

# EDUCATION

## Today's Lessons:

- "Smart" Phones & Disasters
- Vaccination Compliance
- "Bad Things" & Good Advice
- New Higher Education Database
- Ebola & Healthcare Systems
- Online vs. Brick & Mortar
- Data-Driven Decisions
- Education vs. Training
- Benefits of Internships



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*About the Cover: As Martin Luther King Jr. wrote in a student paper in 1947, “The function of education ... is to teach one to think intensively and to think critically.” This function is imperative for those who must make critical decisions when faced with disasters. Education does not end when the chalkboard is erased, but is a lifelong journey with a never-ending list of lessons to learn. (Photo by iStockPhoto)*

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## Editorial Remarks

By Catherine Feinman

*“Education is the most powerful weapon which you can use to change the world.”*

– Nelson Mandela, former president of South Africa, 1993 Nobel Peace Prize laureate



In a world where disasters occur every day, emergency preparedness leaders need this powerful weapon on their side. “Education” is a never-ending process that expands and can be built upon over time. From formal learning at academic institutions to informal knowledge building during daily operations, these leaders indeed are building skills to help protect and serve their communities, thus changing the world for the better. Kevin Kupietz leads this month’s issue of the *DomPrep Journal* with an article about the educational journey. With many online and brick-and-mortar options to consider, prospective students have important decisions to make along the way. Although the path forward may take some twists and turns, the journey itself is often more important – and more life-changing – than the final destination.

However, the journey into higher education is one that should not be taken lightly. Matthew Ellis and the International Association of Emergency Manager’s Global Student Council are helping to fill a database gap by compiling a comprehensive list of academic emergency management programs available in many different countries. Even with a degree, though, there is no guarantee of obtaining a job. To address this concern, Wayne Bergeron describes how some academic institutions and agencies are working together to build real-life skills to fulfill requirements of both education and experience.

In schools and in workplaces, data and technology have become staples of modern society. Unfortunately, such technological advances tend to create interdependencies and have varying learning curves. Smartphones, for example, may not seem so “smart” when cellular towers are inoperable. Anjila Lebsock shares some solutions to this problem when plans are in place and the right applications are installed before communication is severed. Statistical data also present challenges for decision-makers as described by Joseph Cahill. In some cases, there is no substitute for the analytical human thought process.

Education offers knowledge about something that a person may not have known about or thoroughly understood. When people talk about topics such as high-consequence disasters and infectious diseases, factual information can become overshadowed by rumors and other misinformation. William Kaewert shares his experience talking to people who may not grasp the possibility and credibility of incidents that could have a significant impact on critical infrastructure. Craig DeAtley reflects on the Ebola virus and what healthcare facilities must do to adequately protect their personnel. And, Dipti Subramaniam discusses the resurgence of measles in the United States and the need for vaccination compliance.

Rounding out the issue is an article by Bruce Martin, which leads the discussion into next month’s topic on training. Education and training are not interchangeable and each plays an important role in building successful homeland security enterprises. As Martin points out, it is not enough to just know how to do something (training), it is equally important to know why (education).

# Exploring an Online Educational Journey

By Kevin Kupietz



There has long been [debate](#) about the effectiveness and applicability of online learning for those seeking education in emergency service fields. For a field that has traditionally relied on hands-on education strategies to teach skillsets, some may question the process of learning in an online environment. However, online education is effective for persons seeking formal degrees or continuing education courses, as well as for those who want to pursue more vocational-centered classes, such as firefighters and emergency medical technicians.

Working professionals have an increasing number of online education options available that are attractive because of their flexible scheduling, anyplace availability, and affordable cost structure. Although online courses are not ready to completely take over all the training and education in the emergency service world, they are proving to be a great and affordable solution for many needs.

## ***Research Shows That Online Education Is Effective***

There is an overwhelming amount of data to examine regarding the effectiveness of online education. The easiest way to evaluate this data is to look at a [2009 meta-analysis report](#) conducted for the Department of Education that evaluated 99 different studies of online learning over a 12-year span. This report found that students of online programs tested in the top 59 percentile and concluded that, “On average, students in online learning conditions performed modestly better than those receiving face-to-face instruction.”

Therefore, research shows that online education is not only as good as traditional classroom education but, in some cases, can actually be better. To determine the right educational setting, it is important for prospective students to consider many factors, such as the material they want to learn, the type of learner they are, and the benefits of both online and traditional classroom learning.

## ***Different Ways of Learning***

Students may begin by considering whether the course material is primarily:

- *Cognitive*: Involves information processing and ways that people think, perceive, remember, and problem solve;
- *Psychomotor*: Requires muscular activities guided by signals from the environment – for example, using a fire hose, performing emergency medical procedures such as intubations, or even practicing basic skills such as driving emergency service vehicles; and
- *Affect learning domain*: Deals with student attitudes and values based on the education process – for example, a student may understand the concept of buckling a seatbelt (cognitive), may be able physically to do the task (psychomotor), but may not do the task as needed (affective).

In the case of fire service education, a student might need to increase his or her knowledge about the manufacturing materials used in a fire hose, which could be taught in an online classroom format. However, the psychomotor – or hands-on skill – of controlling a fire hose while applying water on a fire can only be mastered by physically doing it and would best be taught in a traditional classroom setting. In today’s creative world of education, though, it may be argued that in some ways psychomotor and affect domains can be taught online. For example, the emerging computer simulators for Advanced Cardiac Life Saving (ACLS) and even fire pump operations that allow students to practice their skills from the comfort of their own homes.

### ***Learning Styles & the Online Classroom***

When considering educational options, each person needs to evaluate his or her own learning styles. For students who are primarily hands-on learners, it may be difficult to adjust to the online environment, which largely offers visual and auditory learning. Online education relies heavily on strong reading comprehension and writing skills to convey understanding of material rather than oral communication.

In general, online education requires students to be highly self-motivated and have the ability to manage time well. Professors are not physically present to push students to learn more. In addition, many online programs are designed asynchronously so that coursework is due at the end of the week and



students are not required to be present in the classroom at any particular time. This can be a challenge for students who are not able to structure their time well.

### ***The Reality of Today’s Educational Environment***

Although students, instructors, and employers may use the word “easy” in discussions about distance education, this is a misconception. An online education is not easier or even less work, but it does offer more flexibility. When courses are conducted correctly, online education is actually harder and more time-consuming. Even when the course is shorter in terms of the number of weeks, the content is often condensed to cover the same amount of material as found in a traditional school semester.

