

MANAGEMENT DURING CRISIS – THE ART OF WAR FOR MANAGERS

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Abstract

The field of Emergency Management is rapidly growing, as its importance in the global business community is recognized. Ability of the U.S. to manage disasters lies, in part, on training/preparedness of the business community, and ability of the other sectors to understand unique aspects of business that must be addressed. Although EM higher education programs are offered around the country, they are offered in many different academic departments and perspectives. Few are well founded in the management discipline. EM grew out of first responder professions, and then into other governmental agencies. Businesses have now recognized the vital nature of emergency management in surviving the disasters ahead. There has been too little emphasis on taking advantage of classical management principles and how they relate to disaster management in particular. The writings of Sun Tzu in *The Art of War* have provided the management world with valuable lessons in the 2001 translation and interpretation by Gerald A. Michaelson (*The Art of War for Managers: 50 Strategic Rules*, Adams Media, 2001).

This paper analyzes and evaluates the critical management principles in common with practical disaster management, and uses classic leadership lessons to create classroom modules to best educate future emergency managers. This includes using selected concepts from *The Art of War for Managers* as they specifically relate to Disaster Management. Course syllabi from other disaster management programs in the United States have been collected and analyzed. The experiences of two new university programs in emergency management were critically analyzed and contrasted in much greater detail. One program was developed at Saint Xavier University Graham School of Business, a private school in Chicago, and the other developed at the state Western Illinois University. These initial steps in identifying the relationship between Sun Tzu strategies, emergency management topics, and target audiences will lead to the development of a composite course design and syllabus.

Introduction

In the last decade, the United States has become painfully aware of its vulnerability to disasters. This includes man-made disasters, natural disasters, and infectious disease outbreaks, such as Severe Acute Respiratory Syndrome (SARS) and Pandemic Influenza.

Increasing types and amounts of toxic substances, including nuclear materials, are stored in industrial areas and travel our roads and railways on a daily basis. Terrorist activities (domestic and international) have become commonplace in areas of the world previously untouched. Images of the Oklahoma City Bombing, World Trade Center, and moon suits used during the Anthrax

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attack in our nation continue to haunt us. However, most devastating has been the loss of our sense of safety and security. It has, in reality, always been merely an illusion, since the price of a free society is a more vulnerable population. The harsh realities and risks of domestic and man-made terrorism have clearly demonstrated the lack of ability of all sectors of our nation to respond adequately to disasters. As a nation, we began to respond by designing and executing nationwide full-scale exercises and creating plans that would help us prepare and react. With the cruel blow of 9/11, the United States created the Department of Homeland Security (DHS), and there was a nationwide effort to bring all sectors to an understanding of what we needed to do together to be more prepared. It was a monumental effort that continues to evolve today.

Each year more than 50 major disasters are declared by the Federal government, accompanied by an additional high number of federally-declared emergencies, and yet additional wildfire management declarations. We have come to live in a world, in the U.S. at least, where efficient disaster management is expected for each declared disaster. The federal management of Hurricane Katrina in 2005 provided insight into the inadequacy of government at all levels to manage disasters that are larger-in-scale than are typically encountered. For the most part, response and recovery efforts go well and it is common for most states, at any one time, to have multiple federal disasters open and being managed. Criticisms arise when management does not go well and people and property are severely impacted. The indication is that the public expects each level of government to provide an excellent level of management for all magnitudes of disaster. Certainly there are magnitudes of disaster which are managed well, and others that exist beyond some higher threshold of impact that are less frequent and which are not (Schneider, 1995). The expectation of the public is that “all” be managed well, no matter how realistic this might be. In addition to Hurricane Katrina, inadequate responses were reported for Hurricanes Hugo (1989), Andrew (1992), and Ike in 2008. Hurricane Rita received more favorable reports, although the evacuation from the Houston, Texas, area proved problematical. The Congress of the United States, through the Robert T. Stafford and Emergency Assistance Act (Stafford Act), accepted the responsibility to assist state and local governments in the management of disasters when requested by Governors and approved by the President. The definition of “major disaster” as defined in the Stafford Act identifies what magnitudes of disaster will be managed: “Major disaster” means any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby. (Section 102, paragraph 2).

This paper focuses on the term “management” as contained within the overarching responsibilities of emergency management. In the definition of “major disaster, it is explained that principles of management will be applied by the Federal government to “any” natural catastrophe, including “any” hurricane (and all major natural and manmade hazards) in supplementing the (management) efforts of States, local governments, and disaster relief organizations. The word “efforts” would be interpreted to mean “management efforts”.

