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Development of Competency-Based Education Standards for Homeland Security Academic Programs

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Abstract:
Colleges and universities that educate aspiring homeland security professionals are duty-bound to supply a national workforce that is capable and adequately prepared to meet the National Preparedness Goal. It is perhaps not an exaggeration to suggest that developing a qualified homeland security (HLS) workforce could be considered a matter of national security. Indeed, an appropriately educated workforce is not only (at least implicit) part of the current FEMA National Preparedness Goal, it was identified as a national security imperative as early as 2001 by the US Senate Committee on Homeland Security and Government Affairs. A baseline set of education standards for homeland security education would, at the very least, ensure that academic programs would consistently graduate a workforce that has a common set of competencies aligned to the needs of both public and private sector actors engaged in domestic and national security. In turn, employers and students alike would better understand not only what homeland security is, but what HLS graduates can do. Many mature disciplines ultimately use education standards to not only define themselves, but to sanctify and protect their professional boundaries. Nutritionists, for example, are professionals protected by registration, and licensure (as well as certification in some cases). Yet to become a registered dietician, one needs to graduate from an accredited academic degree program, the basis of which is compliance to a set of education (i.e., accreditation) standards assessed by an external organization. In the same way, and to advance the HLS profession, it makes sense to think that HLS practitioners should have educational backgrounds (like doctors or lawyers) that share some common set of educational competencies. To date, we observe that higher education's response as to how to best educate students to enter the homeland security enterprise has been to consider homeland security as a *meta-discipline*, or a discipline of disciplines. As such, homeland security curricula tend to include faculty, courses and student learning outcomes from a variety of other disciplines such as law, business, management, political science, international relations, emergency management, etc. Second, we note that academic homeland security education is still largely characterized as an *emergent* discipline. That is, the core theory of what is and is not "homeland security" remains under-developed. Indeed, it is accurate to characterize homeland security more as a "practice discipline" such as medicine, nursing or law (each of which, by the way, shares the characteristic of being meta-disciplines), albeit a practice with a growing literature and experience basis as well as a theoretical basis. This project leveraged the collective expertise of subject matter experts over roughly a 3-year period to emulate the structure and approach used by these better-established disciplines and create a consensus set of HLS education standards. Created were nine knowledge domains and a set of competencies (aka knowledge, skills and abilities as student learning outcomes) per domain. Taken together, such a set of knowledge domains and competencies (the minimum set of skills, knowledge, and abilities students of homeland security acquire academically) would describe the professional boundaries of the homeland security discipline. A major remaining challenge is how best to conceptualize and implement a system that integrates a set of competencies into all academic HLS programs nationwide. The paper tackles this issue by proposing a system of "voluntary academic accountability" from all academic institutions that offers a bona fide peer review of undergraduate level homeland security programs.

Keywords: homeland Security education, accreditation, education standards
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Introduction: Early Efforts at Homeland Security Education

Following the terrorist attacks of September 11th, "homeland security" grew in importance within the U.S. government and matured from a concept discussed among a relatively small cadre of policymakers and strategic thinkers to a broadly discussed issue in Congress.[1] In 2005, the North American Aerospace Defense Command and U.S. Northern Command in partnership with the University of Colorado, Colorado Springs, the University of Denver and the U.S. Naval Postgraduate School established the Homeland Security and Defense Education Consortium, (HSDEC). HSDEC was designed to build "... a network of teaching and research institutions focused on promoting education, research, and cooperation related to and supporting the homeland security/defense mission."[2]

The HSDEC effort to cultivate academic degree programs and professional relationships was notably successful. As HSDEC grew, so did the number of academic programs and non-academic partners' interest in homeland security research, education, and development. Over roughly the next 10 years, academic programs grew and consequently, between the end of 2005 and early 2009, nearly 300 homeland security academic programs had been established across the U.S.[3] To better organize and mature the burgeoning academic homeland security enterprise, and because the nature of HSDEC was to not function as a professional association, the University and Agency Partnership Initiative (UAPI) was developed within the Naval Post-Graduate School's Center for Homeland Defense and Security (CHDS). Over the next several years, UAPI continued to develop itself, as well as a broad network of homeland security academics, scholarly journals, and professional conferences, symposia, and curriculum workshops not surprisingly also grew. Though programs continued to develop, and despite dozens of conferences, workshops and a growing peer-reviewed literature, it became clear that homeland security education, like the term "homeland security," had no consistent definition and had enjoyed virtually no common understanding in either industry, the public or private sectors. That is, it was clear that neither scholars, students, parents nor employers understood what an education in HLS truly entailed or enabled. Though HSDEC did work to host at least two workshops focused on forming education standards in HLS, as a governmental entity, HSDEC was not structured as a professional association so it could not maintain, sustain or advocate for specific standards nor did it memorialize its findings in the peer reviewed literature. Consequently, a robust process to develop, maintain and disseminate education standards that would guide HLS education faltered.

Scope and Structure of the Project

This project is the result of over three years of effort by a panel of subject matter experts from around the US. In early 2015, the INSPRS[4] education standards committee undertook he challenge to form an intellectual framework on which academic degree programs in homeland security (or similarly named programs) might be built. The definition and grounding of a professional discipline based on education standards is commonly found across several well-established disciplines such as medicine, law, engineering, nursing, etc.[5]

This paper is structured into essentially three parts. The first part offers an introduction and background into homeland security education since its inception in late 2005 and early 2006. The second part presents the results of the three-year SME consensus process as a set of knowledge domains and outcomes-based education standards for each domain that we believe should comprise a foundation for all undergraduate academic homeland security programs. The third part offers a roadmap toward program accreditation that could advance the homeland security profession by describing how a voluntary adoption of these standards by degree programs could facilitate both consistency across programs and a wide dissemination of the proposed standards into academic homeland security programs nationwide.

The Evolution of Academic Homeland Security Programs

Homeland security (HLS) was born within and from the National Security Community.[6] The terms "Homeland Defense"/"Homeland Security" were first used in *Transforming Defense: National Security in the 21st Century: Report of the National Defense Panel in December 1997*.[7] The underlying concept described by the panel was to protect the Homeland from terrorism to free national military power for national security priorities overseas, while emergency management and public safety were not mentioned much. Then multiple studies and steps were undertaken to address homeland security issues before the September 11, 2001 (9/11) attacks.[8] Common to all those studies was the federal level focus.[9]

After 9/11, the national focus stayed mainly on *terrorism*, Weapons of Mass Destruction (*WMD)*, and *international adversaries*. Homeland security was referred to in the National Strategy for Homeland Security of 2002 as: "…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".[10]

Initially, early homeland security educational courses were picked up, to some extent by National Security Programs that were taught at and by the National War College, U.S. Northern Command, and the Naval Postgraduate School. Their model was a theory-based deductive inquiry for strategists and policymakers.[11] Thus national security professionals brought a way of thinking to Homeland Security in that it has been referred to as multi-disciplinary in nature, including diplomacy, intelligence, information, military, and economics ("DIME"). These disciplines are theory-based, deductive in nature, and driven by inquiry.[12] Though not prescriptive, a topical recommendation by the National Academy of Sciences emphasized the following topics of content for undergraduate degrees in homeland security: port security, aviation security, asymmetric threats and terrorism, civil-military relations, intelligence community and the intelligence process, principles of criminal investigation, legal and constitutional issues in HLS and EM preparedness, nuclear, biological and chemical threats, and energy and transportation security; whereas the typical topics covered under EM are hazard mitigation theory and practice, disaster response and recovery, leadership and organizational behavior, hazardous materials, private sector issues, building disaster resistant communities, voluntary agency disaster services, crisis communications, and community disaster preparedness.

In contrast and reflecting the breadth of focus across the academic homeland security enterprise, there are interesting differences between homeland security programs, emergency management programs, and the like. For example, although academic homeland security, emergency management, and criminal justice programs are each focused on graduates entering a specific aspect of the larger homeland security enterprise, one abiding intellectual core capability that transcends across related security disciplines seems to be the management of modifiable risk factors. Although there has been a movement towards an "all-hazards" education with educational programs that focus on enhancing terrorism prevention, preparedness, and response, Homeland Security education deviates slightly from its sister fields of Emergency Management, Intelligence Management/Studies, and Criminal Justice. Many urban areas face crises that stem from many hazards including terrorism threats on an everyday basis, and given the limited public funds, the preparedness efforts have been inclusive of all types of threats and incidences including mass casualty events regardless of whether intentionally or unintentionally induced.[13] Although arguably this "double indemnity" should be at the core of education programs concerning homeland security,[14] homeland security programs differ from emergency management programs philosophically by the competencies and domains as agreed-upon by our educational standards committee as presented here.

Emergency Management education has a longer history and is a professionalized discipline that has a distinct certification (CEM®) awarded by the International Association of Emergency Managers. The Federal Emergency Management's (FEMA) training arm Emergency Management Institute (EMI) has spearheaded the efforts in emergency management higher education for curriculum development. Though clearly related, it has been argued by faculty teaching homeland security and or emergency management curricula that homeland security has distinct and has sharp contrasts against Emergency Management in terms of "disaster agent,"[15] management paradigm,[16] scope of event,[17] intergovernmental system,[18] and content.[19]

The Center for Homeland Security/Defense Education (CHDS-Ed)

CDHS was founded in 2004 by U.S. Northern Command (USNORTHCOM)[20] and North American Aerospace Defense Command (NORAD), in collaboration with the University of Colorado, Colorado Springs; the University of Denver; and is housed in the U.S. Naval Postgraduate School in Monterey, California. Its initial purpose was to provide the required knowledge and skillsets to support the national Homeland Security/Homeland Defense (HLS/HD) mission that was not readily available in either the military or civilian communities for the command personnel and its allies.[21]

CHDS has been a coordinating body engaging academia and other interested agencies through holding conferences, issuing a newsletter, and offering internship opportunities.[22] Within CHDS, the University Agency Partnership Initiative (UAPI) has been an active participant in the creation and development of faculty and programs nationwide. UAPI supports faculty development workshops, national workshops/conferences, special seminars, educational resources, a thesis repository, self-study courses, and the nation's foremost digital library for homeland security as well as networking opportunities for homeland security academics and practitioners.

