertainment Workforce: Employment and Earnings 1991-2002.” The Entertainment Economy Institute, 2005 “Crossworking: High Tech Motion Picture and Television Workers in California – Employment Patterns and Industry Cross-over Opportunities.” The Entertainment Economy Institute, 2006, “Multimedia Occupations: The Convergence of Art and Technology in the Age of New Media.”

- Industry specific skills such as film editing tend to limit employment opportunities, while non-industry specific skills such as computer programming tend to expand employment opportunities.
- Workers with high-level skills (i.e., extensive education and training) tend to be in stable employment arrangements and receive relatively higher wages than workers with more general and lower-end skills. Therefore, those with high-level skills, such as software developers and network administrators, tend to be less subject to employment fluctuations, even though their skills are non-industry specific.
- The level of attachment to the industry, defined as frequency and duration of employment, influences reliance on non-motion picture and television industry jobs. For example, core workers, who work regularly on film projects, tend to work less in other industries. In contrast, peripheral workers, who work less regularly in the motion picture and television industry, work more in other industries.
- The findings strongly support the relevance of cross-over skills in terms of enhancing marketability of workers in multiple industries. Pennsylvania’s Workforce Investment Organizations can play an important role in addressing educational and training needs of current and future motion picture and television industry workers by emphasizing skills that are applicable in multiple industries.

Motion picture and television industry workers in Pennsylvania worked in a variety of non-film and television industry sectors. Non-film and television industry data is comprised of NAICS codes where at least 15% of motion picture and television industry workers were employed in 2008. Non-film jobs held by industry workers were concentrated in 9 NAICS codes. The two NAICS with the largest share of jobs were temporary help services and payroll services. In the case of payroll services, while the data will not show what percentage of jobs in this industry are related to the motion picture and television industry, it is common in the motion picture and television industry to use payroll services to hire production professionals.

Figure 15: Non-MP &TV Industry Jobs Held by MP & TV Workers, 2008

NAICS	NAICS Industry	Job Count	% of Job Count (n=6,618)	Cum %
561320	Temporary Help Services	841	13%	13%
541214	Payroll Services	649	10%	23%
611310	Colleges, Universities and Professional Schools	343	5%	28%
711310/ 711320	Promoters of Performing Arts, Sports and Similar Events, with and without Facilities	548	8%	36%
711510	Independent Artists, Writers and Performers	273	4%	40%
515112	Radio Stations	173	3%	43%
711110	Theater Companies and Dinner Theaters	164	2%	45%

611110	Elementary and Secondary Schools	156	2%	48%
722110	Full-Service Restaurants	151	2%	50%

Source: Center for Workforce Information and Analysis; EEI.

In his testimony on May 1, 2009, to the Committee on Tourism and Recreational Development of the Pennsylvania House of Representatives, Richard Guay, Entertainment Partners, Vice-President, East Coast Marketing Sales submitted the following, which provides a valuable description of the role of payroll companies in the entertainment industry. It also helps explain why some motion picture employment does not appear in the traditional NAICS codes for those industries.

“EP is the largest motion picture payroll services company in the entertainment industry and has been in business for over 30 years. A motion picture payroll services company (“MPPSC”) pays talent and crew working on client film, television and other client projects and performs a host of other employment administrative functions for client production companies. These employment administrative services include, by way of example, (1) workers’ compensation insurance coverage and administration involving talent and crew working on the production, (2) employment and income tax withholding, payment and reporting, (3) funding pension, health and welfare plan contributions to applicable guild plans covering project personnel, (4) unemployment insurance contributions and claims administration, and (5) wage garnishment processing. By undertaking payroll and other employment administrative functions on behalf of production company clients, EP typically functions as a co-employer of the talent and crew for these limited administrative purposes.

“Because production labor costs represent a significant component of qualified expenditures for domestic and international film production tax incentive programs, EP has developed sophisticated knowledge regarding the administration of these incentive programs to further clients’ fiscal objectives. Moreover, EP pays client productions throughout the United States and world and, thus, possesses specialized information about production employment, labor cost and production location data.

“In the case of Pennsylvania, EP has direct knowledge of client production expenditures before and after enactment of the Film Tax Credit law in 2007, locations of client’s Pennsylvania (“PA”) productions and corresponding labor costs and taxes withheld on earnings in Pennsylvania-based productions. As explained in more detail below, information available to EP reflects that (1) EP client production in Pennsylvania has substantially increased since passage of the Pennsylvania Film Tax Credit, (2) earnings yield revenue to Pennsylvania because (a) taxes are owed from compensation earned in Pennsylvania and (b) production employees working in Pennsylvania spend money with Pennsylvania vendors for food, lodging, transportation, leisure, clothing and other items, and (3) independent (i.e., non-major studio) productions film with frequency in Pennsylvania.”

Below is a copy of an EP spreadsheet reflecting Pennsylvania client payroll and Pennsylvania withholding tax volume during the fiscal years ending June 30, 2006; June 30, 2007; June 30, 2008, and through April 2009.

	FY06	FY07	FY08	FY09 Thru 4/25/09	Total
Gross Payroll	\$25,056,572	\$26,950,895	\$73,900,972	\$56,982,450	\$182,890,889
PA State Withholding Tax	\$412,951	\$524,627	\$1,114,006	\$929,273	\$2,980,857

The prominence of entertainment-related industries in the data shown in Figure 17 indicates the close connections between the motion picture and television industry and other types of entertainment industries. Except in the case of independent artists, writers and performers, the other entertainment industry jobs are more likely to be associated with production-related activities. Production skills sets – such as rigging, graphic design, set construction and audio engineering – are easily applicable in other entertainment productions such as concerts, live events and similar activities. Given that post-production has a small presence in the state, it is not surprising that computer-related industries do not appear in this data.

From a workforce development perspective, a wide range of motion picture and television industry occupations show a strong growth potential in the near term. These include – but are not limited to -- multimedia artists and animators, audio and video equipment technicians and make-up artists. The number of riggers, who construct sets, is expected to decrease very slightly over the next several years. This may have to do with increased use of digital sets, as well as the growth of reality and non-scripted TV shows.

Table 12: Growth Forecast in Selected Motion Picture and Television Occupations, U.S.

SOC	Occupation Title	2006 Employment Numbers (Thousands)	2016 Employment Numbers (Thousands)	Percent Change in Employment (2006-2016)
27-1014	Multi-media artists and animators	87	110	26%
27-1027	Set and exhibit designers	12	14	17%
27-3041	Editors	122	124	2%
27-4011	Audio and video equipment technicians	50	62	24%
27-4012	Broadcast technicians	38	42	11%
27-4014	Sound engineering technicians	16	18	13%
27-4031	Camera operators, television, video and motion picture	27	30	11%
27-4032	Film and video editors	21	23	10%

27-4099	Media and communication equipment workers, all other	19	21	11%
39-3092	Costume attendants	4	5	25%
39-5091	Makeup artists, theatrical and performance	2	3	50%
49-9096	Riggers	12	12	0%

Source: Bureau of Labor Statistics, EEI.

Best Practices in Industry Workforce Development in Competitor States and Countries

In order to develop recommendations for the Commonwealth's potential workforce development program, EEI investigated workforce initiatives focused on the creative sector in other states and countries. EEI's principals have been involved in workforce development in the motion picture and related industries for more than 20 years and have firsthand knowledge of many efforts in this area – a number of them unsuccessful. We identified those programs that have shown the most success or, in the case of new programs, the most promise. Specific programs and initiatives are covered below.

California

California has more than 500 high school, community college and four-year college and university programs related to arts, media and entertainment. Several are well-known as schools that provide excellent training for direct entry into the film, television and commercial production industries. These include the University of California, Los Angeles; University of Southern California; Chapman College; The American Film Institute, and the California State Universities in Long Beach, San Francisco, Chico and Northridge; as well as the community colleges in Pasadena, Los Angeles Valley, Los Angeles City and Marin County. For the purposes of this report, we will focus on four highly specialized programs with exemplary results in successfully preparing and placing completers into the industry:

The Directors Guild - Producer Training Plan

Commonly known as the Assistant Directors Training Plan, this joint training initiative has been in existence for more than 30 years. It is funded by the members of the Alliance of Motion Picture and Television Producers (AMPTP) and managed by a Board of Trustees with an equal number of members from the AMPTP and the Directors Guild of America (DGA). Their mission is to provide motion picture and television industry training to a diverse group of applicants from across the United States. They provide participants with education, training and paid experience in professional settings, facilitating their development into successful union assistant directors.

The program consists of 400 days of paid, on-the-job training and regular unpaid curriculum-based seminars relating to aspects of the industry and the role of the assistant director. Training is conducted in Los Angeles and participants must live in Los Angeles for the duration of the training. Some trainees go on distant locations, depending on the feature film or television show where they work. Weekly evaluations are conducted by any member of the production management team who interacts with the trainee during the week.

Upon successful completion of the program, each graduate has their name placed on the Southern California Area Qualifications List for the DGA. This makes them eligible for employment as a second

assistant director. There is no guarantee of future employment following program completion. The career ladder most frequently followed by second assistant directors is first assistant director and unit production manager. The job of the assistant director is primarily administrative, financial and managerial. It is not a junior director or director in training.

Depending on the year, approximately 20 trainees are selected out of thousands of applicants. Candidates must have an AA or BA or have equivalent work experience. The application process includes transcripts, essays and group and individual interviews.

There is a similar program in New York, but it has a separate application, selection and placement process and generally accepts only five trainees per year.

www.dgatrainingprogram.org

Streetlights Production Assistant Training Program

Streetlights was founded in 1992 by commercial and documentary producer Dorothy Thompson. Its mission is to promote ethnic diversity in the entertainment industry, while helping the students overcome any barriers to employment.

Each student must complete 240 hours of training, 120 of which are spent working on actual productions. The classroom portion of the training is about four weeks long. The total training period is approximately six weeks. No stipends are paid to trainees during classroom training. Stipends are paid for on-the-job training. The program is very rigorous and follows industry standards with regards to being on time, having a car or access to reliable transportation, having childcare taken into consideration for long days and weekend work, etc.

Mentoring and follow-up job counseling are an on-going part of the programs. The program provides job placement for at least six months, if necessary. Scholarships for specialized advanced courses are available through UCLA Extension's Entertainment Studies, the Association of Independent Commercial Producers Coordinators Training, as well as editor's training through two private training providers.

Streetlights has a unique initiative with a number of major national advertisers, such as Procter & Gamble and General Mills, and advertising agencies, such as Saatchi and Leo Burnett, to ensure that Streetlights graduates work on many of the ads produced by and for these companies.