Distance education has matured greatly in the past few decades. Although distance education began in the form of correspondence courses, challenge exams, and even audiocassettes, today’s modern distance education programs are much more sophisticated. These programs include real-time presentations and lectures, adaptive

tools, and computer-simulation tools. Many programs often provide the student with real-time access to the instructor.

Online programs offer flexibility for students who miss presentations to watch them later and to contact their instructors with questions. Video examples are widely used, especially in fire and emergency medical services training classes. Videos provide students with constant access to visual demonstrations for review at any time. Student presentations also can be displayed online.

### ***The Importance of Engagement in the Classroom***

Education requires good instructors, regardless of the learning environment. Instructors should work hard to engage the student and be present, whether physically in a traditional classroom or virtually in an online setting. When evaluating programs, students should research faculty members and determine if their backgrounds and expertise match the students' desired areas of study and their career objectives.

The ways instructors engage students is slightly different depending on the setting. In a traditional classroom, the instructor may ask the students verbal questions to engage them and to assess their level of understanding about the material being taught. A similar technique is used in the online setting, but is often done through written discussion forums where students post responses to a professor's questions and engage in written discussions with other students. To provide a more real-time discussion experience, many online courses include a chat-room function where students and professors can engage with one another online.

### ***The Key Purpose of Education***

When evaluating educational options, it is important to keep in mind the purpose of education. Often, students begin their educational journey focused on the end of the process; wanting a certificate or degree in hopes it will get them a better job. However, two sayings often come to mind when discussing the pursuit of education: (a) The real experience of a trip comes from the journey, not the destination; and (b) Each person gets out of an experience what he or she puts into it.

Whether someone chooses a brick-and-mortar or an online classroom, the journey is the important part. It is critical to enjoy the process of learning, to enhance one's knowledge, and to be able to apply what has been learned. The reward of education is greater than any piece of paper. It is about choosing the best journey, not the easiest way to an educational destination.

---

*[Kevin Kupietz](#), Ph.D., is a firefighter and paramedic by trade with more than 20 years of experience. He has taught in traditional classrooms as well as in online formats for more than 15 years. He is an adjunct faculty for the graduate program of [Emergency and Disaster Management at American Military University](#). In addition, he is a full-time school director of Fire/EMS at Halifax Community College in North Carolina. He also serves with the Roanoke (NC) Rapids Fire Department, RRT1 hazmat team and NCI DMAT. He received his Ph.D. in human services, MS in occupational safety, and BS in fire engineering. In addition, he is an Executive Fire Officer (EFO) graduate.*



# How to Make a “Smart” Phone “Undumb” in a Disaster

*By Anjila Lebsock*



**T**echnology is continually expanding and ever changing. The first cellphones were large, difficult to carry, and in some cases had to be transported in a suitcase. As technology advanced, cellphones became small enough to fit into pants or shirt pockets. The trend is now reversing back to large phones designed to store substantial amounts of information and to display the data on oversized screens. Many, if not most, people with cellphones have enormous amounts of information about their lives stored on this single device. People rely on their cellphones to wake

them, deliver the morning news, and keep them on track throughout the day. When cell towers cease to function after a disaster, those who rely so heavily on these devices still could utilize their cellphones beyond the traditional method. There are now applications (apps) on the market that do not require a cellular connection and can provide the owner with useful information and even connectivity to emergency and community services.

## ***People, Pets & Emergency Response***

The first app to consider allows chatting with those who are in the immediate area. This app is particularly valuable after a disaster if the cell towers are down, overloaded, or an Internet/Wi-Fi connection is not available. One app to consider for this purpose is *FireChat*, which works off a peer-to-peer mesh network that is formed when devices are within 200 feet of each other. With Bluetooth enabled, the cellphone can connect to other people who also have the app open. The more people with the app operating on their phones, the further the communication can reach. Each added device becomes a link in the chain to build a robust communication network. Another feature of this app is that, if any device in the chain has Internet access, the communication can be shared online. This is a great way to share shelter locations and other critical information after a disaster. A recent use of this app occurred in the 2014 Hong Kong protests when the government shut down the Internet and cell towers. Protestors were able to coordinate the protest movement through FireChat.

iPhone: <https://itunes.apple.com/us/app/firechat/id719829352?mt=8>

Android: <https://play.google.com/store/apps/details?id=com.opengarden.firechat&hl=en>

Following a disaster, children are among the most vulnerable, especially when separated from their guardians. In one case, after Hurricane Katrina in 2005, it took nearly seven months to reunite the last child with her guardians. To aid law enforcement when a child goes missing, parents and guardians should consider the *FBI id Child* app, which allows a parent or guardian to add a photo of the child, identifying characteristics, as well as guardian name and contact information. If cell towers are working, FBI id Child has the added feature of easily emailing the child’s information to the law enforcement officer working on the case.

iPhone: <https://itunes.apple.com/us/app/fbi-child-id/id446158585?mt=8>

Android: <https://play.google.com/store/apps/details?id=com.fbi&hl=en>

Other vulnerable members of the family are pets, which can become scared and break out of their yards or cages. In addition, when time is of the essence to evacuate a disaster area, sometimes pets cannot be located quickly, which means they may be left behind. The American Society for the Prevention of Cruelty to Animals (ASPCA) has developed a free mobile app to help locate lost pets. The *ASPCA* app works similarly to the FBI id Child app, but is designed specifically for pets. The app allows users to add a photo as well as information such as name, breed, color, weight, and microchip number – a unique way to identify an animal and return it to its owner. The app also allows pet owners to store vital medical records, receive guidance on how to locate a lost pet, and other tasks that can be performed before, during, and after a disaster.

iPhone: <https://itunes.apple.com/us/app/aspca/id726419470?mt=8>

Android: <https://play.google.com/store/apps/details?id=com.cube.aspca.pfa&hl=en>

After a disaster, there is a possibility that 911 may not work. Therefore, access to medical assistance may be unavailable. At these times, basic first aid may be necessary to help family and friends. Even when community members receive training through the Red Cross, Community Emergency Response Teams (CERT), or any other nationally recognized program, this knowledge may be forgotten during a disaster. The Red Cross has developed a free app, *First Aid by American Red Cross*, to provide step-by-step instructions for the most common first aid emergencies. The Red Cross app also includes videos to show many of the procedures.

iPhone: <https://itunes.apple.com/us/app/first-aid-by-american-red/id529160691?mt=8>

Android: <https://play.google.com/store/apps/details?id=com.cube.arc.fa&hl=en>

### ***Many Apps, With Many More Possibilities***

These four apps are only a few of the resources that can help community members in the aftermath of a disaster. However, it is important to plan effectively before a disaster in order to allow for greater empowerment after a disaster. On a final note, although these apps work without cell service, they still require a charged cellphone battery. Each disaster kit should include a charging device, such as a small solar panel charger, a hand-crank flashlight that the charger cable can plug into, or even a camping stove equipped with USB ports. These stoves convert heat to electricity through a thermoelectric generator. To ensure that an app will work during a power outage or disruption in cellular service, community members should carefully plan, evaluate, and test the various options available.

