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Forward

The Center of Excellence for Homeland Security at Pierce College is pleased to offer this 2007-2008 Trends Analysis report highlighting the growth in the field of Homeland Security. This report was modeled and similarly designed to the excellent Information Technology Trends Assessment, 2007 – 2008 report recently published by the National Workforce Center for Emerging Technologies and Washington Center for IT Excellence at Bellevue Community College.

This report provides a summary of how events conspired to make the field of Homeland Security one of the fastest growing fields in the US. It examines the complex nature of the threats we face as a nation, and the skills that are required of our workforce in order to meet the challenges of these threats. The unprecedented growth of the field of Homeland Security is not confined to one sector of the economy, but rather transcends all segments of the economy. While our nation faces very serious threats, academic institutions can and are playing a pivotal role in the education and training of the workforce in all sectors of our economy. Opportunities clearly exist for colleges and universities to develop certificate, credit and non-credit education and training programs to meet the threats we face. This report provides information on current and projected employment and job opportunities in the field, and the training and skills necessary to be effective in those jobs.

Beyond the identification of current and projected job opportunities in the field, this report also provides information on those industry disciplines designated by the Office for Domestic Preparedness (now the Office of Grants and Contracts) of the Department of Homeland Security that have training, equipment, organization and exercise requirements in the event of a major catastrophe. These industry disciplines include: Public Works, Public Health, Health Care, Emergency Management Agency, Hazardous Materials Personnel, Government Administrative, Law Enforcement, Fire Service, Emergency Medical Services, Public and Safety Communications. This report provides information on the specific skills related to Homeland Security that need to be integrated into existing curriculum in these areas to prevent, protect against, respond to, and recover from a major catastrophic event.

It is our sincere hope that you will find this information to be both useful and timely as your institution considers expanding or developing programs in the field of Homeland Security. We stand by willingly to assist you in any way that we can and would welcome your feedback or lessons learned from the field.

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Homeland Security Institute – Washington State
Kirkwood Community College, Cedar Rapids, Iowa
The Naval Postgraduate School Center for Homeland Defense & Security (CHDS)
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Executive Summary

The events of September 11, 2001, were the genesis for the tremendous growth of the homeland security industry in the United States. Since the field is so new, there is still some confusion over exactly what constitutes a “homeland security” job, and thus the categorization of jobs is still a work in progress and ongoing. The purpose of this report is to familiarize the reader with the new and emerging field of homeland security and to provide some clarity in terms of what the field is, and what the implications are for educators, business and industry, and government representatives.

This report provides information on the industry in general, and examines trends that will continue to affect the workforce this century. Employment trends in homeland security within Washington State and nationally, are presented and contrasted. Information is also provided on how to identify the skills and tasks of those working in the field of homeland security, and resources are identified on where further information can be obtained. Information is provided on the new and emerging academic programs in homeland security and keys to successfully developing programs.

This report relies heavily on information and research conducted by the American Association of Community Colleges (AACC), Department of Labor, Career Voyages and the Occupational Information Network (O-Net), Department of Education, Department of Homeland Security, and the Washington State Employment Security Department, Labor Market and Economic Analysis Branch.

The Emerging Field of Homeland Security

This section provides an overview of explosive growth of the homeland security industry from September 11, 2001 to the present. It traces the creation of the Department of Homeland Security in November 2002 and chronicles its rise to third largest cabinet level department in the federal government. This section also covers the importance of an “all hazards” response capability, and the corresponding increase of the threat matrix as illustrated in the *15 National Planning Scenarios*.

Presented in this section are the challenges that colleges face. Also, summarized are the opportunities for the development of homeland security programming on their college campuses.

Trends Shaping the Workforce in the 21st Century

This section provides examples of some of the important demographic changes that will have a significant impact on our economy and workforce. The aging population will have a major affect on the labor force, while at the same time creating a tidal wave of individuals eligible for entitlement programs, straining the US economy. The increasing diversity of the workplace with different cultures and learning styles represented, will impact the way learning and training is successfully carried forward.

The proliferation of information technology and its affect on the workplace will continue to grow at an exponential rate. While the use of information technology continues to grow, there is a “digital divide” which refers to the gap between those with regular, effective access to digital and information technology, and those without this access. A

“generational divide” refers to those people who range from 55 to 64 years old, and were 44% more likely to use a computer than those who range in age from 65 to 74. As this population grows older, they will be 2.5 times as likely to use computers as the current 65 to 74 age group.

According to the DOL Strategic Plan for Fiscal Years 2006 - 2011, “*The U.S. is entering a new period of dramatic globalization that will affect all aspects of our economy, our workforce, and our workplaces.*” Globalization in its broadest sense refers to the cultural, physical and economic transfer between nations of the world. This process of globalization includes the exchange of goods and services as well as outsourcing. These changing patterns of investment, trade and technology are having dramatic impact on the day-to-day operation of business around the world.

Economic and Workforce Trends

Economic and Workforce Trends covers the growth in the homeland security industry and summarizes the employment outlook for homeland security jobs both in the State of Washington and the United States as a whole. Thirty-two homeland security occupations are identified, many of them with sub-categories containing many other job possibilities. Specific data is provided on homeland security jobs including, *Projected Need for Employees (2004 – 2014)*, *Projected Growth, 2004 Hourly Wage, and Education and Training*. Comparative data is also provided contrasting homeland security occupations nationally versus the State of Washington.

Homeland Security Employment and Workforce Trends

This section provides information on the many and varied jobs that currently exist in homeland security both in the public and private sectors. In addition, job opportunities in volunteer organizations are discussed. A brief description of the kinds of jobs available in the ten “First Responder” disciplines recognized by DHS is also provided. These jobs, though not solely homeland security jobs, are jobs that nonetheless have training, equipment, organization, and exercise requirements pertaining to Homeland Security.

Identifying Homeland Security Skills and Tasks

Though the homeland security industry is relatively new, information is available concerning the kinds of skills required and the tasks that will be performed in a whole array of homeland security jobs. This section provides considerable detail on the occupation Emergency Management Specialist to illustrate the kinds of information that is available. *Career Voyages* is a collaborative effort between the U.S. Department of Labor and the U.S. Department of Education and provides a considerable amount of information on tasks and skills, as well as additional information on knowledge, abilities, interests, work styles and tools and technology for each occupation.

The *Occupational Information Network (O-Net)* validates the information obtained at *Career Voyages* and takes the information a step further. The categories of information O-Net provides for each occupation include: tasks, knowledge, skills, abilities, work activities, work context, job zone, work styles, and wages and employment trends.

This section also provides information on a Washington State Workforce Training and Education Coordinating Board grant awarded to Pierce College for a *Skill Panel Formation in Homeland Security* project. The centerpiece of the project is a series of focus group workshops designed to identify skills, tasks and competencies required of those in the ten first responder disciplines. The discipline Emergency Management

Agency defined as one of those ten first responder disciplines is reviewed and compared to the results of *Career Voyages* and *O-Net*.

The Role of Education in Protecting the Homeland

Whether they realize it or not, community colleges are already playing a major role in training individuals in homeland security. A 2004 survey conducted by the American Association of Community Colleges (AACC) supported data from an earlier report by the National Center for Education Statistics in 2003, which indicated that close to 80% of the nation's firefighters, police, and emergency medical technicians are trained by community colleges. The same report indicates that 60% of all new nurses in the health care industry are also trained at community colleges.

This section provides information on the types of programs being developed, and identifies website links where repositories of program information can be found. Curriculum development recommendations are also provided.

Appendices

In this section, examples of academic programs in homeland security at Pierce College are provided. In addition, appendices of “common homeland security terms” and acronyms common in homeland security are also provided. A complete list of the Centers of Excellence in Washington State, with website links are included. An overview of the content of this report is included in a slide presentation format.



1. The Emerging Field of Homeland Security

1.1 Homeland Security – An Overview

Prior to the events that occurred on September 11, 2001, few people were familiar with the term “homeland security.” In the aftermath of September 11, “homeland security” has come to mean many things to many people. It’s still a relatively new mission and continues to evolve. The federal government defines homeland security as follows:

Definition

Homeland Security is a concerted national effort to prevent terrorist attacks within the United States, reduce America’s vulnerability to terrorism, and minimize the damage and recover from attacks that do occur.¹

The Creation of the Department of Homeland Security (DHS)

On September 20, 2001, in response to the September 11, 2001 attacks, President George W. Bush announced the establishment of an *Office of Homeland Security (OHS)* to coordinate “homeland security” efforts, to be headed by Governor Tom Ridge with the title of *Assistant to the President for Homeland Security*. The department was officially established on 25 November, 2002 by the Homeland Security Act of 2002.

While the Department of Defense is responsible for military actions abroad, DHS is charged with protecting the United States within, at, and outside its borders. Its primary responsibilities include: to prepare for, prevent, and respond to domestic emergencies and particularly terrorist events. The growth of DHS has been nothing short of phenomenal. With approximately 192,809 employees (projected for 2008), DHS *third largest cabinet level department* in the U.S. federal government after the Department of Defense and Department of Veterans Affairs.²

National Planning Scenarios Developed

On March 19, 2002, the Homeland Security Advisory Council was established by Executive Order. To prepare for possible terrorist threats, this council, in partnership with DHS, local, state and tribal officials developed fifteen scenarios for use in local, state, federal and tribal homeland security preparedness activities. In developing these scenarios, it was recognized that an “all hazards” approach should be used. An “all hazards” approach refers to preparing not only terrorist related events, but also possible natural disasters and other emergencies that would require a large, coordinated response.

During the Cold War which began after World War II and lasted until the breakup of the former Soviet Union, preparing for the “unthinkable” meant preparing for the likelihood of

a nuclear attack from the former Soviet Union. Though there were certainly other potential threats, a nuclear strike was the most serious. As a result of 9/11, our definition of “unthinkable” has been expanded to include a whole assortment of possible threats. These threats now come not from a conventional enemy, but one who uses asymmetrical or non-conventional tactics. Add to these threats the need to be better prepared for a natural disaster or other emergencies, and the threat matrix is even further widened. The fifteen National Planning Scenarios include:

- Scenario 1: Nuclear Detonation – 10-Kiloton Improvised Nuclear Device
- Scenario 2: Biological Attack – Aerosol Anthrax
- Scenario 3: Biological Disease Outbreak – Pandemic Influenza
- Scenario 4: Biological Attack – Plague
- Scenario 5: Chemical Attack – Blister Agent
- Scenario 6: Chemical Attack – Toxic Industrial Chemicals
- Scenario 7: Chemical Attack – Nerve Agent
- Scenario 8: Chemical Attack – Chlorine Tank Explosion
- Scenario 9: Natural Disaster – Major Earthquake
- Scenario 10: Natural Disaster – Major Hurricane
- Scenario 11: Radiological Attack – Radiological Dispersal Devices
- Scenario 12: Explosives Attack – Bombing Using Improvised Explosive Device
- Scenario 13: Biological Attack – Food Contamination
- Scenario 14: Biological Attack – Foreign Animal Disease (Foot and Mouth Disease)
- Scenario 15: Cyber Attack

These scenarios were designed to provide a fundamental structure for the development of national preparedness standards from which homeland security capabilities could be measured. These scenarios reflect a serious and comprehensive effort by federal, state, tribal and local homeland security experts. However, it is recognized that regular review and possible revision over time will be necessary to ensure the scenarios remain accurate, represent the evolving all-hazards threat picture, and embody the capabilities necessary to respond to domestic incidents.

Homeland Security Presidential Directive/HSPD-8³

On December 17, 2003, Homeland Security Presidential Directive (HSPD) 8 created a framework to establish policies to strengthen the preparedness of the United States. It was created to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies by creating a national domestic all-hazards preparedness goal. It established mechanisms for improved delivery of federal preparedness assistance to state, tribal and local governments, and outlines actions to strengthen preparedness capabilities.

To support the achievement of the national preparedness goal outline above, the Department of Homeland Security’s Office of State and Local Government Coordination and Preparedness (DHS/SLGCP) established a Universal Task List (UTL).

Definition

Universal Task List (UTL): The UTL are tasks required to prevent, protect against, respond to, and recover from major events.

The UTL serves as the basis for defining target capabilities required by the goal. The UTL defines what tasks need to be performed by Federal, State, local and tribal jurisdictions and private sector to prevent, protect against, respond to, and recover from events defined in the National Planning Scenarios. The UTL identifies approximately 1,600 unique tasks.⁴ The UTL is the basis for defining the capabilities found in the Target Capabilities List (TCL).

Definition

Target Capabilities List (TCL): The TCL are needed to perform the full range of tasks required to prevent, protect against, respond to, and recover from incidents of national significance.

The UTL and TCL provide officials at all levels with a framework for assessing their overall level of preparedness, while targeting resources to address their greatest needs. The TCL was developed following an analysis of *critical tasks* in the UTL.

Definition

Critical Tasks: Critical tasks are defined as those that must be performed during a major event to prevent occurrence, reduce loss of life or serious injuries, mitigate significant property damage, or are essential to the success of a homeland security mission.

Approximately 200 tasks found in version 2.1 of the UTL have been identified as critical. Version 1.1 of the TCL identifies 36 target capabilities.

The best way to illustrate the inter-relationship between the National Planning Scenarios, Universal Task List and the Targeted Capabilities are as follows:

Table 1.1: Inter-relationship between the National Planning Scenarios, Universal Task List and Targeted Capabilities

Scenarios	→	Tasks	→	Capabilities
The National Planning Scenarios highlight the scope, magnitude, and complexity of plausible catastrophic terrorist attacks, major disasters, and other emergencies.	→	The Universal Task List (UTL) provides a menu of tasks from all sources that may be performed in major events such as those illustrated by the National Planning Scenarios.	→	The Target Capabilities List (TCL) provides guidance on specific capabilities that Federal, State, local and tribal entities will be expected to develop and maintain.
- 15 Scenarios Chemical, Biological, Radiological, Nuclear,		- Prevention - Protection - Response - Recovery		- 36 Capability Summaries - Includes Capability Description, Outcome,

Explosive, Food and Agricultural, and Cyber Terrorism. Natural Disasters Pandemic Flu	→		→ Relationship to the National Response Plan ESF/Annex, Groups of Tasks Performed with the Capability, Associated Critical Tasks, Performance Measures and Objectives, Capability Elements, Linked Capabilities, References - Tailored to Geographic Regions, Performance Measures and Objectives, and Capability Classes.
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Source: The Department of Homeland Security

Clearly, the consequences of a significant terrorist attack (like 9/11) or a major natural disaster (like Hurricanes Katrina and Rita, or an earthquake or volcanic eruption in the Pacific Northwest) would be devastating. A similar or more severe attack or disaster could result in mass fatalities, and the degradation of critical infrastructure. Any event or disaster of this magnitude would have a serious economic impact that would certainly have national and perhaps even international implications. Depending on the event, there is also the possibility of irreparable damage to the environment.

To deal with these new and chilling realities, the Department of Homeland Security has grown exponentially. In addition to hiring new employees to perform the growing list of tasks and responsibilities within the department, whole agencies, once separate entities, have been included and are now represented on the department’s organizational chart. Consequently, it’s no surprise that a department that didn’t exist seven years ago is now a cabinet level department.

It’s no coincidence that job opportunities related to homeland security have also grown in the private sector. Critical infrastructure protection, business continuity, company security, and cyber security are just a few of the areas of significant job growth in the private sector. There is hardly a business or industry in the U.S. that is not impacted to some extent by homeland security.

Lastly, it’s also important to mention that there are many other jobs that although not considered as homeland security jobs, are nonetheless impacted by it and thus require certain homeland security-related skill sets to perform their positions. The Department of Homeland Security’s Office of Grants and Training (formerly the Office for Domestic Preparedness) led the effort to identify training requirements and skills needed to work effectively in the ten disciplines recognized by the department as having training, equipment, organization, and exercise requirements. These disciplines include:

- Public Works
- Public Health
- Health Care
- Emergency Management Agency
- Hazardous Materials Personnel
- Government Administrative

- Law Enforcement
- Fire Service
- Emergency Medical Services
- Public Safety Communications

1.2 The Challenge for Education

As a result of unprecedented growth, Homeland Security has generated many new and emerging job opportunities. In 2003, President Bush unveiled “The President’s High Growth Job Training Initiative.” To put this approach into action, this new initiative identified 14 sectors that fit within the following criteria: (1) they are projected to add substantial numbers of new jobs to the economy or affect the growth of other industries; or (2) they are existing or emerging businesses being transformed by technology and innovation requiring new skills sets for workers. Homeland Security was identified as one of the 14 high demand sectors.⁵ This new initiative signaled an added emphasis on the industry and resulted in an explosion of various academic programs nationally.

New academic programs are being developed nationally at an astounding rate. Some of these new offerings are credit programs (associates, bachelors, masters, and doctoral). Other offerings include certificate programs and a variety of non-credit programs. These programs vary in content and scope. Other colleges are being creative and applying for grants from federal agencies that have increased budgets for homeland security projects. One such college, Kirkwood Community College in Cedar Rapids, Iowa, is especially creative. In 2000, through a grant from the Centers for Disease Control and Prevention, they founded the National Mass Fatalities Institute. Its mission is to prepare communities for the effective management of mass fatalities events. In 2004, the U.S. Department of Homeland Security awarded a major grant to Kirkwood to found the Ag-Terror Preparedness Center. The center, the only one of its kind in the United States, was tasked to create a Foreign Animal Disease Response training course for emergency responders. In 2006, Kirkwood was awarded a similar grant from the Department of Homeland Security to implement a similar training program for Avian Influenza response. This is just one example of how colleges are carving a niche in the increasingly competitive field of homeland security.