Streetlights is funded by the Los Angeles County Workforce Investment Board with additional support from several studios, foundations, advertisers and others.

www.streetlights.org

Hollywood Cinema Production Resources (CPR)

Hollywood CPR, a non-profit, tax-exempt 501 (c) (3) organization, was founded in 1997 by Kevin Considine. Kevin was inspired by his personal experiences with the arts as a form of empowerment in his life and career when traditional academic paths did not lend themselves to his form of learning. The arts led him to a successful career in the entertainment industry.

Hollywood CPR developed its Entertainment Arts Training Program to fill a void that exists in training for the trade skills needed for the art department. This includes – but is not limited to –prop making, model making, set design and construction, mold making, sculpting, robotics and special effects.

Hollywood CPR collaborates actively with and employs professional industry instructors who guide and mentor students in the life skills required for success in the entertainment industry. A unique aspect of this collaboration is that members of the IATSE who teach at Hollywood CPR can count their hours teaching as working hours for the purpose of computing their health and pension benefits.

Hollywood CPR offers two programs: an after-school track for 15-18 year olds, where they learn about the different crafts employed in the entertainment industry, and a career track, which lasts approximately 18 months. The program was created and is staffed by the following IATSE unions:

- Stagecraft (Local 33)
- Upholstery/Draperies (Local 44)
- Set Dressing/Decoration (Local 44)
- Greens (Local 44)
- Grip/Craft Services (Local 80)
- Cinematography / Camera Loader (Local 600)
- Apprentice Editor (Local 700)
- Costume Manufacturing (Local 705)
- Set Lighting (Local 728)
- Set Painting (Local 729)
- Scenic and Graphic Artists (Local 800)

All programs are free and open to anyone. However, priority is given to men and women of color or from financially disadvantaged households. Funding comes from a variety of sources including the industry, foundations, and the Department of Labor.

www.hollywoodcpr.org

Employment Training Panel (ETP)

The ETP is part of California's Labor and Workforce Development Agency. It was established in 1982 to provide worker training for specific industries. It is funded by an Employment Training Tax paid by every California employer on every employee (up to \$7 per year). It is employer-driven training and performance-based. While there is some new hire training, more than 90% of ETP's funds go to incumbent worker training. This means individuals must be employed at the time of the training and must be employed for at least 90 days after training in order for the employer or training provider to be reimbursed.

Since the early 2000s, ETP has funded training for more than 5,000 entertainment workers with more than \$7 million in contracts. ETP contracts with individual companies, as well as with training providers who serve multiple employers. For example, from 2000 to 2004, the City/County Film Office of Los Angeles held a master contract with ETP for nearly \$4 million that retrained 2,200 employees in more

than 350 companies, most of which employed fewer than 20 people. Since California enacted the legislation that created this program, 12 other states have developed similar programs. Pennsylvania is not one of them.

www.etp.ca.gov

Other States and Countries

Connecticut

The Connecticut Office for Workforce Competitiveness, in collaboration with the Connecticut Commission on Culture and Tourism's Film Division, has established a series of initiatives under the banner of the Connecticut Film and Digital Media Workforce.

Connecticut's tax incentive program for film and digital media became effective in 2006. In 2008, the state hosted more than 50 productions totaling \$400 million.

According to their website: "While the tax credit program has received a strong response from film and digital media producers, much work needs to be done toward the establishment of a resident professional workforce. A concentrated effort is needed to expand the production of local feature, commercial, corporate and education film projects within the state. Whenever possible, Connecticut must encourage the integration of qualified local crew personnel into the feature film and episodic television workforce."

The inaugural Connecticut Film Training Program (FITP) funded by the state and competitively bid, attracted more than 450 applications, accepted 155 participants and graduated 149 trainees. Conducted over four weeks in late July and early August 2008, the FITP was taught simultaneously at Middlesex Community College in Middletown, Quinnipiac University in Hamden and Norwalk Community College in Norwalk. All instructors were union-member working professionals with significant experience in the industry.

The program began with a two-week production overview taught in lecture format, during which all trainees received a comprehensive introduction to all aspects of production. Trainees then moved on to a two-week concentrated course of study with hands-on training, working directly with professional equipment while simulating an actual production.

The final week of the program was devoted to a practical filmmaking exercise involving all trainees. At the completion of the program, graduates received a certificate of completion from the CCT Film Division.

For 2009, the training program is offered at two sites: Middlesex Community College in Middletown and Quinnipiac University in Hamden.

www.ctfilmworkforce.com

Louisiana

In 2008, the Louisiana Economic Development Department allocated \$2 million to a pilot program for entertainment workforce training. This program provides training assistance to enhance the quantity and quality of individuals who possess sufficient skills to perform jobs in the entertainment industry. The training to be funded may include, but is not limited to;

1. Film—lighting; hair and make-up; grip; electric; set construction; camera; post visual editing; post sound editing; post visual effects; digital animation; 2. Sound—scoring; engineering; 3. Live Performance—staging; lighting; sound; rigging; carpentry; wardrobe; special effects; and 4. Digital Media—programming; animation/computer generated imagery; interactive animation.

Training providers or employers apply to offer or obtain training in these areas and are reimbursed eligible costs. An example of this was a game company in Baton Rouge, called Nerjzed, which received a \$950,000 grant to cover the cost of courses and instruction, materials and equipment needed to build its high-tech workforce. Through this program, Nerjzed was able to build a team of artists, game designers, webmasters, information technology specialists and sound engineers to publish and produce video games and 3D animation. Nerjzed surpassed its original staff goal of 31, now employing more than 40 people.

www.louisianaentertainment.gov

Michigan

Since Michigan approved its tax incentives in April 2008, 71 projects have been approved, with 37 films already completed. The Michigan Film Office reports that nearly 3,000 direct jobs have been created, with total wages reaching \$57 million. More production is on the way, and the Michigan Film Office reports that “there's a real urgency to get Michigan workers trained for the jobs ranging from production assistants to lighting and grip work , so filmmakers don't have to import workers. “

Some community colleges are offering short-term courses to get displaced workers onto sets immediately. Unemployed workers may be eligible for funding through the state's No Worker Left Behind program if they apply in advance through Michigan Works!

michiganworks.org

Some universities have retooled their theater, media and communications programs to better align students with emerging jobs.

Among them:

- Wayne State University added new courses, including animation, broadcast production and acting for the camera.
- Michigan State University created a new film specialization that should receive final approval for the fall semester.

- Madonna University's new \$20 million Science and Media building will open in the fall and include state-of-the art production facilities where students can create movies using the latest digital production equipment. Christopher Coppola, nephew of director Francis Ford Coppola and brother to actor Nicholas Cage, joined its faculty last year.

www.michiganfilmoffice.org

New Mexico

The Film Crew Advancement Program (FCAP) is an incentive for production companies to help create job opportunities for New Mexican film and television crew professionals working in below-the-line positions. Mexico offers a 50% reimbursement of wages for on-the-job training of New Mexico residents in advanced below-the-line crew positions. New Mexican Supervisors and Keys have the opportunity to hire and mentor qualifying New Mexico crew in advanced positions for this program. This is in addition to the 25% film production tax rebate.

For example: if a New Mexican key grip is hired, the key grip may mentor a New Mexican best boy grip who has less than two film/TV credits as a best boy grip prior to being hired on the production. The best boy grip in this example would qualify for the 50% reimbursement of hourly wages for as many hours the best boy grip has available in the program (up to 1040).

After being in this program, a New Mexican crew member potentially comes away with two or three film or television credits in this position to be hired on their own merit. This program may also be used as a negotiating tool for the potential participant and/or their mentor during the hiring process. Both the participant and the mentor must be New Mexican residents.

www.nmfilm.com

New York

The “Made in NY” Production Assistant Training Program was developed in partnership between the Mayor's Office of Film, Theatre and Broadcasting and Brooklyn Workforce Innovations, a non-profit organization. It started in 2006.

The “Made in NY” Production Assistant Training Program is designed to:

- Provide unemployed and low-income New York City residents with training and placement into entry-level positions in film and television production.
- Promote diversity within New York City's entertainment production workforce.
- Provide an additional resource as an incentive for attracting new production to New York.

A working group comprised of the following entities helped to make the program possible: 40 Acres and a Mule (Spike Lee's Production Company); Brooklyn Workforce Innovations; NYC Department of Small Business Services; NYC Mayor's Office of Film, Theatre and Broadcasting, and NYC TV.

The program is a free, four-week non-profit training program, taught by industry professionals and followed by two years of job placement. No previous production experience is required.

Since its launch, the "Made in NY" Production Assistant Training Program has certified 150 production assistants.

www.bwiny.org/pages/patraining.html

United Kingdom

The UK has one of the oldest, best-funded and most robust workforce development initiatives for what is known there as the audio-visual sector. Called Skillset, it is the industry body that supports skills and training for people and businesses to ensure the UK creative media industries maintain their world-class position.

In 2008, their budget was £15.3m (\$25.2 M), of which approximately 70% is from public sources. Both government and industry representatives comprise Skillset's governing structure. They work with their industries through research, consultations, sector and regional industry panels and task focus groups. Helping to bridge the gap between industry and education, Skillset then articulates industry needs to the education and skills providers.

They provide information about the challenges that face the industries, and what they need to do to overcome them. They offer impartial media career advice for aspiring new entrants and established industry professionals, online, face to face and over the phone.

Skillset's Film Skills Fund is the largest fund in the UK dedicated to supporting film-specific training. Over the past four years, the Film Skills Fund has distributed around £7m (\$11.5 M) in grants to providers whose courses provide the best professional development to the existing workforce and new entrants. Skillset Approval is awarded to those institutions and organizations that achieve an exceptionally high standard set out and evaluated by industry with Higher and Further Education. Skillset Accreditation provides the same recognition to individual courses.

As a Sector Skills Council, one of Skillset's main roles is to develop and maintain National Occupational Standards for all occupations across the creative media industries. These standards define the skills, knowledge and experience required to work in broadcast, film, video, interactive media and photo imaging.

www.skillset.org

Pennsylvania's Current Education and Training Capacity

Post-Secondary Schools

Pennsylvania currently has at least 65 private and public post-secondary institutions with degrees, certificates and/or majors in motion picture, television production, communications, technical theater and related subject areas.

- 12 public community colleges
- 5 public universities
- 17 private colleges
- 25 private universities
- 7 private post-secondary vocational schools

A number of schools are starting to develop new programs to address the growing need for talent in media-related businesses, including games and other internet/mobile/anywhere anytime visual content. It appears that, with the exception of a few post-secondary schools, these programs have little or no direct engagement in a meaningful way with industry professionals. Enrollment data is not available and tracking students after graduation is hampered by federal privacy laws that protect student information.¹⁸

An inventory of schools in Pennsylvania that have curriculum relevant to working in the motion picture and television industries is attached as Appendix C.