---

*Anjila Lebsock has been the emergency services coordinator for the City of Palm Springs since 2011. As the emergency services coordinator, she is responsible for the five phases of emergency management (prevention, mitigation, preparedness, response, and recovery), serves as program manager and instructor of the Community Emergency Response Team (CERT), oversees grant management, and serves as Basic Life Support (BLS) instructor and training center coordinator for the city's American Heart Association Training Center. She holds a master's degree in environmental technology management with an emphasis in emergency management and a bachelor's degree in industrial engineering from Arizona State University. She has completed the required courses and training by the International Association of Emergency Managers to be a Certified Emergency Manager (CEM). She also has completed her California Specialized Training Institute (CSTI) Emergency Management Specialist Certificate.*

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# A Global Student Council & A New Higher Education Database

By Matthew P. Ellis



Emergency management has [evolved](#) extensively since the 1950s era of civil defense, when personnel came from a military or emergency services background. Once solely the domain of local government, it has become a complex, multidiscipline area that can be located within: state, local, tribal, and territorial governmental agencies; nongovernmental organizations; faith-based organizations; academic institutions; military; and public and private sector agencies and organizations. Emergency management is a risk-based discipline that is dynamic and complex, making it difficult to assess, particularly with low-probability, high-consequence events.

As emergency management evolves and competes with conflicting organizational priorities, it is important that it be able to compete effectively while demonstrating an ability to be productive. In 2013, the Australian Workforce and Productivity Agency ([AWPA](#)) identified productivity as being vital to the economic growth of a nation, allowing organizations to increase output while maintaining input numbers.

*“Emergency management increasingly plays an important role in public safety, growing to include university courses specific to emergency management for a wide range of disciplines, levels of government, businesses, and approaches.”*

The AWPA identified a positive correlation between learning and productivity. Although education in itself may not increase production, higher levels of education are important, as they can help identify specific attributes of productive workers. Furthermore, the 2013 AWPA literature review recognizes that education is

not a “dominating factor,” but “as more knowledgeable and skilful workers join the work force, the overall productive capacity of labour is enhanced” (p. 41).

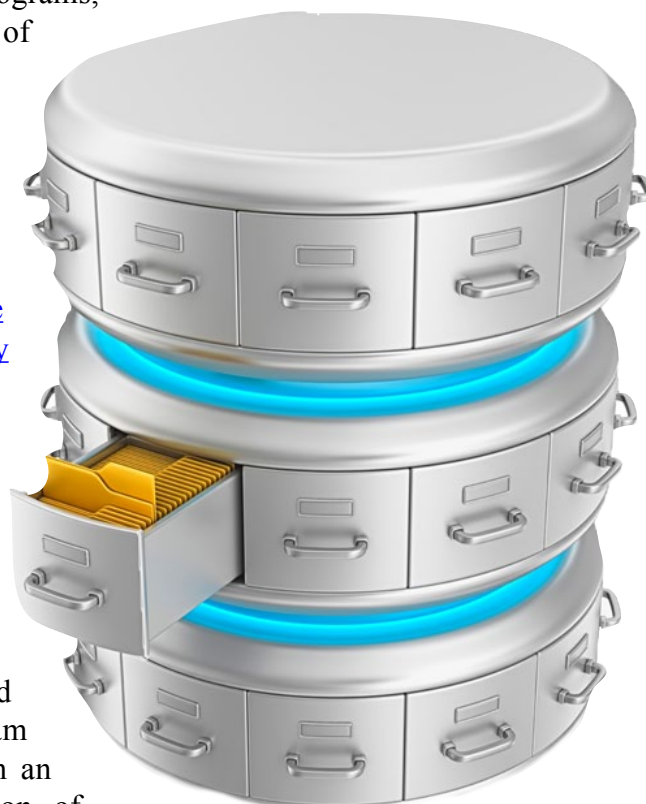
## ***Justification***

Emergency management increasingly plays an important role in public safety, growing to include university courses specific to emergency management for a wide range of disciplines, levels of government, businesses, and approaches. The relatively late establishment of these programs within academia has meant that these programs have developed within and been greatly influenced by other disciplines such as social sciences, human and physical geographies, political sciences, and engineering. These disciplines have significantly contributed to the development of the emergency management body of knowledge and the existing emergency management higher education programs.

Emergency managers have a high level of responsibility, and many have pursued academic qualifications. Over the past 20 years, the number of universities offering programs related to emergency management has grown.

In an effort to address this growth in programs,

several organizations have compiled lists of various programs. These range from the International Association of Emergency Managers-Oceania's list of [University Emergency Management Programs Offered in the Oceania Region](#), the Federal Emergency Management Agency's [The College List](#), the [Institute of Civil Protection & Emergency Management](#), and the [Emergency Management Academy](#).



These lists have contributed to the awareness of emergency management higher education programs through their respective organizations. However, an analysis of the various lists revealed separate agendas with information collected at different times and on different program types and locations. This has resulted in an inconsistency of information, duplication of some programs, outdated information with some programs no longer offered, and limited details pertaining to individual programs. The Global Emergency Management Higher Education Database Initiative will resolve these issues, creating a more efficient and productive database for all stakeholders.

### ***Target Audience***

The International Association of Emergency Managers' (IAEM) Global Student Council (GSC) is dedicated to supporting its student members. One project that was unanimously approved by the GSC Board is the "Backpack to Briefcase" initiative. This initiative examines the various stakeholders in emergency management and discovers how the IAEM can best target their future requirements. Online forums have further revealed that academia, practitioners, and students of emergency management are interested in better understanding the availability of educational programs and the quality of these programs as they move forward in their education and careers.

The Global Emergency Management Higher Education Database will enable the Global Student Council to better respond to the needs of the emergency management student body by leveraging the work already started. The council has 29 student chapters and more than 1,200 student members across four regions – Canada,

United States, Oceania, and Europa – with three more underway in Asia, Latin America & Caribbean, and International. These regions are in line with IAEM Council regions. The Global Student Council can utilize its unique position in the emergency management marketplace as the leading organization for students to develop this project effectively.