What are the major challenges for academic institutions wanting to develop homeland security programs? Some of the challenges facing academia include:

- Homeland security is a moving target and the educational needs of those in the field depend on the threat matrix and realities at the present. Consequently, being able to adapt quickly to revise curriculum will be an ongoing challenge. Along the same lines, identifying qualified faculty with expertise in homeland security will also be a challenge.
- Determining who your target market is. This should be decided by conducting a labor market assessment of potential customers to determine their precise needs. Should the program be credit or no-credit? There is nothing with more potential problems, than developing a program that is not market based and market driven.
- Recognizing the technology capabilities of students and the potential digital divide that exists between generations of students. Will your program be only in

the classroom or through various technology means? Or, will it be a combination? Will it also include the use of some of the emerging technologies like podcasts, blogs, and wikis? Knowing the technology capabilities of your students before the program is created is essential.

- Recognizing the changing demographics of students and the pedagogic needs of particular groups of students. This is an ongoing challenge for educators as they address the learning styles of an ever-diversifying student population. Focus must be placed on teaching critical thinking skills so that the student can appropriately apply what they have learned on the job.
- Besides the many challenges associated with developing new and emerging homeland security curriculum, how will educators ensure that homeland security-related skills are infused into existing curriculum in those industry clusters with homeland security responsibilities? For example, the ten disciplines listed in Section 5 of this report, all have specific homeland security-related tasks to perform, and thus have a need to be proficient in new skills. Within each of those clusters there are numerous occupational areas, in which many of the graduates at our colleges are being trained. Are these new students being trained in these new and emerging homeland security-related skills?

These are just some of the major challenges that face academic institutions interested in offering education and training programs in homeland security. Though there are challenges, there are also opportunities for colleges and universities. No doubt the field of homeland security will continue to grow at a tremendous rate. Consequently, many opportunities exist to develop education and training programs that meet the needs of those in the field. Homeland security needs a solid educational foundation that will not only train those currently in the field, but will also provide a professional development system, and new programs that will provide a new cadre of leaders required to meet the demands of the 21st century.

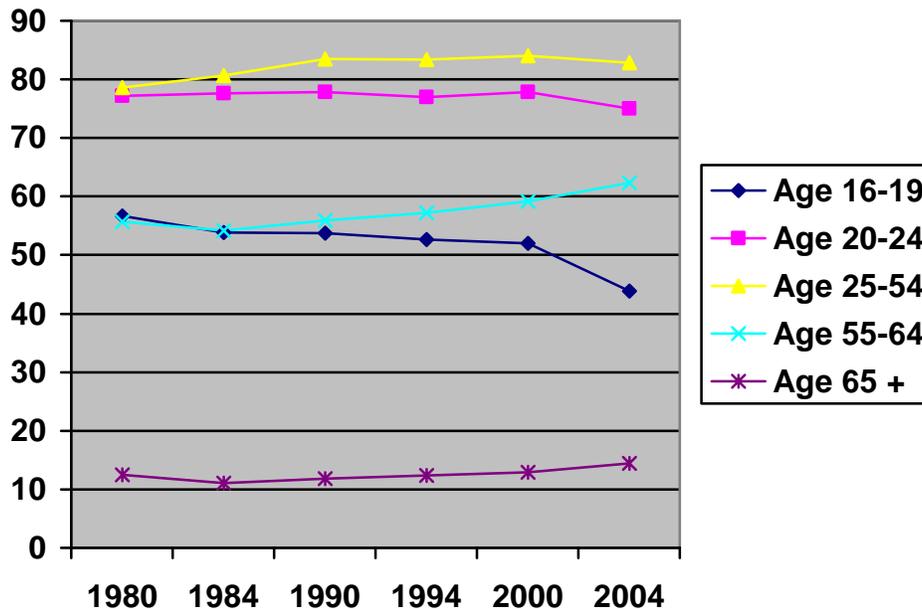
2. Trends Shaping the Workforce in the 21st Century

2.1 Shifting Demographic Patterns

Three major trends will tend to form what the future will hold for workers in the 21st Century; shifting demographic patterns, acceleration of technological change, and continued economic globalization.⁶ If present demographic trends persist, the proportion of older people in the United States is expected to increase significantly. At present, there is lively debate concerning the labor force implications of such an "older" population. It is believed that the "aging" of the pool of workers will have extensive societal and economic implications, leading some analysts to suggest that when coupled with the projected decline in people ages 16 to 24 in the population, there will be an increased demand for, and need to retain older workers.⁷ The reason why there is a projected decline in the 16 to 24 year old in the workforce is due to smaller numbers of workers coupled with an increased enrollment in higher education prior to entering the workforce.

Changing historical rates for labor force participation of selected age groups between 1980 and 2004 is shown below.⁸ Individuals ages 55 and above tended to participate at increasing rates, while younger populations participated less. The largest decrease is among 16 to 19 year olds, while the largest increase is in the 55 to 64 year age bracket.

Figure 2.1 Changing Labor Force Participation Rates



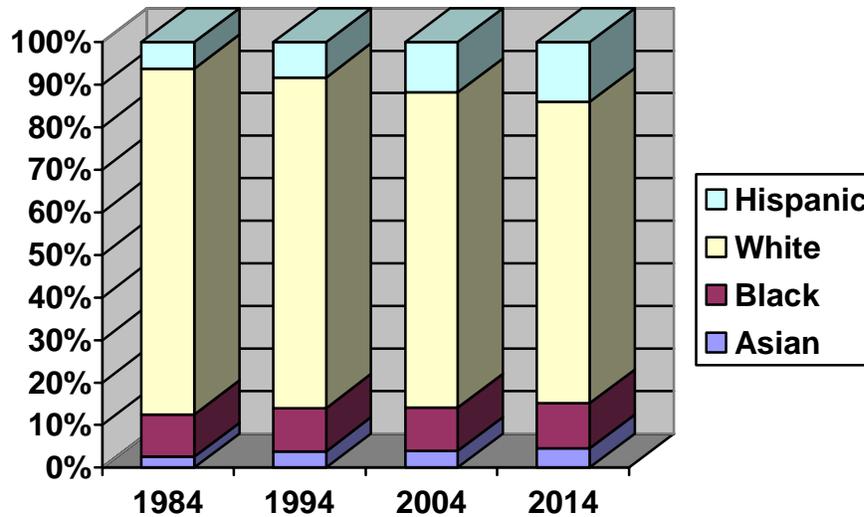
Source: **Employment outlook: 2004–14 Labor force projections to 2014: retiring boomers;** Monthly Labor Review, November 2005.

Highlight

One of the major implications of the aging population on the US economy is the coming tsunami of entitlement spending. The challenge posed by long-term entitlement spending on programs like Medicare, Medicaid, and Social Security is daunting. Between now and 2050, Social Security, Medicare, and Medicaid costs are projected to surge from 8.7 percent to 19.0 percent of Gross Domestic Product.⁹

The labor force in the USA is expected to diversify significantly over the next decade. This diversification will have long-reaching ramifications when training considerations are addressed. Culture and learning are connected in important ways. Life experiences, family background, and socioeconomic levels affect the processes of a student's learning. Well-accepted theories and extensive research has illustrated and documented learning differences based on cultural background. Individuals from different backgrounds bring their own unique approach, talents and interests to the learning situation. Consequently, as the diversity in the US continues, culture and learning styles will continue to have a major impact on education and training.

Figure 2.2 Percent Distribution of Workforce by Race



Source: **Employment Outlook: 2004–14 Labor force projections to 2014: retiring boomers; Monthly Labor Review, November 2005.**

Population is the single most important factor in determining the size and composition of the labor force—that is, people who are either working or looking for work. The civilian labor force is projected to increase by 14.7 million, or 10 percent, to 162.1 million between the years 2004-14. The U.S. workforce will become more diverse by 2014. White, non-Hispanic persons will continue to make up the largest but decreasing share of the labor force, falling from 70 percent in 2004 to 65.6 percent in 2014. “The numbers of men and women in the labor force will grow, but the number of women will grow at a faster rate than the number of men.”

While these demographic changes are clearly affecting the workplace, the following table compares and contrasts the current community college population in the US versus the general population. The most significant difference between community college enrollment and the general population is the percentage of women versus men enrolled in college.

Table 2.1: Community College Demographics versus the General Population¹⁰

Community College Enrollees		The General Population*	
Women	59%	Women	51.0%
Men	41%	Men	49.0%
Caucasian	66%	Caucasian	74.7%
African American	13%	African American	12.8%
Hispanic	14%	Hispanic	14.5%
Asian/Pacific Islander	6%	Asian/Pacific Islander	4.4%
Native American	1%	Native American	.8%

Source: American Association of Community Colleges and U.S. Census Bureau

*NOTE: Percentages do not add up to 100% due to rounding and because Hispanics may be of any race and are therefore counted under more than one category.

2.2 Technology and the Digital Divide

The growth of information technology and its affect on the workplace has been dramatic, and the pace of technological change will certainly increase in the foreseeable future. Economists believe that this trend will have a “favorable effect” on both competition and innovation in the United States.¹¹

While the use of information technology continues to grow, there is a “digital divide” which refers to the gap between those with regular, effective access to digital and information technology and those without this access. It encompasses both physical access to technology hardware and, more broadly, skills and resources which allow for its use. Groups often discussed in the context of a digital divide include socioeconomic (rich/poor), racial (white/minority), or geographical (urban/rural). The term global digital divide refers to differences in technology access between countries.¹²

In a research report commissioned by Microsoft Corporation in 2004, it was reported that people who range from 55 to 64 years old were 44% more likely to use a computer than those who range in age from 65 to 74. While some of this may be explained by retirement, most of it is driven by a “generational divide” in computer use. People who range from 55 to 64 years old today currently use computers in the workplace at a higher rate than people in their 60s and 70s did at earlier ages. As current 55 to 64-year-olds mature into their 60s and 70s, they will continue to use computers. Therefore, in ten years, there will be 2.5 times as many adults who range from 65 to 74 years old using computers as there are today, thus eliminating this generational divide.¹³

2.3 Economic Globalization

Economic Globalization Impact:

The U.S. is entering a new period of dramatic globalization that will affect all aspects of our economy, our workforce, and our workplaces.

Source: DOL Strategic Plan for Fiscal Years 2006 -2011

Globalization, in its broadest sense refers to the cultural, physical and economic transfer between nations of the world. This process of globalization includes the exchange of goods and services as well as outsourcing. These changing patterns of investment, trade and technology are having dramatic impact on the day-to-day operation of business around the world. The result can be both negative and positive, and is dependent on the industry in question.¹⁴ Innovative approaches will be necessary in order to meet the challenge of broad changes facing America in the decades to come. The workforce will be smaller, more diverse and more susceptible to the effects of global competition. Coupled with the impact of changing demographics and advances in technology, it appears that major changes are in store for American employees and industries in the 21st Century.

These trends have important repercussions to the future work force and for the U.S. economy.¹⁵ The American workers should prepare for global outsourcing to continue having impacts on areas of the economy that have been insulated from the effects of international competition. To increase their ability to compete, more companies will be moving to countries that have lower labor costs and relaxed regulatory controls. "Globalization also tends to privilege large companies who can capture new markets quickly and easily to the disadvantage of small entrepreneurs who face difficulties gaining knowledge of – much less access to – emerging markets."¹⁶

3. Economic and Workforce Trends

Homeland Security Industry Facts

Marketplace forecasts for the global homeland security industry anticipate business will grow from approximately \$40 billion in 2004, to nearly \$180 billion by 2015.

Source: (Homeland Security Research Corporation estimate)

3.1 Highlights

What impact will Homeland Security have on the economy?

Homeland Security is one of the fast growing industries in the United States and the impact on the workforce has been sudden and dramatic. Over the last six years, new jobs have emerged, and many other existing jobs have been altered to reflect new homeland security responsibilities.

The impact of homeland security on the economy is less well understood. Since 2001, spending on homeland security has increased steadily. The U.S. Department of Homeland Security (DHS) recently announced an eight percent budget increase in the Fiscal Year 2008 Budget Request.¹⁷ And DHS isn't the only federal agency with a budget for homeland security issues. In FY 2006, DHS along with Health and Human Services, Justice and Energy accounted for 90 percent of the federal spending on homeland security. During the same time, private sector funding on homeland security has also increased. However, even combining both private and public sector funding, it

still represents a relatively small percent of the U.S. Gross Domestic Product. Given this rather modest increase in percentage terms, coupled with a good economic performance of the US since 2001, makes the broader economic impact of homeland security spending not as significant as one might expect. However, a major concern of economists is that large-scale spending on homeland security could hold back economic growth by diverting labor and capital from more productive uses which could have a negative effect on the economy.¹⁸

How fast and for how long homeland security spending will continue to increase, is hard to forecast, because it could largely depend on future incidences of terrorist activity. Even with no terrorist attack in the short term, the homeland security industry is expected to continue growing for the next decade. Any future attack, especially if it involved a Weapon of Mass Destruction (WMD), would undoubtedly have long lasting and far reaching implications for our workforce and the economy. And, because our economy is so interconnected globally, even a terrorist attack on foreign soil could have significant consequences for our economy here in the United States.

3.2 U.S. Industry and Employment Outlook

The ability of our nation's workers to compete in this new, fast paced global marketplace is "dependent on a highly skilled, adaptive workforce and on workplaces that provide for needed flexibility."¹⁹ "Total employment is expected to increase from 145.6 million in 2004 to 164.5 million in 2014, or by 13 percent. The 18.9 million jobs that will be added by 2014 will not be evenly distributed across major industrial and occupational groups. Changes in consumer demand, technology, and many other factors will contribute to the continually changing employment structure in the U.S. economy."²⁰

Service-providing industries will continue to reflect the long-term shift in the US economy from one which provides goods and products to one which offers services. "Service-providing industries are expected to account for approximately 18.7 million of the 18.9 million new wage and salary jobs generated" in the coming decade.²¹ Occupations generally fall into either service producing or goods producing industries; in the US, the latter "has been relatively stagnant since the early 1980s."²²

Defining Homeland Security-Related Employment

What is a homeland security-related job? As stated in Section 1.1, the term "homeland security" has come to mean many things to many people. Since homeland security is a relatively new and emerging occupational category, even economists are grappling with defining exactly what constitutes "homeland security" related jobs. The following definition from the article, "*Careers in Homeland Security*," is an accurate description of what the work entails.

Definition

Homeland Security Work

People who work in homeland security anticipate, prepare for, prevent, and react to everything from pandemics to hurricanes to terrorism. These workers help to reduce our Nation's vulnerabilities and to minimize the damage from catastrophic events.²³

As the definition implies, homeland security is much more than combating possible terrorist attacks, it includes a broader “all hazards” approach. The movement to the “all hazards” approach has been gradual. For example, Homeland Security Presidential Directive 8 indicated an all-hazards approach to national preparedness, but with a special emphasis on terrorism. In fact, of the fifteen National Planning Scenarios the overwhelming emphasis has been on terrorism, with only three of the fifteen scenarios related to natural disasters (# 3 Biological Disease Outbreak: Pandemic Influenza, #9. Natural Disaster: Major Earthquake, and #10. Natural Disaster: Major Hurricane). Still, the all-hazards approach is garnering more and more support and seems to be the most logical approach. In using an all-hazards approach, our Nation’s first responders and local and state officials, will be better prepared to respond to either a terrorist attack or natural disaster because they will have had more practice on equipment, and experience through training. This approach is also much more cost effective and provides a consistent model for all catastrophic events.

Harvesting and Understanding the Statistical Data

When sifting through all of the information and statistical data available, it can be rather confusing to find solid information, and even more confusing to understand it. *Career Voyages* is a collaborative effort between the U.S. Department of Labor and the U.S. Department of Education and in their list of “In-Demand Occupations” Homeland Security is identified as a high growth industry.

<http://www.careervoyages.gov/homelandsecurity-main.cfm>. When you “click on” the “In Demand Occupation” this site has a list of *thirty-two occupations*. At first glance, one might look at this list and think, “Why are these occupations considered as homeland security-related? The answer to that question is that these occupations (i.e., Police and Sheriff’s Patrol Officers, Fire Fighters, Emergency Medical Technicians and Paramedics, etc.) will probably be the first on the scene of any major catastrophe, and as such, have responsibilities as “first responders.” The numerous computer technology-related occupations speak to the importance of cyber security, while the scientific occupations (i.e., Physicists, Chemists, Biological Technicians, Nuclear Technicians, Biochemists and Biophysicists) speak to the importance of being prepared for an unconventional attack.