However, the CHDS higher-education program – a graduate program designed around policy, practice, and program needs identified through empirical research – is available only to government officials at the federal, state, or local level and is not open to private sector workers.[23] Because the nation's critical infrastructures (including oil, natural gas, electricity, food, and agriculture) are largely owned and operated by the private

industry and their vulnerability to deliberate attacks or unintentional acts could pose a serious threat to the nation's security, there was an obvious need to educate a cadre of private sector representatives in matters of homeland security. Thus, many academic institutions quickly jumped on the bandwagon of filling this critical need – albeit without much guidance or any guidance as to what should constitute a homeland security curriculum.[24]

Homeland security education is young but past its infancy.[25] As homeland security education has expanded, there has been a surge of higher degree programs on Homeland security and related academic focus areas within more than 350 colleges and universities based in a variety of departments. Many of the programs started as brand new programs but some of them were an extension to the existing programs that dealt with emergency preparedness against natural and human-induced hazards that quickly added new curriculum to cover terrorism preparedness,[26,27] Today there are over 400 academic degree programs offering homeland security education in the form of certificates and associate's, bachelor's, master's, or doctorate degrees.[28] These programs are based on a generally accepted set of core concepts and their graduates are hired into government and private industry.

Professionalization of Homeland Security

The concept of professionalization remains grounded on the idea of developing a theoretical basis for the study. However, homeland security professionals have more in common with practitioners than theorists. Homeland security education has evolved similarly to education in practitioner-based disciplines such as Business, Engineering, Medicine, Law, Information Technology (IT), and Emergency Management. These disciplines are principle-based, inductive in nature, and driven by practice.[29] Many practitioner disciplines use Competencies, Knowledge, Skills and Behaviors/Attitudes as the basis for creating educational standards.

After or around 2005, HSDEC took the lead role of building and maintaining a community of higher education by instituting a network among these teaching and research institutions focused on promoting education, research, and cooperation related to and supporting the homeland security and defense missions,[30] and it expanded its affiliation into more than 250 universities, colleges, and other interested agencies.[31] HSDEC eventually stood down after roughly 5 years of service, according to its own mission objective. As HSDEC stood down, a vacuum was beginning to form in the sense that the emergent discipline area now commonly referred to as homeland security had no real, bona fide professional association around which networking, conferences and the exchange of peer reviewed research, etc. might develop. As a result, the Homeland Security Defense Education Consortium Association (HSDECA) formed. For roughly 2 years, HSDECA attempted to fill the void of a professional association. HSDECA charged its members' dues and co-sponsored annual conferences with UAPI and formed an education standards committee to begin the work of organizing standards of education around academic homeland security programs. However, HSDECA itself disbanded around 2012.

However, because of the expanding size of the affiliated organizations, and due to the lack of any other professional organization that could represent HLS education, students and faculty, in 2008, HSDEC leadership decided to convert HSDEC into a member-run professional society, such as the International Association of Emergency Managers (IAEM) and named it Homeland Security and Defense Education Consortium Association (HSDECA).[32] HSDECA was originally designed to become the premier HLS education association. With respect to undergraduate and graduate degree programs in homeland security, it has been noted that a consensus on what should constitute a common body of knowledge did not yet exist.[33] At that time, no professional association had evolved or had taken the lead to determine what was (and what was not) HLS education. That is, there was no organization that could offer a vetted or consensus set of published program-level learning outcomes (that is, a curriculum in terms of knowledge, skills, and abilities that students acquire at the program level).[34] One reason for the lack of consensus has been that homeland security is inherently complex, value-laden, interdisciplinary, and extremely dynamic. HLS was evolving as a new composite discipline of other disciplines. As a result, the major emphasis from HSDECA was to sow the seeds for an accreditation process by forming a committee to examine how other, well-established major academic disciplines developed education standards and how they conducted accreditation. HSDECA also investigated how it could become a recognized accreditor of HLS education programs by emulating how other organizations, such as the Accreditation Board for Engineering and Technology (ABET) functioned regarding engineering and technology program accreditation. HSDECA ultimately failed around 2012.

The International Society for Preparedness, Resilience and Security (INSPRS)

Despite the lack of success by HSDECA, academic homeland security programs continued to flourish as indicated by an annual increase in the number of undergraduate and graduate programs nationwide, an increasing presence of the term "homeland security" on search sites such as USAjobs.gov, and the persistent success internship programs and student placements in undergraduate degree programs.

Around 2014 a small group of security academics gathered at Pennsylvania State University-Harrisburg to discuss and form a new professional association. This new association would be focused on developing an international network of scholars, practitioners and policy makers interested in security, preparedness and resilience, as well as development of an intellectual framework for academic degree programs (now numbering nearly 370 nationwide) in homeland security. The collective effort after two and half days of meetings was the creation of the "International Society of Preparedness, Resilience and Security" (INSPRS).

INSPRS is a member organization that has a substantially broader mission than HSDECA indicated by the fact that it does not use the term "homeland security" in its title or governing documents. INSPRS seeks to:

- Advance the profession by promoting outcomes-based education in homeland security, preparedness, resilience, and related disciplines.
- Form communities of scholars and practitioners dedicated to strengthening commonalities across the disciplines of national security, homeland security, civil security, political violence, emergency management, disaster preparedness, community resilience, and environmental security.
- Provide venues for educators, practitioners, policy makers, and students worldwide to network.
- Support and recognizing student achievement through student chapters, honor societies, and conferences.
- Review and analyze relevant policy, developing best practices, publish white papers, and sponsor professional meetings.

INSPRS remains an active and growing association today with over 500 members from over 10 countries and is centrally involved with the development of HLS education standards and practices.[35]

Homeland Security Research

The advancement of a field requires the creation of new knowledge through basic and applied research and the dissemination of the knowledge generated.[36] Homeland Security education can benefit from research skills provided to both students and faculty. Today, the federal government is the leading provider of research funds concerning Homeland Security research. The major funding sources are the Department of Defense, Department of Homeland Security, Department of Health and Human Services, Department of Justice, and Department of Agriculture, and Environmental Protection and Central Intelligence Agencies. These federal departments and agencies usually leverage the existing Federally Funded Research and Development Centers (FFRDCs) and national laboratories for the advancement of research.[37] One FFRDC is the Homeland Security Systems Engineering and Development Institute (HS SEDITM), which is operated by the MITRE Corporation. HS SEDI mission is "to ensure the nation is safe from terrorism, secure from cyber threats, and resilient against natural disasters".[38] Another one is the Homeland Security Studies and Analysis Institute (HSSAI), formerly operated by Analytic Services, Inc., now operated by RAND,[39] "delivers independent, objective analysis and specialized expertise to help homeland security leaders address their most complex operational and policy issues, transform homeland security goals and objectives into meaningful strategies, operational requirements, and metrics".[40]

The national laboratories include the five DHS laboratories, which include the Chemical Security Analysis Center, the National Biodefense Analysis and Countermeasures Center, the National Urban Security Technology Laboratory, the Plum Island Animal Disease Center, and the Transportation Security Laboratory. In addition, all laboratories operated under the Department of Energy's National Nuclear Security Administration, which include Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratory; and those under the Department of Energy Office of Science, such as Argonne National Laboratory, Brookhaven National Laboratory, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Idaho National Laboratory, and others.

Additionally, the University Centers of Excellence (COEs) established through the Homeland Security Act of 2002 under the DHS's Office of Science and Technology (S&T) Directorate serve "to develop multidisciplinary, customer-driven, homeland security science and technology solutions and help train the next generation of

homeland security experts".[41] Managed through the S&T Directorate Office of University Programs, the COE network "is an extended consortium of hundreds of universities conducting groundbreaking research to address homeland security challenges. Sponsored by the Office of University Programs, the COEs work closely with the homeland security community to develop customer-driven, innovative tools and technologies to solve real-world challenges. COE partners include academic institutions; industry; national laboratories; DHS operational components; S&T divisions; other federal agencies; state, local, tribal and territorial homeland security agencies; and first responders. These partners work in concert to develop critical technologies and analyses to secure the nation".[42] Currently, there are 18 COEs of which three of them were awarded as recently as 2015. Five COEs have been moved to Emeritus status. "Although these centers compose the most concrete platform for integrating academia, the private sector, and the federal government in support of homeland security, there are two fundamental questions raised by the critics: (1) in the long term will the strong motivation continue for these synergistic relationships to survive and continue to help overcome (the sectors') administrative and functional differences, or will the motivation cease to exist? (2) will real integration occur given the challenges of having so many different types of players whose cooperation, successes, or failures can put the success of the entire Centers of Excellence at risk?"[43]

Journals and Conferences

There are several national and international journals that publish research findings, current trends, technology, policy, and law review related to Homeland Security. The first-tier journals are the classical subscription based two-way blind peer-reviewed journals that fall under scholarly journals. One notable journal that is independent of any institution is the *Journal of Homeland Security and Emergency Management*[44] *(JHSEM)* that requires a subscription fee, another is the *Homeland Security Affairs Journal*[45] (HSAJ) owned by the Naval Postgraduate School which requires a subscription but is free; the *Journal of Homeland Security Education*[46] *(JHSE)* also free and open access[47]; and the *Journal of Human Security and Resilience*[48] *(JHSR)*. It is important to note that HSAJ began when UAPI was formed, and that both JHSE and JHSR are new journals developed by scholars contributing to the growing literatures in HLS and HLS related topics. Other notable journals are *Homeland Security Review* maintained by California University of Pennsylvania,[49] *Journal of the Institute for Law & Public Policy, Journal of Terrorism Research* maintained by the Centre for the Study of Terrorism and Political Violence,[50] *The Journal of Homeland Security and Counterterrorism International*,[51] *Perspectives on Terrorism*[52] maintained by the European-based Terrorism Research Initiative and the US-based Center for Terrorism and Security Studies. There are other notable journals that publish Homeland Security related research, but they are less specialized and serve for wider general domain areas such as Public Administration and Policy Analysis.