Secondary Schools

The Commonwealth's public secondary schools have 16,160 students enrolled in drama and theater, 3,936 students in film studies, 6,940 students in broadcast communications, as well as thousands of students in related courses such as aesthetics, art criticism and photography. Nearly 200,000 students are enrolled in industrial arts and technical education.¹⁹

Pennsylvania has a new career cluster called "Arts, A/V Technology and Communications" established in 2006. This cluster includes printing and graphic communications, as well as film/video/cinema production. Approximately 74 schools offer at least one of the eight approved instructional programs (using the Federal Classification of Instructional Programs (CIP) codes):

1. Prepress/Desktop Publishing and Digital Imaging Design 10.0303
2. Graphic Communications (Other) 10.0399
3. Dance, General 50.0301

¹⁸ EEI Research, PA Commission for Community Colleges, Association of Independent Colleges and Universities of Pennsylvania.

¹⁹ State Board of Education. Enrollments grades 7-12, 2007-2008 school year.

4. Commercial and Advertising Art 50.0402
5. Commercial Photography 50.0406
6. Cinematography and Film/Video Production 50.0602
7. Communications Technology 50.5999
8. Visual and Performing Arts, Other 50.99920

Probably, due to its relatively new status, there are no sequential programs of study in this cluster. In addition, it does not appear that there are standards across the cluster – just for individual occupations. Some states, most notably California, have developed extensive standards and frameworks in arts, media and entertainment that may be helpful to the Commonwealth in further enhancing these programs.

There are secondary career technical education programs in related clusters such as architecture and construction, information technology and business, management and administration. However, since these programs are geared toward more traditional career paths in these clusters, much intervention would be necessary to make them relevant to the screen-based production industry.

Recommendations for Pennsylvania's Motion Picture and Television Workforce Development

Pennsylvania Workforce Investment Boards, along with the Commonwealth's education and training providers, can play an important role in addressing the educational and training needs of current and future motion picture and television industry workers by emphasizing skills that are applicable in multiple industries.

General Recommendations

- Entry-level training in most high-tech occupations
- Incumbent worker training through contract education and other auxiliary programs
- Soft skills training embedded throughout the curriculum
- Integrating general understanding of the industry and production processes into the education and training curriculum
- Cross-industry curriculum that emphasizes multiple perspectives from different industries that share common skills

Specific Recommendations

- Retain and/or expand the current tax incentive program. As it does not appear most other states are going to abandon their incentives, Pennsylvania needs to remain competitive in this area.
- Make the incentive multiyear to encourage longer-range planning on the part of filmmakers and encourage investments in facilities and production services.
- Strongly consider an added tax incentive or a carve-out in the current package that is tied to hiring local below-the-line crew. Fifteen other states have a workforce aspect to their incentive program.
- Consider expanding the credit to include firms that produce animation, games and visual effects. Pennsylvania has several exemplary educational institutions and production companies working in this area and it would be helpful to include them in the incentive.
- Model the New Mexico program by subsidizing the salaries of Pennsylvania residents working as keys, firsts and seconds in below-the-line positions.
- Create at least two regional industry workforce advisory boards staffed jointly by the local WIBs and the local film offices who will meet on a regular basis to identify trends, skill gaps, design programs, support work-based learning activities, design subsidies for employment and identify opportunities for supportive services to the industry. These advisory boards should also recommend other economic and production development policies relevant to their respective areas and the industry. Representatives from companies who have produced projects in Pennsylvania and may be located in Los Angeles and New York should be included as well.

- Develop a production assistant training program that will place subsidized production assistants in every below-the-line production department on motion picture and television projects. Exemplary programs included Streetlights Production Assistant Training Program in Los Angeles and the Made in NY Production Assistant Training Program in New York. Imagine a program called *PAs for PA*. Ensure that these participants receive at least two years of counseling and career support to help them transition from production assistants to trained crew by connecting them to programs that allow them to move up in their specific department.
- Create short-term certificate programs at community colleges in Pittsburgh and Philadelphia in industry-specific production accounting software regularly used in motion picture and television projects.
- Replicate the model of Hollywood Cinema Production Resources in Los Angeles by having union members teach classes specific to their craft, either as an adjunct with the community colleges or through a separate non-profit organization.
- Consider contracting with Hollywood CPR to transfer its curriculum, admission policies and structure. Use the UK Skillset National Occupational Standards to identify specific skills and units. Work with the unions to validate these standards and curriculum.
- Create at least one workforce development intermediary position in each region funded by the WIB but sited in the local film office to assist with identifying opportunities and facilitating placements.
- Create a Pennsylvania Media Production Association in Los Angeles, and perhaps New York, comprised of Pennsylvania natives or graduates of Pennsylvania colleges and universities now working in those cities in production and production-related work. Build this organization to the point where students from Pennsylvania schools can spend time in Los Angeles and/or New York working in internships. Pennsylvania industry professionals in this association could be available to guest lecture, webcast, mentor and participate in advisory boards.
- Connect with the Assistant Director Training Plan in New York and Los Angeles to identify opportunities to partner. Examples might include: assisting with recruiting, helping Pennsylvania residents to apply to the program and subsidizing their participation in the process with the proviso that they have to return to Pennsylvania for a certain period of time (similar to programs that subsidize tuition for doctors and teachers who agree to teach in under-served communities).
- Identify an initial cluster of high schools, community colleges and four-year institutions (and related programs) – start with one of each to begin – and connect them to each other and the industry advisory groups.
- Provide opportunities for professional development for faculty and counselors from high schools, community colleges, and four-year schools to work in local facilities related to production.
- Integrate school counselors into the process of exploring career options in particular industry segments. Counselors are pivotal in designing curriculum and providing a delivery system that meets student needs. Include standards for counselor preparation and certification in the multiple pathways reform.

- Require school districts to follow certain protocols in establishing business and community partnerships. For example, include these industry partners at the inception of work-based learning programs and enable them to be equal partners in decision-making.

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The Center for Workforce Information and Analysis
The Pennsylvania Department of Commerce and Economic Development

APPENDICES

A. INTERVIEWS WITH PRODUCERS

The Pittsburgh and Philadelphia Film Offices provided EEI with contact information for selected productions that had been filmed in their respective cities from 2006-2009. We are grateful for the time and candor of the following industry professionals.

Name	Title	Project	Principal Location	Year
Flo Speakman	Producer	The Nail	Philadelphia	2008
Ilt Jones	Location Manager	Transformers 2	Philadelphia	2008
Buddy Enright	Line Producer	The Road	Pittsburgh	2008
Janice Sperling	Production Coordinator	Adventureland	Pittsburgh	2008
David Brind	Writer Producer	DARE	Philadelphia	2008
Mike Wittlin	Producer	Bridge to Nowhere In Northwood	Pittsburgh Pittsburgh	2007 2008
Laura Greenlee	Producer	Zach & Miri Dogma	Pittsburgh Pittsburgh	2008 1998
Declan Baldwin	Producer	Adventureland	Pittsburgh	2007

B. PRODUCTION OCCUPATIONS

Chart 1: Production Management

The production management team is responsible for making sure that the production proceeds on schedule and within the planned budget.

Unit Production Manager

Duties and Responsibilities	Skills and Knowledge
Responsible for keeping within the budget; sign checks and money requests; hire and fire crew; approve schedules, call sheets and production reports; approve forced call which is to bring actors and crew back to the set before the end of their rest time (turnaround).	Excellent knowledge of budgeting and project management; strong understanding of the production process; decision-making skills under budgetary and time constraints.

Production Office Coordinator

Duties and Responsibilities	Skills and Knowledge
Responsible for operating the production office; work with the unit production manager; deal with all paperwork that production generates; handle phones, pagers, rooms, travel arrangements, crew lists, deliveries, film shipments, copiers, time cards, call sheets, and wrap reports, dailies.	Excellent coordination and organizational skills; detail-oriented; interpersonal and communication skills.

Office Production Assistant

Duties and Responsibilities	Skills and Knowledge
Assist the production office staff on variety of office functions.	Entry level position; detail-oriented; willingness to assist and learn; ability to respond quickly and follow instructions.

Production Accountant

Duties and Responsibilities	Skills and Knowledge
<p>Production Accountants are responsible for calculating finances, budgeting productions and controlling the cash flow to ensure that payments are made on time, and in accordance with the agreements and approved budgets. Production Accountants assist the Producers and Production Managers to prepare budgets and Estimated Final Cost Reports. They evaluate and approve all purchases, oversee payments, manage payroll, petty cash and keep accurate financial records; analyze costs and provide daily or weekly cost reports. They must set up and maintain accounting systems and supervise Assist Accountants and Clerks.</p>	<p>Thorough knowledge of motion picture accounting and budgeting policies and procedures as well union, guild, tax and other relevant state and federal regulations.</p>

Assistant Accountant

Duties and Responsibilities	Skills and Knowledge
<p>Reports to the Production Accountant. Performs accounting duties as required including imputing data, computing cast and crew payroll. Processing and tracking purchase and rental orders.</p>	<p>Excellent computer skills, familiarity with payroll company software and other budgeting software as needed.</p>

Accounting Clerk

Duties and Responsibilities	Skills and Knowledge
<p>Reports to the Production Accountant. Performs accounting duties as required including copying and filing purchase and rental orders, invoices, petty cash envelopes</p>	<p>Can be an entry-level position. Strong interest in learning motion picture accounting, good office and computer skills. Good inter-personal skills.</p>

1st Assistant Director

Duties and Responsibilities	Skills and Knowledge
<p>Responsible for smooth operation of the shooting set; make sure crew and actors know what is happening and what will happen; create call sheet with input from the director, unit production manager, producer; keep track of schedule changes and make sure filming is on schedule; attend to director's and crew's questions; determine the area that the camera is seeing and let the 2nd assistant director know so that s/he can set the quiet area (lock-up); review the safety rules and filming schedule for the day with the crew.</p>	<p>Strong administrative, managerial and interpersonal skills; ability to deal with stressful situations; resourceful and problem-solver; excellent communication skills; physically fit to handle long hours; Producer/DGA training background is helpful.</p>

2nd Assistant Director

Duties and Responsibilities	Skills and Knowledge
<p>Responsible for making sure that everyone has a call time and knows when and where to be at work; prepare the call sheet; disseminate information from 1st assistant director to the other members of the assistant director's team and the rest of the crew; let the production assistant know which area has to be controlled for noise during filming.</p>	<p>Strong administrative, managerial and interpersonal skills; ability to deal with stressful situations; resourceful and problem-solver; excellent communication skills; physically fit to handle long hours; Producer/DGA training background is helpful.</p>

Production Assistant

Duties and Responsibilities	Skills and Knowledge
<p>Arrive on the set early before the crew and leave the set after the crew; be prepared for the day's filming; know who is working; make sure 1st and 2nd assistant directors have their radios or walkie-talkies with fresh batteries; coordinate extras and help them get ready for the filming; prepare the slides (scripts containing the scenes to be filmed) and make sure key department heads have a copy; watch the line during lunch and make sure non-production people are not in the line; make sure everyone has had their lunch; know the time when crew is due back on the set after lunch (usual time is half-hour after the last person has gone through the line); watch for possible disturbances during filming in the assigned area; hold on to next day's call sheet until told to distribute them.</p>	<p>Entry level position; willingness to assist everyone and do whatever is required; alert and quick to respond to requests and problems; use common-sense and good judgment; excellent communication and interpersonal skills; physically fit to handle long hours.</p>

Script Supervisor

Duties and Responsibilities	Skills and Knowledge
<p>The script supervisor maintains the continuity of the script, notes the duration of each take and logs information regarding the action in the scene, position of the actors, screen direction, type of lens used and additional information as needed. The script supervisor coordinates with the 2nd asst. Cameraman and the Sound Mixer to make sure that the scene numbers and takes are in sync and notes which takes are no good, hold or to be printed. At day's end the script supervisor provides production a daily log of scenes, pages and minutes of script shot each day. Editorial receives a lined script of pages shot each day.</p>	<p>Thorough knowledge of the directing and editorial process. Pays extreme attention to detail and able to multi-task and interface with directors, cast, camera crew and the editorial team.</p>

Chart 2. Art Department

The Art Department is responsible for the overall look of a filmed event such as films and TV programs. Production designers have one of the key creative roles in the creation of motion pictures and television. Working directly with the director and producer, they must select the settings and style to visually tell the story.