Homeland Security-Related Occupations and Their Projected 10-Year Growth Nationally²⁴

Table 3.1 – Homeland Security-Related Occupations

Occupational Title	Projected Need for Employees 2004-2014	Projected Growth	2004 Hourly Wages			Education and Training		
			Bottom 10%	Median	Top 15%	High School or Less	Some College	College Degree or Higher
Computer Software Engineers, Applications	268,000	36%+	\$23	\$37	\$55	4%	13%	83%
Network	153,000	36%+	\$18	\$29	\$46	9%	31%	60%

Systems and Data Communications Analysts								
Network and Computer Systems Administrators	138,000	36%+	\$18	\$28	\$44	14%	35%	51%
Database Administrators	51,000	36%+	\$17	\$30	\$47	9%	19%	72%
Computer Systems Analysts	280,000	21-35%	\$21	\$32	\$48	9%	25%	66%
Fire Fighters	150,000	21-35%	\$10	\$19	\$30	22%	58%	20%
Emergency Medical Technicians and Paramedics	74,000	21-35%	\$8	\$12	\$12	18%	65%	17%
Medical Scientists Except Epidemiologists	37,000	21-35%	\$16	\$29	\$54	1%	1%	98%
First-Line Supervisors / Managers of Fire Fighting and Prevention Workers	35,000	21-35%	\$18	\$29	\$44	14%	61%	25%
Biochemists and Biophysicists	8,000	21-35%	\$18	\$33	\$54	1%	3%	96%
Ambulance Drivers, Attendants, Except EMT's	8,000	21-35%	\$6	\$9	\$14	44%	45%	11%
Emergency Management Specialists	5,000	21-35%	\$12	\$22	\$39	20%	38%	42%
Epidemiologists	2,000	21-35%	\$16	\$25	\$40	1%	1%	98%

Source: Career Voyages, careervoyages.gov

Table 3.1 – Homeland Security-Related Occupations, Continued

Occupational Title	Projected Need for Employees 2004-2014	Projected Growth	2004 Hourly Wages			Education and Training		
			Bottom 10%	Median	Top 15%	High School or Less	Some College	College Degree or Higher
Security Guards	349,000	10-20%	\$7	\$10	\$16	51%	36%	12%
Police and Sheriff's Patrol Officers	265,000	10-20%	\$13	\$22	\$33	20%	50%	30%
First-Line Supervisors / Managers of	48,000	10-20%	\$18	\$31	\$47	17%	53%	30%

Police & Detectives								
Detectives and Criminal Investigators	39,000	10-20%	\$14	\$23	\$35	12%	35%	53%
Police, Fire and Ambulance Dispatchers	36,000	10-20%	\$9	\$14	\$22	45%	44%	11%
Surveying and Mapping Technicians	30,000	10-20%	\$9	\$15	\$25	46%	43%	11%
Surveyors	28,000	10-20%	\$12	\$21	\$35	6%	12%	82%
Environmental Scientists and Specialists, Including Health	26,000	10-20%	\$15	\$25	\$42	3%	4%	93%
Biological Technicians	22,000	10-20%	\$11	\$17	\$26	32%	9%	59%
Microbiologists	7,000	10-20%	\$16	\$27	\$49	1%	3%	96%
Cartographers and Photogrammetrists	5,000	10-20%	\$14	\$22	\$37	6%	12%	82%
Nuclear Technicians	3,000	10-20%	\$14	\$29	\$42	26%	34%	40%
Computer Programmers	117,000	0-9%	\$18	\$30	\$49	6%	22%	72%
Chemists	33,000	0-9%	\$16	\$27	\$48	3%	3%	94%
Chemical Technicians	18,000	0-9%	\$11	\$19	\$28	30%	43%	27%
Operation Research Analysts	17,000	0-9%	\$18	\$30	\$48	8%	27%	65%
Physicists	6,000	0-9%	\$24	\$43	\$66	3%	5%	92%
Statisticians	6,000	0-9%	\$17	\$30	\$50	7%	4%	89%
Transit and Railroad Police	1,000	0-9%	\$15	\$24	\$35	20%	50%	30%

Source: Career Voyages, careervoyages.gov

A logical question that might arise is, “Where are the Border Patrol Agents?” At the present time, the way Border Patrol Agents are classified, is with a Standard Occupational Code of 33-3051, and are listed underneath Police and Sheriff’s Patrol Officers. This may not seem like a logical place to find Border Patrol Agents, but points out the need to “drill down” within categories to find information about a specific occupation.

Another occupation that one might intuitively think would be homeland security-related that is absent from this analysis, is interpreters and translators. The job market for this occupation is projected to increase faster than average. In the Job Outlook section of the DOL Bureau of Labor Statistics on the occupation, is stated the following:

“...current events and changing political environments, often difficult to foresee, will increase the need for persons who can work with other languages. For example, homeland security needs are expected to drive increasing demand for interpreters and translators of Middle Eastern and North African languages, primarily in Federal Government agencies.”²⁵

What these last two examples point out is the imprecise nature of the information and data. Though homeland security-related employment information is much better organized than it was just a few years ago, one must take into account that the category of Homeland Security is still in its infancy, and the way information is presented will no doubt continue evolving over time.

3.3 Washington State Industry and Employment Outlook

The Washington State unemployment rate fell to 4.6 percent in March 2007, which tied a record low (last seen in November 1999). This was the second straight month in which the state unemployment rate fell after holding in a tight 5-5.1 percent range through most of 2006. Between 2004 and 2014, Washington State is expected to have a total of 1,267,870 job openings.

In 2006 Washington state employment growth was good. On the whole, Washington employment growth surpassed the nation. Thanks to the aerospace industry, manufacturing employment is growing locally, though it is not growing nationally. Over the past year, the state's employment situation showed relatively healthy growth. While many industry sectors posted healthy job gains, increases were not uniform across industries. In Washington, payroll growth was significantly stronger in the goods-producing sector than in the services-providing sector. This is in sharp contrast to the nation, where job growth continues to accelerate in the service sector at the cost of the goods sector. Yearly employment growth was generally stronger in the goods-producing employment which increased 7.0 percent in October 2006 over the previous year – which was already strong with a 5.6 percent hike.

The largest number of jobs (18,500) was added in the professional and business services industry, but with a 5.8 percent year-over-year gain, this was not the fastest growing sector. Information services payrolls grew by 8.2 percent despite the fact that telecommunications payrolls declined 0.4 percent from a year ago. The software industry posted a 12.5 percent gain in payrolls between October 2005 and October 2006.²⁶

Structurally Influenced Industries

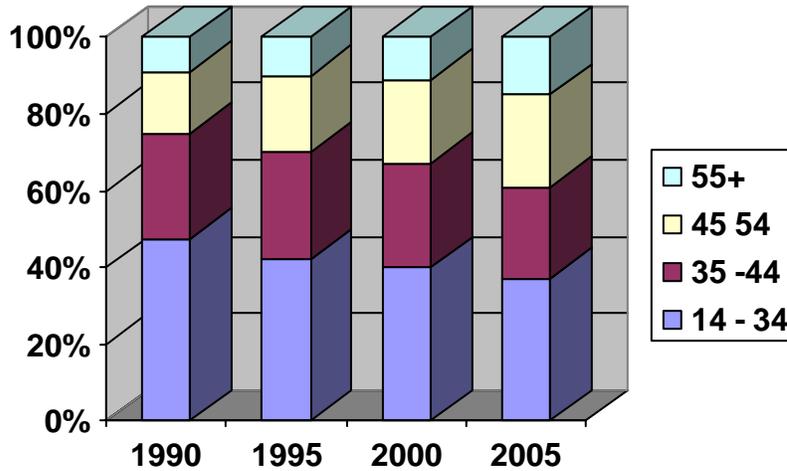
Structurally influenced industries are those that experience strong employment fluctuations due to structural changes in the economy or the industry itself. The forces which typically drive structural changes are technology, government policy (increased environmental regulations or higher priority), altered trade pattern (lower wages in China), or even shifting consumer tastes. "Classic examples of structural industries are the declining employment in timber and wired telecommunications, as well as the increasing employment seen in wireless telecommunications and software publishing." Protective Services and Homeland Security is being significantly influence by this effect.²⁷

Demographic Changes Affect Washington State

As indicated in Section 2 *Trends Shaping the Workforce in the 21st Century* of this report, the demographics affecting the workforce nationally, will also affect the State of Washington in a similar fashion. Figure 3.1 illustrates the anticipated changing age structure of Washington State. As is projected nationally, changing historical rates for

labor force participation of selected age groups will also have societal and economic implications for the State of Washington, suggesting that when coupled with the projected decline in people ages 16 to 24 in the population, there will be an increased demand for, and need to retain older workers.

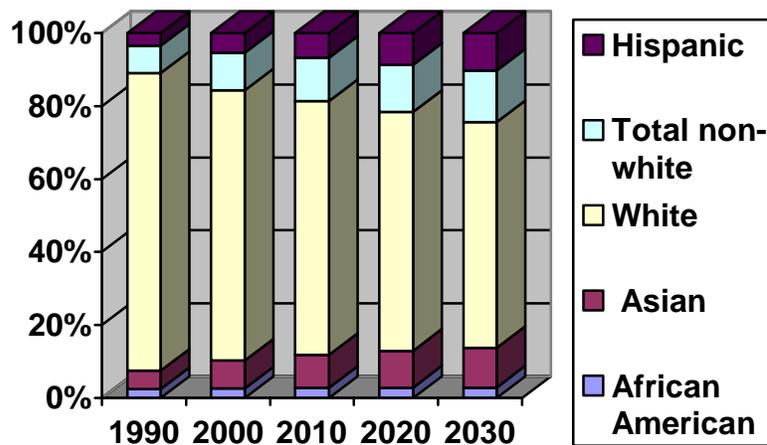
Figure 3.1: Changing Age Structure of Washington's Workforce



Source: Washington State Labor Market and Economic Report, 2006

Figure 3.2 depicts changes in the composition of the workforce by race. The increasing diversity of the workforce with different cultures and learning styles represented, will impact the way learning and training is successfully carried forward.

Figure 3.2: Washington Labor Force Composition by Race



Source: Washington State Labor Market and Economic Report, 2006

Homeland Security Growth in Washington State versus the US

As indicated in Section 2.2, there are currently thirty-two occupations/clusters that presently make up the homeland security industry according to economists. It is worth noting that the data that follows provides different numbers than the data in Section 2.2. This is because the following data includes estimates of turnover that result from people who leave the occupation (e.g. quit, retire, death), and new jobs that are created. The SOC code listed beside the occupational title is the Standard Occupational Classification code.

State and National Employment Trends in Homeland Security 2004 - 2014²⁸

Occupation and SOC: Security Guard: 33-9032.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	1,016,400	1,144,000	127,600	34,880	\$9.98
Washington	15,300	18,970	3,670	740	\$11.17

Occupation and SOC: Computer Software Engineers, Applications: 15-1031.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	459,800	682,200	222,400	26,790	\$37.06
Washington	21,270	28,610	7,340	980	\$38.28

Occupation and SOC: Police and Sheriff's Patrol Officers: 33-3051.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	638,800	738,000	99,200	26,450	\$22.25
Washington	8,550	9,500	950	330	\$27.81

Occupation and SOC: Computer Systems Analysts:15-1051.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	486,500	639,500	153,000	20,800	\$32.84
Washington	15,750	18,260	2,510	440	\$33.10

Occupation and SOC: Network Systems and Data Communications Analysts: 15-1081.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	231,300	357,500	126,200	15,340	\$29.69
Washington	6,750	8,220	1,470	240	\$32.45

Occupation and SOC: Fire Fighters: 33-2011.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	282,100	350,700	68,600	15,040	\$18.80
Washington	4,670	5,200	530	190	\$24.71

Occupation and SOC: Network and Computer Systems Administrators: 15-1071.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	278,400	385,200	106,800	13,770	\$28.81
Washington	9,420	11,290	1,870	300	\$30.45

Occupation and SOC: Computer Programmers: 15-1021.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	455,300	464,300	9,000	11,650	\$30.49
Washington	12,440	16,620	4,180	760	\$38.42

Occupation and SOC: Emergency Medical Technicians and Paramedics: 29-2041.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	191,500	243,700	52,200	7,420	\$12.54
Washington	2,930	3,550	620	100	\$16.29

Occupation and SOC: Database Administrators: 15-1061.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	104,400	144,300	39,900	5,070	\$30.41
Washington	2,340	2,840	500	80	\$34.72

Occupation and SOC: First-Line Supervisors/Managers of Police and Detectives: 33-1012.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	99,900	115,400	15,500	4,850	\$31.52
Washington	1,850	2,050	200	80	\$33.86

Occupation and SOC: Detectives and Criminal Investigators: 33-3021.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	91,000	105,800	14,800	3,930	\$26.82
Washington	1,120	1,190	70	40	\$31.41

Occupation and SOC: Medical Scientists, Except Epidemiologists: 19-1042.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	72,500	97,200	24,700	3,750	\$29.68
Washington	3,740	4,690	950	170	\$29.48

Occupation and SOC: Police, Fire, and Ambulance Dispatchers: 43-5031.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	95,400	110,600	15,200	3,570	\$14.45
Washington	1,310	1,500	190	50	\$20.01

Occupation and SOC: First-Line Supervisors/Managers of Fire Fighting and Prevention Workers: 33-1021.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	55,900	67,700	11,800	3,480	\$29.25
Washington	1,460	1,630	170	80	\$34.97

Occupation and SOC: Chemists: 19-2031.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	82,100	88,100	6,000	3,280	\$27.83
Washington	1,570	1,990	420	100	\$29.84

Occupation and SOC: Surveying and Mapping Technicians: 17-3031.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	65,000	71,200	6,200	2,990	\$15.04
Washington	1,670	2,140	470	120	\$18.51

Occupation and SOC: Surveyors: 17-1022.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	56,000	64,900	8,900	2,810	\$22.05
Washington	1,010	1,290	280	70	\$27.05

Occupation and SOC: Environmental Scientists and Specialists, Including Health: 19-2041.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	73,400	85,900	12,500	2,560	\$25.30
Washington	3,580	4,360	780	150	\$27.53

Occupation and SOC: Biological Technicians: 19-4021.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	64,400	75,500	11,100	2,200	\$16.47
Washington	4,120	4,950	830	160	\$16.72

Occupation and SOC: Chemical Technicians: 19-4031.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	62,300	65,100	2,800	1,830	\$18.51
Washington	1,050	1,270	220	50	\$23.80

Occupation and SOC: Operations Research Analysts: 15-2031.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	57,500	62,300	4,800	1,740	\$29.90
Washington	640	770	130	30	\$31.73

Occupation and SOC: Biochemists and Biophysicists: 19-1021.00					
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Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	16,100	19,500	3,400	840	\$34.14
Washington	540	680	140	30	\$24.04

Occupation and SOC: Ambulance Drivers and Attendants, Except Emergency Medical Technicians: 53-3011.00

Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	20,500	26,200	5,700	780	\$9.03
Washington	470	580	110	20	\$10.80

Occupation and SOC: Microbiologists: 19-1022.00

Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	15,100	17,700	2,600	730	\$27.34
Washington	460	550	90	30	\$23.62

Occupation and SOC: Statisticians: 15-2041.00

Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	18,900	19,800	900	580	\$30.02
Washington	1,000	1,190	190	50	\$26.95

Occupation and SOC: Physicists: 19-2012.00

Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	14,900	16,000	1,100	590	\$43.18
Washington	650	790	140	40	\$35.70

Occupation and SOC: Cartographers and Photogrammetrists: 17-1021.00

Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	10,500	12,100	1,600	520	\$23.20
Washington	460	540	80	30	\$26.78

Occupation and SOC: Emergency Management Specialists: 13-1061.00

Employment Trends	Employment		Change	Average Annual Job	2005 Median Wage
	2004	2014			

				Openings	Comparison
	2004	2014			
United States	10,400	12,800	2,400	470	\$22.10
Washington	320	350	30	10	\$25.01

Occupation and SOC: Nuclear Technicians: 19-4051.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	7,300	8,300	1,000	300	\$29.39
Washington	80	100	20	10	-

Occupation and SOC: Epidemiologists: 19-1041.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	4,800	6,000	1,200	210	\$25.08
Washington	240	270	30	10	\$29.77

Occupation and SOC: Transit and Railroad Police: 33-3052.00					
Employment Trends	Employment		Change	Average Annual Job Openings	2005 Median Wage Comparison
	2004	2014			
United States	4,800	5,200	400	140	\$23.49
Washington	570	630	60	20	-

Note: For anyone that has a specific question about the employment data represented in this report, or would like further clarification as to how it is represented are urged to contact an economist at the Washington State office of Employment Security Department, Labor Market and Economic Analysis Branch. Their phone number is: (800) 215-1617.

4. Homeland Security Employment and Workforce Trends

Homeland Security Industry Facts

Cyber security is expected to be the fastest growing sub-sector of homeland security business from 2005 through 2010, with an annual growth rate of 15 to 20 percent.

Source: (Frost & Sullivan Analysis of Current and Future U.S. Homeland Security Market)

4.1 General Trends in Homeland Security Employment

Many of the activities and occupations related to homeland security are not necessarily new, but until recently these sectors were decentralized and not considered part of one industry sector. The demands of the 21st century require more unified preparation and a timely and targeted response. Homeland Security is not yet considered one large, “supersector,” but instead seem to fall into one of three categories. Those categories include jobs in the (1) public sector, (2) private sector and (3) volunteer organizations. The following is a brief description of each category. In Section 4.2, there is a list of many of the career opportunities that exist in the field. However, this is not meant to be a complete list of employment options, rather a general description of the nature of homeland security-related career opportunities in the category.