Employment Trends

Homeland Security jobs are classified by the U.S. Department of Labor as requiring extensive preparation and work-related skill and knowledge, most of which require a 4-year bachelor's degree. Homeland Security/Emergency Management Directors need to be proficient in public safety and security, law and government, administration and management, and education and training. These positions also demand strong skills in service orientation, complex problem solving, coordination, oral and written comprehension and clarity, oral expression, problem sensitivity, and critical thinking.[53]

A 2012 survey assessing the most needed academic skills for the workforce of DHS and its sponsored organizations and agencies, indicate that the top sought-after skills are general education and knowledge, such as good oral and written communication and ethics, understanding of HLS operations and procedures, laws and law enforcement practices, responding to and mitigation of disasters, and critical thinking.[54]

Another study performed on three groups of homeland security professionals (382 homeland security leaders and administrators graduating from the master of arts program at the Naval Postgraduate School, faculty teaching in that graduate program, and a subject matter expert panel of national leaders in homeland security) professed that strategic collaboration, critical thinking and decision-making, foundations of homeland security, and analytical capabilities are the most important attributes of a graduate program dedicated to homeland security.[55]

The following table shows the top 15 hiring regions with respect to the number of job postings related to homeland security majors in a descending order (Table 1):

Table 1: Top 15 Hiring Regions for Homeland Security Majors.[1]

State	Job postings
California	27,570
Texas	15,735
New York	15,512
Illinois	10,650
Massachusetts	9112
Virginia	8862
New Jersey	8163
Florida	7744
Pennsylvania	7113
Washington	6487
Michigan	6200
Georgia	6115
Ohio	5931
North Carolina	5695
Maryland	5542

[1](Source: U.S. Department of Labor, Bureau of Labor Statistics Occupational Handbook 2016–2017).

Methodology: Development of Homeland Security Knowledge Domains and Competencies for Undergraduate Programs

Professional, academic programs should consist of educational objectives, program-level outcomes and student learning outcomes which together comprise the core body of knowledge that defines the professional identity of the discipline. In defining the core body of knowledge for homeland security professionals, it's critical to develop a consensus set of knowledge domains and a set of student learning outcomes within each domain and which are derived from core competencies and around which a model curriculum can be formed. It is important to note that all degree programs will differ in mission, expertise, market niche and the needs of the program's constituents. In this way, a model curriculum-based system provides a minimum set of knowledge domains and competencies in each domain that in turn provide latitude for individual programs to express their distinctive personality and around which develop their own distinctive competence.

To develop a scholarly basis for homeland security academic degree programs, and by extension the homeland security profession, the INSPRS education standards committee (ESC) considered the content and structure of dozens of academic homeland security programs nationwide. In addition, the ESC considered the history of how other disciplines (i.e. medicine, law, nursing, safety) have matured into sovereign professions over time and the role that outcomes-based education has played in the governance, structure, credentialing and reputation of those disciplines. Toward this end, INSPRS identified a panel of subject matter experts (as seen in Table 2 below) to develop a consensus set of knowledge domains and student learning outcomes (i.e. competencies) within each domain. Subject matter experts (SMEs) were identified as having each of the following three characteristics: 1) a terminal degree in a related discipline; 2) at least 7 years of academic experience in homeland security, terrorism studies, nationalism studies, national security, emergency management or intelligence; and 3) experience in building and directing homeland security academic degree programs. Table 2 indicates the SMEs who participated in the INSPRS effort to produce a consensus set of knowledge domains and student learning outcomes for undergraduate degrees in homeland security.

Table 2: INSPRS Subject Matter Experts (SMEs).[a]

Paul Stockton, Ph.D., Chair	Managing Director, Sonecon, LLC; former Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs
John Comiskey, Ed.D.	Assistant Professor of Homeland Security, Monmouth University
Mike Collier, Ph.D.	Associate Professor of Emergency Management & Homeland Security, Eastern Kentucky University
Chris Martin, M.S., ABD	Doctoral Student, Wright State University
Nadav Morag, Ph.D.	Associate Professor and Chair, Department of Security Studies, Sam Houston State University, Faculty, Center for Homeland Defense and Security, Naval Postgraduate School

Dave McIntyre, Ph.D.	Faculty, Bush School of Government and Public Service, Texas A&M University
James Ramsay, Ph.D., MA, CSP	Chair, Department of Security Studies & International Affairs, Homeland Security Program Director, Professor of Security Studies Embry-Riddle Aeronautical University
Steve Recca, M.S.	Co-Director University and Agency Partnership Initiative Center for Homeland Defense and Security, Naval Post Graduate School
Irmak Renda-Tanali, D.Sc.	Professor and Program Chair, Homeland Security and Emergency Management, The Graduate School, University of Maryland University College

[a]Professional affiliations and titles provided are accurate for the time of the study. While the current affiliations of most members are academic, many members have professional backgrounds including law, intelligence, law enforcement, science, and engineering.

As is true for many mature disciplines, the roadmap toward professionalizing the HLS discipline requires a consensus set of educational standards. In turn, such standards are themselves based on three things: a body of knowledge or intellectual framework derived from subject matter experts; on best practices; and on scholarly literature, prevailing policy and academic standards. In two phases, the entire INSPRS panel, once convened, participated in regularly spaced (typically 4–5×/year) conference calls. Phase 1 was focused on developing a set of knowledge domains titles and definitions, while phase 2 was to focus on student learning outcomes within each domain. Both phases used a modified nominal group technique (MNGT) to achieve consensus as to the set of knowledge domain titles, and definitions and then a set of competencies (aka, student learning outcomes – SLOs) within each domain. MNGT is a qualitative research process dependent on a capable leader/facilitator(s), invested group members and purposeful MNGT method application.[56] Although total elimination of individual influences on group processes can never be obtained, key attributes of the MNGT process include an equal opportunity to participate by all SMEs, iterative discussions designed to flesh out understanding and anonymous voting. The INSPRS SMEs were located across the country, so practicality dictated that all interactions occur by conference call and by email. In addition, the group decided that anonymous voting was not necessary to protect individual opinions or to dissuade an overly influential group member. As a result, when the group was ready to decide on either the set of knowledge domains or SLOs, the consensus was achieved by voice vote during a conference call. Though unanimity was not always achieved, the consensus was before the group moved on. The result was a process that prioritized results and optimized group meeting time which resulted in participant satisfaction and which produced results in an efficient way.[57]

To begin, the SMEs were instructed that the task was to produce a set of education standards around which the homeland security discipline might be defined and upon which undergraduate academic programs could depend for curricular guidance. The larger model was to develop both knowledge domains and competencies within each domain. Definitions for each domain was provided. In addition to achieving consensus on both a set of knowledge domains and competencies, the SMEs were asked to develop a brief bibliography for each domain developed. The domain-specific bibliographies were developed to provide a body of knowledge around which each domain was developed and from which the utility to the domain to the overall homeland security enterprise could be demonstrated. Dozens of academic works inform each competency area, but due to space limitations, a short list of publicly available sources and only a select few academic works are presented at the end of the paper.

Knowledge Domains and Competencies[58]

Generally, a knowledge domain would include the knowledge, skills, abilities, or behaviors (i.e. student learning outcomes) for extant aspects of a discipline and that collectively define the intellectual scope of the discipline. INSPRS defined knowledge domains as the core set of intellectual areas which collectively define the homeland security discipline. In contrast, core competencies represent extant knowledge, skills, abilities, behaviors for each knowledge domain that should be part of all homeland security curricula. Competencies are the measurable skills, knowledge, and behaviors/attitude students acquire in their matriculation through an academic program and which may or may not be specific to a knowledge domain. For example, a competence like "understand and demonstrate principles of effective management" is likely applicable to several domains, whereas a competence like "examine and discuss Constitutional law principles and their relationship to Homeland Security law and policy" may be more specific to a domain such as "HLS law and policy".

A competence can be thought of as the ability to execute/complete a task skillfully, correctly, professionally. In contrast, capability can be thought of as the ability to apply theoretical knowledge that underpins practice

in occupations and the industry-specific knowledge and skills that transcend a given workplace and the tacit knowledge of the workplace.[59] For HLS, we believe there are two distinct categories of competencies; *technical and adaptive* which work together to create capability. Technical competencies are those that are derived from the literature and from best academic practices over the years while adaptive competencies are more focused on the "softer skills" of day to day professional life such as communication, relationship building, trust, partnering, collaboration, etc.

Below, each knowledge domain is first described in terms of its importance to the homeland security discipline, then defined and then the consensus set of competencies (aka student learning outcomes – SLOs) for that domain are presented. The domain bibliographies are listed at the end of the paper.

Results

The results of the nearly 3-year long set of meetings among the SMEs was to create a consensus set of nine knowledge domain titles and definitions, and a set of associated student learning outcomes (i.e. competencies) in each domain. These domains include (1) intelligence; (2) emergency management; (3) law and policy; (4) critical infrastructure security and resilience; (5) strategic planning; (6) terrorism; (7) human and environmental security; (8) risk assessment and management; and (9) professionalism. In addition to the set of knowledge the project developed a set of "program level outcomes". Program level outcomes include competencies that accrue to students across the curriculum but are themselves not specifically derived from an extant academic or practice area, such as a knowledge domain. An example program level outcome would be the capability to work in groups.

A domain-specific bibliography justifying the concepts offered in the domain. Ultimately, eight "content" domains were created with a total of 44 competencies. A ninth domain, Professionalism, was also created yielding 13 competencies. Professionalism was considered a separate domain, not tied specifically to a content area, because of its clear importance to the practice of homeland security. By including it as a separate domain, the INSPRS project was able to list specific competencies under it. The 13 competencies listed were considered "program level competencies". That is, professionalism was thought to transcend a given content or practice expertise, and to instead tie into each aspect of one's overall HLS education.

All domains are listed, defined and their competencies included below in Table 3. Following Table 3 is a more comprehensive description of each domain, and the associated domain competencies.

Table 3: Knowledge Domain and Associate Domain Competencies.