The art department is a group of people who work with the production designer to implement the scenic elements of that vision. While technically, a number of department work directly with the art department such as Location Management and Construction, we have shown those departments as separate charts. Production Designer/Art Director

Duties and Responsibilities	Skills and Knowledge
Collaborates with the Director and Director of Photography to establish the look of the picture. Insures Art Department, Costume Design, Make-up, work together to present a unified visual appearance of the film.	Thorough knowledge of contemporary and period architecture as well as motion picture construction and visual effect techniques.

Set Designer

Duties and Responsibilities	Skills and Knowledge
Reports to Art Director and/or Production Designer. Responsible for creating set designs and construction blueprints as requested.	Excellent drafting skills. Thorough knowledge of set construction materials and techniques. Ability to draft at a drawing board as well as on computer.

Illustrator

Duties and Responsibilities	Skills and Knowledge
Reports to Production Designer/Art Director. Creates pre-production concept art. Consults with Director to create continuity sketches.	Excellent drawing and illustration skills. Ability to translate Director's vision into continuity sketches and storey boards. Thorough knowledge of screen direction and camera movement.

Art Department Coordinator

Duties and Responsibilities	Skills and Knowledge
Responsible for ensuring the smooth operation of the art department. Maintaining office files and ordering supplies as needed. Ability to research as needed and handle correspondence as necessary.	Excellent coordination and organizational skills; detail-oriented; interpersonal and communication skills.

Chart 3. Location Management

The location manager is a relatively new occupational category as compared to other occupations such as grips and camera crew that have been around since the beginning of filmmaking. Location managers became professionally organized about 20 years ago. They are different from location scouts in that in addition to scouting or finding an ideal location for filming, they are responsible for “managing” the location. They are responsible for solving any problems that might arise at the location as well as taking a “diplomatic” role in dealing with the public and residents in the immediate community.

Location Manager

Duties and Responsibilities	Skills and Knowledge
Work with the producer, director and sometimes the production designer. Responsible for finding appropriate sites for filming; manage the filming site; prepare photographs of sites for review by director and art director; act as the primary interface between the company on location and the public; notify residents in the area of production activities; negotiate with property owners on the price and type of activity; secure necessary permits (city, county, fire, police, etc.); deal with any questions or problems related to the site; manage a budget for permits, restoration costs, trash removal, parking, security, and transportation; notify crew of filming location and provide a basic direction map.	Public relations, interpersonal, and organizational skills; ability to work with personnel from different departments; know various permit processes and procedures; ability to conduct research on sites; basic photographic knowledge; ability to assess space in terms of creative and actual work related concerns; ability to see how the space will look on screen.

Assistant Location Manager

Duties and Responsibilities	Skills and Knowledge
Assist location manager with finding the most ideal location to film each scene; make the maps and signs that lead to the location; interact with the community and inform them of production activities on the location; handle all problems associated with the location.	Strong interpersonal, diplomatic and communication skills; ability to be alert and prepared to handle unexpected situations and problems on location.

Production Security

Duties and Responsibilities	Skills and Knowledge
Responsible for the safety of the crew and equipment on the set; interact with public in an informative and pleasant manner; watch the equipment during off-filming hours.	Strong interpersonal skills; knowledge of the community in which filming takes place; responsible and prompt; ability to respond efficiently to potential problems on the set or on location.

Chart 4. Camera Crew

The camera department or crew works in coordination with lighting and grip departments to produce the best possible images for each scene. They are not only responsible for the “look” of the film, but also for selecting and maintaining the camera equipment. Technical and cinematic skills are usually acquired on the job as one successfully moves up the ladder from a film loader to a cameraperson. Another good place to start is at a camera rental house. One can learn about technical aspects of camera operation and camera equipment at a camera house.

Director of Photography (Cinematographer)

Duties and Responsibilities	Skills and Knowledge
<p>Responsible for the “look” of the film by constructing a visual image of the script; work with the director, producer, production designer, and visual effects supervisor; scout all locations and shooting sites; select the camera, film stock, lenses, lighting style, and the color scheme; approve lighting and grip equipment; prepare an equipment budget; manage the camera crew; set camera positions; determine exposure; select lens for each shot; set composition for camera operator before each take; view dailies for quality control.</p>	<p>In-depth understanding of photography, lighting, and composition; ability to visualize scenes from the script; know what each camera and equipment used in the filming can do; possess interpersonal and managerial skills. Film school or professional training in photography and related work experience is very useful.</p>

Camera Operator

Duties and Responsibilities	Skills and Knowledge
<p>Operate the camera; frame the shot; read the script; work with the director of photography on composition; focus camera and control camera movement; stop filming if problems are detected in the framing or focus; maintain the camera and equipment for operation; regulate all focus changes; record meter reading; execute the use of filters, gauze, etc.; handle lenses; coordinate with dolly crane or boom grip; communicate quality of each take to the director of photography.</p>	<p>Thorough knowledge of camera and camera accessories; hand-eye-body coordination to follow the subject; understanding of shot composition; ability to frame shot by considering the movements on the set. Film school or professional training in photography and related work experience is helpful.</p>

1st Camera Assistant (Focus Puller)

Duties and Responsibilities	Skills and Knowledge
<p>Report to camera operator; responsible for setting up and maintaining camera(s) and equipment for operation; fix basic camera problems; regulate all focus changes; record meter reading; responsible for film threading and labeling; handle lenses; keep accurate record of each take and the amount of film used; account for camera and equipment at the end of the day.</p>	<p>Understand basic photography, lighting, and composition; ability to use and assemble camera and camera accessories; ability to troubleshoot and fix basic problems. Film school, visual and performing arts, or professional training in photography; and experience in camera maintenance, camera handling, film and/or video production are desirable.</p>

2nd Camera Assistant

Duties and Responsibilities	Skills and Knowledge
<p>Report to 1st camera assistant; responsible for placing orders for film, camera equipment and expendables; keep film inventory and calculate exposed, printed, non-printed, and wasted film footage; make sure sufficient number of film magazines are loaded and ready; slate each scene.</p>	<p>Knowledge of basic principles of camera and photography; excellent interpersonal skills; ability to work with many different people under stressful situations.</p>

Film Loader

Duties and Responsibilities	Skills and Knowledge
<p>Report to 2nd camera assistant; load and download film magazines with appropriate film stock; put identification labels on film magazines and cans of exposed film; prepare exposed film for delivery to the film lab; keep record of films in the loading room; put away camera equipment.</p>	<p>Know basic camera, film and photographic principles; organizational and record keeping skills; consistent and accurate loading; basic math skills.</p>

Digital Imaging Technician (DIT)

Duties and Responsibilities	Skills and Knowledge
<p>On digital photography productions the digital imaging technician is responsible for the coordination of the internal workings of the digital camera. Under the direction of the cinematographer or director of photography, the DIT will make adjustments to the multitude of variables available in most professional digital cameras to creatively or technically manipulate the resulting image.</p>	<p>Complete understanding of digital audio acquisition and time code process and how they are integrated into digital acquisition formats and post production environments.</p>

Digital Utility

Duties and Responsibilities	Skills and Knowledge
<p>Reports to Digital Imaging Technician. Responsible for setting up and maintaining digital equipment, cables and monitors as needed.</p>	<p>Basic understanding of the digital process and equipment. Ability to follow instructions and work with camera crew.</p>

Still Photographer

Duties and Responsibilities	Skills and Knowledge
<p>Responsible for taking all still B+W and Color photographs of the production including cast, production and publicity photographs.</p>	<p>Excellent photography skills. Ability to work quickly and quietly without interfering with the production.</p>

Chart 5. Lighting Crew

The lighting crew is divided into 1) off-production crew that works on the set before filming, and 2) on-production crew that works during filming. The off-production lighting crew is responsible for setting up electrical equipment and wires, primarily associated with lights and light operating devices. The on-production crew maintains the specified lighting conditions during filming. They also operate specialized lights and lighting devices.

On Production Crew

Chief Lighting Technician

Duties and Responsibilities	Skills and Knowledge
Report to the director of photography; perform all functions pertaining to cinematographic electrical lighting procedures.	Knowledge of electrical circuitry; know how to effectively and safely plan and tie in lighting units to a dimmer board.

Assistant Chief Lighting Technician

Duties and Responsibilities	Skills and Knowledge
Report to the chief lighting technician; supervise the work of the lighting crew.	Understands basic electrical circuitry.

Dimmer Board Operator

Duties and Responsibilities	Skills and Knowledge
Report to the chief lighting technician; handle all dimmer board console control procedures; check connections in set lighting circuits to the appropriate channels in the dimmer control board.	Understands basic electrical circuitry; ability to operate a dimmer board.

Special Operator

Duties and Responsibilities	Skills and Knowledge
Operate the arc light, follow-spot, or handheld light in an accurate, safe and efficient manner; operate all lighting units that are assigned to follow specific subject or action.	Hand-eye coordination; ability to handle lighting equipment and devices.

Lighting Technician

Duties and Responsibilities	Skills and Knowledge
Make electrical connections to spiders, boxes, lamps, and fans; set-up all production lamps-incandescents, fluorescents, vapors, halogens, arcs-during production procedures; rig, place, operate, repair and strike all electrical equipment and accessories.	Understand basic electrical circuitry; know how to use and operate lighting devices safely.

Repair Technician

Duties and Responsibilities	Skills and Knowledge
Responsible for keeping all lighting equipment used in production, such as control consoles, luminaries, cables, and scrims in good working condition; repair and replace lighting equipment and support material when necessary.	Understand basic electrical circuitry; know how to operate and repair lighting devices and accessories.