(1) Public Sector Employment: There are numerous career opportunities within the public sector. The Department of Homeland Security is the most obvious example. However, there are many other federal agencies that have homeland security responsibilities. Some notable examples include the Department of Justice and the Department of Energy, both of which offer a wide range of career opportunities that would be considered homeland security or homeland security-related. The Department of Defense, particularly the US armed forces offer civilian career opportunities in homeland security-related occupations. In addition, a number of agencies are involved with a special focus such as Bio-defense, which includes agencies such as the Department of Health and Human Services (HHS), Centers for Disease Control and Prevention (CDC), the National Institute of Allergy and Infectious Diseases (NIAID), the Food and Drug Administration (FDA), and two agencies within the Department of Agriculture (DOA) – the Food Safety and Inspection Service (FSIS) and the Animal and Plant Health Inspection Service (APHIS). In short, the reader would be hard pressed to find a federal agency that is not involved with, or has some responsibilities connected to homeland security.

Department of Homeland Security: The most heavily involved federal agency in homeland security and the one with the most career opportunities is the Department of Homeland Security (DHS). As the mission statement of DHS implies the primary purpose of the department is to provide security for our country.

‘We will lead the unified national effort to secure America. We will prevent and deter terrorist attacks and protect against and respond to threats and hazards to the nation. We will ensure safe and secure borders, welcome lawful immigrants and visitors, and promote the free-flow of commerce.’²⁹

DHS as a cabinet level agency employs nearly 190,000 workers. In a search for homeland security job openings listed on the “USA Jobs” website, over 750 jobs were listed. These jobs were for positions within various federal agencies under DHS including, the Directorate for National Protection and Programs, Directorate for Management, Directorate for Science and Technology (S & T), Office of Intelligence and Analysis, Office of the Inspector General, U.S. Citizenship and Immigration Services (USCIS), U.S. Coast Guard (USCG), U.S. Customs and Border Protection (CB), Federal

Emergency Management Agency (FEMA), U.S. Immigration and Customs Enforcement (ICE), U.S. Secret Service, U.S. Transportation Security Administration (TSA), and the Federal Law Enforcement Training Center (FLETC). These jobs are located nationwide, not just in Washington DC.

First Responders: Probably the most misunderstood, but arguably the most important segment of our economy that must be prepared in the event of a major catastrophe, is public sector jobs referred to as “first responders.” Why? Because any major catastrophe would begin locally and end locally. Shortly after September 11th, the Office for Domestic Preparedness (now the Office of Grants and Contracts) of the Department of Homeland Security recognized the importance of this reality by designating the ten critical industry disciplines (Public Works, Public Health, Health Care, Emergency Management Agency, Hazardous Materials Personnel, Government Administrative, Law Enforcement, Fire Service, Emergency Medical Services, Public and Safety Communications) that would have training, equipment, organization and exercise requirements in the event of a major catastrophe. The career opportunities for first responders are also numerous and varied. Generally, individuals in these occupations work in city, county, tribal and state organizations.

(2) Private Sector Employment: Probably the most prevalent and obvious jobs in the private sector related to homeland security are those in the security and protective services field. The organization, *American Society for Industrial Security* (ASIS) International lists six distinct security disciplines. These include; Physical Security, Information Security, Personnel Security, Information Systems Security, Homeland Security, and Critical Infrastructure Protection (CIP).

Many private companies in the US have full or part-time safety or security officers. Prior to September 11th, many of the individuals who worked in this field were primarily concerned with protecting employees’ workplace safety and guarding against theft of company assets. In the aftermath of September 11th, their job descriptions have been altered significantly, and in some cases, new more specialized jobs have been created to meet new realities and challenges. For example, conducting threat and vulnerability assessments especially for those companies that are “high value targets” or “soft targets” are becoming increasingly more common.

Another area that has received increasingly more attention is the field of cyber security. In fact, one of the Fifteen National Planning scenarios concerns a potential cyber attack. ASIS International has recognized the seriousness of this potential threat, and it’s no surprise that two of their six security disciplines are related to cyber security. Virtually all private sector companies could be affected by a cyber attack, and are putting more resources into this area to combat potential threats.

Another private sector industry significantly affected by homeland security is the insurance industry. Insurance risk managers, loss control specialists and others in the insurance industry have had to become increasingly more knowledgeable about potential threats to their clients.

(3) Volunteer Organizations: There are also employment opportunities in volunteer organizations that require knowledge about homeland security. Volunteer organizations often provide training to citizens in first aid, emergency response and community safety

initiatives so that a reserve corps can promote safety and aid municipal emergency services in the event of a disaster.

There are a number of networks of organizations in place that respond to disasters. One network is the National Voluntary Organizations Active in Disaster (NVOAD), which is a network of over fifty different organizations that respond to disasters. NVOAD coordinates the planning activities of voluntary organization in their network that respond to disasters. They strive to coordinate response activities by meeting ahead of time and planning response activities before disasters occur. A list of their member organizations can be found at: <http://www.nvoad.org/membersdb.php?members=National>.

Citizen Corps, is a component of USA Freedom Corps, and was created to help coordinate volunteer activities to make communities safer and better prepared to respond to any emergency situation. The Citizen Corps mission is accomplished through a national network of state, local, and tribal Citizen Corps Councils including: the Community Emergency Response Team (CERT) Program, the Fire Corps, USAonWatch (UOW)-Neighborhood Watch, the Medical Reserve Corps (MRC) Program, and Volunteers in Police Service (VIPS). These Councils build on community strengths to implement the Citizen Corps programs and carry out a local strategy to have every American participate. Citizen Corps also has an affiliates program that expands the resources and materials available to states and local communities by partnering with Programs and Organizations that offer resources for public education, outreach, and training. A list of their affiliate organizations can be found at: <http://www.citizencorps.gov/programs/affiliate.shtm>.

There are also many other well known organizations such as the American Red Cross, the Salvation Army, and more that play a critical role in emergency planning, response and recovery efforts from major disasters and offer numerous volunteer and employment opportunities.

Career Ladders

There are various ways to move up the career ladder. Traditionally, the most common ways to advance up the career ladder are by promotions, transfers, and reclassifications within a particular job family. Another way of advancing is to change fields of work. It is also worth noting that career ladders vary depending on whether they are based on education or work experience.

Career ladders in homeland security are particularly difficult to describe because of the sheer number of jobs, and variations of educational requirements, which vary from agency to agency, and job to job. Because of the rapid change and the emerging nature of careers in homeland security, advancements may often come as a result of a reclassification. A reclassification is justified when there have been sufficient changes in a job making it more appropriate to identify the position in a higher classification. Specific criteria must often be met to justify the assignment of the higher level reclassification. Some examples include:

- The classification specification for the higher level classification more appropriately identifies the major functions of the position.

- Significant, logical and gradual change of a permanent nature in the duties and responsibilities of the position.
- The job change is a result of related outgrowth of the former duties and responsibilities of the position.
- The higher level duties and responsibilities must be performed for at least six months before reclassification can be initiated.

Typically, movement up the career ladder is based on either increased educational attainment or work experience. However, there are other attributes that can make an employee more valuable, thus assisting them up the career ladder. These attributes include: initiative, judgment, efficiency, dependability, enthusiasm and loyalty. Those interested in career advancement, must be familiar with all of the mechanics involved in making this possible.³⁰

4.2 Homeland Security Careers

Shifting demographics, changes in technology and global expansion are all forces influencing the American workforce. The events of September 11th have profoundly changed world view and our sense of safety. The perceived need for increased preparation for either a natural catastrophic event or terrorism is driving the career field, and has resulted in an increased importance placed on homeland security. However, there is no clear consensus of what the term homeland security actually means when applied to careers and jobs within the workforce. The career field is new and emerging.

Analysts do predict continued expansion of the homeland security career market.³¹ When companies across the United States were asked if the events of September 11th had an impact on sales, 75% said yes. "A strong majority indicated that they had re-evaluated existing security services provided by their company and increased training for security staff on terrorism-related topics. About 30% of the businesses reporting indicated that they were updating their marketing materials, and had started offering and providing new security services."³² These changes by no means were limited to the private business sector; changes were just as sweeping in the public sector.

Among the most significant of these changes was the establishment of the Department of Homeland Security as a separate Cabinet level position within the Administration which fostered the "expansion or creation of homeland security agencies at state, regional, and municipal levels."³³ Due to the diverse nature of the job category and its integrated nature, career opportunities are found in many disciplines. Consequently, careers may appear in a variety of categories, and a number of specialized disciplines. Further complicating this situation is the nature of the organization and the specific position. Professionals may work either full-time in one aspect or part-time in a variety of areas, thus requiring expertise and a variety of skills relating to homeland security. The positions currently available require a broad range of skills, training and experience to qualify. For up-to-date information on current jobs within the DHS visit their jobs site at <http://www.dhs.gov/xabout/careers/>.

Career Opportunities in Homeland Security in the Private Sector

The increasing emphasis placed on homeland security and protective services in recent years has had a significant impact on careers in the private sector of the workforce. One

source indicated that 48.5% of those companies surveyed indicated they expected a long-term effect on their business.³⁴ Some positions in the private sector like their counterparts in the public sector, are emerging, and contain homeland security responsibilities, but may not be considered solely homeland security occupations. For example, Blackwater, USA is a private sector security company whose vision is “To support security and peace, and freedom and democracy everywhere.” They are currently advertising jobs for occupations like Medic Instructor, Rotary Wing Pilot, and staff in Information Technology. Additionally careers under “corporate opportunities” run the gamut from Security Guard, to Accounting to Risk Analyst to name a few.³⁵

The current War on Terrorism has forever changed how Americans view security. Daily events are lead stories on most news programs which serve as ever present reminders of homeland security threats and terrorism. As was pointed out earlier, the majority of the careers in homeland security are in the private sector. Eighty-five percent of the critical infrastructure in the US is privately controlled. Security still plays a peripheral role in most companies. In smaller companies the individual who is responsible for security almost always wears other hats, and in fact security is not their primary job. Companies tend to have common security related concerns such as:

- Computer/network security
- Liability insurance
- Access control
- Workplace violence
- Parking lot/garage security
- Terrorism
- Security planning
- Contingency planning
- Business continuity planning

Industry sectors were queried regarding the top three security concerns. The results of that survey are displayed as follows.³⁶

Table 4.1: Top Three Security-Related Concerns by Industry Sector

Industry Sector	Top Three Related Concerns
Agriculture-Mining-Construction	Liability insurance Property crime Computer/network security
Finance-Insurance-Real Estate	Computer/network security Information security Identity theft
Manufacturing	Computer/network security Liability insurance Employee theft
Services	Computer/network security Information security Liability insurance and Property crime
Transportation-Communication-Utilities	Liability insurance Property crime Computer/network security and Substance

	abuse
Wholesale-Retail Trade	Employee theft Liability insurance Computer/network security

Source: Career Opportunities in Security, 2005 by ASIS International

Homeland security and terrorism do not appear as specific concerns, but are integrated throughout and within each area of concern. Careers in security in the private sector typically fall within one of discipline areas shown below. Within these “security disciplines” may be found a variety of specialty areas.³⁷ Each discipline is listed with a brief description of the roles, applications and functions of each.

Physical Security:

- Role: protection of people, property, and facilities
- Applications: security forces, systems, and procedures.
- Function: oversee and assess uniformed security operations, and system requirements, and counter threats to those assets.

Information Security:

- Role: safeguarding sensitive information.
- Applications: protection of classified information, privacy data, proprietary and contractual information, and intellectual property.
- Function: deals with data access issues such as who has access and how data is stored, controlled, marked, disseminated, and disposed of.

Personnel Security:

- Role: ensuring the integrity and reliability of an organization's workforce.
- Applications: background and other pre-employment screening techniques
- Function: adjudication of results and granting security and access clearances.

Information Systems Security:

- Role: protect against threats to information systems.
- Applications: maintaining the confidentiality, reliability and availability of data created, stored, processed and/or transmitted via automated information systems.
- Function: develop procedures and safeguards to protect against threats to information systems.

Homeland Security:

- Role: Civil defense
- Applications: little consensus on exactly what the term means has a broad connotation and is treated as an emerging crosscutting discipline.
- Function: protection of U.S. from terrorist attacks.

Critical Infrastructure Protection (CIP):

- Role: protecting the information systems that control elements of the infrastructure from terrorist attacks.

- Applications: Various, examples could include petroleum pipelines, bridges, telecommunications systems, and nuclear power plants, or a food processing plant.
- Function: protection of critical information systems that operate and control the infrastructure, and the infrastructure itself.

Among the security disciplines certain specialty areas tend to surface. This list though not comprehensive, is extensive and includes specialties which incorporate aspects of homeland security in their associated specialty areas. The primary difference between these specialty areas is the principal focus of each, and how it is applied within the particular discipline or corporation. Examples include:

- Banking and Financial Services
- Commercial Real Estate
- Cultural Properties
- Educational Institutions
- Gaming and Wagering
- Government Industrial
- Healthcare
- Information Systems
- Investigations
- Lodging and Hospitality
- Manufacturing
- Retail Loss Prevention
- Security Engineering and Design
- Security Sales, Equipment, and Services
- Transportation
- Utilities and Nuclear
- Other Security Specialty Career Opportunities.

Career Opportunities in Homeland Security in the Public Sector

There are a large number of agencies within the federal government (public sector) that offer career opportunities in homeland security. Some examples include but are not limited to:

- Department of Justice
- Department of Energy
- Department of Defense
- Department of Health and Human Services
- Centers for Disease Control and Prevention (CDC)
- National Institute of Allergy and Infectious Diseases (NIAID)
- Food and Drug Administration (FDA)
- Department of Agriculture including the Food Safety and Inspection Service (FSIS) and the Animal and Plant Health Inspection Service (APHIS).

Career opportunities in homeland security at the Department of Homeland Security are varied and abundant. A search of USAJOBS for career information in homeland security at DHS has identified the following Federal Agencies with missions directly related to

national securities and readiness for emergencies. The list is not all-inclusive, but a very good representative sample of the types of career opportunities that exist within DHS agencies.

Customs and Border Protection (CBP): The priority mission of CBP is to prevent terrorists and terrorist weapons from entering the United States. Career opportunities at the CBP include:

- Pilots
- Agriculture Specialists
- Border Patrol Agents
- Customs and Border Protection Officer
- Import Specialist

Federal Emergency Management Agency (FEMA): The FEMA continues to reduce the loss of life and property and to protect our nation's institutions from all types of hazards (whether natural disaster or terrorist assault) through a comprehensive, risk-based emergency management program of prevention, response, and recovery. The list below is representative of the FEMA positions currently available throughout the U.S..

- Disaster Recovery & Operations Specialist
- Emergency Management Program Officer
- Information Technology Specialist

Federal Law Enforcement Training Center (FLETC): The FLETC is the nation's lead organization for interagency training of Federal law enforcement personnel.

- Law Enforcement Specialist (Instructor)

Office of Intelligence & Analysis (OIA) The OIA led by the Chief Intelligence Officer for the Department, ensures that information gathered from all relevant DHS field operations; state, local, private sector and international partners; and other parts of the intelligence community, is fused, and analyzed into a Department common operational picture of emerging threats to national security, and is further disseminated to meet its responsibility for providing relevant and timely information to state, local, tribal, and private sector partners.

- Information Technology Specialist
- IT Project Manager

Science and Technology Directorate: The professionals within this department plan, fund, and manage top-flight research and development programs in almost all technical fields. They work closely with leading researchers in national laboratories, universities, and corporations to design, develop, and test cutting-edge security applications - either making evolutionary improvements to new technology, or creating entirely new capabilities.

- Social Scientist
- Interdisciplinary
- Chemist
- Computer Scientist
- Engineer
- Physicist

Transportation Security Administration (TSA): The TSA is responsible for protecting the Nation's transportation systems to ensure freedom of movement for people and

commerce. You will help secure our transportation infrastructure from future terrorist attacks.

- Transportation Security Specialist
- Supervisory Transportation Security Specialist
- Transportation Security Office (TSO)
- Program Analyst:
- Occupational Health Nurse

U.S. Citizenship and Immigration Services (USCIS): (USCIS) employees for improving immigration customer service and ensuring that immigrants accomplish their goal of acquiring U.S. citizenship.

- Management and Program Analyst
- Adjudications Officer
- Asylum Officer
- Immigration Information Officer (IIO)
- Public Affairs Specialist
- Intelligence Research Specialist
- Citizen Outreach Specialist

U.S. Immigration and Customs Enforcement (ICE): (ICE) is the largest investigative arm of DHS.

- Mission Support Specialist
- Federal Protective Service
- Special Officer
- Criminal Investigators (Special Agent)

United States Coast Guard (USCG): The USCG is the nation's leading maritime law enforcement agency and forms a critical part of our country's homeland security infrastructure, protecting America's coastlines and waterways. There are over 200 different types of Civilian jobs in the U.S. Coast Guard.³⁸

- Professional, Administrative, and Technical
- Administrative Support
- Trades and Labor
- Senior Executive Service (SES)

United States Secret Service (SS): The USSS is mandated by statute and executive order to carry out two significant missions: protection and criminal investigations.

- Special Agent
- Uniformed Division Officer
- Professional & Administrative
- Technical
- Administrative Support & Clerical
- Technical Security
- Physical Security Specialist
- Information Technology Specialist

Note: Without question, jobs in DHS are clearly homeland security-related, and although incumbent employees may perform some job functions that are not directly homeland security-related, these jobs are considered homeland security. For many of the job applicants at DHS, there are often two other additional requirements. Most of the applicants that apply for jobs with DHS agencies must undergo security clearances

or background checks because of the sensitive information they may come in contact with. Another common requirement for homeland security employment is that applicants must be U.S. citizens. Applicants for federal jobs are also awarded five additional points on their applications if they are a veteran, and ten additional points if they are a disabled veteran.