Knowledge Domain	Associated Domain Competencies
Intelligence	1. Appraise the historical context, organizational structure, missions, responsibilities, and strategies of local, tribal, state and federal agencies providing intelligence support to homeland security 2. Assess all phases of the intelligence cycle, to include requirements and planning, information collection, processing/exploitation, analysis/production, and dissemination of intelligence reports 3. Compare and contrast the legal, ethical and oversight structures and implications of domestic intelligence activities versus foreign intelligence activities in all phases of the intelligence cycle 4. Demonstrate intelligence analysis techniques, including critical thinking and structured analytic techniques, to assess existing and potential threats to the homeland 5. Appraise the historical context and current policies and procedures for counterintelligence activities

Emergency Management	1. Identify and explain the five mission areas of National Preparedness Goal: prevention, protection, mitigation, response, and recovery 2. Analyze and evaluate emergency management policies, strategies, and emergent issues 3. Identify and explain the National Preparedness System and National Incident Management System 4. Conduct, analyze, and evaluate emergency management exercises
Law and Policy	1. Review Constitutional law principles and their relationship to Homeland Security law and policy 2. Discuss the Homeland Security Act 3. Discuss USA Patriot Act and related legislation 4. Discuss the Foreign Intelligence Surveillance Act (FISA) 5. Discuss the Intelligence Reform and Terrorism Prevention Act 6. Discuss principles of international law (law of war, Geneva Conventions, UN Universal Declaration of Human Rights) and their relationship to homeland security efforts within and outside of the U.S. 7. Distinguish between the concepts of personal liberty and security in developing and analyzing homeland security policy and law 8. Examine the laws and policies concerning the roles and interactions between different levels of government and the private sector for homeland security 9. Analyze existing and proposed laws and policies for their impact on individuals, all levels of government, and the private sector
Critical Infrastructure Security & Resilience	1. Demonstrate knowledge of the evolution and basic principles of critical infrastructure and key resource protection including resiliency initiatives, in both the private and public sectors 2. Identify and describe each of the recognized sectors of critical infrastructure and key resources, and identify appropriate countermeasures using a risk-based methodology 3. Compare and contrast private sector and governmental responsibilities in the area of critical infrastructure and key resource identification, protection, and resiliency 4. Demonstrate knowledge of security management strategies, priorities, and challenges
Strategic Planning and Decision Making	1. Describe the steps in the strategic planning process 2. Explain the types of and steps involved in conducting economic analysis 3. Define and explain the differences between wicked and tame problems 4. Identify and define the instruments of national power and their relationship to strategic (security) planning 5. Interpret a public safety budget in relation to a strategic plan, including resource allocation 6. Differentiate the strategic planning interface between federal, state and local governments

Terrorism	1. Summarize the history and basic concepts of global terrorism to include groups, ideologies, and underlying causes 2. Describe psychology of fear and its relationship to terrorism and counterterrorism 3. Discuss the United States and international law, statutes and policy guidance relating to counter- and anti-terrorist activities 4. Compare and contrast types of terrorism (e.g. state-supported, transnational, domestic, international) and their similarities and differences 5. Discuss the national and international policies promulgated that guide the U.S and allied involvement in counter-terrorism activities
Human & Environmental Security	1. Discuss the relationship between domestic/civilian security and threats to critical infrastructure that arise from environmental or climatic perturbations 2. Explain the relationship between population growth, resource availability, environmental or climatic perturbations and radicalization, violence, or geopolitical instability 3. Describe potential implications of climatic perturbations on human security 4. Compare and contrast the concepts of human security and environmental security 5. Describe the relationship between human security and domestic/civilian security 6. Compare and contrast the role of individuals versus the role of governments in human security
Risk Analysis & Management	1. Demonstrate knowledge of risk analysis principles processes and techniques, in both the public and private sectors including an all-hazards approach to risk analysis and infrastructure protection 2. Demonstrate knowledge of risk analysis, including assessment of hazards, threats, vulnerabilities, and consequences pertaining to critical infrastructure and key resource protection 3. Discuss differing approaches to managing risk by individuals, governments, militaries, healthcare sector, and the insurance/re-insurance sectors 4. Apply a methodology to measure and explain risk 5. Define the role risk plays in strategic planning
Professionalism	1. Knowledge of Human Cultures and the Physical and Natural World 2. Intellectual and Practical Skills 3. Personal and Social Responsibility 4. Integrative and Applied Learning

Knowledge Domain 1: Intelligence

The Homeland Security Enterprise requires timely information and intelligence to ensure the safety, security, and resilience of the homeland. Information and intelligence must be coordinated and delivered to a variety of federal, state, local, tribal, territorial and private sector partners. These partners carry out the daily activities of the enterprise to include infrastructure protection, disaster management, transportation security, border security, immigration enforcement, cybersecurity and the countering of transnational crime, terrorism and other violent acts of extremism – all missions that require intelligence support. The Department of Homeland Security, Office of Intelligence and Analysis is the only enterprise element statutorily responsible for coordinating delivery of information and intelligence among the many federal, state, local, tribal, territorial and private sector partners. To facilitate this coordination, the Office of Intelligence Analysis supports a national system of state and local Fusion Centers; intelligence, cyber and infrastructure protection liaison officials; dedicated communications systems and other intelligence sharing programs – none of which existed prior to the formation of the

Department of Homeland Security. The complexity of the Homeland Security intelligence support process requires not only intelligence personnel, but also staff planners, enforcement, and operations officials, and others in the enterprise to understand the organization, capabilities and activities of the intelligence support agencies. Every U.S. cabinet-level department and most federal independent agencies, not to mention the many state, local, tribal, territorial and private sector partners, have responsibilities for protecting the homeland and thus must have competence in the intelligence process.

Definition

Intelligence is the process by which information is converted into intelligence and made available to users, consisting of the six interrelated intelligence operations: planning and direction, collection, processing and exploitation, analysis and production, dissemination and integration, and evaluation and feedback. Source: Joint and National Intelligence Support to Military Operations (JP 2-01). (2012)

Domain Competencies

1. Appraise the historical context, organizational structure, missions, responsibilities, and strategies of local, tribal, state and federal agencies providing intelligence support to homeland security.
2. Assess all phases of the intelligence cycle, to include requirements and planning, information collection, processing/exploitation, analysis/production, and dissemination of intelligence reports.
3. Compare and contrast the legal, ethical and oversight structures and implications of domestic intelligence activities versus foreign intelligence activities in all phases of the intelligence cycle.
4. Demonstrate intelligence analysis techniques, including critical thinking and structured analytic techniques, to assess existing and potential threats to the homeland.
5. Appraise the historical context and current policies and procedures for counterintelligence activities.

Knowledge Domain 2: Emergency Management

Emergency management includes the process of risk analysis (economic, social, political, etc. commonly considered component of an "all hazards approach"), planning for, and the execution of all emergency management functions necessary to protect/mitigate, prepare for, respond to, and recover from all-hazards. Prior to the creation of the Federal Emergency Management Agency (FEMA) in 1979, the U.S. government managed disasters through multiple federal agencies. Several catastrophic disasters requiring federal assistance including Hurricane Camille in 1969, the San Fernando Earthquake in 1971, and the Three Mile Island nuclear accident in 1979, as well as calls by the National Governor's Association (NGA) for the establishment of one federal agency to consolidate the federal government's disaster management led to the creation of FEMA. The NGA also called for comprehensive emergency management at the State level. Comprehensive emergency management refers to a State's responsibility and capability for managing all types of emergencies and disasters by coordinating the actions of numerous agencies throughout the four stages of emergency activity: mitigation, preparedness, response, and recovery.

FEMA absorbed the civil defense and disaster preparedness and response missions of several federal departments including the Department of Defense's Civil Preparedness Agency and the Department of Housing and Urban Development's Federal Disaster Assistance Administration. Cold War diplomacy, national security planning and several accidental and natural disasters, and terrorist attacks including the Exxon Valdez oil spill in 1989, Hurricane Andrew in 1992, and the bombing of the Alfred P. Murrah Federal Building in 1995 led to new authorities for FEMA including preparing state and local first responders for weapons of mass destruction incidents, and the development of all-hazard preparedness plans at the federal level.

In response to the terrorist attacks of September 11, 2001, the White House issued the first-ever National Strategy for Homeland Security (2002), the stated purpose of which was to mobilize and organize the Nation to secure the U.S. homeland from terrorist attacks. In 2003, in accordance with the Homeland Security Act of 2002, FEMA became part of DHS and assumed a homeland security mission and was given responsibility for helping to ensure that first responders from all levels of government were prepared for terrorist incidents as well as natural disasters. In the aftermath of Hurricane Katrina in 2005, in accordance with the Post-Katrina Emergency Reform Act of 2006, FEMA assumed substantial new authorities and responsibilities including assuming the

federal government's lead in disaster preparedness, response, and incident management. The National Incident Management System (NIMS) that was issued originally in 2004, and later revised in 2008, and 2017 with updates and lessons learned from real incidents, "provides a common, nationwide approach to enable the whole community to work together to manage all threats and hazards. NIMS applies to all incidents, regardless of cause, size, location, or complexity."[60] The Presidential Policy Directive 8 (PPD-8) that was issued in 2011 puts Emergency Management and Homeland Security under the same "preparedness for resilience" umbrella. PPD-8 initiated the creation of a National Preparedness Goal (NPG), a National Preparedness System, and a National Preparedness Report to be issued annually. National preparedness is based on core capabilities that support "strengthening the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the Nation, including acts of terrorism, cyber-attacks, pandemics, and catastrophic natural disasters."[61] PPD-8 placed the responsibility of national preparedness to all levels of government, the private and nonprofit sectors, and individual citizens, which means that everyone can contribute to safeguarding the Nation from harm.