Lamp Operator

Duties and Responsibilities	Skills and Knowledge
Responsible for dimming devices on the set.	Ability to take directions on the set; know how to use dimming devices.

Off Production Crew

Chief Rigging Electrician

Duties and Responsibilities	Skills and Knowledge
Visit a set or location and assess rigging work based on given requirements for lighting equipment.	Ability to install lights and equipment in any filming location; problem-solving skills; managerial skills.

Assistant Rigging Electrician

Duties and Responsibilities	Skills and Knowledge
Assist the chief rigging electrician in rigging equipment on the set or location; responsible for the crew and equipment; make sure the lighting crew is on time and the needed equipment is set up.	Ability to install lights and equipment in any filming location; problem-solving skills; supervisory and organizational skills.

Rigger

Duties and Responsibilities	Skills and Knowledge
Physically install equipment according to the chief rigging electrician's instructions.	Ability to install lights and equipment in any filming location; problem-solving skills; ability to follow instructions.

Rental Department/Company

The rental occupations in lighting require basic technical knowledge about cameras, lighting, and lighting equipment. Production experience is valuable to a rental clerk who often works with clients to determine the rental package that meets both technical needs and budget.

Rental Clerk

Duties and Responsibilities	Skills and Knowledge
Consult with clients on lighting equipment; prepare the rental package with appropriate items; use computerized inventory control system to update orders; supervise rental warehouse staff and drivers.	Strong communication skills including understanding industry terms; managerial skills; knowledge of different lighting equipment and ability to interpret client's needs; basic computer skills.

Rental Warehouse Worker

Duties and Responsibilities	Skills and Knowledge
Pull equipment from warehouse according to order form; clean and test equipment; present equipment to clients; inspect returned equipment; restore equipment to appropriate storage area.	Detail-oriented and ability to exercise common sense; physically fit; interpersonal skills; willingness to learn.

Chart 6. Grip Crew

Grip occupations are divided into 1) construction crew that works on getting the set ready before filming, and 2) production crew that works on the set during filming. The construction crew usually has carpentry background. They need to be physically fit and good at problem solving. The construction crew is often asked to construct something in unusual places, which poses unexpected and new problems. The production crew works during filming and its primary responsibility is to take down and put up basic set structures. A member of the construction crew can work on the set if there is a shortage of production crew.

Key Production Grip

Duties and Responsibilities	Skills and Knowledge
Report to director of photography and chief electrician; responsible for setting-up all reflectors and light modifying devices; supervise and coordinate the operation of grip crew; coordinate camera placement and camera movement procedures.	Ability to work with different department heads, especially camera and lighting; possess problem-solving abilities; personnel management skills; know how to use light construction equipment; know how to handle camera and lighting equipment.

First Assistant Grip

Duties and Responsibilities	Skills and Knowledge
Report to key grip; rig, place, secure, operate, and move all grip equipment, accessories and set pieces; order, maintain and schedule equipment, materials, and personnel.	Ability to problem-solve under tight schedules; interpersonal skills; ability to handle camera and lighting equipment.

Dolly Grip

Duties and Responsibilities	Skills and Knowledge
Report to key grip; coordinate moving shots during blocking, rehearsals, and takes; smoothly operate the mobile camera platform; synchronize camera movement with the movement of the subject.	Strong eye-hand-body coordination; physically fit; ability to work with other crew members especially camera operator, focus puller, and dolly grip by synchronizing movement according to the movements on the set.

Grip (“extra hammer”)

Duties and Responsibilities	Skills and Knowledge
Rig and install equipment and basic structures of the set.	Basic construction skills; ability to use hand and power tools.

Construction

Key Construction Grip

Duties and Responsibilities	Skills and Knowledge
Supervise preparation of the set before filming or taping; place cameras and equipment; supervise installation of scenic backgrounds; supervise setting-up and dismantling of sets.	Management skills; basic carpentry skills and ability to work with power tools; basic math skills; stagehand experience.

Gang Boss (“Pusher”)

Duties and Responsibilities	Skills and Knowledge
Supervise the work of the construction crew.	Supervisory skills; basic carpentry skills and ability to work with power tools; basic math skills; stagehand experience.

Chart 7. Sound Crew

Sound crew is responsible for on set recording of sound, principally dialogue. This also involves acquiring, handling and simple maintenance of equipment. Close coordination with set managers, actors and crew is important. Sound crew also produces a video recording of shooting.

Production Mixer

Duties and Responsibilities	Skills and Knowledge
Mix sounds from various microphones at the mixing console; adjust sound level by opening or closing range; maintain sound consistency.	Recording skills; ability to operate sound mixing console; artistic skills.

Boom Operator

Duties and Responsibilities	Skills and Knowledge
Responsible for microphones; hold up pole microphone and move it according to actor's movement; read the script to become familiar with dialogue and action in the scene.	Basic understanding of recording; physically fit; hand-eye coordination; interpersonal skills.

Sound Utility Technician

Duties and Responsibilities	Skills and Knowledge
Responsible for laying out the cable and microphones; set up mixer's equipment.	Basic electrical background.

Audio Recordist/Video Assist Technician

Duties and Responsibilities	Skills and Knowledge
Responsible for audio playback; perform video assist; operate 24-frame video.	Understand video recording techniques and know how to use video-audio equipment.

Sound Equipment Maintenance and Rental

Digital sound equipment and video are being used more and more in film production. Since sound equipment is often built according to specifications of the individual project, there is an increased demand for engineers and technical personnel.

Rental Pre-Technician

Duties and Responsibilities	Skills and Knowledge
Prepare audio gear; test equipment; check-in and check-out equipment for rental.	Basic electronic repair skills; know how to use audio equipment as well as their key features.

Audio Engineer

Duties and Responsibilities	Skills and Knowledge
Maintain, modify, and repair audio equipment; build systems according to order specifications.	Basic electronics background plus specialization in video equipment; formal education in electrical engineering and computer science.

Video Engineer

Duties and Responsibilities	Skills and Knowledge
Maintain, modify, and repair video equipment; build systems according to order specifications; videotape editing.	Basic electronics background plus specialization in video equipment; formal education in electrical engineering and computer science.

RF Engineer

Duties and Responsibilities	Skills and Knowledge
Work with all types of wireless communication devices.	Basic electronic background; formal training in electronics.

Chart 8. Makeup and Hair

Make-up artists and hair stylists use their artistic and technical skills to transform actors and actresses into believable characters. Through years of experience on the job, they acquire effective techniques to make actors look older, injured with cuts and bruises, or as if they were aliens from space. Hair stylists are equally skilled in making actors look the part. One of the most important skills for make-up artists and hair stylists is to be able to recreate the same look when the same character appears in different scenes which are filmed on different days.

Key Makeup Artist

Duties and Responsibilities	Skills and Knowledge
Work with the art director and director of photography; read the script and break down makeup needs for each character; create appropriate “look” for each character in the scene by applying make-up and false facial hair pieces to actors; prepare makeup schedules; apply make-up on actors; apply touch-up makeup between scenes; apply special effects makeup; responsible for staffing and budget; make and apply facial appliances for special effects.	Knowledge of cosmetological techniques; understand cinematographic and special effects makeup; know how to safely apply and remove makeup; ability to make and apply facial appliances including making molds and sculpting; understand chemicals and colors; ability to create cuts, bruises, and aging effects.

Assistant Makeup Artist

Duties and Responsibilities	Skills and Knowledge
Assist key makeup artist; apply makeup to actors and do touch-ups.	Knowledge of basic cosmetological techniques; know how to safely apply and remove makeup.

Body Makeup Artist

Duties and Responsibilities	Skills and Knowledge
Report to the key makeup artist; apply body makeup on actors; touch-up body makeup between takes; remove body makeup at the end of day; should be of the same gender as the performer.	Knowledge of basic cosmetological techniques; know how to safely apply and remove body makeup.

Key Hairstylist

Duties and Responsibilities	Skills and Knowledge
Work with the director and costumer; read and annotate script for hairstyling; create appropriate hair style for each character in each scene; select wigs, extensions, toupees, switches; touch-up, comb and/or spray actor's hair between takes.	Possess "eye" for designing appropriate hairstyles; ability to cut and style hair; know how to apply wigs and extensions; interpersonal skills; hairstylist license.

Assistant Key Hairstylist

Duties and Responsibilities	Skills and Knowledge
Report to the key hairstylist; apply hairdressing materials and dress hair as specified and supervised by the key hairstylist; maintain hair styling supply including hair irons, hair dryers, and portable hand tools.	Ability to cut and style basic hair styles; interpersonal skills; hairstylist license

Specialty Hair

Specialty hair pieces such as wigs and facial hair are often subcontracted to independent firms that employ crafts people and specialize in particular products.

Wig Maker and Designer

Duties and Responsibilities	Skills and Training
Design and style wig and facial hairpieces.	Artistic skills including how to blend hairpieces with actor's natural hair color and hairline; know what type of hair to use and combine hair to produce a desired effect; know how to mix colors and make molds for wigs; basic hairstyling.

Ventilator

Duties and Responsibilities	Skills and Training
Tie hair strands on to a mesh type material to make a wig or facial hairpieces.	Understand how to blend hair color; meticulous craftsmanship.

Chart 9. Costume and Wardrobe

The costume department handles the design and manufacture of costumes. Costumes can be designed as originals or bought off the rack. There are costume houses that create costumes according to designer’s specifications. On the set, the wardrobe department is responsible for managing the costume inventory and dressing the cast.

Costume Designers

Duties and Responsibilities	Skills and Knowledge
Determine the overall look of the show by working with the producer, director, art director, and set decorators; design costumes and accessories; supervise production of costumes.	Artistic knowledge of design and styles; technical knowledge of textiles and fashion production; ability to visualize appropriate look for the scene; technical background in textile design; stage theatre experience; college degree in fashion design or art.

Assistant Costume Designer

Duties and Responsibilities	Skills and Knowledge
Assist costume designer with executing designs; gather complete and accurate body measurements for cast members; supervise production or acquisition of costumes; read and annotate the script for type and number of costumes for each scene; prepare costume schedule; make sure every item of costuming apparel fits and is appropriate; enforce OSHA regulations and building and safety fire laws.	Artistic knowledge of design and styles; ability to conduct research on historic period styles; organizational and communication skills; technical background in textile and fashion design; stage theatre experience.

Sketch Artist

Duties and Responsibilities	Skills and Knowledge
Illustrate designs for the costume designer.	Ability to draw human figures; detail oriented and meticulous; art school or fashion design school training.

Key Men’s Costumer

Duties and Responsibilities	Skills and Knowledge
Supervise measuring of male cast members; read and annotate the script for male costuming requirements; call each male member in for final fitting; send costumes to cutters and fitters.	Basic knowledge of design, textiles, and fashion styles; understand body measurements and “fit”; organizational and interpersonal skills for working with different cast members.