Examples of Career Opportunities in Selected Other Agencies

There also exists a large number of “other agencies” which have careers or jobs related to readiness and security responsibilities. The following list shows other organizations with readiness and security responsibilities. This information is taken directly from the USAJOBS website and is available for review.

Bureau of Diplomatic Security (DS): The DS is the security and law enforcement component of the U.S. Department of State provides a secure environment for the conduct of U.S. foreign policy on a global scale. DS employs both Foreign Service and Civil Service employees.

- o Special Agents
- o Security Engineering Officers and Technical Specialists
- o Diplomatic Couriers
- o Security Specialists and Investigators
- o Electronic Engineers and Technicians
- o Computer Specialists

Centers for Disease Control and Prevention (CDC): The CDC is recognized as the lead Federal agency for protecting the health and safety of people - at home and abroad. CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States.

- | | |
|-------------------------------------|--------------------------------------|
| o Behavioral Scientists | o Biologists |
| o Emergency Response Specialists | o Epidemiologists |
| o Health Education Specialists | o Health Informatics Specialists |
| o Health Scientists | o Medical Officers |
| o Microbiologists | o Public Health Advisors |
| o Public Health Analysts | o Audiovisual Production Specialists |
| o Health Communications Specialists | |

Federal Bureau of Investigation (FBI): The FBI mission is to investigate violations of Federal criminal law; protect the United States from foreign intelligence and terrorist activities; provide leadership and law enforcement assistance to Federal, state, local, and international agencies; and perform these responsibilities in a manner that is responsive to the needs of the public and is faithful to the Constitution.

- o Safety & Occupational Health Manager Unit Chief
- o Linguists, Interpreters and Translators
- o Special Agents

Food and Drug Administration (FDA): The FDA mission to protect the health and welfare of American consumers and encompasses both science and law enforcement. Whether by analyzing food samples, protecting the blood supply, investigating drug tampering, following up on import enforcement needs, or supporting domestic inspections, FDA employees do their part to protect the American people.

- Consumer Safety Officer
- Education Program Specialist
- Physical Science Technician

Pentagon Force Protection Agency: This agency's mission is: "Protecting those who protect the Nation". In response to the terrorist attack against the Pentagon on September 11, 2001, the Department of Defense established the Pentagon Force Protection Agency (PFPA).

- Operations Specialist
- Protective Services Manager
- Supervisory Criminal Investigator
- Protective Services Manager

Pentagon Police Department (PPD): The PPD is the result of over 63 years of continuous evolution. After September 11, 2001, the need to expand their mission and create smaller, specialized units within the Agency to address specific threats was recognized. The PPD is rapidly becoming one of the nation's premiere federal law enforcement organizations.

- Investigative Assistant
- Operations Specialist
- Emergency Response Team
- K-9 Team
- Protective Service Unit
- Criminal Investigations
- Evidence and Court Liaison

U.S. Capitol Police: This agency has primary responsibility for protecting life and property; preventing, detecting, and investigating criminal acts; and enforcing traffic regulations throughout a large complex of congressional buildings, parks, and thoroughfares. Jobs are in the legislative branch.

- Police Officer, Federal Law Enforcement
- Procurement Officer

National Institutes of Health (NIH): The NIH is one of the world's foremost medical research centers, and the Federal focal point for medical research in the United States. The National Institute of Allergy and Infectious Diseases (NIAID) leads the NIH in a national effort to build a new research program aimed at the global problem of bioterrorism and emerging infections. Non-scientific support positions will also be available.

- Supervisory, Information Technology Specialist
- Telecommunications Manager
- Tenured Senior Investigators
- Tenure-track Investigators
- Biologists
- Microbiologists
- Chemists

- Engineers
- Laboratory Managers
- Computer Scientists
- Medical Doctors
- Nurses
- Dentists
- Allied Health

First Responders

One area of the public sector that requires special mention are those “first responder” disciplines recognized by DHS as having training, equipment, organization, and exercise requirements. These are the individuals that would be most intimately involved in any preparation, response to or recovery from a major catastrophe. Though these jobs may not be devoted solely to homeland security full-time, they certainly have homeland security responsibilities and should be referenced here. Anyone seeking a career in any of the disciplines listed below should be aware that homeland security responsibilities would be part of the job. The disciplines and a few, selected job titles include the following:

Law Enforcement

Individuals who, on a full-time, part-time, or voluntary basis, work for agencies at the local, municipal, and State levels with responsibilities as sworn law enforcement officers.

This category includes:

- Patrol Officers
- SWAT Teams
- Bomb Technicians
- Evidence Technicians
- Supervision/Management/Incident Command
- Investigations

Emergency Medical Services

Individuals who, on a full-time, part-time, or voluntary basis, serve as first responders, EMTs (basic), and paramedics (advanced) on ground-based and aeromedical services to provide pre-hospital care. This category includes:

- First Responders (basic life support)
- EMT (basic life support)
- ILS (intermediate life support)
- Paramedic (advanced life support)

Emergency Management Agencies

Organizations, both local and State, that coordinate preparation, recognition, response, and recovery for WMD incidents. This category includes:

- State and Local Emergency Management Agencies (EMAs)
- Voluntary Organizations Active in Disaster (VOADs)
- Professional Associations (e.g., American Society of Civil Engineers, American Institute of Architects)
- Human Service Agencies
- Private Agencies Supporting EMA Activities

Fire Service

Individuals who, on a full-time, part-time, or voluntary basis, provide life-safety services, including fire suppression, rescue, arson investigation, public education, and prevention.

This category includes:

- Firefighters
- Company Officers
- Fire Marshal's Office
- Urban Search and Rescue (USAR) Teams
- Technical Rescue Teams

Hazardous Materials Personnel

Individuals, who, on a full-time, part-time, or voluntary basis, identify, characterize, provide risk assessment, and mitigate/control the release of a hazardous substance or potentially hazardous substance. This category includes:

- Technicians
- Specialists
- Metropolitan Medical Response System (MMRS)
- Environmental Quality Control
- Private Companies and Contractors Supporting Hazardous Materials Activities

Public Works

Public Works refers to those organizations and individuals who make up the public/private infrastructure for the construction and management, of these roles at the Federal level. The categories/roles include administration, technical, supervision, and craft (basic and advanced). This category includes:

- Environmental Services (Water Quality)
- Solid Waste
- Animal Services
- Water Treatment
- Public Buildings and Parks
- Telecommunications, Electric Districts, and Digital Cable
- Engineering and Equipment Services

Governmental Administrative

Governmental Administrative refers to those elected and appointed officials responsible for public administration of community health and welfare during an incident. This category includes:

- Mayors
- Elected Officials
- Executives
- Chief Administrative Officers (City Managers and Supporting Staff)

Public Safety Communications

Individuals who, on a full-time, part-time, or voluntary basis, through technology, serve as a conduit and put persons reporting an incident in touch with response personnel and emergency management, to identify an incident occurrence and help support the resolution of life-safety, criminal, environmental, and facilities problems associated with the event. This category includes:

- Call Takers
- Shift Supervisors
- Medical Control Centers
- Dispatchers (EMS, Police, and Fire)

Health Care

Individuals who provide clinical, forensic, and administrative skills in hospitals, physician offices, clinics and other facilities which offer medical care including surveillance (passive and active), diagnosis, laboratory evaluation, treatment, mental health support, epidemiology investigation, evidence collection, along with fatality management for humans and animals. This category includes:

- Physicians, Dentists, Nurses, Physician Extenders (Physician Assistants and Nurse Practitioners), Veterinarians, Pharmacists, and Technicians
- Medical Examiners/Coroners, Therapists, Epidemiologists, Facility Management, Security, Environmental Investigators, and Medical Records

Public Health

Individuals whose responsibilities include the prevention of epidemics and spread of disease, protection from environmental hazards, the promotion of healthy behavior, responding to disasters and assistance in recovery, as well as assuring the quality and accessibility of health services. This category includes:

- Epidemiologists, Environmental Engineers, Environmental Scientists, Occupational Safety and Health Specialists, Health Educators, Public Health Policy Analysts, Community Social Workers, Psychologists and Mental Health Providers, and Counselors

Career Opportunities in Homeland Security in Volunteer Organizations

Volunteer organizations are often overlooked when thinking about the preparation for, response to, or recovery from a major catastrophe. These organizations are critical and provide indispensable assistance to communities affected by a major event. There are both career employment and volunteer opportunities in many of the member organizations that are affiliates of the National Voluntary Organizations Active in Disaster (NVOAD).³⁹ NVOAD coordinates planning efforts by many voluntary organizations responding to disaster. When disasters occur, NVOAD or an affiliated state VOAD encourages members and other voluntary agencies to convene on site. This cooperative effort has proven to be the most effective way for a wide variety of volunteers and organizations to work together in a crisis.

The Federal Emergency Management Agency (FEMA) often works to coordinate the activities of other organizations that make-up the nation's emergency management system. These include state and local emergency management agencies, 27 other federal agencies, as well as the American Red Cross, Salvation Army, Citizen Corps, National Association for Amateur Radio, the USA Freedom Corps and more than 50 other volunteer organizations that are members or affiliates of the NVOAD.⁴⁰

Listing all of the potential job possibilities in volunteer organizations is beyond the scope of this report, but it is important to provide some examples. One of the best known organizations that respond to thousands of disasters annually is The American Red Cross. American Red Cross employees and volunteers help keep the public prepared to respond to disasters and emergencies. The Red Cross provides training in lifesaving skills such as CPR and first aid, collects and distributes half the nation's blood supply, and helps victims of thousands of disasters annually. Job opportunities within the American Red Cross are listed in fourteen different categories including: Armed Forces Emergency Services, Blood Services – (Medical & Technical Staff & National Testing

Laboratories), Chapter Management, Communication & Marketing, Disaster/Emergency Services, Finance, Financial Development Health, Safety & Community Services, Human Resources, Information Technology, Public Support, Volunteer Services, Youth Services, and Other Services.

In the category of Disaster/Emergency Services alone, jobs related to homeland security are many and varied. Some job titles include: Director, Emergency Services, Emergency Services Coordinator Emergency Services Director, Coordinator, Readiness & Response, Response Director Disaster Manager, Staff Services and Community Outreach, Manager Emergency Response, EMT Instructor, Emergency Services Specialist, & Chief Operating Officer/Emergency Services Director.

5. Identifying Homeland Security Tasks and Skills

As has been demonstrated in previous sections, there are numerous occupations that make up the general category (and sub-categories) of homeland security occupations. Therefore, trying to identify all of the skills required and tasks performed for every individual occupation in the field, is beyond the purview of this report. However, it is important to provide the reader with sources for where this information can be obtained, and also give some examples of the kinds of tasks performed and skills required in the field.

5.1 Career Voyages, O-Net and Other Resources

When trying to identify what skills are required and the tasks performed by those in Homeland Security occupations, an excellent place to start is the website *Career Voyages* at <http://www.careervoyages.gov/homelandsecurity-main.cfm>. This web site is the result of collaborative efforts between the U.S. Department of Labor and the U.S. Department of Education. It was specifically designed to provide information on high growth, in-demand occupations along with the skills and education needed to attain those jobs. In addition to providing a list of tasks and skills performed by those in the occupation, the website also provides additional information on knowledge, abilities, interests, work styles and tools and technology.

When you first visit the above link, if you click on the box “In-Demand Occupations,” the list of thirty-two occupations referenced previously will appear. The Homeland Security-related occupations are sorted by Projected Need for Employees (2004 – 2014). This website also allows the user to sort by: Occupational Title, Projected Growth, Projected Hourly Wage Range, and Education & Training required in the occupation. Lastly, another value added feature is that the user is even given the option of watching a short video depicting what people do in the occupation.

An excellent illustration of the kinds of information that can be obtained on this website, including tasks and skills, can be found when looking at the category of Emergency Management Specialist. The following information comes from Career Voyages:

Emergency Management Specialists

Description: Coordinate disaster response or crisis management activities, provide disaster preparedness training, and prepare emergency plans and procedures for natural (e.g.,

hurricanes, floods, earthquakes), wartime, or technological (e.g., nuclear power plant emergencies, hazardous materials spills) disasters or hostage situations.

Tasks:

- o Keep informed of activities or changes that could affect the likelihood of an emergency, as well as those that could affect response efforts and details of plan implementation.
- o Prepare plans that outline operating procedures to be used in response to disasters/emergencies such as hurricanes, nuclear accidents, and terrorist attacks, and in recovery from these events.
- o Propose alteration of emergency response procedures based on regulatory changes, technological changes, or knowledge gained from outcomes of previous emergency situations.
- o Maintain and update all resource materials associated with emergency preparedness plans.
- o Coordinate disaster response or crisis management activities such as ordering evacuations, opening public shelters, and implementing special needs plans and programs.
- o Develop and maintain liaisons with municipalities, county departments, and similar entities in order to facilitate plan development, response effort coordination, and exchanges of personnel and equipment.
- o Keep informed of federal, state and local regulations affecting emergency plans, and ensure that plans adhere to these regulations.

Knowledge:

- o **Public Safety and Security** - Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
- o **Customer and Personal Service** - Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- o **Administration and Management** - Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- o **English Language** - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- o **Education and Training** - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Skills:

- o **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- o **Reading Comprehension** - Understanding written sentences and paragraphs in work related documents.
- o **Coordination** - Adjusting actions in relation to others' actions.
- o **Instructing** - Teaching others how to do something.
- o **Critical Thinking** - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Abilities:

- o **Oral Comprehension** - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- o **Oral Expression** - The ability to communicate information and ideas in speaking so others will understand.

- o **Problem Sensitivity** - The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- o **Speech Clarity** - The ability to speak clearly so others can understand you.
- o **Speech Recognition** - The ability to identify and understand the speech of another person.

Interests:

- o No data available at this time

Work Styles:

- o **Dependability** - Job requires being reliable, responsible, and dependable, and fulfilling obligations.
- o **Integrity** - Job requires being honest and ethical.
- o **Leadership** - Job requires a willingness to lead, take charge, and offer opinions and direction.
- o **Stress Tolerance** - Job requires accepting criticism and dealing calmly and effectively with high stress situations.
- o **Cooperation** - Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.

Tools and Technology:

- o **Tools** used in this occupation: No data available at this time
- o **Technology** used in this occupation: No data available at this time

As the reader can clearly see from the above, *Career Voyages* offers an in-depth look at the field, rich in specific details and pertinent to those in the field.

Expanding on the information available on Career Voyages, the Occupational Information Network (O-Net) takes the information a step further. For example, in addition to the same identical skills and tasks provided at Career Voyages, O-Net provides the following additional skills and tasks for the Emergency Management Specialist:

Additional Emergency Management Specialist Skills listed at O-Net

- o **Speaking** – Talking to others to convey information effectively.
- o **Judgment and Decision Making** – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- o **Writing** – Communication effectively in writing as appropriate for the needs of the audience.
- o **Active Listening** – Understanding the implications of new information for both current and future problem-solving and decision-making.
- o **Time Management** – Managing one’s own time and the time of others.

Additional Emergency Management Specialist Tasks listed at O-Net

- o Prepare emergency situation status reports that describe response and recovery efforts, needs, and preliminary damage assessments.
- o Design and administer emergency/disaster preparedness training courses that teach people how to effectively respond to major emergencies and disasters.
- o Inspect facilities and equipment such as emergency management centers and communications equipment in order to determine their operational and functional capabilities in emergency situations.

The categories of information *O-Net* provides for each occupation include: tasks, knowledge, skills, abilities, work activities, work context, job zone, work styles, and wages and employment trends. The *O-Net* website also provides the Standard Occupational Code (SOC) for each occupation, which may be useful in looking for even more detail about the occupation. The Standard Occupational Code for the Emergency Management Specialist is 13-1061.⁴¹ Another extremely helpful feature of *O-Net* is it provides a sample of reported job titles within the SOC. For example, for the 13-1061 Emergency Management Specialist occupation, the following job titles have been reported to *O-Net*: Emergency Planner, Emergency Management System Director (EMS Director), Emergency Preparedness Program Specialist, Emergency Management Coordinator, Emergency Preparedness Coordinator, Emergency Services Director, Emergency Management Program Specialist, Emergency Response Team Leader, Emergency Services Program Coordinator, and Hazard Mitigation Officer.

For those unfamiliar with the field of homeland security, this is a very helpful feature because it allows one to have a more complete picture of the job titles that are representative of the occupational category.

*Lastly, one statement on the O-Net website that is important, but could easily be overlooked, is the following: “**This newly defined occupation** contains data obtained through the O*NET data collection program and has not yet been rated for Interests and Work Values.” The italics and underlined words were added for emphasis.*

5.2 Validating Skill and Task Lists

As indicated in Section 4.1, there has already been a lot of work done on identifying specific skills and tasks required of individuals who work in the broad occupational area of homeland security. Though the information provided on the Emergency Management Specialist can be considered to be very reliable, it’s still a good practice to validate results, especially if a college is considering the development of an academic program.