Homeland security practitioners and policymakers must understand the "whole of community" approach to modern EM which includes the role of all levels of government, the private sector, and the public in all-hazards disaster management. They must understand the phases of disaster management (also the five mission areas in the NPG): prevention, protection, mitigation, response, and recovery and their requirements, and must be familiar with the National Preparedness System, the National Incident Management System, emergency management legislation and particularly the Robert T. Stafford Disaster and Emergency Assistance Act, and federal and state emergency management grant funding procedures. In August of 2017, a key document was published by Feldman-Jensen et al.[62] on the next generation core competencies for emergency management professionals. The Feldman-Jensen et al. study is based on a multi-cycle Delphi study that consisted of refinement and ratification of a set of competencies from an earlier study.[63] Respondents were asked to evaluate a draft set of competencies for 2030 and beyond. The competencies that came out of the Delphi study fall into three nested categories of competencies that build: the individual, then the practitioner, and the overarching competencies that build relationships as shown below (Figure 1):

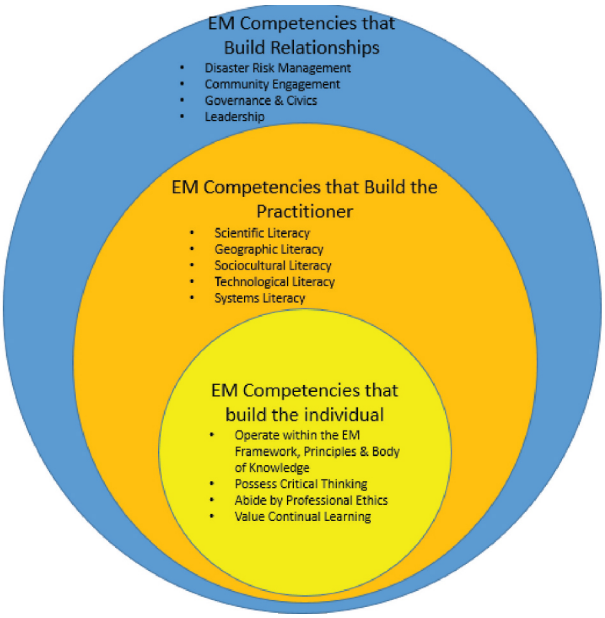

Figure 1: Nested Relationship of the Core Competency Categories that Build Emergency Management Practice (*Source: Feldman-Jensen, S. F., S. Jensen, and Sandy M. Smith. 2017. The Next Generation Core Competencies for Emergency Management Professionals: Handbook of Behavioral Anchors and Key Actions for Measurement.*)

The Jensen et al. study is rooted in behavioral science and provides a highly detailed output of the desired behavioral competencies pertaining to the EM discipline. They complement the findings of our study in that their grouping of competencies are grouped according to a nested structure that describes the desired competencies of an individual as well as the synergistic competencies that result from their interaction with the operating and professional environment. Our competencies are grouped according to domain areas.

Definition

Emergency management is the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters.[64] *Source: FEMA*

Domain Competencies

1. Identify and explain the five mission areas of the National Preparedness Goal: prevention, protection, mitigation, response, and recovery.
2. Analyze and evaluate emergency management policies, strategies, and emergent issues.
3. Identify and explain the National Preparedness System and National Incident Management System.
4. Conduct, analyze, and evaluate emergency management exercises.

Knowledge Domain 3: Law and Policy

One of the mission-critical efforts of the Department of Homeland Security is: "…to ensure a homeland that is safe, secure, and resilient against terrorism and other potential threats."[65] Often, DHS executes this mission by promulgating rules, laws, and regulatory actions. In addition, the President promulgates law through a variety of means, including executive orders, policy directives, decision directives, and homeland and national security policy directives specifically.

For the purposes of an undergraduate program in homeland security, the general concepts of law, sources of law, and nature of both "national security" and "homeland security" should be covered. In this sense, "National security is a corporate term covering both national defense and foreign relations of the U.S. It refers to the protection of a nation from attack or other danger by holding adequate armed forces and guarding state secrets. The term national security encompasses within it economic security, monetary security, energy security, environmental security, military security, political security and security of energy and natural resources. Specifically, national security means a circumstance that exists because of a military or defense advantage over any foreign nation or group of nations, or a friendly foreign relations position, or a defense position capable of successfully protesting hostile or destructive action."

"In Cole v. Young, 351 U.S. 536 (U.S. 1956), the court observed that "the term "national security" in the Summary Suspension Act (64 Stat 476) is used in a definite and limited sense and relates only to those activities which are directly concerned with the nation's safety, as distinguished from the general welfare.""[66]

This knowledge domain must also cover pertinent legislation that would begin to touch on the many aspects of the homeland security enterprise including emergency management, immigration and border security, transportation (maritime, etc.) security, in addition, legislation that impacts law enforcement capabilities and function, civil liberties, and the structure of security-related organizations and agencies. Example legislation that should be covered in an undergraduate curriculum includes, but is not limited to the Homeland Security Act of 2002, the Patriot Act, the Stafford Act, Foreign Intelligence Surveillance Act (FISA), Freedom of Information Act (FOIA), Health Insurance Portability and Accountability Act (HIPAA), National Cybersecurity and Critical Infrastructure Protection Act, Post Katrina Emergency Reform Act (PKEMRA), etc.

Definition

Legislative and administrative formulations that establish jurisdictions, requirements, boundaries and guidance for individuals, organization, and agencies involved in homeland security activities (adapted from US Legal.com).

Domain Competencies

1. Review Constitutional law principles and their relationship to Homeland Security law and policy.
2. Discuss the Homeland Security Act.
3. Discuss USA Patriot Act and related legislation.
4. Discuss the Foreign Intelligence Surveillance Act (FISA).
5. Discuss the Intelligence Reform and Terrorism Prevention Act.
6. Discuss principles of international law (law of war, Geneva Conventions, UN Universal Declaration of Human Rights) and their relationship to homeland security efforts within and outside of the U.S.
7. Distinguish between the concepts of personal liberty and security in developing and analyzing homeland security policy and law.

8. Examine the laws and policies concerning the roles and interactions between different levels of government and the private sector for homeland security.
9. Analyze existing and proposed laws and policies for their impact on individuals, all levels of government, and the private sector.

Knowledge Domain 4: Critical Infrastructure Security and Resilience

In 1998, in response to concerns about physical and cyber threats to the Nation's critical infrastructure, the White House released *Presidential Decision Directive No. 63* that called for a national capability to protect the Nation's critical infrastructure from intentional disruption. The terrorist attacks of September 11, 2001, hastened the White House's efforts to protect the Nation's critical infrastructure.

The *National Strategy for Homeland Security* (2002) identified protecting critical infrastructure as one of six critical mission areas. Coupled with the domestic counterterrorism mission, protecting critical infrastructure would reduce the Nation's vulnerabilities. Since that time, virtually every White House and DHS homeland security strategy including the *National Security Strategy* (2015), the *National Infrastructure Protection Plan* (2013), and the *Quadrennial Homeland Security Review* (2014)[67] has identified protecting the Nation's critical infrastructure as a critical mission area. The Presidential Policy Directive 21 (PPD-21) issued in 2013 on Critical Infrastructure Security and Resilience "advances a national unity of effort to strengthen and maintain secure, functioning, and resilient critical infrastructure. It is the policy of the United States to strengthen the security and resilience of its critical infrastructure against both physical and cyber threats."[68]

The homeland security enterprise is tasked to collectively identify national critical infrastructure priorities, articulate clear goals, mitigate risk, measure progress, and adapt to a rapidly changing environment. As the clear majority of the Nation's critical infrastructure is privately owned, collaborative public-private partnerships as opposed to hierarchical and command and control organizational structures are required to ensure the protection and resilience of the Nation's critical infrastructure. Homeland security practitioners and policymakers must understand their role and the roles of their myriad partners in protecting the Nation's critical infrastructure. They must also understand "across the whole community, the relationships involved to establish and maintain a comprehensive and effective continuity program to ensure resilience, the continuing performance of essential functions at all levels under all conditions, and, ultimately, the preservation of our form of Government under the Constitution."[69]

They must also understand the risk-management approach to critical infrastructure protection that applies to all-hazards including cyber incidents, natural disasters, manmade safety hazards, and terrorism.

Definitions

This domain separates into two parts, critical infrastructure and resilience. *Critical Infrastructure includes all systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters. Source: U.S.A. Patriot Act of 2001. 42 U.S.C. § 5195c (e) § 1016. Resilience. Resilience is the ability to adapt to changing conditions and prepare for, withstand, and rapidly recover from disruption. Source: DHS Risk Steering Committee. (2010) Risk Lexicon.*

Domain Competencies

1. Demonstrate knowledge of the evolution and basic principles of critical infrastructure and key resource protection including resiliency initiatives, in both the private and public sectors.
2. Identify and describe each of the recognized sectors of critical infrastructure and key resources, and identify appropriate countermeasures using a risk-based methodology.
3. Compare and contrast private sector and governmental responsibilities in the area of critical infrastructure and key resource identification, protection, and resiliency.
4. Demonstrate knowledge of security management strategies, priorities, and challenges.

Knowledge Domain 5: Strategic Planning and Decision Making

All governmental and major private sector organizations engage in strategic planning. Examples include the quadrennial reviews by the Departments of Defense, Homeland Security and State, the National Infrastructure Protection Plan, the DHS Strategic Plan, the U.S. Department of Health and Human Services strategic plan, the National Military Strategy, among many others. Similarly, most state governments and emergency management organizations also regularly engage in strategic planning. Knowing how organizations set goals, qualify capacity building, and how to best identify threats and opportunities in their operating environments is essential for all students and practitioners of homeland security. In addition, strategic planning attempts to also accomplish unity of effort within the organization, as well as optimizing stakeholder engagement. Strategic planning helps organizations systematically ask and answer questions such as: Where are we now? Where do we wish to be? How will we get there and with what resources? How will we measure the degree to which we have accomplished our goals? How can we do better next time? Given the multidisciplinary nature of the homeland security enterprise, the asymmetries that create transnational security threats, persistent limitations in resources, challenges posed by international jurisdictions, cultures and governments, it is imperative that one understands how to form strategy, how to engage the strategic planning process and how to optimize decision making under uncertainty and with limited resources.

Definition

Strategic planning is the process of defining an organization's strategy (a long-term plan of action designed to achieve a particular goal or objective) or direction and making decisions on allocating its resources to pursue this strategy, including its capital, its technology and its human resources. Source Mintzberg, Henry*; Quinn, James B. (1996).* The Strategy Process: Concepts, Contexts, Cases. *Prentice Hall.* ISBN 978-0-132-340304.

Domain Competencies

1. Describe the steps in the strategic planning process.
2. Explain the types of and steps involved in conducting economic analysis.
3. Define and explain the differences between wicked and tame problems.
4. Identify and define the instruments of national power and their relationship to strategic (security) planning.
5. Interpret a public safety budget in relation to a strategic plan, including resource allocation.
6. Differentiate the strategic planning interface between federal, state and local governments.