The continuation of declared major natural disasters in the U.S. seems self evident, with the annual average for the last 30 years being in excess of 50. The definition of “major disaster” is all inclusive in terms of magnitude and Hurricane Katrina established a new benchmark in terms of severity, replacing the prior one of Hurricane Camille (1969). It seems clear that benchmark events exist to be surpassed by more extreme future events. It is an interesting observation to read U.S. Gulf Coast accounts of prior hurricanes of the early to mid 1900s as being the benchmark events,

surpassing the prior ones. How extreme these events can be seems yet to be discovered. This summary draws attention to the need for ongoing and improved management practices and the term “management” itself, must be examined more fully.

The world continues to evolve in terms of its complexity, conflict, and increasing likelihood of both man-made and natural disasters. We have come to the understanding that it is through interaction and cooperation of business, financial, legal, public health, medical, law enforcement and other first responders that we can optimize our ability to manage disasters. Recent events have clearly demonstrated that there is much work to be done, not just within sectors, but between them, if we are to be ready. This requires the open exchange of ideas, concepts, and practical application of principles in order to best protect those in our care. It has become apparent that the field of emergency management, and its four aspects of preparedness, response, recovery, and mitigation, needed to evolve well beyond the training currently performed. Research and education, and involvement of the academic community will be required if we are to become prepared as a nation. Educational programs began to be designed to not only stimulate better preparation by each sector, but to highlight the most difficult of tasks – communication and cooperation of all sectors, including academia.

Background and Thesis

There is a dearth of disaster management programs taught through, or in conjunction with, traditional business management programs in the United States. In respect to preparedness, response, and recovery from disasters, the business world must respond in a fashion consistent with all other involved sectors. This is true concerning the control structure used, the format of plans written, and the integrated exercising of those plans. In the United States, there continues to be great activity pertaining to the required use of disaster management concepts that are standardized and that utilize a consistent language. There are several problems with implementing this seemingly logical and advantageous plan in the business world. These include;

- There needs to be an appreciation of, and formal education related to, classic management procedures and methodologies for emergency managers
- There must be formal training of the differences that exist between traditional management and disaster management during formal training.
- Many sectors already possessing established procedures must replace existing methodologies and train the new concepts. Non-governmental sectors that are unused to a command and control structure must implement a new way of thinking and action.

Optimizing a response to disaster requires a better understanding of management principles. This is especially true for individuals who would utilize these concepts in larger disasters, especially those learning the Incident Command System (ICS). ICS 300 and 400 level courses train for large scale disasters that involve wide geographic areas, multiple types of emergencies within a disaster, last for several days, involve several levels of government, and/or many sectors. This type of training is now being required of all first responders, including those involved in business continuity of operations plans (COOP) and university preparedness.

This paper analyzes and evaluates the critical management principles in common with disaster management, and uses classic leadership lessons learned to create classroom modules to address these issues. The experiences of two new university programs in emergency management are compared. One program was developed at Saint Xavier University Graham School of Business, a

private school in Chicago, and the other developed at the state Western Illinois University. Both seek to educate those who will become emergency managers.

There needs to be a method through which basic principles of management can be clearly integrated into the vernacular of emergency/disaster management. This work will concentrate on one aspect of making this happen through the use of the writings of Sun Tzu. The writings of Sun Tzu in *The Art of War* have provided the management world with valuable lessons in the 2001 translation and interpretation by Gerald A. Michaelson (2001).

Principles and lessons from *The Art of War for Managers* can be specifically applied to education in disaster management. As proposed by Michaelson, Sun Tzu contends that it is by planning the right strategy before a “battle” that fighting can be avoided. It is through leadership and team work that this can be accomplished. This work focuses on strategic issues for managers, issues that can be utilized to optimize the effectiveness and successful outcomes of emergency management. Disaster management is, in fact a battle, a battle against the elements to enhance life safety, protect property, and provide for the most effective recovery from the disaster. Age-old principles and lessons can be utilized to attain these goals.