### ***Data Compilation***

A preliminary search on information pertaining to tertiary institutions offering programs in emergency management has revealed several lists but was unable to locate databases specific to this area. The higher education database will leverage the Global Student Council's international presence to identify all universities that offer programs in emergency management on a global level. This includes the following three phases:

- *Phase I: Initial program identification (to be completed by mid-2015)* – This phase will investigate developing a partnership between a student chapter and the council as part of a university internship program. In return, the student chapter will conduct research into universities offering emergency management degrees. Phase I will identify the student chapter partners, all countries, and all universities to gather information on:
  - Name of the university;
  - Country;
  - Name of degree programs (diploma, bachelor, master, doctorate, or Ph.D. level);
  - Full name of program(s); and
  - Faculty or school that oversees the program.
  
- *Phase II: Secondary data collection (to be completed by the end of 2015)* – Secondary data will be collected to enable comparisons between programs. Phase II will gather information on:
  - Name of program coordinator;
  - Who to contact;
  - Date program was established;
  - Enrollment option 1 (full time or part time);
  - Enrollment option 2 (international and/or domestic enrollment);
  - Delivery method (in-person, distant/online, flexible, blended);
  - Costs 1 (international: per course and total);

- Costs 2 (domestic: per course and total);
  - Staff (academic vs. emergency management practitioner background, or both);
  - Duration (full-time program length);
  - Student numbers (total and per annum);
  - Accreditation; and
  - Awards.
- *Phase III: Presentation and conversion (to be completed by mid-2016)* – The final phase will improve the presentation of data and enable a more robust system for allowing students and potential students to better understand existing emergency management programs. Phase III will include:
    - Improving overall design presentation (include university logo, etc.);
    - Converting information into the database;
    - Enabling search functions;
    - Rolling out the database; and
    - Maintaining the database.

### ***Continued Growth***

The continued growth of emergency management as a viable career path will continue to demonstrate a requirement for information on higher education institutions offering courses and subjects pertinent to emergency management. The Global Emergency Management Higher Education Database will add to the emergency management body of knowledge, improve the ability of stakeholders to access a more comprehensive and accurate database, and allow for a more accurate comparison and assessment of existing programs.

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*Matthew Ellis is a Ph.D. candidate at the University of Sydney, Australia, and the IAEM Global Student Council President. He is the former Emergency Services Coordinator for the City of Sydney, Security and Emergency Management Unit. His research and interests examine productivity, human capital theory, and the role of the emergency manager, and the continued development of the emergency management industry.*



# Internships in Emergency Management: Good for All

*By Wayne P. Bergeron*



In the “good old days” of emergency management, most emergency managers secured their jobs based on previous experience and background, such as law enforcement, firefighting, emergency medical services, or military service. In many cases, the emergency manager was a former or retired police officer, fire captain, military service officer, or someone who held a similar position. That norm began to change in the early to mid-1990s as leading thinkers within the field of emergency management began to realize a need for a more-professional approach to a maturing and complex field. In particular, the first attack on the World Trade Center in 1993 and the Alfred P. Murrah Federal Building bombing two years later, preparedness activities related to terrorism quickly expanded the focus of the all hazards approach. The 1997 Nunn-Lugar-Domenici amendment to the National Defense Authorization Act solidified this trend toward evidence-based threat management and, as a result, emergency managers needed a broader base of knowledge, skills, and abilities to be able to perform increasingly complex job tasks.

Certification and training were the first steps in this process, with the International Association of Emergency Managers’ Certified Emergency Manager (CEM<sup>®</sup>) program being one of the first steps in this evolutionary process. Requirements of the CEM and the related Associate Emergency Manager (AEMSM) certification include: (a) 200 training hours; (b) an essay; (c) three reference letters; and (d) a CEM exam. In addition, CEM certification also requires: (e) three years of emergency management experience; (f) a four-year bachelor’s degree; and (g) at least six professional contributions. For “old school” emergency managers, the training and experience are not difficult to meet, and many may already have a university undergraduate degree in their primary (pre-emergency management) field. Those who do not yet meet these requirements have numerous opportunities for education with an ever-increasing number of university programs – conducted in the evening or in an online format – that target working professionals.

## ***The Education & Experience Divide***

The emergency management field began to mature, with a growing need for more formal education. National and international incidents in the early 2000s – including the terrorist attacks of 9/11 and Hurricane Katrina – brought emergency management and the related emerging field of homeland security to the forefront of a new generation of university students and potential practitioners. For emergency management, this development brought energetic and innovative thinkers into the field to fill a growing number of entry-level positions. In many cases, these aspiring graduates had the requisite level of education. However, unless they were military veterans or returning nontraditional students from law enforcement, fire, or emergency medical services, they did not have the desired level of experience necessary for such positions. Professional certifications can help bridge this gap. Nevertheless, with the aforementioned experience requirement of the CEM program, that also may not be an option.



According to Judith Hale, author of *Performance-Based Certification*, employers and hiring managers want to know if a candidate who passed an exam or earned a college degree is able to apply that knowledge in the real world. “There’s a greater onus for the certification to have a practicum, hands-on, portfolio or proven proficiency,” Hale said in [2012](#). In many cases, the newly “minted” traditional university graduates with no experience in emergency management are at a disadvantage within the hiring process. They may find it difficult to prove to prospective employers that they have the ability to perform tasks necessary for the positions they seek.

### ***Enter the Internship***

To overcome this disadvantage, university programs have begun to offer – or, in some cases, even require – an internship component to help traditional emergency management students gain the experience that many agencies desire. In a [2011 article](#), writer Shane A. Sockwell described internships as, “a great opportunity to develop industry specific skills, gain real world work experience, test-drive a chosen career path, establish professional network connections and ... [develop] character.” The credit, pay, and hours vary for different internships: (a) some students receive academic credit; (b) programs may be [paid or unpaid](#); and (c) working hours vary from 10 to 40 hours per week. The International Association of Emergency Managers (IAEM) also has seen the value of emergency management internships and, in 2012, published [IAEM Internship Guidelines for Employers](#), which provides valuable information both for universities and for employers and agencies regarding conducting effective and meaningful internships.