Key Women’s Costumer

Duties and Responsibilities	Skills and Knowledge
Supervise the measuring of female cast members; read and annotate script for female costuming requirements; call each female performer in for final fitting; send costumes to cutters and fitters.	Basic knowledge of design, textiles, and fashion styles; understand body measurements and “fit”; organizational and interpersonal skills for working with different cast members.

Assistant Costumer

Duties and Responsibilities	Skills and Knowledge
Report to key costumers; perform liaison function between key costumers and the set wardrobe person; deliver costuming items to the set.	Organizational and interpersonal skills for working with different cast members; detailed oriented.

Cutter / Fitter

Duties and Responsibilities	Skills and Knowledge
Work with key costumers on altering costumes; take garment to seamstress for final sewing; prepare trimmed elements for final fitting.	Basic knowledge of garment production, styles and fitting; organizational and interpersonal skills for working with different cast members; detail oriented.

Seamstress

Duties and Responsibilities	Skills and Knowledge
Assemble and sew costumes; use appropriate sewing techniques for the period that the costume represents.	Technical knowledge of textiles and sewing techniques; ability to assemble and sew costumes; meticulous and detail oriented; experience or training in sewing.

Wardrobe Supervisor

Duties and Responsibilities	Skills and Knowledge
Maintain wardrobe inventory on the set; make sure each costume is in appropriate condition; supervise dressing of cast members.	Organizational and interpersonal skills.

Set Dresser

Duties and Responsibilities	Skills and Knowledge
Assist the actors and extras with dressing; check costumes on actors just before filming; perform minor repairs on costumes.	Interpersonal skills; basic sewing; entry-level position.

Costume Rental Supervisor

Duties and Responsibilities	Skills and Knowledge
Assist clients with appropriate clothing and accessories; purchase unique items for inventory; maintain the inventory system and supervise the rental staff.	Basic knowledge of design, textiles, and fashion styles; interpersonal and communication skills; computer and basic accounting skills.

Costume Rental Clerk

Duties and Responsibilities	Skills and Knowledge
Pull orders from the warehouse; check-out items and pack them for delivery or pick-up by client; check-in items and inspect them for damage; if necessary tag items for repair.	Basic computer skills; interpersonal skills especially dealing with clients; detail-oriented; entry-level position.

Chart 10. Set Construction

The set construction crew creates the basic infrastructure for the set. Their construction skills are not unique to the FILM AND TELEVISION INDUSTRY. What is particular about the set construction crew is that they must work fast and they must know how to construct all sorts of buildings and structures in such a way that buildings look “real” on film. This means that often only parts of the building are constructed. Thus, the set construction crew possesses conventional construction skills but also important creative and problem-solving skills.

Construction Coordinator

Duties and Responsibilities	Skills and Knowledge
Responsible for the look of the set; coordinates construction and details of the set, including furniture, set dressing, working props, models, and miniatures.	Extensive knowledge of carpentry, milling, machine shop, and welding; ability to work with different types of materials including wood, metal, leather, plastics, glass, and foam; managerial skills.

Construction Specialists

Duties and Responsibilities	Skills and Knowledge
Report to the construction coordinator; construct props and elements of the physical set.	Extensive knowledge of specialty area such as metal, wood carving, and cabinetry.

Key Set Builder (Propmaker)

Duties and Responsibilities	Skills and Knowledge
Report to the construction coordinator; responsible for constructing sets, furniture, and set dressing as efficiently and accurately as possible.	Ability to use set construction tools and techniques; understand appropriate material for each set construction project; managerial skills.

Finisher

Duties and Responsibilities	Skills and Knowledge
Report to the key set builder; responsible for putting finishing and decorative touches on the set.	Carpentry finishing skills; understand characteristics of wood, metals, plastic, paper-mache, fiberglass and foam; ability to apply materials to structural surfaces.

Set Painters & Sign Writers

Duties and Responsibilities	Skills and Knowledge
Report to Art Director and/or Production Designer. Responsible for preparing and painting sets as designed.	<p>Set Painters have the ability to paint sets with techniques such as wood graining, marbling, faux finishes, etc.</p> <p>Sign Writers create signage using advanced computer techniques for layout and application, while being able to hand letter signage as needed with delicate brush strokes.</p>

Scenic Artists

Duties and Responsibilities	Skills and Knowledge
Report to Art Director and/or Production Designer. Responsible for creating scenic works such as cloud backdrops, cityscapes, murals or paintings required on set.	Scenic Artists need excellent comprehensive artistic and scenic skills including basic scenic painting techniques, layout and paint application skills and color mixing. Abilities should include fine art skills of sketching, rendering and painting; have a good understanding of art history, period styles, motifs and architecture. Be able to work independently and meet deadlines.

Chart 11. Set Dressing and Props

The set dressing crew works with the art director to prepare the set in accordance with the requirements of the scene. Set dressing means taking objects, fixtures, and furnishings, and attaching them or hanging them to a wall or placing them on the floor.

Set Decorator

Duties and Responsibilities	Skills and Knowledge
Work with the art director on designing the set and developing a decoration plan based on the script; responsible for dressing the set with appropriate items; select and acquire items; manage the crew and budget.	Knowledge of decorating and set design; ability to research and design to achieve an effective period look; know how to coordinate props; management skills.

Lead Set Dresser

Duties and Responsibilities	Skills and Knowledge
Work with the set decorator on set design and decoration plan; prepare paperwork on items selected by decorator; pick items up from vendors; supervise set dressing crew or swing gang.	Basic knowledge of decorating and set design; organizational and supervisory skills; interpersonal skills.

Prop Master

Duties and Responsibilities	Skills and Knowledge
Manage action props including acquisition, inventory and maintenance.	Basic knowledge of set decorating; organizational skills; interpersonal skills.

Swing Gang

Duties and Responsibilities	Skills and Knowledge
Physically place and remove props on the set.	Interpersonal skills; physically fit.

Greens Handler

Duties and Responsibilities	Skills and Knowledge
Report to the set decorator; maintain all greens for photographic effects.	Extensive knowledge of plants and all greenery.

Prop Suppliers

There are many prop suppliers who specialize in different props such as period props, genres (e.g., westerns, futuristic props) and types (e.g., cars, weapons). Recently, digital props that are used to dress rooms in interactive games have become popular. Prop houses provide valuable services such as locating items that they do not have on stock, access to books on various topics related to design, designers and places, and access to vendor catalogues from all over the world. Larger prop houses are also equipped with machinery and personnel to custom build props for their clients. As demand for digital props grows, prop houses would also likely to employ more photographers, web designers, and computer graphic artists.

Prop Shop

Prop Designer

Duties and Responsibilities	Skills and Training
Design props according to client's specifications.	Artistic and craft skills; extensive knowledge of design, periods, and props; excellent communication skills.

Prop-maker or Builder

Duties and Responsibilities	Skills and Knowledge
Work with the prop designer and build props.	Trade school background; an experienced model maker and basically good with hands; a troubleshooter; basic carpentry, milling, machine shop, and welding skills; ability to work with wood, metal, leather, plastics, glass, and foam; knows how to read blueprints.

Master Cabinet-Maker

Duties and Responsibilities	Skills and Training
Design and build furniture and cabinetry; refurbish antiques and rebuild furniture.	High level craftsmanship; knowledge of antique refurbishing; ability to rebuild parts.

Assistant Cabinet-Maker

Duties and Responsibilities	Skills and Training
Repair furniture and assist master cabinet-maker with building new furniture; find versatile and easy solutions to problems.	Basic knowledge of carpentry and furniture building; ability to use basic power and hand tools.

Prop Rental

Sales Supervisor

Duties and Responsibilities	Skills and Training
Supervise rental staff; consult with clients and assist them with props they want; identify props to buy and look for unique items; shop for props from different venues, including yard sales to auctions.	Managerial skills; ability maintain an inventory system; basic knowledge of design and decorating.

Sales Associate

Duties and Responsibilities	Skills and Training
Work with clients who are set designers and prop masters to find props; write up orders.	Knowledge of props, designs, designers, and periods; basic computer skills; college degree in design and sales experience are helpful; also, read books on designs and different periods.

Warehouse Supervisor

Duties and Responsibilities	Skills and Training
Check-in and out rental items in the warehouse; assist clients with their orders.	Organizational and managerial skills; know how to operate a computerized inventory system; interpersonal skills.

Warehouse Person

Duties and Responsibilities	Skills and Training
Pull orders from the warehouse; tag and pack items; prepare items for pick-up; perform quality control functions by inspecting returned items for damage and writing damage tags; load and unload props from the truck.	Physically fit; ability to work fast; pay attention to detail; interpersonal skills; ability to learn the inventory system; ability to exercise caution and observe safety rules.

Chart 12. Special Effects

The special effects crew (sometimes known as practical or physical effects) creates effects in films that are used on the set during shooting, such as explosions, rain, snow, fire, bullet hits, smoke and fog. While digital visual effects have become increasingly popular, the traditional special effects artists and technicians are still essential crew in film and TV production.

Special Effects Coordinator

Duties and Responsibilities	Skills and Knowledge
Work with the director and cinematographer on designing special effects; responsible for safely coordinating and planning all special effects; manage budget and crew.	Knowledgeable in all aspects of special effects work; ability to work with chemicals, woods, plastics, glass, metals, rubber, and urethane materials; mill work, hydraulics, and rigging.

Special Effects Person

Duties and Responsibilities	Skills and Knowledge
Work with pyrotechnic materials on the set; exercise caution and safety procedures.	Pyrotechnic license; understand pyrotechnic materials and know how to use them safely and effectively.

Special Effects Technician

Duties and Responsibilities	Skills and Knowledge
Report to special effects coordinator; responsible for safely planning and rigging all special effects; ensure that all special effects employees are properly licensed.	Clean criminal record; Class 2 License; at least 2 years of hands-on experience; 5 letters of recommendation from other licensed special effects technicians.

Powder Technician

Duties and Responsibilities	Skills and Knowledge
Report to special effects technician; select and prepare weaponry; distribute weapons for use and collect weapons.	Class 1 License; experience working with chemicals, woods, plastics, glass, metals, rubber, and urethane materials; mill work, hydraulics, and rigging.

Wire and Mechanical Tag Technician

Duties and Responsibilities	Skills and Knowledge
Report to special effects technician; work with pyrotechnic equipment	Must have pyrotechnic license; experience working with chemicals, woods, plastics, glass, metals, rubber, and urethane materials; know safety procedures.

Atmospheric Technician

Duties and Responsibilities	Skills and Knowledge
Report to special effects technician; prepare and execute all atmospheric effects (i.e. snow, fog, rain, etc); provide all visual atmospheric conditions.	Experience working with chemicals, woods, plastics, glass, metals, rubber, and urethane materials; know safety procedures.

