New Mexico State University

ARROWHEAD CENTER

LEADING ECONOMIC DEVELOPMENT FOR NEW MEXICO STATE UNIVERSITY

Status of Educational Efforts in National Security Workforce Development

National Security Preparedness Project
Grant No: DE-FG52-07NA28084

DOE/NA/28084-312

Submitted
By
Arrowhead Center
New Mexico State University

March 31, 2008

National Nuclear Security Administration

NM STATE UNIVERSITY

Live, Learn and Thrive

Table of Contents

"This material is based upon work supported by the Department of Energy [National Nuclear Security Administration] under Award Number DE-FG52-07NA28084."

Status of Educational Efforts in National Security Workforce Development

1.0 INTRODUCTION

This report documents the status of educational efforts for the preparation of a national security workforce as part of the National Security Preparedness Project (NSPP), being performed under a Department of Energy (DOE)/National Nuclear Security Administration (NNSA) grant. This report is due March 31, 2008, as performance measure 3.1.2 (Grant No: DE-FG52-07NA28084, Arrowhead Center proposal, Page 17).

The need to adequately train and educate a national security workforce is at a critical juncture. Even though there are an increasing number of college graduates in the appropriate fields, many of these graduates choose to work in the private sector because of more desirable salary and benefit packages. This is contributing to an inability to fill vacant positions at NNSA that are resulting from high personnel turnover from a large number of retirements. Further, many of the retirements are Cold War scientists that have experience and expertise with nuclear weapons and atom bombs that are practically irreplaceable.

2.0 CURRENT SITUATION

Numerous institutions across the U.S. offer a variety of science and engineering degrees and certificates. The majority of these degrees and certificates currently and in the future will have applications in the NNSA that are widely documented. The work at NNSA in the fields of science and engineering is monumental and comprises the majority of the workforce. Currently engineers in the fields of chemical, civil, general, mechanical, nuclear, and petroleum, as well as physicists and general and physical scientists, are in demand at NNSA. It appears that the educational efforts across the U.S. in these fields are sufficient to meet the demand. The problem lies in attracting graduates in these fields to government service.

While it is recognized that science and engineering degrees play an important role in the NNSA workforce, there are emerging fields in national security that require attention and documentation. Recent acts of terrorism and advances in technology have given way to new fields in the national security arena. Given these facts, research on the current status of educational efforts was concentrated on institutions that offer degrees in national security and their related applications.

Universities and Colleges Offering National Security or Related Degrees

University	Degree	Major
American Military University	MA	National Security Studies – concentrations available in Asian studies, conflict analysis and resolution, homeland security, Middle Eastern studies, security and intelligence analysis, and terrorism studies
	BA, MA	Intelligence
California State University	MA	National Security Studies
Capella University	BS	Public Safety – homeland security specialization

University	Degree	Major
Central Pennsylvania College	BA	Homeland Security Management
	Certificate	Intelligence Analysis
	Certificate	Forensic Criminalistics
Dakota State University	MS	Information Assurance – specialization in banking and financial security, wireless and networking security, internet, and e-commerce
Eastern Kentucky University	BS	Homeland Security
	BS, MS	Safety, Security, and Emergency Management – optional concentration in homeland security
Embry-Riddle Aeronautical University	BS	Global Security and Intelligence
Everest University – South Orlando	AS, BS	Homeland Security
The George Washington University	MA	Forensic Science – concentrations available in forensic molecular biology, forensic chemistry, forensic toxicology, high-tech crime investigation, security management
	MS, Ph.D.	Engineering Management – focus in crisis, emergency, and risk management
	Certificate	Homeland Security Emergency Preparedness and Response
	BS, Certificate	Computer Security and Information Assurance
	MS, Ph.D.	Computer Science – focus in computer security and information assurance
	MA	Security Policy Studies – concentration in homeland security
	MA, Ph.D.	Public Policy, National Security Policy
Georgetown Law	MA, JD	Security Studies
	Certificate	Homeland Security
Henley-Putnam University	MS, BS	Management of Personal Protection
	MS, BS	Intelligence Management
	MS, BS	Terrorism and Counterterrorism Studies
The Institute of World Politics	MA	Statecraft and National Security Affairs – specialization available in intelligence, national security affairs, public diplomacy, and political warfare
	MA	Strategic Intelligence Studies
Kaplan University	BS	Criminal Justice/Homeland Security and Counterterrorism
Keiser University	BA	Homeland Security
Michigan State University	Certificate	Homeland Security Studies