Knowledge Domain 6: Terrorism

In response to the terrorist attacks of September 11, 2001, the United States embarked on a National effort to detect, deter, and prevent future terrorist attacks. Terrorist attacks including the 2002 Bali, Indonesia bombing, the 2004 Madrid train bombings, the 2004 Beslan, North Ossetia massacre, and the 2008 Mumbai, India attacks, as well as numerous terrorist plots, led to similar counterterrorism efforts worldwide. Recent terrorist attacks at home and abroad including the Paris, France and Orlando, Florida mass shootings and the Nice, France truck attack in 2015, Manchester and Barcelona attacks in 2017 have resulted in enhanced security worldwide.

Since its post-9/11 inception, U.S. homeland security policy has focused on a National effort to counter terrorism. Counterterrorism, once considered the exclusive domain of the federal government, now includes state, local, and tribal governments, the private sector, and citizen efforts. All Americans have been called upon to "say something" when they "see something" suspicious.

It is imperative that homeland security practitioners understand the historical, political, and economic underpinnings of international and domestic terrorism as well as the society's efforts to counter terrorism. Homeland security practitioners must understand terrorist organizations' environments, ideologies, methodologies, and targeting practices. They must also understand intricate counterterrorism policy and law that attempts to balance society's security needs with citizens' liberties.

Definition

Terrorism includes any activity that –

A. *Involves an act of that –*

i. *Is dangerous to human life or potentially destructive of critical information or key resources; and*

ii. *Is a violation of the criminal laws of the United States or of any State or other subdivision of the United States; and*

B. *Appears to be intended –*

i. *to intimidate or coerce a civilian population;*

ii. *to influence the policy of a government by intimidation or coercion; or*

iii. *to affect the conduct or a government by mass destruction, assassination, or kidnapping*

Source: Homeland Security Act of 2002, Public Law 107-296.

Domain Competencies

1. Summarize the history and basic concepts of global terrorism to include groups, ideologies, and underlying causes.
2. Describe psychology of fear and its relationship to terrorism and counterterrorism.
3. Discuss the United States and international law, statutes and policy guidance relating to counter- and anti-terrorist activities.
4. Compare and contrast types of terrorism (e.g. state-supported, transnational, domestic, international) and their similarities and differences.
5. Discuss the national and international policies promulgated that guide the U.S. and allied involvement in counter-terrorism activities.

Knowledge Domain 7: Human and Environmental Security

A robust understanding of threats to US security must include threat vectors that emanate from the environment and security concepts that consider the individual as the unit of analysis, as well as that of the nation-state. Threats to human security today seem to be increasing and are becoming global. AIDS and other critical health pandemics, pollution, climate change, the persistence of terrorism, asymmetric domestic insurgencies, a lack of gender mainstreaming, and progressively restricted access to food, water, and other vital resources are increasingly of greater concern. How U.S.' national security strategic thinking incorporates these threats is central to America's future success. Indeed, how the U.S. manages to improve human security is likely central to the success of her foreign policy. Essentially, it is believed that all complex adaptive systems spawn networks. Networks, in turn, give rise to wicked problems. Consequently, as a complex, adaptive system, human security presents "wicked" problems to policymakers. For example, human security is value-laden (i.e. it means different things to different constituents). It is complex in the sense that it is a composite of independent but universally applicable parts such as gender security, food security, water security, energy security, political and economic security, and of course, environmental security. Finally, human security is dynamic in the sense that threats to it evolve over time, how its components interact with each other changes over time, and how nations must work together to enable greater levels of human security form and deform over time per the prevailing political and economic will of nations.

Definition

An interdisciplinary study of the effects of extreme environmental or climatic events which can act locally or transnationally to destabilize countries or regions of the world resulting in either geopolitical instability, resource conflicts or vulnerabilities in critical infrastructure, or some combination of these (UN Human Security Unit). Human security means protecting fundamental freedoms – freedoms that are the essence of life. It means protecting people from critical (severe) and pervasive (widespread) threats and situations. It means using processes that build on people's strengths and aspirations. It means creating political, social, environmental, economic, military and cultural systems that together give people the building blocks of survival, livelihood, and dignity." Source: UN Commission on Human Security: 2003: 4

Domain Competencies

1. Discuss the relationship between domestic/civilian security and threats to critical infrastructure that arise from environmental or climatic perturbations.
2. Explain the relationship between population growth, resource availability, environmental or climatic perturbations and radicalization, violence, or geopolitical instability.
3. Describe potential implications of climatic perturbations on human security.
4. Compare and contrast the concepts of human security and environmental security.
5. Describe the relationship between human security and domestic/civilian security.
6. Compare and contrast the role of individuals versus the role of governments in human security.

Knowledge Domain 8: Risk Analysis and Management

In response to the terrorist attacks of September 11, 2001, the White House issued the first-ever *National Strategy for Homeland Security* (2002), the stated purpose of which was to mobilize and organize the Nation to secure the U.S. homeland from terrorist attacks. The Strategy proposed a National effort of federal, state, local, and tribal governments as well as the private sector and citizens to reduce the risk of terrorist attacks and the potential consequences.

In the aftermath of Hurricane Katrina in 2005, the White House released the *National Strategy for Homeland Security* (2007) which identified the risks from natural catastrophes, including naturally occurring infectious diseases and hazards such as hurricanes and earthquakes as also threatening the Nation's homeland security. The same National effort strategy to reduce the risk of terrorism enunciated in the 2002 *National Homeland Security Strategy* would also mitigate the risks of natural disasters. Subsequently, threats such as cyber-attacks, homegrown violent extremism, and climate change were added to the threats and hazards that threaten the Nation's homeland security. The threats and hazards were addressed by the *National Security Strategy* (2015), the *Quadrennial Homeland Security Review* (2014) the *National Preparedness Goal* (2015) as well as other DHS and White House homeland security policy documents.

The *National Preparedness Goal* (2015) tasks homeland security practitioners and policymakers to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk to the Nation. The 2015 Goal and its predecessor, the *National Preparedness Goal* (2011) were supported by the *Strategic National Risk Assessment in Support of PPD8: A Comprehensive Risk Based Approach toward a Secure and Resilient Nation* (SNRA) (2011). The SNRA concluded that a wide range of threats and hazards pose significant risks to the Nation. Those threats and hazards were categorized as natural hazards, technological/accidental hazards, and human-caused threats/hazards.

Achieving the National Preparedness Goal requires an understanding of risk analysis principles, practices, processes, and techniques. Homeland security practitioners and policymakers must understand the role of risk analysis in homeland security, and especially with respect to national preparedness. They must be familiar with the National Preparedness System and particularly DHS' State Preparedness Reporting and Threat and Hazard Identification and Risk Assessment (THIRA) processes as well as risk assessment methodologies and tools such as CARVER (Criticality, Accessibility, Recoverability, Vulnerability, Effect, and Recognizability).

Definition

Risk analysis is the process used to identify the potential for an unwanted outcome resulting from an incident, event, or occurrence, as determined by its likelihood and the associated consequences.

Source: Adapted from the DHS Risk Steering Committee. Risk Management is a process of identifying, analyzing, assessing, and communicating risk and accepting, avoiding, transferring or controlling it to an acceptable level considering associated costs and benefits of any actions taken. (2010) DHS Risk Lexicon

Domain Competencies

1. Demonstrate knowledge of risk analysis principles processes and techniques, in both the public and private sectors including an all-hazards approach to risk analysis and infrastructure protection.

2. Demonstrate knowledge of risk analysis, including assessment of hazards, threats, vulnerabilities, and consequences pertaining to critical infrastructure and key resource protection.
3. Discuss differing approaches to managing risk by individuals, governments, militaries, healthcare sector, and the insurance/re-insurance sectors.
4. Apply a methodology to measure and explain risk.
5. Define the role risk plays in strategic planning.

Knowledge Domain 9: Professionalism

As mentioned earlier under (see Part 3: Employment Trends) the U.S. Department of Labor classifies Homeland Security jobs as requiring extensive preparation and work-related skill and knowledge, most of which require a 4-year bachelor's degree. In this sense, homeland security professionals need to be proficient in public safety and security, law and government, administration and management, and education and training. In turn this would indicate that these homeland security practitioners require strong skills in service orientation, complex problem solving and critical thinking and writing, coordination and collaboration, oral and written comprehension and clarity, oral expression, problem sensitivity.[70] Taken together, professionalism seems a central component to effective homeland security education.

The first eight knowledge domains clearly refer to extant practice or academic areas. However, and unlike these eight knowledge domains and their associated competencies, elements of professionalism tend not to be tied to a specific academic or practice area such as emergency management. law, intelligence or terrorism. Elements of professionalism seem to occur *throughout* an academic program, across many courses and student learning experiences and indeed shoudl be observed in each of the first eight domains. Consequently, this project considered elements of professionalism to be "program level competencies" since students would acquire them in their matriculation throughout an academic program en masse.

It turns out that many of the competencies considered as elements of professionalism are closely aligned to characteristics of traditional liberal education programs.[71] For example, per the American Association of Colleges and Universities, the essential learning outcomes of a liberal education include the following four characteristics:[72]

1. **Knowledge of Human Cultures and the Physical and Natural World.** Knowledge of human culture and the physical and natural world is *focused* by engagement with big questions, both contemporary and enduring, such as:
   - Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts
2. **Intellectual and Practical Skills.** *Intellectual and practical skills are practiced extensively*, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance, such as:
   - Inquiry, analysis, and evaluation
   - Critical and creative thinking
   - Written and oral communication
   - Quantitative literacy
   - Information literacy
   - Teamwork and problem solving
3. **Personal and Social Responsibility.** Personal and social responsibility is *anchored* through active involvement with diverse communities and real-world challenges, such as:
   - Civic knowledge and engagement – local and global
   - Intercultural knowledge and competence
   - Ethical reasoning and action
   - Foundations and skills for lifelong learning
   - Professionalism and leadership

4. **Integrative and Applied Learning.** Integrative and applied learning is *demonstrated* through the application of knowledge, skills, and responsibilities to new settings and complex problems, such as:
    - Synthesis and advanced accomplishment across general and specialized studies.

Ultimately, the INSPRS education standards project identified 13 *program level* competencies considered essential elements of an undergraduate's ***professional development***. In this sense, in the parlance of higher education program areas, once can classify HLS programs as liberal arts programs as opposed to business, science, technology, engineering or math - though as discussed above, HLS programs would clearly include elements from many discipline areas. Professionalism program level competencies for undergraduate academic degree programs in homeland security (or similarly named programs) are listed below.