In addition to helping students build experience, skills, and real-world knowledge, internships also are an excellent networking tool for students to make connections. Students have an opportunity to establish reputations within the emergency management community even before securing their first jobs. Although the particular office or agency that a student interns with may not have an open position that aligns with the student’s graduation, the agency’s director could refer the intern to a colleague or other agency with an open position. A personal recommendation from a trusted colleague – who can vouch for a student’s performance – can help move a resume to the top of the stack. In short, internships work, and they work well for students who invest the time and effort.

According to The National Association of Colleges and Employers ([NACE](#)), 51 percent of interns from the graduating class of 2013 received a full-time job offer, compared to

35 percent of non-interns. Research published in the [\*Huffington Post Thesis Project\*](#) in 2014 confirmed this trend by showing that those who had completed an internship while attending Southwestern University were 13 percent more likely to secure full-time jobs than those who did not. In addition to higher rates of employment, the research suggests that students who completed an internship also were much happier. More than 35 percent of students who completed at least one internship reported being “very happy” with the resulting outcome versus 29 percent of those who did not complete an internship.

### ***The Benefit to Emergency Management Agencies***

One of the biggest benefits to emergency management agencies or offices, of course, is free or reduced labor costs. Having one or two interns, particularly within a smaller agency, can be a huge boost to productivity and effectiveness. An astute agency director who assesses an intern’s knowledge and capabilities and matches them to particular agency tasks and projects gains a valuable resource, while providing the intern with critical experience to add to a resume. In one example, a local emergency management agency in 2012, used a University of North Alabama student intern, who was working toward a Geographical Information Systems (GIS) major and a Security and Emergency Management minor, to build a GIS database of all of the agency’s historical incidents and activities. It was a project that the agency had long desired to accomplish, but did not have the time or expertise to complete within the office. In addition, the agency did not have the budget or funding to contract the work.

The student did an excellent job on the project and received an outstanding recommendation from the agency’s director. As a result, the student is now working in a neighboring county’s agency as an emergency management planner. Emergency management directors could keep running lists of all the tasks that they would like to accomplish, but do not have the time or resources to do. Then, when they find the right interns, they can rapidly prioritize the desired projects, so the work can begin right away. The other advantage of having regular interns is the steady stream of energetic and innovative individuals who can take a fresh look at old problems.

### ***A Winning Proposition All Around***

The bottom line is that a good internship program is a winning proposition for all involved within the emergency management community. A well-developed partnership between universities and local agencies provides distinct experiential learning opportunities and valuable resume experience for students and recent graduates, while providing much needed labor and expertise to emergency management agencies. It is unlikely that many agency directors would be willing to go on record saying they have all of the help they need or are willing to turn down the opportunity of having a good intern when offered.

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# Ebola – Education for the American Healthcare System

*By Craig DeAtley*



The few cases of Ebola in the United States to date have motivated hospitals and other healthcare facilities to take a serious look at their readiness to manage these types of patients. Caring for a suspected or confirmed Ebola patient is providing the U.S. healthcare system with a just-in-time education on challenges that healthcare workers may encounter in the future for a more widespread highly infectious disease outbreak.

## ***Potential Threats & Treatment Concerns***

The immediate recognition of a suspect case is critical for providing effective patient care, while preserving the health and safety of the treatment personnel and maintaining the operational integrity of the treating healthcare facility. Hospitals have been the focus of preparedness efforts for many communities, but a suspect case could just as easily arrive at an urgent care center or a community clinic. Warning signage is now common at the front door or window of many healthcare facilities. The instructions ask visitors who are exhibiting fever and flu-like symptoms and have recently travelled to affected countries to promptly report their illnesses to front-desk personnel, who should ask them to don masks and perhaps gloves. But patient failure to comply with these instructions and/or staff not maintaining constant vigilance and asking key questions and listening to the answers provided can lead to delayed recognition of a patient's condition – and potential exposure of others – as has already been seen in Dallas, Texas.

Once a suspect case arrives, the impacted healthcare facility must now implement a series of steps – as outlined by the U.S. Centers for Disease Control and Prevention ([CDC](#)) – in a timely manner regardless of the day or time. In many facilities, clinical workspace already is limited, staffing is at minimum levels, and storage space is at a premium. These needed response steps include, but are not limited to:

- Identifying where the patient goes next to receive an evaluation without further risk to staff and facility;
- Understanding how staff can gather other needed clinical information safely;
- Knowing which type of personal protective equipment (PPE) should be worn by those assessing the patient;
- Verifying whether those working are trained to use the PPE; and
- Determining the availability of necessary PPE and other response equipment and supplies.

The confirmation that a patient has Ebola or some other similar illness – for example, malaria also is often a final diagnosis – requires blood work testing not typically done at a healthcare facility lab. Thus, the facility’s link with the local and state health department that can do the required testing has proven vital. Even then, results may take hours to several days before the final diagnosis can be determined in conjunction with the CDC. In the meantime, patient care must continue.

Under the current outlined U.S. Department of Health and Human Services system, there are three levels of facilities with neither a frontline nor assessment facility ultimately being expected to treat a confirmed case. However, these facilities still have to be prepared to recognize cases, respond safely, send test specimens, and care for suspect cases before transferring a confirmed case to one of the designated [Ebola treatment centers](#). This transfer, though, requires utilization of suitably prepared emergency medical system agency (public or private), but these agencies too may be “learning on the fly.”

### ***Protection of Healthcare Workers***

The CDC has outlined PPE ensembles for medical staff to wear when working with a suspect or confirmed case. However, acquiring the recommended items has proven universally frustrating as the sudden “rush order” requests by everyone to a limited number of vendors has resulted in backorders lasting weeks to months. In the meantime, facilities scramble to assemble what they can through individual, corporate, or coalition related efforts. The recent build up of identified PPE by the Strategic National Stockpile may help a facility that has a confirmed case but does little to help facilities trying to protect staff treating suspect cases while they await test results.

***“Hospitals have been the focus of preparedness efforts for many communities, but a suspect case could just as easily arrive at an urgent care center or a community clinic.”***

Training is another focus area. Determining how many and who to train is a critical start. How best to conduct training on proper PPE [donning and doffing techniques](#) as well as working in hazardous materials suits while performing various patient care skills can be challenging. For the original three federally designated highly infectious disease centers – Emory University Hospital, University of Nebraska Hospital, and National Institutes of Health – this training and team building has been performed regularly for years, but how best to do that for all of the other healthcare facilities is a work in progress.

### ***Ongoing Challenges***

Another challenge is trying to first conceptualize then rehearse how to set up and operate a biocontainment unit, whether in a temporary or permanent site. Centers



that have treated Ebola patients have done an outstanding job of sharing the lessons they have learned with others via teleconferences, at conferences, and most recently by hosting site visits. Although there is no substitute for actual practice, a challenge that remains is practicing without disrupting normal operations, thus incurring expensive and uncompensated overtime costs as well as increasing the need for already scarce PPE.