Assistant Special Effects Technician

Duties and Responsibilities	Skills and Knowledge
Report to special effects technician; rig or remove special effects from the set.	Class 2 License; experience working with chemicals, woods, plastics, glass, metals, rubber, and urethane materials; know safety procedures.

Chart 13. Catering

Most caterers work on filming locations although some may be hired to provide meals on sound stages, particularly those not on a studio lot. They use trucks with built-in kitchens, refrigerators, and utility storage. Generally, the menu, cooking style (e.g., the use of fresh ingredients), and service are important features that distinguish one caterer from another. Caterers employ professional chefs with culinary training and experience. They also look for individuals with excellent interpersonal skills because service is one of the most important aspects of catering. A caterer can build a reputation by providing excellent service, such as getting to know the crew by name and being prepared on time for each meal since crew scheduling is so critical. Personnel also may be drivers and require truck driver's licenses.

Head Chef

Duties and Responsibilities	Skills and Training
Create menus; supervise cooking; manage and control inventory of supplies; order necessary ingredients; develop a budget.	Culinary knowledge; organizational and management skills; sensitive to food presentation. Culinary education and training.

Assistant Chef

Duties and Responsibilities	Skills and Training
Work with the head chef in developing menus; responsible for maintaining the supply inventory and food stock; supervise kitchen staff.	Basic culinary knowledge; strong cooking and knife skills; interpersonal and managerial skills. Culinary education and training.

Set-up Person

Duties and Responsibilities	Skills and Training
Report to assistant chef; set-up and clear dining area; prepare the kitchen for cooking.	Interpersonal skills; presentable appearance; basic kitchen skills such as ability to use kitchen equipment.

Runner

Duties and Responsibilities	Skills and Training
Deliver food and equipment to the truck as necessary.	Interpersonal skills; presentable appearance; prompt.

Dish Washers

Duties and Responsibilities	Skills and Training
Work in the kitchen; wash dishes and equipment; prepare equipment for the next job.	Know kitchen equipment; diligent and prompt.

Chart 14. Transportation

Transportation is generally a very large department, particularly when filming on location. Filming on location is like moving an entire factory somewhere new everyday and the transportation department is responsible for all the trucks, cars, vans, station wagons, dressing rooms, and other “rolling stock” required for production.

Drivers must be properly licensed by the state in which the driver resides for the type of vehicle that the driver will be operating. For example:

- The class 1 license is for drivers operating semi-tractor rigs or for doubles.
- The class 2 license is for drivers operating vehicles with three or more axles up to 6,000 pounds or for vehicles carrying more than ten persons.
- The class 3 license is for drivers operating vehicles with two axles weighing less than 6,000 pounds and for vehicles carrying not more than ten persons.

Transportation Coordinator

Duties and Responsibilities	Skills and Knowledge
Directly responsible to the production manager; perform liaison function between various production departments and the transportation department; schedule and coordinate drivers.	Interpersonal and organizational skills; ability to use dispatch communication equipment; problem-solving skills.

Driver Captain

Duties and Responsibilities	Skills and Knowledge
Report to transportation coordinator; ensure each driver is properly licensed to operate the vehicle they are assigned; supervise parking, loading, and unloading of all company vehicles; enforce safe work conditions.	Hold no less than a Class 2 Driver’s License; organizational and managerial skills; interpersonal skills.

Dispatcher

Duties and Responsibilities	Skills and Training
Coordinate all transportation activities; assign equipment and drivers on a daily basis; manage the transportation office.	Basic computer skills; coordination and interpersonal skills; ability to work under high stress situations.

Driver

Duties and Responsibilities	Skills and Knowledge
Report to driver captain; operate assigned vehicle; load and unload assigned vehicle; maintain safe loading limit for the vehicle.	Hold no less than a Class 3 or Class 2 Driver's (commercial B) license; have a good driving record; follow chain-of-command; prompt, reliable, and responsible; maintain professional appearance.

Mechanic

Duties and Responsibilities	Skills and Training
Maintain and repair all types of vehicles; maintain up to date knowledge on truck repair.	Truck repair experience and knowledge.

Serviceperson

Duties and Responsibilities	Skills and Training
Gas and wash vehicles; conduct minor repairs; drive vehicles from the set and back.	Basic mechanical background; interpersonal skills; reliable and dependable.

Specialized Drivers – Mobile Camera Platform Operators

Rig Driver

Duties and Responsibilities	Skills and Knowledge
Report to driver captain; operate tractor-trailer or doubles rig; maintain safe load limit for the vehicle.	Hold no less than a Class 1 Driver's License; interpersonal skills; reliable and dependable.

Mobile Studio Operator

Duties and Responsibilities	Skills and Knowledge
Report to driver captain; operate and maintain mobile studio vehicle; maintain and inventory all equipment and material aboard the vehicle; drive mobile studio vehicle; operate master controls and all built-in and attached accessories.	Hold no less than a Class 2 Driver's License; interpersonal skills; reliable and dependable.

Insert Car Driver

Duties and Responsibilities	Skills and Knowledge
Report to driver captain; operate and maintain the insert camera car; maintain assigned vehicle in readiness; observe proper safety and protective procedures for personnel and equipment being loaded and transported.	Hold no less than a Class 2 Driver's License; interpersonal skills; reliable and dependable.

Mobile Camera Crane Driver

Duties and Responsibilities	Skills and Knowledge
Report to driver captain; operate and maintain mobile camera crane; make sure mobile crane equipment is mechanically sound and safe.	Hold no less than a class 2 Driver's License; interpersonal skills; reliable and dependable.

C. PENNSYLVANIA EDUCATION INVENTORY

Public Schools

Community College

Name	Program	Contact	Title	Tele- phone	Email	Address	City	Zip Code	Main Phone	Website
Bucks County Community College	Arts	John Matthews	Assistant Academic Dean/ Professor	215- 968- 8211 Ext: 8211	mathewsj@bucks.edu	275 Swamp Road	Newto n	18940	215- 968- 8000	www.bucks.edu/
Community College of Allegheny County	Film Production	George Jaber	Advisor/Professo r	412- 469- 6219	gjaber@ccac.edu		West Mifflin	15122	412- 237- 3100	www.ccac.edu/
Community College of Philadelphia	Communica tion Arts	Linda Fellag	Department Head	215- 751- 8867	lfellag@ccp.edu	1700 Spring Garden St	Philade lphia	19130	215- 751- 8000	http://www.ccp.edu/site/about/
Delaware Community College	Communica tion Studies, Drama, Graphic Design	Dr. Clayton A. Railey III	Dean of Communications , Arts and Humanities	610- 359- 5359	crailey@dccc.edu	906 & 912 Sprindale Road	Exton	19341	610- 359- 5000	www.dccc.edu
Harrisburgh Area Community College	Communica tions and Foreign Language	Tim Dolin	Associate Professor of Speech	717- 780- 2434	tdolin@hacc.edu	One HACC Dr	Harrisb urg	17110	717- 780- 2300	http://www.hacc.edu/Harrisburg/index .cfm
Lehigh Carbon Community College	Digital Media Production	Wendy Barron	Coordinator	610- 799- 1729	wbarron@lccc.edu	Lehigh Carbon Communit y College	Schnec ksville	18078	610- 799- 2121	http://www.lccc.edu
Luzerne Community College	Broadcast Communica tions/Jour nalism	A Edward Kuehner	Faculty	800- 377- 5222 x623	ekuehner@luzerne.edu	1333 South Prospect St	Nantic oke	18634	800- 377- LCCC	http://www.luzerne.edu/default.jsp

Montgomery County Community College	Electronic Game Design; Theater Production	Francesca Coppa	Director/Associate Professor	484-664-3275	coppa@muhlenberg.edu	2400 W Chew St	Allentown	18104	610-821-3500	www.muhlenberg.edu
North Hampton County Community College	Art Majors	Mario Acerra	Professor Communications /Theater	610-861-5545	maccerra@northhampton.edu	3835 Green Pond Rd	Bethelton	18020	610-861-5300	http://www.northampton.edu/default.htm
Pennsylvania Highlands Community College	Communications	Carolyn Turturice	Associate Professor	814-262-6414	cturtur@pennhighlands.edu	101 Community College Way	Johnstown	15904	814-262-6400	www.pennhighlands.edu/
Westmoreland County Community College	Multimedia	Andrew T. Barnette	Dean	724-925-4047	barnettea@wccc.edu	145 Pavilion Lane	Youngwood	15697	725-925-4000	www.wccc.edu

University

Name	Program	Contact	Title	Telephone	Email	Address	City	Zip Code	Main Phone	Website
Indiana University of Pennsylvania	Communications Media	Dr. Kurt Dudd	Chair	724-357-2492	kdudt@iup.edu	1011 South Drive	Indiana	15705	724-357-2100	http://www.iup.edu/commmedia/default.aspx
Penn State	Communications	Anthony Olorunnisola	Department Head	814-863-7997	axo8@psu.edu	123 Burrowes	University Park	16802	814-863-2635	www.psu.edu
Penn State: Altoona Campus	Pre-Communications Media	Dr. Kenneth A. Womack	interim Dean	814-949-5750	http://www.personal.psu.edu/kaw16	3000 Ivyside Park # 1	Altoona	16601	814-949-5000	www.aa.psu.edu
Robert Morris University	Media Arts	Timothy J. Hadfield	Department Head	412-397-6881	hadfield@rmu.edu	6001 University Boulevard	Moon Township	15108	800-762-0097	www.rmu.edu/
University of Pittsburgh	Arts and Sciences	N. John Cooper	Dean	412-624-6090	cooper@fcas.pitt.edu	219 Parkmen Avenue	Pittsburgh	15260	412-624-4141	www.pitt.edu

West Chester University of Pennsylvania	Communication Studies	Timothy Brown, PhD.	Department Chair	610-436-2500	tbrown@wcupa.edu	700 S. High Street	West Chester	19383	610-436-1000	www.wcupa.edu
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Private Schools

AS and BS

Name	Program	Contact	Title	Telephone	Email	Address	City	Zip Code	Main Phone	Website
Art Institute of Philadelphia	Media Arts	Erick Hershey	Academic Director of Digital Filmmaking and Video Production	215-567-7080	ehershey@aia.edu	450 Easton Rd	Philadelphia	19103	215-572-2900	http://www.artinstitutes.edu/philadelphia/
Art Institute of Pittsburgh	Media Arts	Andres Tapia-Urzu	Department Director	412-263-6423	atapia-urzua@aia.edu	420 Boulevard of the Allies	Pittsburgh	15219	412.263.6600	http://www.artinstitutes.edu/pittsburgh/

AST and BS

Name	Program	Contact	Title	Telephone	Email	Address	City	Zip Code	Main Phone	Website
Art Institute of York-Pennsylvania	Media Arts	Jose A. Acosta	Adjunct Professor	717.755.2300		1409 Williams Rd	York	17402	717-755-2300	www.artinstitutes.edu