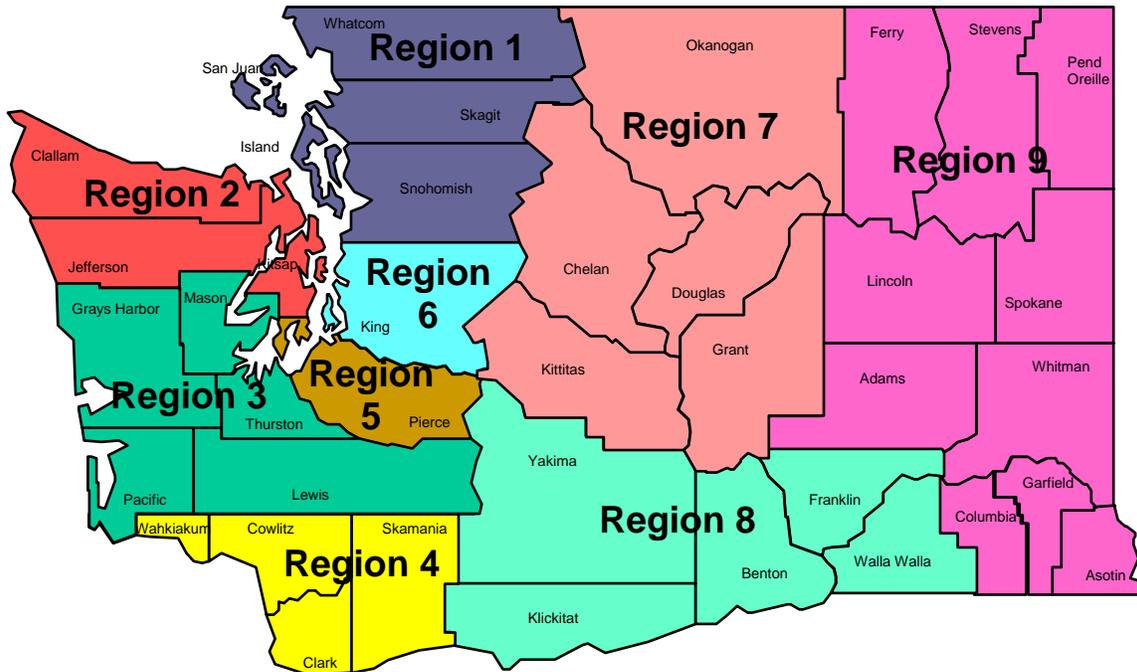
In November 2004, the Washington State Workforce Training and Education Coordinating Board awarded a *Skill Panel Formation in Homeland Security* grant to Pierce College. As of the publication of this report, the skill panel project is ongoing, but eight focus group workshops have been held as follows: Emergency Medical Services, Public Safety Communications, Law Enforcement, Fire Service, Hazardous Materials Personnel, Public Works, Public Health, and Emergency Management Agency. The other two disciplines, Health Care and Government Agencies will also have focus group workshops held in the fall of 2007.

Publication Date:

A final copy of the *Skill Panel Formation in Homeland Security* grant project report with results from all of the disciplines will be published and available from Center of Excellence for Homeland Security at Pierce College in December 2008.

The centerpiece of this grant project was to identify the skills, tasks and competencies required of those individuals that were employed in the ten disciplines listed in Section

1.1 recognized by DHS as having training, equipment, organization, and exercise requirements. Expert workers were identified by state and regional contacts and recruited from each of the state's nine regions based on the state emergency management structure. (See map) The results of the workshop were then validated by others in the field to ensure that the results generated by workshop panelists reflected the input of other professionals who worked in the field.



Emergency Management Regional Structure in Washington State

In expanding on the example of the Emergency Management Specialist provided in Section 4.1, Pierce College conducted a modified DACUM workshop for the Emergency Management Agency discipline in 2006. (See Section 6.3) The chart that follows is an abbreviated version of the results of the workshop. It is significant to mention that the panelists of this workshop did not have the skill and task lists that were prepared by *Career Voyages* and *O-Net*, available to them at the workshop. However, the results of the workshop still *validated* the work of *Career Voyages* and *O-Net*, and are not repeated below. The tasks listed below are now being performed by those in the field as a result of the new homeland security initiatives. Those interested in a complete copy of the Emergency Management Agency Discipline results, may contact the Center of Excellence for Homeland Security at Pierce College. (Phone: (253) 912-3622) <http://www.pierce.ctc.edu/HomelandSecurity/index.php>

Note: The General Job Category highlighted in blue, italicized font represents a new job category that has emerged as a result of Homeland Security-related issues. The Specific Job Tasks also highlighted in blue, italicized font, represent those Specific Job Tasks that have emerged as a result of Homeland Security-related issues and are now performed by practioners in the field.

Emergency Management Agency Discipline

General Job Categories↓	Specific Job Tasks↓		
Communications and Technology	<i>Equip all responders with interoperable radios, MDTs, software, WebEoc, etc.</i>		
Plans, Policies and Procedures	<i>Develop or contribute to, and coordinate the Interoperable Communication Plans</i>		
Resource Management	<i>Resource identification and typing</i>		
Mitigation	<i>Support and participate where required in regional law enforcement intelligence groups</i>		
Preparedness	Coordinate Emergency Management advisory council and or <i>Citizens Corps Council</i> activities where appropriate		
NIMS	<i>Comply with NIMS</i>	<i>Complete NIMS training</i>	<i>Complete National Response Plan (NRP) training (Independent Study-800)</i>
Professional development	Complete Office of Grants Training (OGT) required courses		
Other Knowledge and Skills	In addition to ICS-800, also complete ICS-100, ICS-200, and IS-700. *		

* [Note](#): The NIMS acronym stands for National Incident Management Systems. The ICS acronym stands for Incident Command System.

Summary of the Results: The Emergency Management Agency panel identified a new general job category in their discipline. The National Incident Management System (NIMS) was developed so responders from different jurisdictions and disciplines could work together more effectively to respond to natural disasters and emergencies, including acts of terrorism. This panel recognized the criticality of NIMS as a separate general job category and also identified specific job tasks required. The panel also identified new tasks required in the general job categories of Communications and Technology, Plans, Policies and Procedures, Resource Management, Mitigation, Preparedness, and Professional Development. In addition, other recommended homeland security-related knowledge was also identified in “Other Knowledge and Skills.”

6. The Role of Education in Protecting the Homeland

Homeland Security Industry Facts

The median annual compensation for security professionals in the United States in 2004 was \$75,200, a 5.9% increase over the 2003 level, outpacing inflation.

Source: (ASIS U.S. Security Salaries Survey Results, 2005)

As outlined in the previous section, the Department of Homeland Security has designated several key industry clusters that would have significant responsibilities in the event of a major catastrophe. All of these industry clusters have training, equipment, organization, and exercise requirements and are the cornerstones of our National Response Plan (NRP).⁴² The NRP, dated December 2004 (updated May 25, 2006, and currently under review), establishes a comprehensive all-hazards approach to enhance the ability of the United States to manage domestic incidents.

If there was any doubt about the significant role that community and technical colleges play in training individuals in those key industry clusters, one has only to look at the responses to the 2004 American Association of Community Colleges survey, which indicates that the vast majority of community colleges were actively engaged in training first and second responders. This finding supported data from an earlier report by the National Center for Education Statistics in 2003, which indicated that close to 80% of the nation's firefighters, police, and emergency medical technicians are credentialed by community colleges.⁴³ The same report indicates that 60% of all new nurses in the health care industry are also trained at community colleges.

6.1 New and Emerging Homeland Security Academic Programs

In 2004, the above referenced survey was sent out to 1,100 community colleges with questions about the growing need for homeland security courses and programs. The survey was sent to chief academic officers of these institutions and 344 colleges responded (a 31% response rate).⁴⁴

The results of this survey are not surprising, and indicated that homeland security-related programs are one of the fastest growing "cutting-edge" programs being offered by community colleges.⁴⁵

Table 6.1: Cutting-Edge Programs Added by Community Colleges

Program	% of Colleges
Biomedical Engineering/Biological Technology	12.8%
Homeland Security	11.9%
Internet Technologies	4.9%
Computer Networking	4.9%
Law Enforcement	4.6%
Multimedia	4.6%
Computer Technologies	3.6%
Graphic Information Systems	3.6%
Graphic Design	3.3%
Manufacturing	3.3%

Source: “Hot Programs at Community Colleges” by Sara McPhee, AACCC, 2004

Respondents were also asked more specifically about whether or not their colleges had made curriculum changes based on increased homeland security needs: 65.4% of the respondents indicated that they had *reviewed* or in some way *modified* their *curriculum*. Of the 65.4%, 50% had *added courses*, and 20% had *added entirely new programs* to meet local homeland security training needs. Of those colleges that had done any review or modification of their curricula, the most common areas of focus within homeland security were training for first responders, cyber security, and security and protective services. Areas of education and training focus in homeland security at community colleges vary, but training first responders is at the top of the list.⁴⁶

Table 6.2: Areas of Focus for Homeland Security Programs at Community Colleges

Area of Focus	% of Colleges
Training for First Responders	76%
Cyber Security	36%
Security and Protective Services	32.4%
Scientific Programs	15.6%
Historical/Policy	13.5%
Infrastructure Security	11.1%
Counterterrorism and National Security	9.3%
Other	5.8%

Source: “Hot Programs at Community Colleges” by Sara McPhee, AACCC, 2004

Salaries in homeland security-related occupations vary significantly and depend on training and the area of focus. Consequently, the survey note above bears repeating, readers are cautioned against viewing starting salaries as representative of any definitive national trends, because it is not possible to determine whether starting salaries reported reflect the salaries of hot programs’ graduates just entering the workforce or those who may have been working for some time. Still the chart below indicates that the salaries in homeland security and even the homeland security-related occupations of cyber security and registered nursing are all in the top seven and all are “hot” programs.⁴⁷

Table 6.3: Top 10 For-Credit and Noncredit Hot Programs, by Starting Salary

Program	Salary		
	Starting	Minimum	Maximum
1. Computer Programming	\$48,500	\$32,000	\$56,000
2. Manufacturing	\$40,178	\$22,000	\$65,000
3. Cardiovascular Technology	\$40,000	\$40,000	\$40,000
4. Homeland Security	\$40,000	\$35,000	\$45,000
5. Cyber Security	\$38,625	\$35,000	\$50,000
6. Engineering	\$38,451	\$29,000	\$55,000
7. Registered Nursing	\$38,419	\$18,000	\$72,000
8. Real Estate	\$38,093	\$20,000	\$60,000
9. Occupational Therapy Assistant	\$38,000	\$38,000	\$38,000
10. Mortuary Science	\$36,666	\$30,000	\$45,000

Source: "Hot Programs at Community Colleges" by Sara McPhee, AACCC, 2004

Survey Note: Readers are cautioned against viewing starting salaries and enrollments as representative of any definitive national trends, because most of the respondents estimated enrollment numbers, and it is not possible to determine whether starting salaries reported reflect the salaries of hot programs graduates just entering the workforce or those who may have been working for some time.

As illustrated above, education and training programs in homeland security has exploded. These programs offering a vast array of credit or non-credit options are sprouting up almost weekly, so any attempt to catalog offerings is bound to be incomplete. However, there are a few websites that have attempted to list homeland security-related offerings that are worth mentioning here. Any college considering offering homeland security-related programming would benefit greatly by reviewing curriculum content already in place.

The Center of Excellence for Homeland Security

The Center of Excellence for Homeland Security at Pierce College has created an online database (accessible on the COE website) which serves as a repository of state and national education and training programs related to Homeland Security. This site also contains an extensive list of those credit and non-credit programs offered in Washington State from the key industry clusters identified in Section 4, i.e., fire services, law enforcement, public health, public works, emergency medical services, public safety communications, health care, emergency management, hazardous materials, government agencies, volunteer organizations, and cyber security. As a value added piece, research efforts were also made to identify and provide links to education and training opportunities at colleges and universities nationally. The website address is: <http://www.pierce.ctc.edu/HomelandSecurity/index.php>.

Center for Homeland Security Defense

The Naval Postgraduate School Center for Homeland Defense & Security (CHDS) has certificate and degree programs listed by institution, with a link directly to the program. This is a very "user friendly" site and also provides a direct link to the department

referenced so the user doesn't have to "drill down" through the website and search for information. <http://www.chds.us/?partners/institutions&i=associates>

National Academic Consortia at the Ohio State University

The National Academic Consortium for Homeland Security comprises public and private academic institutions engaged in scientific research, technology development and transition, education and training, and service programs concerned with current and future U.S. national security challenges, issues, problems and solutions, at home and around the world. This is a site geared more towards four-year institutions, but there are several community and technical college members. Unfortunately, the link provided only takes you to the institutional home page, so the user must still search from the home page for the requested information. Current member institutions of this consortium can be found at: <http://homelandsecurity.osu.edu/NACHS/members.html>.

Emergency Management Institute (EMI)

The Emergency Management Institute (EMI) is located in Emmitsburg, Maryland, and offers a variety of emergency management related courses on site and also through distance learning. The distance learning courses are self-paced courses designed for people who have emergency management responsibilities and the general public. All are offered free-of-charge to those who qualify for enrollment. In addition, they also maintain a data base of colleges that offer programs in emergency management, homeland security and related programs. <http://training.fema.gov/EMIWeb/edu/collegelist/>

6.2 Keys to Successful Program Development

There are several key components of successful programs. The following, though not an all encompassing list, are some of the more essential components that need to be considered in designing a successful homeland security program.

- Identifying the Experts: It's important to know where to go for assistance when developing a new program. Homeland Security is an emerging field, and it can also be quite complex. Though the field is relatively new, there are many experts who are willing to help. Why reinvent the wheel if curriculum is already available and accessible at little or no cost? At the recent American Association of Community Colleges annual convention in Tampa, Florida in April 2007, one of the presentations given was "Workforce Development Opportunities in Homeland Security." This session presented examples of unique and successful homeland security workforce development programs created by three community colleges. The speakers discussed the history of their programs, identified the partnerships they created, how their colleges secured funding, and what curricula was available for other colleges to use. Bill Hudson, a Homeland Security Consultant with AACCC said, "*If your college wants to get into Homeland Security, you need to speak to the three individuals on this panel.*" The three individuals he was referring to were Duane Bedell, Director of the National Preparedness Institute, at St. Petersburg College in Florida, Doug Feil, Executive Director of Environmental Health, Safety and Security, Kirkwood Community College in Cedar Rapids, Iowa, and Dr. Patrick Gerity, the Vice President of Continuing Education and Workforce Development at Westmoreland Community College in Pennsylvania. In addition to contacting individuals like Duane, Doug and Patrick, there are a whole host of individuals at the local, state and federal levels

and also private industry who would welcome the opportunity to assist colleges in standing up a new program, and who are also well versed in the subject matter.

- Labor Market Assessment: The first and most important question to consider prior to developing any type of program is determining what the market is for graduates. Other important questions include: Is there sufficient demand to justify the development of a program? If so, what should the program content be? Who is the audience for a program? Will the program content be offered as a certificate, credit, or non-credit program? What times of the day, or days of the week, should the program be offered? Are there any equipment requirements that will add to the cost of developing a program? Will classes be offered in person or through other technological means? These questions can only be answered by conducting a comprehensive Labor Market Assessment prior to program development. In addition to identifying what the all-important program focus should be, a Labor Market Assessment can also preempt potential delivery challenges ahead of time by identifying the demographics of the students and the appropriate delivery method(s).

Tip: For anyone interested in developing or expanding training in any first responder discipline, a visit to the Homeland Security Institute is highly recommended. They have some excellent resources including a fine report entitled, *Emergency Responder Training Assessment and Recommendations (2006)*. This report covers many subjects including a training gap analysis, standards, credentialing, oversight, content, delivery and evaluations.⁴⁸

- Administration Support: In developing any new program, it is essential to garner support for the program from the college administrative team, perhaps even the college board of trustees. To obtain that support, it is imperative to have your homework done. The best way to garner support from the administration is to have the answers to these questions ahead of time. Being able to articulate the vision for the program and having the facts are essential. Are there jobs available in the community? What are the wages for those jobs? Do you have the documentation to support job growth? Have you researched the Department of Labor's Occupational Outlook Handbook, the Bureau of Labor Statistics, and Washington State's Workforce Explorer? Have you conducted the Labor Market Assessment? And, have you researched the cost of standing up the program?
- Exploring Innovative Partnerships: Another approach that is all too often overlooked is the possibility of developing partnerships with other colleges, institutions, organizations or even private industry. Given the explosive growth of the homeland security industry, it's no wonder that new programs are cropping up daily. Consequently, there is a good chance that a college in an adjacent district is considering developing a similar program or already has. Rather than look at this as competition, why not consider the opportunities? Developing a collaborative partnership has enormous benefits. Working together, colleges can share the workload, share program startup costs and leverage assets and resources. There are many examples of successful partnerships and collaboration between colleges, but here is one specific example. Twenty years ago, two Iowa community colleges, Kirkwood Community College in Cedar Rapids, and the Eastern Iowa Community College District (EICCD), headquartered in Bettendorf, Iowa created the Hazardous Materials Training and

Research Institute (HMTRI). The Institute was innovative and entrepreneurial by design. The colleges agreed on a division of labor, identifying unique niches, split operating expenses, and ran the Institute like a business. Both college CEO's were actively engaged and supportive of the Institute. When asked why the Institute was created, the Chancellor of EICCD, Dr. John Blong said, "We were *much stronger together than we ever would have been individually.*"

- **Program Costs:** In trying times with tight budgets, it's especially difficult to find funding to spur the development of any new program. If, for example, a program was going to be developed that required teaching the 40-hour Hazardous Waste Site Worker course, it might be necessary to purchase enough equipment for students to wear the full ensemble of gear to simulate conditions in the field. This might involve purchasing several units of equipment such as Self Contained Breathing Apparatus's (SCBA), level A, B or C suits, boots, gloves, sampling and monitoring equipment, and communications equipment for starters. Being creative and imaginative in identifying and cultivating funding streams is critical. Often times, companies or fire departments will donate such equipment. Perhaps Advisory Committee members will also be able to help, and increasingly, colleges are looking to local state and federal grant programs to assist in purchasing needed program equipment.