As with most educational experiences, the invaluable lessons learned from the Ebola response to date are just the beginning. There are many more lessons to learn about this deadly disease, including how to prevent further spread, respond to new and existing cases, and sustain the ongoing Ebola effort.

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# Talking to People Who Do Not Believe Bad Things Can Happen

*By William Kaewert*



Soldiers, law enforcement officers, emergency responders, and others whose professions involve responding to or mitigating catastrophic events tend to think about “bad things” more often than the average person because they either deal with life-and-death issues regularly or have received training to do so. The term “bad things” in this article refers to high-impact threats to the well-being of a large number of people in a wide area – for example, any natural disaster or deliberate attack with the potential to cause cascading infrastructure failure. When receiving bad news, there are different ways in which less concerned people can unrealistically minimize threats, which include but are not limited to:

- Those who believe that bad news happens all the time and, as a result, they may tune out the media.
- Those inexperienced with disasters and, therefore, do not believe until it is too late that they could be affected.
- Those who believe that, if the situation deteriorates, the government will take care of them.

## ***Common Barriers to Communication***

Each of the above behaviors or attitudes can cause the people who embrace them to be unprepared for disasters. Communicating about high-impact threats to people who do not want to hear about them can be a challenge. However, there are common-sense approaches that can improve the odds of successful communication and perhaps lead to positive action. The benefits of communicating about bad things accrue to both parties. Becoming more self-sufficient enables citizens to better endure disasters while experiencing less stress. Emergency responders benefit because a well-prepared citizenry means reduced demand for emergency services during a disaster.

***“The chance of having a successful conversation about bad things increases when saying the right thing to the right people at the right time.”***

When confronted with a new problem or threat for the first time, some people may become defensive. At an EMPact America conference in September 2009, Peter Huessey, senior defense consultant of the National Defense University Foundation,



described four types of barriers people erect when confronted with new information: (a) “Not invented here” (distrustful attitude); (b) “How often has *that* happened?” (sarcastic attitude); (c) “What are you selling?” (skeptical attitude); and (d) “How come I haven’t heard of this before?” (defensive attitude).

These barriers may be conveyed by words or body language and include an underlying attitude behind the behavior. There are effective techniques for addressing these types of resistance. Depending on the situation (group presentation, tabletop exercise, or one-on-one discussion), one or more of the following approaches may be helpful in breaking through the other party’s preconceived notions that underlie their defensiveness.

### ***Tell a Story***

Personal stories about problems and how they affect presenters and listeners often are more effective than lectures for communicating a concept about which the person may not be an expert, such as a politician discussing the possibility of an extended power outage. Conveying that a friend’s wife would die without her diabetes medication more powerfully illustrates the problem of an extended power failure than lecturing about maintaining sufficient reserve supplies. Personal stories combined with sincere feelings help listeners relate to the presenter, thus reducing the chance of confrontation.

### ***Be Credible***

Allaying fears about the presenter’s motives can improve the relationship between presenter and participants by reducing suspicion of a hidden agenda. If the target audience does not already know the presenter well, providing them with information about the presenter’s background, training, and organizational affiliation boosts credibility, as does telling the truth, preparing thoroughly, and attributing all research material to relevant sources.

In addition, audiences often relate well to presenters who explain from whom they learned about a particular problem, display an appropriate level of humility, such as admitting when they do not have answers, and refraining from telling people that everything “is under control” or “will be all right” when no such assurance is possible. Sometimes listeners feel embarrassed when they think they know less than others and, as a result, may act defensively. Presenters can help listeners overcome this hurdle by explaining they once did not know about the threat being discussed, and sharing where they learned of it.



### ***Choose Wisely***

An obvious example of the wrong time to initiate the subject of catastrophic threats is at a cocktail party, where people reasonably expect to relax and unwind. The chance of having a successful conversation about bad things increases when saying the right thing to the right people at the right time. Three points to consider are:

- *Timing* – Initiate conversations when the audience sends clear signals that it is receptive, not when the presenter feels like talking.
- *Research* – Understanding the audience can pay big dividends by helping a presenter tailor an appropriate message. Presenting a disaster scenario that fits the listener’s worldview, for example, can reduce the problem of listeners “tuning out” the presenter.
- *Discernment* – Sometimes presenters face unexpectedly difficult listeners. A shrewd presenter asks questions to discern the listener’s motives, and adjust his or her approach accordingly – including disengaging from people that the presenter’s information will not help.

### ***Get Help***

There is a wealth of published information about the causes of, preparation for, and recovery from nearly any disaster imaginable. Reports are available from government, nonprofit, university, think-tank, corporate, and other sources. Some carefully researched novels based on a variety of disasters from financial system meltdown to electromagnetic pulse attack can be powerful triggers of the imagination. Leaving trustworthy reading material behind after an exercise or presentation can reinforce the message.

### ***Ask for Action***

After successful communication, the next step is to ask for action, such as developing an emergency plan, writing to elected representatives, or improving neighborhood relationships. The earlier this goal is defined when planning any interaction or presentation with the target audience, the more likely the goal will be achieved. The primary goal of such presentations is to help people imagine what a disaster would mean for them and encourage them to respond by taking small steps toward becoming more self-sufficient. As their preparedness grows, they will be in better shape when disaster strikes and less of a burden on emergency-response systems that could well be overstressed during the next “bad thing.”

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# Lessons About Measles & Vaccination Compliance

*By Dipti P. Subramaniam*



The recent measles outbreak in California and the rise in cases have received considerable media attention, largely due to the debate surrounding the advocacy for child vaccination. The Centers for Disease Control and Prevention (CDC) declared a multistate outbreak in the United States at a record number (since the [early 1990s](#)) of [644 measles cases](#) in December 2014. More than 150 additional cases have been reported in 2015.

## ***Infection & Protection***

Measles is a highly infectious disease that affects all age groups, but the complications can be especially devastating in children who are five years or younger. Although the symptoms of measles may initially appear to be mild and common, this disease also has been known to cause severe complications such as pneumonia and encephalitis. Measles can increase the risk of acquiring long-term complications such as subacute sclerosing panencephalitis (SSPE), which is a fatal disease affecting the central nervous system. Although the measles was [eliminated](#) in the United States in 2000, its resurgence can be attributed, in part, as a result of some parents' refusal to vaccinate their children.