College

Name	Program	Contact	Title	Tele- phone	Email	Address	City	Zip Code	Main Phone	Website
Bryn Mawr	Arts	Mark Lord	Director of Theater/ Associate Professor	610-526-5210	theatre@brynmawr.edu	101 North Merion Ave	Bryn Mawr	19010	610-526-5000	http://www.brynmawr.edu/theater/
Chestnut Hill College	Communications	Kathleen Spigelmyer	Director of Communications	215-248-7025	spigelmyerk@chc.edu	9601 Germantown Ave	Philadelphia	19118	215-248-7001	http://www.chc.edu
Geneva College	Communication Department	Elaine Hontz Hockenberger	Associate Professor & Chair, Communications Department	724-847-6683	ehockenb@geneva.edu	3200 College Ave	Beaver Falls	15010	724-846-5100	http://www.geneva.edu/object/communication_major.html
Juniata College	Communications and Theater Arts	Dr. Donna Weimer	Department Chair / Professor	814-641-3462	weimer@juniata.edu	1700 Moore Street	Huntingdon	16652	877-JUNIATA	http://www.juniata.edu
Keystone	RTV	David Elliot PhD.	Professor / Director of Honors Program	570-945-8753	david.elliott@keystone.edu	One College Green	La Plume	18440	570-945-8000	www.keystone.edu
LaRocheCollege	Communications, Media and Technology	Jeff Ritter PhD.	Associate Professor/chair	412-536-1027	jeff.ritter@laroche.edu	9000 babcock Blvd	Pittsburgh	15237	800-838-4LRC	http://www.laroche.edu/academics/DisciplineDetail.asp?DisciplineID=2
Lycoming College	Communications	Leah Bedrosian Peterson	Professor.Co-Chair	570-321-4340	Peterson@lycoming.edu	700 College Place	Williamport	17701	570-321-4000	http://www.lycoming.edu/home/
Marywood College	Communication Arts	Douglas Lawrence, Ph.D.	Program Director	570-348-6209.	lawrence@marywood.edu	2300 Adams Ave	Scranton	18509	570-348-6211	http://www.marywood.edu
Messiah College	Communications Department	Edward T. Arke, Ed.D	Professor/Chair	717-766-2511	EArke@messiah.edu	1 S College Ave	Grantham	17027	717-766-2511	http://www.messiah.edu/departments/communication/index.html
Muhlenberg College	Film Studies	Neil Goldstein	Coordinator	215/641-6463	ngoldste@mc3.edu	340 DeKalb Pike,	Blue Bell	19422	215.641.6300	http://www.mc3.edu/aboutus

Neumann College	Communication and Media	Gail Shanley Corso	Associate Professor	610-558-5515	gcorso@neumann.edu	Aston, PA 19014	Ashton	19014	610-459-0905	http://www.neumann.edu/contact/default.asp
Swarthmore College	Film and Media Studies	Patricia White	Professor/Chair	610-328-8148	pwhite1@swarthmore.edu	500 College Avenue	Swarthmore	19081	610-328-8000	http://wwwtest.swarthmore.edu/
Waynesburgh College	Art and Communications	Richard Krause	Chair/Assistant Professor	724-852-3240	rkrause@waynesburg.edu	51 West College Street	Waynesburgh	15370	724-627-8191	www.waynesburgh.edu
Westminster College	Communication Studies, Theater and Art	David L. Barner	Professor/Chair	724-946-7239	http://www.westminster.edu/staff/barnerdl/	319 S. Market St.	New Wilmington	16172	800-942-8033	http://www.westminster.edu/acad/academics_department.cfm?dept=3&name=comm

Community College

Name	Program	Contact	Title	Telephone	Email	Address	City	Zip Code	Main Phone	Website
Lackawanna College	Communications	Frank Healey	Professor	570-961-7810	healeyf@lackawanna.edu	501 Vine Street	Scranton	18509	877-346-3552	http://www.lackawanna.edu/index.html

Post-graduate

Name	Program	Contact	Title	Telephone	Email	Address	City	Zip Code	Main Phone	Website
Carnegie Mellon University	Entertainment Technology Center	Don Marinelli	Executive Producer	412-268-5791	thedon@cmu.edu	5000 Forbes Avenue	Pittsburgh	15219	412-268-2000	www.cmu.edu/

PPSVS

Name	Program	Contact	Title	Tele- phone	Email	Address	City	Zip Code	Main Phone	Website
Dubois Business College	Russo Movie Making Program	John Russo	Instructor	(814) 371-6920		One Beaver Drive	DuBois	15801	814-371-6920	http://www.dbcollege.com/
Film Tech School	20-week Immersion Classes	Dominic DeFino	Executive Director	215-313-0123	info@filmtechschool.com	2019 Juniper Street 2nd Flor	Philade lphia	19148	215-313-0123	www.filmtechschool.com
Future Media Concepts	Digital Media	Jennifer Herman	Branch Manager	215-922-2500	JennH@fmctraining.com	325 Chestnut St # 220	Philade lphia	19106	215.92 2.2500	http://www.fmctraining.com/fmc.asp?!=Philadelphia
Pittsburgh Filmmakers	School of Film Production	Gordon Nelson	Senior Instructor	412-361-0455 x326	gnelson[at]pghfilmmakers.org	477 Melwood Ave	Pittsbu rgh	15213	412-681-9500	www.pghfilmmakers.org
Douglas Education Center	Savini Programs	Tom Savini	Supervisor	800-413-6013	tsavini@dec.edu	130 7th St	Mones sen	15062	800.41 3.6013	http://www.douglas-school.com

University

Name	Program	Contact	Title	Tele- phone	Email	Address	City	Zip Code	Main Phone	Website
Arcadia University	Communicati ons	Alan Powell	Associate Professor	215-572-2900	Powella@arcadia.edu	450 S. Easton Road	Glensid e	19038	215-572-2900	www.arcadia.edu
Carlow University	Arts, Graphic Design, Animation	Thomas Beemsterboer	Professor	412-578-6032	beemsterboertv@carlow.edu	2755 Station Avenue	Center Valley	18034	610-282-1100	www.carlow.edu
Chatham University	Writing, Literary and Cultural Studies Division	Prajna Paramita Parasher	Program Director/Associate Professor	412-365-1100	parasher@chatham.edu	Woodland Road	Pittsbu rgh	15232	412-365-1100	http://www.chatham.edu/departments/writing/undergraduate/film/

Clarion University	Mass Media Arts, Journalism & Communication Studies	Dr. Myrna Kuehn	Department Chair	814-393-2286	kuehn@clarion.edu	840 Wood Street	Clarion	16214	814-393-2000	www.clarion.edu
DeSales	Performing Arts	John Bell	Department Chair	610-282-1100 ext. 1247	john.bell@desales.edu	2755 Station Avenue	Center Valley	18034	610-282-1100	http://www.desales.edu/default.aspx?pageid=4639
Drexel University	College of media Arts and Design	Yvonne Leach	Department Head	215-895-2408	cinetv@drexel.edu	3141 Chestnut St	Philadelphia	19107	215-895-2000	http://www.drexel.edu/westphal/academics/undergraduate/eam/
Duquesne University	Journalism and Multimedia Arts	Dr. John Shepard	Chair	412-396-5772	shepard@duq.edu	1000 Locust St	Pittsburgh	15282	412.434.66.26	www.duq.edu/
Edinboro University	Art	James Parlin	Chair	814-732-2915	jparlin@edinboro.edu	219 MEADVILL E STREET	Edinboro	16444	814-732-2000	www.edinboro.edu/
Gannon University	School of Humanities	Anthony Micelli	Director	814-871-7492	MICELLI@gannon.edu	109 University Square	Erie	16541	814-871-7000	http://www.gannon.edu/
LaSalle	Communications	Lynne Texter	Department Chair / Professor	215-951-1207	texter@lasalle.edu	1900 W. Olney Ave	Philadelphia	19141	215-951-1000	http://www.lasalle.edu/
Mercyhurst University	RTV	Daniel Burke	Department Chair and Professor	814-824-2391	dburke@mercyhurst.edu	501 E. 38th Street	Erie	16546	814-824-2000	www.mercyhurst.edu
Philadelphia University	School of Design and Media	Dennis Kuronen	Interim Dean/ Director	215-951-2596	kuronend@PhilaU.edu	4201 Henry Avenue	Philadelphia	19144	215-951-2106	http://www.philau.edu/designandmedia/index.html
Point Park University	Cinema and Digital Arts	Fred Johnson	Chair	412-391-4313		201 Wood Street	Pittsburgh	15222	412-391-4100	www.pointpark.edu/
Seton Hill University	Communications and Art	Mary Kay Neff	Program Director / Professor	724-830-1068	neff@setonhill.edu	3451 Walnut Street	Greenburg	19104	215-898-5000	www.asc.upenn.edu
Shippensburg University	Communications/Journalism	Dr. Ted Carlin	Professor/Department Chair	717-477-1517	ejcarl@ship.edu	1871 Old Main Dr	Shippensburg	17257	717-4771517	www.ship.edu
St. Joseph's University	Fine and Performing Arts	Renee Dobson	Associate Professor	610-660-1816	rdobson@sju.edu	5600 City Ave	Philadelphia	19131	610-660-1000	www.sju.edu

Susquehanna University	Communications & Theater Departments	Larry D. Augustine	Department Head/Professor	570-372-4300	augustin@susqu.edu	514 University Avenue	Selings grove	17870	570-374-0101	http://www.susqu.edu
Temple University	Broadcasting, Telecome's & Mass Media	Mathew Lombard	Associate Professor	215-204-7182	lombard@temple.edu	1801 N. Broad Street	Philadelphia	19122	215-204-7000	www.temple.edu/btmm
University of Pennsylvania	Annenberg School for Communications	<u>Michael Delli Carpini</u>	Dean	215-898-7041	<u>Michael Delli Carpini</u>	3451 Walnut Street,	Philadelphia	19104	215-898-5000	www.asc.upenn.edu
University of Scranton	Communications	Rebecca Mikesell	Professor	570-941-6333	mikesellr1@scranton.edu	800 Linden St	Scranton	18510	570-941-7400	http://matrix.scranton.edu
Widener University	Communication Studies	Dwight Dewerth Pallmeyer	Director of Communication Studies	610-499-4632	dwight.dewerth.pallmeyer@widener.edu	One University Place	West Chester	19013	888-WIDENER	www.widener.edu
Wilkes University	Communication Studies	Dr. Mark D. Stine	Associate Professor	570-408-4173	mark.stine@wilkes.edu	169 S Main St	Wilkes-Barre	18766	570-342-5617	http://wilkes.edu
University of the Arts	Multimedia	Peter Rose	Professor	215-717-6554	<u>prose@uarts.edu</u>	320 South Broad Street	Philadelphia	19102	800-616-ARTS	www.uarts.edu