University	Degree	Major
The National Defense University – School for National Security Executive Education	Certificate	National Security Studies
	MA	Strategic Security Studies
Penn State	BS	Security and Risk Analysis – concentrations available in intelligence analysis and modeling option, information and cyber security option, social factors and risk
Pierpont Community and Technical College	AS	Homeland Security Program
Texas A&M University	Certificate	Homeland Security
Tiffin University	BA	Government and National Security
	BS	Homeland Security/Terrorism
University of Maryland University College	MS	Biotechnical Studies: Biosecurity and Biodefense – specializations available in bioinformatics, biotechnology management
University of New Haven	MS	National Security and Public Safety – concentrations available in information protection and security
	MS	National Security/Information and Security
	Certificate	National Security Administration
	Certificate	National Security Technology
	Certificate	National Security Graduate
Upper Iowa University	MPA	Public Administration – emphasis in homeland security
Virginia College Online	MS	Cybersecurity – includes cyber terrorism and forensics
Walden University	MPA, MBA	Homeland Security Policy and Coordination

Research has indicated that one of the fields most affected at the NNSA by near-term retirements is that of Nuclear Engineering. Therefore, it is prudent to identify quality institutions that offer degrees and certificates in Nuclear Engineering. This research will assist in developing and implementing strategies to ensure that an adequate number of properly trained nuclear engineers are available to the NNSA.

Nuclear Engineering Colleges and Universities

University	Degree	Major
Georgia Institute of Technology	BA, Ph.D.	Nuclear and Radiological Engineering
	MS	Nuclear Engineering
Idaho State University	BS	Nuclear Engineering
	MS, Ph.D.	Nuclear Science and Engineering
North Carolina State University	BS, MS, Ph.D.	Nuclear Engineering
The Ohio State University	MS	Nuclear Engineering

University	Degree	Major
Pennsylvania State University	BS, MS	Nuclear Engineering
Purdue University	MS, Ph.D.	Nuclear Engineering
Rensselaer Polytechnic Institute	BS, MEng, MS, DEng	Nuclear Engineering
	Ph.D.	Nuclear Engineering and Science
Texas A&M University	BS, MS, ME, Ph.D.	Nuclear Engineering
University of Florida	BS, MS	Nuclear and Radiological Engineering
University of Missouri	MS, Ph.D.	Nuclear Science and Engineering
University of New Mexico	BS, MS, Ph.D.	Nuclear Engineering
University of Tennessee	BS, MS, Ph.D.	Nuclear Engineering
University of Wisconsin	BS	Nuclear Engineering
	MS, Ph.D.	Nuclear Engineering and Engineering Physics

The majority of the identified institutions offering nuclear engineering or related degrees are located in the Midwest, Northeast, and Southeast. Only three institutions are in the Northwest and two in the South Central regions.

3.0 CONCLUSION

There has been an increased emphasis on the development of national security accompanied by an increase in funds for these programs. As such, many universities and colleges have recognized this need and have implemented programs aimed at meeting this demand. There are new degree programs that have been developed specifically in homeland security or national security, as well as an increase in specializations or minors relating to the security of our nation. Specializations range from security and intelligence law to high-tech crime investigation. One downside of these programs is that they are fairly new and do not necessarily have the experience and renown of other degree programs.

Colleges and universities also have recognized the importance of addressing the needs of the non-traditional college students. There has been a marked shift towards offering online degrees, distance learning, night classes, short courses, and certificates. Many employers have incorporated these types of educational opportunities into the workplace. This is an opportunity for employers to retrain and retain valued employees.

In addition to the need for educational efforts in national security and nuclear engineering that have been previously mentioned, there are many other degrees necessary and important for the development of the national security workforce. They include, but are not limited to, business, science, math, technology, and other engineering fields. There are many quality colleges and universities offering these degrees. The important message is that in the specialized educational areas of national security and nuclear engineering, there has been an increase in opportunities.