The measles, mumps, rubella (MMR) vaccine provides optimum protection against measles and minimizes the risk of acquiring the associated complications. More importantly, the vaccine reduces infection and transmission. Like any vaccine, the MMR vaccine can cause mild adverse events, such as mild fever, but severe problems are "[very rare](#)," according to the CDC. The CDC in collaboration with organizations such as the American Academy of Family Physicians (AAFP) and American Academy of Pediatrics (AAP) highly recommend that children receive the MMR vaccine based on the suggested schedule to reduce the risk of being infected. Despite noted benefits and recommendations, the lack of MMR vaccine acceptance among parents and their resistance to vaccinate their children are alarming because, although [MMR vaccination coverage](#) is at 92 percent, it is still below the threshold for "[herd immunity](#)" of [95 percent](#). Herd immunity (or community immunity) is the concept that, when a critical portion of a community's residents is immunized (in the case of measles, 95 percent), everyone within this community is protected.

## ***Fears & Facts***

Parents' knowledge about vaccinations is a key factor in predicting vaccination compliance. Often, the reported barriers for vaccination compliance include vaccine misconceptions and fear of vaccine-adverse events that result in parental refusal of the vaccine on behalf of the child. The lack of compliance stems from an anti-vaccination movement propelled by parents who are either uninformed, or who consciously choose not to vaccinate due to cultural, philosophical, or religious beliefs. A major point of



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those who are misinformed is allegations that the MMR vaccine can cause autism, despite the large body of [scientific evidence](#) proving otherwise. Some members of the anti-vaccination movement not only propagate fear, but also undermine the parent-physician relationship.

In recognition of this growing public health problem, healthcare providers and professionals are key stakeholders in promoting compliance among community members, specifically parents. The first step in dismissing myths regarding MMR vaccine is education. Public health professionals can collaborate with family physicians in developing educational materials that highlight the benefits of receiving the vaccine. Physicians also should be trained in communicating to parents how the benefits outweigh the side effects of vaccines and the risk of developing measles. Furthermore, physicians should be prepared to address parents who refuse to consent to vaccination for their children – for example, communicating the benefits of vaccination for their child’s long-term health as well as for the health of the community.

### ***Targeting of Future Messages***

In addition to physicians, public health practitioners should be trained to frame tailored messages for a variety of communities, which have diverse perspectives, social norms, and cultural beliefs affecting how they receive public health messages. Message framing is a key component of influencing behavior and can minimize resistance in communities where healthcare providers are mistrusted. These messages can shift the focus back to the scientifically demonstrated dangers of measles and away from the uncorroborated claims such as the link between [vaccination and autism](#).

Health officials can work with parents to identify and address individual concerns as well as learn more about attitudes and behaviors regarding vaccination. Through this approach, health officials are better able to effectively develop targeted interventions that meet the actual needs of the parents rather than solely perceived needs. Shifting the focus to parents encourages them to take the primary role in the decision-making process, which can alleviate the perceived infringement on parental rights. Likewise, employing the influence of community leaders such as pop culture figures and religious leaders encourages awareness and education among parents

The solution is not as simple as developing a universal message for parents. Targeted interventions are more effective in encouraging vaccination uptake since they take into account the wide variety of individual, social, and cultural beliefs and concerns of specific communities. However, even with targeted interventions, the anti-vaccination movement will not dissipate overnight. Continual reframing of messages and community engagement are needed to ensure the long-term success of vaccination advocacy.

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# Data-Driven Decisions – Lies & Statistics

*By Joseph Cahill*



One of the perennial buzzwords in governance is “[data-driven](#).” This concept implies that work performed by emergency medical services (EMS) and other government agencies can be judged by statistics and that decisions can be made based on an aggregation of previous outcomes. EMS systems are frequently judged on statistics – for example, the “[save rate](#),” which is the percentage of cases when a patient has no heart beat upon arrival of emergency medical technicians (EMTs) but he or she survives the episode.

However, the ways in which agencies use these data measurements can make a significant difference.

## ***Lives Saved & Data Collected***

Save rate is the type of statistic that [plays well in the media](#), but may not be realistic. As with all statistics, the save rate depends on what it is compared to and how this type of statistic is used. In one example, a major city in the Pacific Northwest received accolades because it had a save rate around 25 percent, while most cities were hovering in the single digits. A review of the rules of that city revealed that if the patient was flatline on a cardiac monitor, also known as asystole, they were pronounced dead and no workup or medical care was rendered. Meanwhile, in other cities with low save rates, asystolic patients were routinely treated. Since such patients have the lowest chance of survival, their save rates significantly lowered their cities’ overall rates.

Based on these statistics, EMS managers could act upon such data by conforming their policies in two ways. First, they could mandate that patients with asystole not be treated, thus pushing the agency save rate up. Although the save rate for flatline is low, it is not zero. This move would condemn some to die, who might otherwise have been saved. Second, they may consider the cost-benefit ratio. Workup – or code of cardiac arrest – is the most costly work



EMS performs so by removing a large number of low success cases, an agency could fund units they would not otherwise be able to afford, thus lowering response times and saving lives.

### ***Setting the Bar***

Another statistical analysis that EMS agencies may perform would determine the useful lifespan of an ambulance. “Useful lifespan” could be defined as the service life after which the costs of needed repairs and maintenance exceed a particular benchmark, or the acceptable amount of out-of-service time within a year. Once this benchmark is established, vehicle replacement would be planned within a particular timeframe.

Both of these statistical examples – save rate and useful lifespan – seem reasonable but, in both cases, a decision must be made about the level of adherence and the severity of the stakes. In the case of save rates, some people may die if the bar is set too high. In addition, managers must have the latitude to make common-sense decisions. In the case of vehicle replacement schedules, fleet managers should be able to flag a vehicle that has outlived its lifespan prior to the expectation. Without these flexibilities, a statistically driven government is as bad as a statistically blind government.

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*Joseph Cahill is the director of medicolegal investigations for the Massachusetts Office of the Chief Medical Examiner. He previously served as exercise and training coordinator for the Massachusetts Department of Public Health and as emergency planner in the Westchester County (N.Y.) Office of Emergency Management. He also served for five years as citywide advanced life support (ALS) coordinator for the FDNY – Bureau of EMS. Before that, he was the department’s Division 6 ALS coordinator, covering the South Bronx and Harlem. He also served on the faculty of the Westchester County Community College’s paramedic program and has been a frequent guest lecturer for the U.S. Secret Service, the FDNY EMS Academy, and Montefiore Hospital.*

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# Preparedness – A Balance Between Training & Education

By Bruce Martin

“Training for Certainty and Educating for Uncertainty.”