Domain Competencies

1. Work collaboratively and in teams.
2. Create and deliver professionally prepared papers, presentations, and briefs.
3. Conduct research.
4. Design, conduct and evaluate exercises applicable to the disciplines of homeland security.
5. Demonstrate knowledge of emergent risks, including natural, human- induced and technological hazards.
6. Apply the principles of professionalism in the homeland security enterprise.
7. Apply the concepts of ethics in the homeland security enterprise.
8. Understand and utilize principles of effective program management.
9. Understand and utilize principles of effective leadership.
10. Understand the range and challenges presented by technology.
11. Demonstrate knowledge of project and quality management methods.
12. Complete an internship.
13. Complete a senior capstone in homeland security or a related area.

Discussion and Conclusions

This project leveraged the collective expertise of subject matter experts over roughly a 3-year period to develop a consensus set of nine knowledge domains and a set of competencies (aka knowledge, skills and abilities as student learning outcomes) per domain. The ninth domain, professionalism, is organized differently as a consensus set of "program level outcomes". Program level outcomes are competencies not tied to a specific academic or practice area such intelligence, or risk management, but are instead outcomes distributed across the curriculum and which may indeed be subcomponents of multiple knowledge domains. Taken together, such a set of knowledge domains and competencies (the minimum set of skills, knowledge, and abilities students of homeland security acquire academically) would describe the professional boundaries of the homeland security discipline. By extension and appreciating that any HLS academic program would be more robust than the set of domains and competencies described here, the set of domains and competencies describe the minimum capabilities homeland security graduates will have upon entering the profession.

The authors recognize that many mature disciplines ultimately use education standards to not only define themselves, but to sanctify and protect their professional boundaries. Nutritionists, for example, are professionals protected by registration, and licensure (as well as certification in some cases). Yet to become a registered dietician, one needs to graduate from an accredited academic degree program the basis of which is compliance to a set of education standards. As an emergent discipline, the INSPRS project attempted to create its own intellectual framework by emulating the structure and approach used by these better-established disciplines to create education standards. In the same way, and to advance the HLS profession, it makes sense to think that

HLS practitioners should have educational backgrounds (like doctors or lawyers) that share some common set of educational competencies.

Further, colleges and universities that educate aspiring homeland security professionals are duty-bound to supply a national workforce that is capable and adequately prepared to meet the National Preparedness Goal.[73] It is perhaps not an exaggeration to suggest that developing a qualified HLS workforce could be considered a matter of national security. Indeed, an appropriately educated workforce is not only part of the current FEMA National Preparedness Goal, it was identified as a national security imperative as early as 2001 by the U.S. Senate Committee on Homeland Security and Government Affairs.[74] A baseline set of education standards for homeland security education would, at the very least, ensure that academic programs would consistently graduate a workforce that has a common set of competencies aligned to the needs of both public and private sector actors engaged in domestic and national security. In turn, employers and students alike would better understand not only what homeland security is, but what HLS graduates can do. The challenge is how best to conceptualize and implement a system that integrates such a set of competencies into all academic HLS programs nationwide.[75]

To best address this challenge, it is helpful to keep in mind two main characteristics of academic homeland security. First, homeland security is still an enterprise. To date, higher education's response as to how to best educate students to enter such an enterprise has been to consider homeland security as a *meta-discipline*, or a discipline of disciplines. As such, homeland security curricula tend to include faculty, courses and student learning outcomes from a variety of other disciplines such as law, business, management, political science, international relations, emergency management, etc. Second, we note that academic homeland security education is still largely characterized as an *emergent* discipline. That is, the core theory of what is and is not "homeland security" remains under-developed. Indeed, it is accurate to characterize homeland security more as a "practice discipline" such as medicine, nursing or law (each of which, by the way, shares the characteristic of being meta-disciplines), albeit a practice with a growing literature and experience basis as well as a theoretical basis.

Accreditation as a Possible Roadmap Forward

The call to engage in accreditation is a complex affair. Yet there remains a compelling case to do so (Ramsay 2013). Interestingly practice disciplines tend to address these same challenges by creating a system of external peer review based on compliance to a set of education standards otherwise known as recognized program level accreditation.[76] Considering that homeland security program accreditation does not yet exist (that is, there are no organizations recognized to evaluate and issue accreditation recommendations), academic programs that call themselves "homeland security" have no external peer review process that binds them to either structural or curricular standards. In disciplines such as engineering, medicine, nursing, nutrition and law, it is clearly in the best interest of the public to ensure that practitioners are licensed or at least certified to practice. In turn, licensing requirements require practitioners to graduate from accredited degree programs. Consequently, recognized program level accreditation is the norm in mature disciplines to demonstrate both degree integrity and quality assurance.

Admittedly, it remains a question for debate as to whether now is the right time to pursue accreditation in homeland security education. Questions of timing are never clearly answered in the life cycle of any discipline; rather the discipline (if not society) determines whether and to what degree the public interest is best served by licensing practitioners, or if accreditation is warranted. Certainly, engineering medicine, law, or nursing programs were not always accredited. Further, physicians and lawyers were not always licensed and engineers practiced for years before there was a professional engineering credential. Currently, in HLS, there is no certification, registration or licensing requirements demanded by employers or insurance companies. As a result, there's no "pull" (necessarily) to create and engage in program level accreditation which typically predicates professional licensure other than a voluntary sense of duty or desire to subject one's academic program to external peer review for quality assurance/improvement reasons. In contrast however, there may be a push. The "push" may be that there is a growing literature on the scholarship of teaching and learning in homeland security and as such a tacit understanding of a more consistent curricular framework in academic HLS programs as the current project demonstrates. Additionally, one might argue that the need to create an adequately educated and trained national workforce could be better met by introducing a uniform, albeit minimum, set of education standards (competencies) all homeland security graduates possess.

Perhaps a middle ground between the random, almost eclectic state of HLS education as it exists today and a more rigorous system of academic peer review such as recognized program level accreditation could be the construction and voluntary adoption of a model HLS curriculum. Such a model curriculum would contain the knowledge domains and set of competencies reported here, but would also be flexible, non-prescriptive and would maximize program. Essential characteristics of a voluntary system of academic accountability would inclue the discretionary adoption, assessment and implementation of a model HLS curriculum that would

integrate the above competencies into the curricula of all programs adopting the HLS model curriculum. Such a system should also maximize program latitude and sovereignty without being overly prescriptive. That is, it would allow for individual academic programs to maintain distinctive programmatic competencies important to their ability to compete in the marketplace, their faculty expertise and the needs of their consituency.

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Notes

1 See The CRS Report: Selected Issues in Homeland Security Policy for the 114th Congress. W. Painter, May 19, 2015. http://fas.org/sgp/crs/homesec/R44041.pdf, accessed Oct 15, 2016.
2 http://www.northcom.mil/Newsroom/Article/563151/the-homeland-security-defense-education-consortium/, accessed May 28, 2018.
3 See the University and Agency Partnership Initiative (UAPI) at https://www.uapi.us/partners-list, accessed May 20, 2018.
4 INPRS stands for International Society for Preparedness, Resilience, and Security. A brief description is provided within the text.
5 Ferguson, L. and J. Ramsay. "The Role of Education and Certification in Occupational Safety and Health Becoming a Profession." Professional Safety, October, 2010; Ramsay, J. and W. Hartz "A Competency-Based Model Curriculum for Occupational Safety and Health: Results from Two National ASSE Education Standards Workshops." Professional Safety, March 2017.
6 Ramsay, J. & McIntyre, D. (2016). Professionalizing Homeland Security: Using educational standards to define the discipline. 18th Annual Higher Education Symposium, Emmitsburg, MD June 6–9, 2016.
7 The report can be retrieved from http://www.ists.dartmouth.edu/docs/trf_def1.pdf.
8 Those were: The Bremmer Commission Report (Report of the National Commission on Terrorism, 2000), 3 reports by The Hart-Rudman Commission or Task Force Reports from 1998 to Jan 2001 (The U.S. Commission on National Security/ 21st Century), 5 reports by the Gilmore Commission (U.S. Congressional Advisory Panel to Assess Domestic Response Capabilities for Terrorism involving Weapons of Mass Destruction (WMD), from 1999 to 2003, President's Commission on Critical Infrastructure Protection (PCCIP) in 1998, and various Presidential Policy Directives including 39 on Counterterrorism and one Federal Response Plan, 56 counts on Managing Complex Contingencies, and 63 on Critical Infrastructure Protection.
9 As noted by Ramsay, J. & McIntyre, D. (2016) neither emergency management nor public safety were major considerations.
10 Retrieved from https://www.dhs.gov/sites/default/files/publications/nat-strat-hls-2002.pdf.
11 Ramsay & McIntyre, D. (2016).
12 As noted by Ramsay & McIntyre (2016) deductive research grows knowledge from laws & beliefs to specific truths; is used when you cannot see the formative process directly, only its result. So, you build knowledge based on what you do know, using theory – laws and principles – Fact: we know A (at least we believe we do), Theory: If A then B, Test the relationship between A & B. If you can prove it, great (but unlikely). If you can DISPROVE it, that's ok too – because at least we know what NOT to believe so we approach truth.
13 Robert McCreight, "Introduction to Journal of Homeland Security and Emergency Management Special Issue," *Journal of Homeland Security and Emergency Management* (DeGruyter), 2011: Article 5.
14 *Ibid*.
15 Thomas E. Drabek (2007). "Emergency Management and Homeland Security Curricula: Contexts, Cultures, and Constraints", presented at the Western Social Science Association, Calgary, Alberta, Canada in April 2007. Drabek's research findings demonstrate that within homeland security programs, terrorism is identified as the major risk currently confronting the U.S.A., while emergency management faculty reflect an all-hazards perspective which they focus on building support for flood mitigation measures and better hurricane evacuation procedures.
16 *Ibid*. Drabek's findings indicate that most homeland security faculty reflected a top-down approach to management, such as stressing the importance of unity of command from the President down to the commander in field. Again, in direct contrast, emergency management faculty in their teaching model emphasize cooperation, not command; coordination, not control, a rather bottoms-up perspective in their curricula.
17 *Ibid*. Homeland security faculty tend to be more concerned with events that involve terrorism and incidents that threaten our homeland security.
18 *Ibid*. Emergency management programs emphasize the "horizontal pattern of relationships that must be nurtured if the emergent response network is to be effective, and procedures to rapidly access state and federal resources are among the core knowledge that any emergency manager must know thoroughly." However, homeland security faculty emphasize "the crime scene" nature of disaster setting and a heavy emphasis on the roles played by law enforcement agencies. "Intelligence gathering designed to thwart potential enemy attacks and the quick capture of those who might be successful in implementing their plot is a top priority".
19 *Ibid*. A group of experts within National Academy of Sciences emphasized the following topics of content for undergraduate degrees in homeland security: port security, aviation security, asymmetric threats and terrorism, civil-military relations, intelligence community and the intelligence process, principles of criminal investigation, legal and constitutional issues in HLS and EM preparedness, nuclear, biological and chemical threats, and energy and transportation security; whereas the typical topics covered under EM are hazard mitigation theory and practice, disaster response and recovery, leadership and organizational behavior, hazardous materials, private sector issues, building disaster resistant communities, voluntary agency disaster services, crisis communications, and community disaster preparedness.
20 The USNORTHCOM partners include first responders, Title 32 National Guard forces, federal agencies, and various other partners from government and private communities.
21 Ramsay et al., "Development of an Outcomes-Based Undergraduate Curriculum in Homeland Security"; USNORTHCOM, n.d.
22 *Ibid*.