Homeland Security Industry Facts

DHS Awarded \$2.6 Billion for Preparedness in 2006: Included in this total, approximately \$1.9 billion in Homeland Security Grant funds has been awarded to State and local governments for equipment, training, exercises, and various other measures designed to increase the level of security in communities across the Nation. Over \$300 million in grants was awarded to strengthen the Nation's ability to prevent, protect against, respond to, and recover from terrorist attacks, major disasters, and other emergencies that could impact this country's critical infrastructure. Almost \$300 million was also distributed in fire grants to fire departments and EMS organizations to enhance their response capabilities and to more effectively protect the health and safety of the public and emergency response personnel with respect to fire and all other hazards.

Source: Homeland Security, Budget in Brief, Fiscal Year 2008.

6.3 Curriculum Development Recommendations

Once a comprehensive labor market assessment has been completed and the program content area has been identified, there is still work to be done. The following are some considerations in developing curriculum.

- **Designing a Curriculum (DACUM):** While a labor market assessment can provide colleges with a focus for program development, more work still needs to be done. To determine what skills need to be taught in the curriculum, it is highly recommended that colleges consider conducting a Designing a Curriculum (DACUM) *or similar process* which will provide a task analysis of the occupation. Panelists for a DACUM are selected by identifying six to twelve workers who are considered "experts" in the occupation being analyzed. Every effort should be made to exclude those individuals who only work peripherally in the field or who are managers and do not work in the field on a day-to-day basis. Similarly, adjunct educators who work full-time in the field should be encouraged to

- participate, while full time teachers should be excluded. Remember, expert workers are the key to the success of a DACUM or any task analysis. A DACUM is usually a day and a half brainstorming process that leads to the identification of the general areas of competence and corresponding tasks required in the occupation. It's also important to point out that a DACUM chart should not be the only information used in the development of curriculum, but it should be a very important part of the process.
- Validation of the DACUM Results: At the conclusion of each workshop a draft DACUM chart is developed and should be circulated amongst panelists for one last review. Upon receiving any comments and making any necessary corrections, a final draft should be sent out to individuals who have been identified to participate in the validation process. Validation reviewers should also be selected carefully. They may be colleagues and co-workers of DACUM panelists, but it is recommended that they be “experts” in the field. The purpose of validating the DACUM is to ensure that the results generated by workshop panelists reflected the sentiments of other professionals who worked in the field.
 - Articulation Possibilities: It is highly recommended that one of the first steps a college should take in developing a new program is to investigate to see if a similar degree program exists at a four-year college or university in the area. If so, every effort should be made to articulate the program, making the transition as “seamless” as possible for prospective students. Offering a two-year degree that articulates with a four-year degree can also serve as another marketing advantage. By talking with representatives of the four-year institution up front, it could remove potential objections, especially if they recognize that your program could “feed” students to theirs.
 - Incorporating Hands-on Training: Much has been written in the educational literature in recent years about the importance of designing and integrating practical, hands-on training into the curriculum. This is especially important in training related to homeland security. Developing meaningful hands-on, scenario based training and field exercises will enhance and support classroom activities. These experiences contribute to the student’s critical thinking skills and are invaluable when called upon in the field. For example, if the subject is critical infrastructure protection or risk management, why not have students do a vulnerability assessment of the campus?
 - Advisory Committees: One of the keys to a successful program is identifying enthusiastic and active Advisory Committee members who are champions for the program. Advisory Committee champions are those individuals who are engaged in the program, and will participate in the curriculum development process, perhaps as DACUM panelists or validation reviewers. In addition, active Advisory Committee members will assist in aggressively marketing the program, and possibly even hiring graduates.

Tip:

In the Labor Market Survey ask those surveyed if they would participate on an Advisory Committee or be interested in hosting internships for students, and ask for their contact information.

The above recommendations are based on the assumption that the program being developed is a new program specifically related to homeland security. It's also *highly recommended* that *all* colleges who have existing programs in any of the occupational areas in those disciplines recognized by the Department of Homeland Security as having training, equipment, organization, and exercise requirements, review their curriculum to ensure that those skills are reflected in the curriculum. If they aren't, it's recommended that serious consideration be given to infusing those skills into the curriculum.

7. Appendices

7.1 Pierce College Certificate in Homeland Security Emergency Management

CERTIFICATE in Homeland Security – Emergency Management

Course Number	Course Title	Number of Credits
HSEM 102	Intro to Homeland Security Emergency Management	5
HSEM 110	Homeland Security Incident Management	5
HSEM 120	All Hazards Emergency Planning	5
HSEM 130	Technology in Emergency Management	2
HSEM 160	Emergency Response Awareness to Terrorism	5
HSEM 210	Training, Exercise Design and Evaluation	5
HSEM 220	Developing and Managing Volunteer Resources	3
HSEM 240	HSEM Work Based Learning	5
OSH 190	Industrial Security	2
OSH 251	Safety Planning	3
Total Credits		40

Pierce College offers a Certificate in Homeland Security – Emergency Management at the Ft. Steilacoom campus. The program is grounded in Emergency Management theory as well as Department of Homeland Security awareness training programs. A mandatory work based-learning (internship or approved work experience/training) element will connect theory and practice. Students who intend to transfer to a four-year program should work closely with their advisor and make contact with the desired university early in their educational career.

The Certificate in Homeland Security – Emergency Management is designed to provide students awareness level knowledge in Homeland Security and prepare them for entry-level positions or enhance incumbent worker skills and knowledge.

Awareness level training provides instruction on recognition, avoidance, isolation, and notification techniques in a weapon of mass destruction (WMD) environment. The courses cover prevention and deterrence and chemical, biological, radiological, nuclear, and explosive (CBRNE) hazards and key Emergency Management topics.

Target Audience/Discipline: Law Enforcement, Business Continuity, Emergency Medical Services, Emergency Management Agency, Fire Service, Hazardous Materials, Public Works, Public Safety Communications, Health Care, Public Health, Transportation, Volunteers, and Public and Private Agencies.

For class information please contact Mike Campbell, mscampbel@pierce.ctc.edu

7.2 Pierce College Homeland Security – Emergency Management AA

Associate of Homeland Security – Emergency Management, Direct Transfer Agreement

This transfer degree ensures that a student who completes the Associate in Homeland Security – Emergency Management (HSEM) DTA degree will have satisfied the lower division general education (or core) requirements and lower division business requirements at the baccalaureate institutions. This articulated degree for the HSEM major is specific to public institutions; however, since the degree follows the statewide articulated DTA agreement and DTA is designated in the title on the transcript, it will be accepted for admission to private institutions in the same manner as any other DTA-based degree.

Basic Degree Requirements

- A minimum of 100 earned credits in courses numbered 100 or above is required to complete the HSEM-DTA.
- English 101 (Composition – Exposition) is required.
- A minimum of 25 of the last 45 credits must be earned at Pierce College.
- A cumulative grade point average (GPA) of 2.0 or better is required.
- The minimum grade for HSEM courses is a 2.0.
- A 1.5 grade (C-) or better for all other Core Requirements is required unless prerequisites state otherwise.
- “Pass” (P) grades may be used only for General Elective credits.
- Independent Study credits may be used only for General Elective credits.
- Cooperative work experience/work-based learning credits may be applied to the General Elective area only.
- Once a course has been successfully completed, credits obtained may be used only once, even if that course is listed in more than one category.

Core Requirements

Courses should be selected from the lists prescribed on this degree sheet only.

- Communication Skills (CM) (10 credit minimum). Must include ENGL 101 & 103.

- Quantitative/Symbolic Reasoning Skills (QS) — (5 credit minimum) Math 281. Prerequisite MATH 098 with a grade of 2.0 or better or placement out of MATH 098.
- Humanities (HM) (15 credit minimum) Must include at least three disciplines, with no more than five credits from performance/skills courses. SPCH 100, PHIL 150, JOURN 101.
- Social Sciences (SS) (15 credit minimum) PSYCH 110, HIST 244, POLS 201.
- Natural Sciences (NS) (15 credit minimum) Must include at least two different disciplines and at least one laboratory course. GEOG with GIS/GPS, Geo; 105, ATMOS 101, BIO 101 w/lab.
- HSEM Specific Courses (40 credits)

Course Requirements

HSEM Specific Courses (40 credits)

Course Number	Course Title	Number of Credits
HSEM 102	Intro to Homeland Security Emergency Management	5
HSEM 110	Homeland Security Incident Management	5
HSEM 120	All Hazards Emergency Planning	5
HSEM 130	Technology in Emergency Management	2
HSEM 160	Emergency Response Awareness to Terrorism	5
HSEM 210	Training, Exercise Design and Evaluation	5
HSEM 220	Developing and Managing Volunteer Resources	3
HSEM 240	HSEM Work Based Learning	5
OSH 190	Industrial Security	2
OSH 251	Safety Planning	3
Total Credits		40

AA Core Requirements (GER)
100 Credit Minimum

Notes and Clarifications

HSEM School Admission

Please note that admission for many HSEM schools is competitive, and higher grade-point-averages and course grades are often required. Please check with your destination school and college. In addition, the minimum grade for business courses is a 2.0. WWU requires a minimum of 2.0 in all prerequisite courses.

Specific University Information

For program planning purposes, students are advised that the lower-division requirements for individual Washington public university business schools may vary.

Additional Courses Recommended by WWU for admittance to Huxley School (18 credits):

- Pre-calculus 1 (5 credits) preferred or Algebra with Applications to Business & Economics (4 credits)
- Introduction to Micro-Economics (4 credits)

- Chemistry 115 or 121 General Chemistry with lab (5 credits)
- Biology 101 Introduction to Biology with lab (4 credits)

7.3 COMMON HOMELAND SECURITY TERMS

All-Hazards Preparedness: Refers to preparedness for domestic terrorist attacks, major disasters, and other emergencies. (*HSPD-8*)

Capability: A capability provides the means to accomplish one or more tasks under specific conditions and to specific performance standards. A capability may be delivered with any combination of properly planned, organized, equipped, trained, and exercised personnel that achieves the intended outcome.

Critical Task: Critical tasks are defined as those prevention, protection, response, and recovery tasks that require coordination among an appropriate combination of Federal, State, local, tribal, private sector, and non-governmental entities during a major event in order to minimize the impact on lives, property, and the economy.

Emergency: Absent a Presidential declared emergency, any incident(s), human-caused or natural, that requires responsive action to protect life or property. Under the *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, an emergency means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States. (*NIMS, March 2004*)

Emergency Response Provider: Includes Federal, State, local, and tribal emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities. (See section 2(6), Homeland Security Act of 2002, Public Law 17-296, 116 Stat. 2135 (2002) Also known as Emergency Responder, (*NIMS, March 2004*)

First responder: Those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers as defined in section 2 of the Homeland Security Act of 2002 (6 U.S.C. 11), as well as emergency management, public health, clinical care, public works, and other skilled support personnel (such as equipment operators) that provide immediate support services during prevention, response, and recovery operations. (*HSPD-8*)

Incident Command System (ICS): ICS is a management system used to organize emergency response. ICS offers a scalable response to an emergency incident of any magnitude, and provides a common framework within which people can work together.

Incident of National Significance: Based on criteria established in HSPD-5 (paragraph 4), an actual or potential high-impact event that requires a coordinated and effective response by an appropriate combination of Federal, State, local, tribal, nongovernmental, and/or private sector entities in order to save lives and minimize

damage, and provide the basis for long-term community and economic recovery. (*NRP, January 2005*)

Jurisdiction: A range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority. Jurisdictional authority at an incident can be political or geographic (e.g., city, county, tribal, State, or Federal boundary lines) or functional (e.g., law enforcement, public health). (*NIMS, March 2004*)

Local Government: Local means “(A) a county, municipality, city, town, township, local public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; (B) an Indian tribe or authorized tribal organization, or in Alaska a Native village or Alaska Regional Native Corporation; and (C) a rural community, unincorporated town or village, or other public entity.” (Homeland Security Act of 2002)

Major Disaster: As defined under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122), a major disaster is any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby. (*NIMS, March 2004*)

Major Event: Refers to domestic terrorist attacks, major disasters, and other emergencies. (HSPD-8)

National: Of a nationwide character, including the Federal, State, local and tribal aspects of governance and polity. (*NIMS, March 2004*)

National Incident Management System (NIMS): NIMS was developed so responders from different jurisdictions and disciplines can work together better to respond to natural disasters and emergencies, including acts of terrorism. NIMS benefits include a unified approach to incident management; standard command and management structures; and emphasis on preparedness, mutual aid and resource management.

Performance goal: A statement of the intended result, effect, or consequence to be achieved by carrying out a program or activity.

Performance measure: A quantitative or qualitative characteristic used to gauge the results of an outcome compared to its intended purpose (e.g. percentage, time, or amount).

Performance metric: A particular value or characteristic used to measure the outcome (e.g., “100,” “25,” or “partially”) that is generally expressed in terms of a baseline and a target.

Preparedness: Build, sustain and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. (NRP p. 71) Preparedness includes:

- Planning, training, and exercises.
- Personnel qualification and certification standards.
- Equipment acquisition and certification standards.
- Publication management processes and activities.
- Mutual aid agreements and Emergency Management Assistance Compacts (EMACs).

Prevention: Deter all potential terrorists from attacking America, detect terrorists before they strike, prevent them and their instruments of terror from entering our country, and take decisive action to eliminate the threat they pose.

Recovery: Develop, coordinate, and execute service- and site-restoration plans and reconstitute government operations and services through individual, private-sector, nongovernmental, and public assistance programs.

Region: As used in this document, “region” generally refers to a geographic area consisting of contiguous State, local, and tribal entities located in whole or in part within a designated planning radius of a core high threat urban area. The precise boundaries of a region are self-defined.

Response: Implement immediate actions to save lives, protect property, and meet basic human needs.

Risk: Risk is the product of threat, vulnerability, consequence, and likelihood of occurrence.

State Government: State means “any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any possession of the United States.” (Homeland Security Act of 2002)

System: A combination of facilities, equipment, personnel, procedures, and communications integrated into a common organizational structure to achieve a mission or outcome.

Target Capabilities List: Provides guidance on the specific capabilities and levels of capability that local, state, federal, and tribal entities will be expected to develop and maintain.

Tier: Groupings of jurisdictions that account for reasonable differences in expected capability levels among entities based on assessments of total population, population density, critical infrastructure, and other significant risk factors.

Universal Task List: A comprehensive menu of tasks from all sources that may be performed in major events illustrated by the National Planning Scenarios. Entities at all levels of government should use the UTL as a reference to help them develop proficiency through training and exercises to perform their assigned missions and tasks in major events.