– [Principle of the U.S. Army Command and General Staff College](#)



Agencies within the United States spend a significant amount of resources training and educating their employees to perform specific tasks. Members of a variety of disciplines and organizations spend many hours learning. Yet, in after-action reviews (AARs), the need for training and education – and by extension learning – often is repeated. In AARs of large-scale incidents, the gaps are broad and sometimes difficult to define, for example:

- The [9/11 Commission Report](#) released in 2004 labeled one aspect of 9/11 “a failure of imagination.”
- A 2006 [Hurricane Katrina AAR](#) expressed the desire not to repeat that failure as well as a notion of insufficient training.
- A 2006 *Homeland Security Affairs* article, entitled “[Lessons We Don’t Learn](#),” reviewed a number of large incidents and found that learning, per se, is not taught in emergency response educational institutions.

## ***Defining the Problem***

Although both training and education are critically important, public safety, public health, and emergency management agencies seem to focus more resources on training. Unfortunately, this is a challenge to the evolution and responsiveness of homeland security. Many homeland security operators begin their careers at lower organizational levels where they receive a variety of trainings. As these operators move to higher positions within agencies, they continue to apply training models when educational experience may be appropriate. Depending on the homeland security discipline in which they serve, they may or may not have acquired school-based homeland security education.

*Training*, by one definition, is the act of teaching a particular skill or type of behavior. Another definition, “to cause (a plant) to grow in a desired shape,” is the basis for the word *instruct*, which also could mean *educate* and *teach*. *Education*, in turn, is defined as providing intellectual, moral, and social instruction to someone else. Robert H. Essenhigh, professor of mechanical engineering at Ohio State University, explained the difference in a [2010 article](#) as “know how” (training) versus “know why” (education).

Training is created to solve a specific problem set or perform a specific task. The task may be complex, but it is typically definable and clear. Preston Cline of the University of Pennsylvania noted in a 14 March 2014 white paper that many mission-critical

teams – for example, special operations as well as urban search and rescue – are created to solve a problem, can be quite complex, and can engage in complex training efforts.

An issue arises when the problem cannot be defined. “Wicked problems,” a term coined by Horst Ritter, professor of science of design at University of California-Berkeley, are unstructured, which means that causes and effects are extremely difficult to identify and model, thus adding complexity and uncertainty and engendering a high degree of conflict. There is little consensus on the problem or the solution. The wicked-problem space comprises multiple, overlapping, interconnected subsets of problems that cut across multiple policy domains and levels of government. Despite all the best intentions and resources, these problems may not be resolved, and efforts to solve them will have consequences for other policy arenas as well.

### ***New Responses to New Problems***

Novel circumstances – as seen in some recent homeland security incidents – may be “new” in methodology, scope, or impact. In such cases, there may be a blurred line separating training and education, but education is the foundation to solving new

***“Robert H. Essenhigh, professor of mechanical engineering at Ohio State University, explained the difference in a 2010 article as ‘know how’ (training) versus ‘know why’ (education).”***

problems. Critical thinking has been a longtime component of education, and simplistically means being able to see more than one side of a problem, or being able to “walk in another’s shoes,” during development of policies and procedures for future incidents.

Historically, there is a dichotomy between trades/skills and professions. The training of manual arts took place with a student (apprentice) under the tutelage of a master. The student completed a journey to learn the skills (journeyman), and eventually master them (master of arts). Training results in linear thinking and application of learned concepts and skills.

Some of the trades’ terminology translated into universities; in education, one must at least be a master in order to teach within a discipline. Students typically are educated first in a university setting, then move into the workforce, as opposed to the on-the-job-training approach of trades and operators. Some would argue that universities currently are producing (and industry demanding) trained individuals who can “hit the ground running,” rather than the more idealistic concept of a new team member with education and no experience. Clearly, internships and summer work placements are popular in some university programs. Nonetheless, education has been more about instilling a broad set of facts and knowledge, as well as an understanding of learning and self, in order to develop a student’s nonlinear thinking about problems.

Similarly, teams with complex missions and high-reliability demands are evolving their notion of training to include greater situational awareness and freer use of guidelines



versus standard operating procedures to allow for new responses to new problems. Cline recommended to special operations teams that, among other things, access to professional educators and learning research, could give teams an advantage when dealing with emerging problems.



***Professional Development –  
The Union of Education & Training***

Homeland security is a relatively young discipline, which has grown considerably since the terrorist attacks of 9/11. A 2014 study in a [doctoral dissertation](#) by John Comiskey of St. John Fisher College suggested that the emphasis of homeland security education programs is influenced by the academic discipline in which these programs are housed. In other words, criminal justice programs look through a terrorism lens, fire and emergency management through all-hazards, etc. A brief review of homeland security curricula reveals that many rely on existing training (Federal Emergency Management Agency’s online courses) as components of their coursework.

The U.S. Fire Administration reconciles training and education with its [professional development system and models](#). The ability to do a job is important – whereas training focuses on the road, education focuses on the horizon. Cross-walking of training and educational components lies in the realm of professional standards as presented by curricula, with industry-based hierarchies (ranks) integrated as benchmarks. Admittedly, the U.S. fire service can be considered more as a trade (training) in the process of professionalizing (education) than other homeland security disciplines such as public health. The value of the professional development model is one of presenting a simultaneously cohesive and flexible approach to training and education.

Both training and education are part of preparedness. Both require an understanding of how learning occurs, of what problems are being solved, and of the context of the students and operators. The world of preparedness requires both a pool of operators doing critical work and a pool of open-minded professionals who will be ready to adapt to solve whatever nature or man next brings.

Both training and education are part of preparedness. Both require an understanding of how learning occurs, of what problems are being solved, and of the context of the students and operators. The world of preparedness requires both a pool of operators doing critical work and a pool of open-minded professionals who will be ready to adapt to solve whatever nature or man next brings.

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*Bruce Martin retired in 2012 as fire chief for the City of Fremont. He now works as a project manager for the Bay Area Urban Area Security Initiative (UASI) and as an assistant professor of fire technology at the College of San Mateo. He holds a master’s degree in security studies from the U.S. Naval Postgraduate School, a bachelor’s degree in business from College of Notre Dame, and an associate’s in fire science from Indian Valley. He is a Commission on Professional Credentialing (CPC) chief fire officer and was incident commander with others of the East Bay incident management team (Type 3).*