23 John Persyn and Cheryl Polson, "Foundations of Homeland Security Education," in *Introduction to Homeland Security*, Keith Gregory Logan and James D. Ramsay (Boulder, CO: Westview Press, 2012), 365–77.
24 *Ibid*.
25 Alperen, M. "Foundations of Homeland Security: Law and Policy". 2011, Wiley.
26 Renda-Tanali, I. (2013). "Higher education in Homeland Security: Current state and future trends". In D. G. Kamien (Ed.), Chapter 40 in McGraw-Hill homeland security handbook: The definitive guide for law enforcement, EMT, and all other security professionals (pp. 917–935). 2nd ed. New York, NY: McGraw-Hill.
27 According to Ramsay and McIntyre (2016) Emergency Management education and training models were in general focused on best practices for practitioners and remain that way with a few exceptions that combine Homeland Security to the curriculum.
28 The Center for Homeland Security's University Consortium Initiative lists 443 programs under Homeland Security Programs. Retrieved August 25, 2016 at: https://www.uapi.us/partners-list.
29 As Ramsay and McIntyre stated "Inductive Research b*uilds up an understanding over time, by collecting relevant facts & experiences, and trying to construct principles from these multiple data points; then tests the generalization by collecting more data points; many operators and citizens consider this a common-sense way to proceed (Old Scientific Theory). Social sciences sometimes challenge – not as legitimate as theory based research*".
30 U.S. NORTHCOM n.d.
31 Ramsay et al., "Outcomes-Based Undergraduate Curriculum."
32 *Ibid*.
33 Renda-Tanali (2013) "Higher education in Homeland Security" Chapter 40; Todd Stewart, "Academe and Homeland Security." Chapter 55 in The McGraw-Hill Homeland Security Handbook: The Definitive Guide for Law Enforcement, EMT, and All Other Security Professionals, David G. Kamien, ed. (New York: McGraw-Hill, 2005), 865–97; Robert McCreight, "Educational Challenges in Homeland Security and Emergency Management," Journal of Homeland Security and Emergency Management (DeGruyter) 6, no. 1 (2009): Article 34; Christopher Bellavita and Ellen M. Gordon, "Changing Homeland Security: Teaching the Core," Homeland Security Affairs II, no. 1 (2006): Article 1; Ramsay, Cutrer, and Raffel, "Development of an Outcomes-Based Undergraduate Curriculum in Homeland Security," Homeland Security Affairs VI, no. 2 (May 2010): 1–20.
34 Ramsay et al., "Outcomes-Based Undergraduate Curriculum."
35 http://www.INSPRS.org.
36 In his 1997 book entitled *Pasteur's Quadrant: Basic Science and Technological Innovation*, Stokes asserts that a compact between science and government can be framed by recognizing the importance of use-inspired basic research.
37 Todd Stewart, "Academe and Homeland Security," Chapter 55 in The McGraw-Hill Homeland Security Handbook: The Definitive Guide for Law Enforcement, EMT, and All Other Security Professionals, David G. Kamien, ed. (New York: McGraw-Hill, 2005), 65–897.
38 https://www.mitre.org/centers/homeland-security-systems-engineering-and-development-institute/who-we-are.
39 https://washingtontechnology.com/articles/2016/09/26/dhs-hsoac-rand.aspx.
40 http://www.anser.org/HSSAI.
41 https://www.dhs.gov/science-and-technology/centers-excellence.
42 *Ibid*.
43 As stated and referenced in Renda-Tanali (2013) Jane Bullock, George Haddow, Damon Coppola, and Sarp Yeletaysi, Introduction to Homeland Security, 3rd ed. (Burlington: Elsevier, 2009).
44 Edited by Irmak Renda-Tanali and Sibel McGee, http://www.degruyter.com/jhsem.
45 Edited by Christopher Bellavita, http://www.hsaj.org/.
46 Name change pending due to broadening of its mission and scope.
47 Currently edited by John Comiskey (founding editor Michelle Majewski, Marion University), http://www.journalhse.org/ and as of August 2018, JHSE will be re-titled the "International Journal of Security and Resilience Education" to better include the EM community of scholars and to more sharply focus the journal on the scholarship of teaching and learning (SoTL) in HLS and EM.
48 Currently edited by Elizabeth Hope Murray, Embry-Riddle Aeronautical University (founding editor Edin Mujic, University of Colorado, Colorado Springs).
49 Edited by Alex Schmid, http://www.calu.edu/business-community/ilpp/publications/the-review/index.htm.
50 Edited by Gillian Duncan, http://ojs.st-andrews.ac.uk/index.php/jtr.
51 Also, marketed under its short title COUNTER TERRORISM, is the flagship publication of the International Association for Counterterrorism and Security Professionals (IACSP).
52 http://www.terrorismanalysts.com/pt/index.php/pot.
53 Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2016–2017 Edition*.
54 Ramirez, C. D. & Rioux, G. A. (2012). Advancing curricula development for homeland security education through a survey of DHS personnel. *Journal of Homeland Security Education*, *1*, 6–25. http://www.journalhse.org/v1i1-ramirezandrioux.html.
55 Pelfrey, William V., and William D. Kelly. "Homeland Security Education: A Way Forward." *Homeland Security Affairs* 9, Article 3 (February 2013). https://www.hsaj.org/articles/235.
56 Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning: A guide to nominal group and Delphi processes*. Scott Foresman.
57 *Ibid*.
58 NOTE: Each of the program level competencies (Table 2) and all student learning outcomes (Table 3) should ultimately be mapped to core courses in the HLS curriculum in the attached matrix, showing whether the outcomes are at the introductory, practice, or mastery level in each core course.
59 Wheelehan, L. & Moodie, G. (2011). *The quality of teaching in VET: final report and recommendations*. Mawson: Australian College of Educators. Retrieved from http://www.lhmartininstitute.edu.au/userfiles/files/research/quality_vetteaching_final_report%281%29.pdf.
60 See https://www.fema.gov/national-incident-management-system.
61 U.S. Department of Homeland Security. (2011). The strategic national risk assessment in support of PPD 8: A comprehensive risk-based approach toward a secure and resilient nation. Retrieved from http://www.dhs.gov/xlibrary/assets/rma-strategic-national-risk-assessment-ppd8.pdf.
62 Feldman-Jensen, S.F., Jensen, S. and Sandy M. Smith. The Next Generation Core Competencies for Emergency Management Professionals: Handbook of Behavioral Anchors and Key Actions for Measurement, Aug. 2017.
63 Blanchard, Wayne. "Top Ten Competencies of Emergency Management". Oct. 2005. Retrieved from https://training.fema.gov/hiedu/docs/blanchard%20-%20competencies%20em%20hied.doc.
64 Retrieved from https://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20(w-o%20draft).pdf.
65 From the US DHS website: https://www.dhs.gov/dhs-rulemaking.
66 Retrieved from http://definitions.uslegal.com/n/national-security/.

67 The 2018 QHSR is pending as of this writing.
68 See https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil.
69 See FEMA Continuity Guidance Circular (February 2018) at https://www.fema.gov/media-library-data/1520878493235-1b9685b2d01d811abfd23da960d45e4f/ContinuityGuidanceCircularMarch2018.pdf.
70 See Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2016–2017 Edition*.
71 See for example: https://www.aacu.org/leap, accessed Oct 20, 2016.
72 See https://aacu.org/leap/essential-learning-outcomes, accessed Oct. 20, 2016.
73 The current US National Preparedness Goal is: "A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk." https://www.fema.gov/national-preparedness-goal, accessed June 21, 2018.
74 See: https://www.hsgac.senate.gov/media/majority-media/thompson-akaka-and-durbin-introduce-legislation-to-strengthen-americas-national-security-workforce.
75 James Carafano suggested having Congressional oversight through the establishment of committees in the House and Senate over key education, accreditation interagency programs in Missing Pieces in Homeland Security: Interagency Education, Assignments, and Professional Accreditation. Executive Memorandum No.1013 (Oct.16, 2006). Heritage Foundation.
76 Accreditation in higher education refers to an external review process degree programs or institutions engage in to demonstrate the highest level of quality assurance. The concept of "accreditation" indicates that an academic degree program can demonstrate how they achieve a specified set of student learning outcomes and the degree to which that program is compliant with specified structural requirements such as faculty credentials, library resources, advising systems, etc.
The term "recognized program level accreditation" incorporates several components: "Recognized" refers to the fact that the organization issuing the accreditation decision is itself certified to issue such determinations. Both CHEA and the US Department of Education qualify organizations to issue accreditation to academic degree programs. The interested reader is referred to CHEA's homepage (https://www.chea.org/) or the US Department of Education's home page: (https://ope.ed.gov/accreditation/) for more information on recognized program accreditation. Note that the term "program accreditation" is a term that refers exclusively to the accreditation of a degree program in contrast to "institutional accreditation" which refers to the accreditation of the entire university or college.

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