Volunteer: Any individual accepted to perform services by an agency, which has authority to accept volunteer services when the individual performs services without promise, expectation, or receipt of compensation for services performed (See, for example, 16 U.S.C. 742f(c) and 29 CFR 553.11.) (NIMS, March 2004)

7.4 ACRONYMS COMMON IN HOMELAND SECURITY

AAR: After Action Report
APHIS: Animal and Plant Health Inspection Services
ASIS: American Society for Industrial Security (ASIS) International
ATSA: Aviation and Transportation Security Act
BSIR: Biannual Strategy Implementation Report
BWIC: Biological Warfare and Incident Characterization System
CBP: Capabilities-Based Planning
CBRNE: Chemical Biological Radiological Nuclear Explosive
CCV: Characteristics and Common Vulnerabilities
CDL: Commercial Drivers License
CERC: Crisis and Emergency Risk Communications
CII Act: Critical Infrastructure Information Act of 2002
CI/KR: Critical Infrastructure/Key Resources
CIP: Critical Infrastructure Protection
COG: Continuity of Government Plan
COOP: Continuity of Operations Plan
CSI: Container Security Initiative
C-TPAT: Customs-Trade Partnership Against Terrorism
CWA: Chemical Warfare Agent
DHS: Department of Homeland Security
DMAT: Disaster Medical Assistance Team
DMORT: Disaster Mortuary Operations Response Team
DOJ: Department of Justice
EFP: Explosively Formed Projectile
EMS: Emergency Management System
EOC: Emergency Operations Center
EOD: Explosive Ordinance Disposal
EOP: Emergency Operations Plans
EP&R: Emergency Preparedness and Response Directorate (DHS)
FEMA: Federal Emergency Management Agency
FMD: Foot and Mouth Disease
FRERP: Federal Radiological Emergency Response Plan
GIS: Geographic Information Systems
HAZMAT: Hazardous Material
HLS: Homeland Security
HAS: Homeland Security Advisor
HSAC: Homeland Security Advisory Council (DHS)
HSEEP: Homeland Security Exercise and Evaluation Program
HSGP: Homeland Security Grant Program
HSIN: Homeland Security Information Network
HSOC: Homeland Security Operations Center
HSPD-5: Homeland Security Presidential Directive 5

HSPD-7: Homeland Security Presidential Directive 7
HSPD-8: Homeland Security Presidential Directive 8
HUMINT: Human Intelligence
HV/HR: High Value/High Risk
IA: Information Analysis Division (DHS)
IAIP: Information Analysis and Infrastructure Protection Directorate (DHS)
ICS: Incident Command System
IED: Improvised Explosive Device
IM: Incident Management Task
IP: Infrastructure Protection Division (DHS)
IPR: Incident Prevention and Response Task
ISIP: Initial Strategy Implementation Plan
JIC: Joint Information Center
LETTP: Law Enforcement Terrorism Prevention Program
LLIS: Lessons Learned Information System
NADB: National Asset Database
NEMA: National Emergency Management Association
NGA: National Governors' Association
NIAC: National Infrastructure Advisory Council
NIC: NIMS Integration Center
NIMS: National Incident Management System
NIPP: National Infrastructure Protection Plan
NRP: National Response Plan
NST: National Strategic Task
NSA: National Security Agency
NSHS: National Strategy for Homeland Security
ODP: Office for Domestic Preparedness (DHS)
OJP: Office of Justice Programs (DOJ)
OSHA: Occupational Safety and Health Administration
PCII: Protected Critical Infrastructure Information
PMTL: Protective Measures Target List
PPE: Personal Protective Equipment
RAP: Radiological Assistance Program
SCIP: Statewide Communications Interoperability Planning
SHSAS: State Homeland Security Assessment and Strategy
SHSS: State Homeland Security Strategy
SLGCP: Office of State and Local Government Coordination and Preparedness (DHS)
SOP: Standard Operating Procedure
TCL: Target Capabilities List
TEW: Terrorist Early Warning
TIC: Toxic Industrial Chemical
TOPOFF: Top Officials (Exercise)
UCS: Unified Command System
US-CERT: United States Computer Emergency Readiness Team
USDA: United States Department of Agriculture
US&R: Urban Search and Rescue
UTL: Universal Task List
WMD: Weapons of Mass Destruction

7.5 2007 – 2008 HOMELAND SECURITY TRENDS ANALYSIS PRESENTATION



What is Homeland Security?

- **Definition:** *Homeland Security is a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur.*

Source: National Strategy for Homeland Security, Office of Homeland Security, July 2002.

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Massive Growth:

Since September 11, 2001, the homeland security industry has exploded.

- "Marketplace forecasts for the global homeland security industry anticipate business will grow from approximately \$40 billion in 2004, to nearly \$180 billion by 2015."
- Since its creation in November 2002, the Department of Homeland Security has risen to third largest cabinet level department in the federal government.

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Homeland Security Presidential Directive 8

- Directive 8 created a framework to establish policies to strengthen the preparedness of the United States to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies.
 - Requires a national domestic *all-hazards* preparedness goal.
 - establishes mechanisms for improved delivery of Federal preparedness assistance to State and local governments
 - outlines actions to strengthen preparedness capabilities of Federal, State, and local entities

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Thinking the Unthinkable 15 National Planning Scenarios

- Nuclear Detonation
- Biological Attack
 - Aerosol Anthrax
 - Plague
 - Food Contamination
 - Foreign Animal Disease
- Biological Disease Outbreak
- Chemical Attack
 - Blister Agent
 - Toxic Industrial Chemicals
 - Nerve Agent
 - Chlorine Tank Explosion

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Thinking the Unthinkable

- Radiological Attack
- Explosives Attack
- Natural Disaster
 - Major Earthquake
 - Major Hurricane
- Cyber Attack

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Scenarios → Tasks → Capabilities

- Universal Task List (UTL)
- Critical Tasks:
- Target Capabilities List (TCL)

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Challenges to Colleges

- What are the major challenges for academic institutions wanting to develop homeland security programs?

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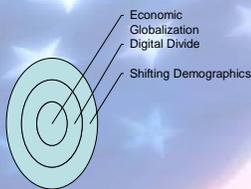
Challenges to Colleges

- “The President’s High Growth Job Training Initiative”
 - Homeland Security was identified as one of the 14 high demand sectors.
- New academic programs are being developed at an astounding rate.
- Recognizing the changing demographics of students and the pedagogic needs of each.
- Recognizing the technology capabilities of students and the potential digital divide that exists among students.
- Infusing homeland security-related skills into existing curriculum in those industry clusters with homeland security responsibilities.
- Determining target market.
- Homeland security is a moving target as are the educational needs of those in the field .

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Trends Shaping the 21st Century



- Shifting Demographic Patterns
- Technology and the Digital Divide
- Economic Globalization

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Economic and Workforce Trends

- Combining both private and public sector funding, it still represents a relatively small percent of the U.S. Gross Domestic Product.
- Large-scale spending on homeland security could hold back economic growth by diverting labor and capital from more productive uses.

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US Industry and Employment Outlook

- Total employment is expected to increase from 145.6 million in 2004 to 164.5 million in 2014, or by 13 percent.
- Service-providing industries will continue to reflect the long-term shift in the US economy from one which provides goods and products to one which offers services.

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Defining Homeland Security-Related Employment

- People who work in homeland security anticipate, prepare for, prevent, and react to everything from pandemics to hurricanes to terrorism. These workers help to reduce our Nation's vulnerabilities and to minimize the damage from catastrophic events.

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Harvesting and Understanding the Statistical Data



Image courtesy of James Tourtellotte via CBP.gov

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Career Voyages is a collaborative effort between the U.S. Department of Labor and the U.S. Department of Education and in their list of “In-Demand Occupations” Homeland Security is identified as a high growth industry.

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Harvesting and Understanding the Statistical Data

- “Where are the Border Patrol Agents?”
- Where are the interpreters and translators?

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Border Patrol Agents

- At the present time, the way Border Patrol Agents are classified, is with a Standard Occupational Code of 33-30-51, and are listed underneath Police and Sheriff's Patrol Officers.
- This may not seem like a logical place to find Border Patrol Agents, but points out the need to "drill down" within categories to find information about a specific occupation.

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Interpreters and Translators

- The job market for this occupation is projected to increase faster than average.
- *"...current events and changing political environments, often difficult to foresee, will increase the need for persons who can work with other languages.*
- *Homeland security needs are expected to drive increasing demand for interpreters and translators of Middle Eastern and North African languages.*

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Washington State Industry and Employment Outlook

- Yearly employment growth was generally stronger in the goods-producing employment areas
- The largest number of jobs (18,500) was added in the professional and business services industry

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Homeland Security Employment and Workforce Trends

- Homeland Security is not yet considered one large, “supersector,” but instead falls into one of three categories:
- Public
- Private
- Volunteer organizations

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Public Sector includes:

- Department of Homeland Security
- “Other” Federal Agencies
- First Responders

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First Responders

- First responders are identified as those individuals that would have training, equipment, organization and exercise requirements in the event of a major catastrophe.

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Ten Key Disciplines

- Public Works
- Public Health
- Health Care
- Emergency Management Agency
- Hazardous Materials Personnel
- Government Administrative
- Law Enforcement
- Fire Service
- Emergency Medical Services
- Public and Safety Communications

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Community colleges train
over 80% of first
responders!

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Identifying Homeland Security Skills and Tasks

- **Career Voyages:**
- Provides a list of tasks and skills performed by those in the occupation, and also provides additional information on knowledge, abilities, interests, work styles and tools and technology.
- **Occupational Information Network (O-Net):**
- Provides a list of tasks, knowledge, skills, abilities, work activities, work context, job zone, work styles, and wages and employment trends. *O-Net* also provides the Standard Occupational Code (SOC) for each occupation, and a sample of reported job titles within the SOC.

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Sample of Reported Jobs Emergency Management Specialist – 13-1061.00

- Emergency Planner
- Emergency Management System Director
- Emergency Preparedness Program Specialist
- Emergency Management Coordinator
- Emergency Preparedness Coordinator
- Emergency Services Director
- Emergency Management Program Specialist
- Emergency Response Team Leader
- Emergency Services Program Coordinator
- Hazard Mitigation Officer

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Skill Panel Formation in Homeland Security

- In November 2004, the Washington State Workforce Training and Education Coordinating Board awarded a Skill Panel Formation in Homeland Security grant to Pierce College.
- Modified DACUM workshops were held with experts in the field to identify skills, tasks and general job categories in their fields.

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Skill Panel Formation, Continued

- **Work has been validated by peers in the field.** The list of tasks and skills listed for occupations at Career Voyages and O-Net have been validated, and even added some additional important homeland security-related tasks identified.
- **Publication Date:** A final copy of the Skill Panel Formation in Homeland Security grant project report with results from all of the disciplines will be published and available from **Center of Excellence for Homeland Security at Pierce College in December 2007.**

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The Role of Education in Protecting the United States of America

- AACC survey indicates that the vast majority of community colleges were actively engaged in training first responders.
- Supports findings of earlier study by National Center for Education which indicated close to 80% of the firefighters, police and EMT's are credentialed by community colleges.

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Cutting Edge Programs Added by Community Colleges

Program	% of Colleges
Biomedical Engineering/Biological Technology	12.8%
Homeland Security	11.9%
Internet Technologies	4.9%
Computer Networking	4.9%
Law Enforcement	4.6%
Multimedia	4.6%
Computer Technologies	3.6%
Graphic Information Systems	3.6%
Graphic Design	3.3%
Manufacturing	3.3%

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Areas of Focus for Homeland Security Programs at Community Colleges

Area of Focus	% of Colleges
Training for First Responders	76%
Cyber Security	36%
Security and Protective Services	32.4%
Scientific Programs	15.6%
Historical Policy	11.1%
Infrastructure Security	9.3%
Counterterrorism and National Security	9.3%

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Top 10 For-Credit and Noncredit Hot Programs by Starting Salary

Program	Starting	Minimum	Maximum
1. Computer Programming	\$48,500	\$32,000	\$56,000
2. Manufacturing	\$40,178	\$22,000	\$65,000
3. Cardiovascular Tech	\$40,000	\$40,000	\$40,000
4. Homeland Security	\$40,000	\$35,000	\$45,000
5. Cyber Security	\$38,625	\$35,000	\$50,000
6. Engineering	\$38,451	\$29,000	\$55,000
7. Registered Nursing	\$38,419	\$18,000	\$72,000
8. Real Estate	\$38,093	\$20,000	\$60,000
9. Occupational Therapy	\$38,000	\$38,000	\$38,000
10. Mortuary Science	\$36,666	\$30,000	\$45,000

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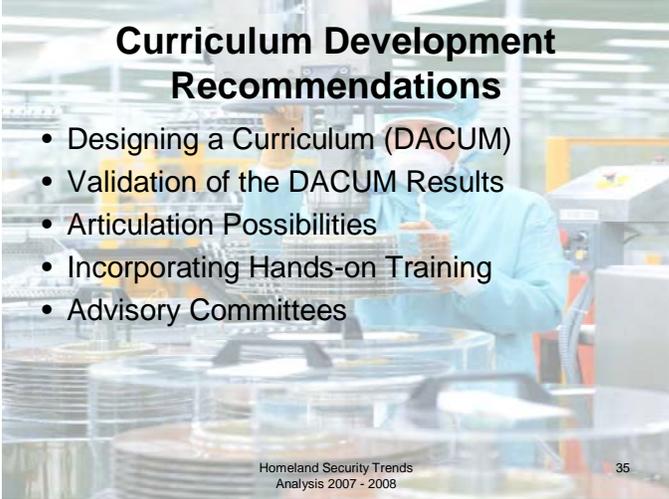
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- ### Where to find information on existing programs?
- **The Center of Excellence for Homeland Security**
<http://www.pierce.ctc.edu/HomelandSecurity/index.php>
 - **Center for Homeland Security Defense**
<http://www.chds.us/?partners/institutions&i=associates>
 - **National Academic Consortia at the Ohio State University**
<http://homelandsecurity.osu.edu/NACHS/members.html>
 - **Emergency Management Institute (EMI)**
<http://training.fema.gov/EMIWeb/edu/collegelist/>
- Homeland Security Trends
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- ### Keys to Successful Program Development
- Identifying the Experts
 - Labor Market Assessment
 - Administration Support
 - Exploring Innovative Partnerships
 - Understanding Program Costs
- Homeland Security Trends
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Curriculum Development Recommendations

- Designing a Curriculum (DACUM)
- Validation of the DACUM Results
- Articulation Possibilities
- Incorporating Hands-on Training
- Advisory Committees

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Overarching Recommendation

- Colleges that currently have “first responder” programs should seriously consider *infusing those skills* identified by the Homeland Security Skill Panel Formation grant project to more accurately reflect realities in these occupational areas.

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Summary

- The field of Homeland Security has exploded.
- Shifting workforce trends will continue to shape the field for the remainder of the century.
- Job opportunities are often times hard to find because the field is new and still emerging.
- Career opportunities in homeland security are many and varied.
- Many opportunities exist for colleges interested in developing homeland security programs.

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7.6 CENTERS OF EXCELLENCE IN WASHINGTON STATE

Bellevue Community College is the Center for Information Technology Excellence (CITE), which is affiliated and co-located with the National Workforce Center for Emerging Technologies (NWCET). CITE is an information resource and solution provider for model information technology education programs, best practices, up-to-date research, information dissemination, instructor development, and sharing of industry trends impacting employment, education, and business growth across Washington State. <http://bellevuecollege.edu/cite/>

Bellingham Technical College is a Center of Excellence for Process Technology, focusing on education and training related to continuous flow processes and instrumentation for industries such as petroleum refineries, chemical processing plants, food processors, pulp and paper mills and wastewater treatment plants. <http://www.nwpta.org/>

Centralia College: The Center of Excellence for Energy Production and Distribution Technology provides leadership for a growing alliance of energy industry and college partners. Together, industry and educational partnerships provide comprehensive degree and certificate programs, on-line courses, and regional classroom training opportunities that focus on the future of the energy industry. <http://www.centralia.ctc.edu/coe/>

Edmonds and Everett Community Colleges jointly host the Materials and Process Development Center of Excellence. The Center's mission is to increase the competitiveness of manufacturers using composites and other advanced materials through workforce training and education. <http://www.mpdc.biz/>

Green River Community College: Green River Community College houses The Washington State Center of Excellence for Careers in Education, and provides support, mentoring, and advising to community colleges and their K-20 partners for the creation and expansion of career-ladder programs in education. The Center provides a yearly best practices conference, a comprehensive web site, curriculum development and dissemination, and training for K-20 instructors and para-professionals. <http://www.careersined.org/>

Highline Community College: The Center of Excellence for International Trade, Transportation and Logistics is led by a statewide advisory committee. The Center facilitates linkages and partnerships among education, business, industry, community partners, and workforce intermediaries, advocating for Washington State both nationally and internationally in international trade, transportation, and logistics. <http://www.highline.edu/home/ittl/>

Pierce College: The Center for Excellence in Homeland Security facilitates and coordinates Homeland Security initiatives with a coalition of 34 community and technical colleges, public agencies, and private sector organizations. The Center provides and brokers dynamic education and training to prepare a skilled workforce to maintain our national security. <http://www.pierce.ctc.edu/HomelandSecurity/index.php>

Renton Technical College: The Construction Center of Excellence is a resource for industry professionals, colleges, and others interested in preparing a diverse workforce for the construction industry. The Construction Center of Excellence showcases innovative educational offerings, at RTC and elsewhere, and promotes awareness of career pathways within construction. <http://www.rtc.edu/communityresources/CCE/>

Shoreline Community College: The Center for Manufacturing Excellence is industry led by an advisory board. Through collaboration among business, industry, education, and community partners, the Center promotes the manufacturing profession and raises awareness of manufacturing careers and educational opportunities throughout Washington State. The Center is a vital resource to help grow and sustain manufacturers' participation in the global marketplace. <http://www.shoreline.edu/cme/>

Skagit Valley College: Skagit Valley College is home to the Northwest Center of Excellence for Marine Manufacturing and Technology. The Center is a hub for innovative discussions, resources, training and education services that create a repository of information and illuminate best practices related to industry trends and emerging technologies to foster economic vitality. <http://www.marinecenterofexcellence.com/>

Walla Walla Community College: The Agricultural Center of Excellence provides collaborative leadership in addressing the emerging workforce and economic development interests of rural, urban, and related agriculture in Washington State. The Center is a hub for accessing fast, flexible services and education to meet employer needs. <http://www.wvcc.edu/ace/>

Yakima Valley College: The Allied Health Center of Excellence is dedicated to addressing Washington State's healthcare workforce needs of today and tomorrow. Through collaboration and cooperation with industry partners, the center provides innovative programs to prepare qualified and competent health care professionals and leaders for the future. <http://www.yvcc.edu/coe/>

For information about centers of excellence contact Dr. Michelle Andreas at State Board of Community and Technical Colleges at: mandreas@sbctc.edu

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Education & Training: These percentages refer to the different levels of education attained by the workers, aged 25 to 44, for that occupation. Use this information as an indication of how much education you will probably need for a particular occupation. <http://data.bls.gov/servlet/oep.noeted.servlet.ActionServlet?Action=empeduc>

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Cover design: Susan Berven, Graphic Designer/Illustrator, Pierce College

Document produced by:
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