Sources of Information and Findings

Disasters and Business

Recent natural disasters, such as hurricanes Andrew, Charlie, and Katrina, flooding of the Mississippi River in the Midwest, forest fires in California, and even a recent earthquake felt in Chicago remind us of our vulnerability in the business world. In addition to the human suffering and loss of life from these human tragedies, Katrina alone is estimated to have cost the United States over \$80,000,000,000. Although we have always had weather-related emergencies, these events have become more severe, more violent, and greater in scope than ever before.

Our world is also at greater risk of infectious disease outbreaks, especially Pandemic Influenza. Due to global travel, higher at-risk populations, intrusion into tropical rainforests and other factors, we have observed an ever increasing risk of epidemic outbreaks. This continues to be a fear of the business sector due to the devastation this would cause to the workforce and the workplace environment.

The umbrella for the response to all types of disasters has become the Department of Homeland Security (DHS) and the adoption of the many-layered National Incident Management System (NIMS). Not surprisingly, the first sectors to train and adopt the procedures were the first responders – fire, law enforcement, and intelligence agencies. Governmental agencies were required to begin their preparations. Other sectors began to follow, especially the health care and public health sectors. Last to begin preparations has been agencies responsible for vulnerable populations and the business world. Business had been familiar with continuity of operations plans within their respective areas, but had no idea of how to handle disasters of greater magnitude, man-made disasters, or of the complex interactions that needed to take place for an optimal response to occur. Business is highly vulnerable to disasters, and the majority of mid-sized and small businesses do not survive following a disaster of any magnitude.

In the business sector, there is a growing sense of urgency as to the vital nature of preparation for potential disasters. There is much confusion concerning the relationship of Continuity of Operations planning to emergency preparedness in businesses of every size and type, especially in

those who are multinational. The vital relationship between government and business in emergency management has yet to be fully realized. It is only through bringing together all involved sectors that a synthesis and synergy can be created to serve the professions we call the Emergency Management Community.

Disaster Management and Academia

The Emergency Management Higher Education Project was created by FEMA in 1994 to begin monitoring, and to enhance, educational opportunities to assist our national preparedness. At that time, only 1 Bachelor of Arts Program existed in the country. Its purpose was to promote professionalization, share expertise, and build emergency management programs in institutions of higher education. Today, there are well over 150 academic institutions around the country with programs in Emergency Management. Saint Xavier University (SXU) in Illinois, and Western Illinois University (WIU), are two of those institutions of Higher Education. The WIU program is housed specifically within an undergraduate setting and teaches disaster management principles as they relate primarily to natural disasters. The other program is in the SXU Graduate School of Business, and is part of a certificate program earned as part of the MBA program.

The field of emergency management is rapidly growing, as its importance in our evolving world, and in global business, is recognized. Our ability as a nation to prepare, respond, and recover from disasters lies, in great part, on the training and preparedness of the business community, and the ability of the other sectors to interact and understand the unique aspects of business that must be addressed if our infrastructure is to continue to function. Although Emergency Management higher education programs can be observed around the country, it can be seen that they are offered in many different academic departments and from many different perspectives. This is due to the fact that, for Emergency Management to function optimally, many different sectors must communicate and collaborate in ways that do not normally occur. The discipline has grown out of the first responder professions, and then into other governmental agencies. Businesses have now recognized the vital nature of this interaction if they are to survive emergencies and disasters ahead. Our program is designed to not only fill that gap, but to become a program that links together the sectors, and focuses in those areas where sectors must interact. It is multisectoral, and is aimed at the managerial aspects of this profession. There has been too little emphasis on understanding the field of management, and in crisis management in particular. There needs to be an emphasis on strengthening the leadership, project management, financial, and accounting aspects of this profession.

A better understanding of what activities must occur during the intersection of sectors – where they all must come together during times of crisis is needed. Further education and training is needed in managing these multiple nexuses. There continues to be a need throughout our Emergency Management Community to promote the existence and importance of building relationships and interactions between sectors. In the many professions that comprise the practical world of emergency management in the United States, there is also a growing realization of the international body of experience and best practices that must be drawn upon. A drawing together of this disparate group of players who comprise Emergency Management is of paramount importance. We strive to bring together both the scientific base and the practical application of these principles to improve the preparations for, the response to, and the recovery from disasters. There is great strength to be gained from this relationship between principles and practice.

The Western Illinois University Emergency Management program offers a Bachelor of Science degree in Emergency Management. The program was developed through a program proposal that was approved throughout the university hierarchy and to the Illinois Board of Higher Education

and it receives guidance through its Advisory Committee consisting of emergency management professionals throughout the state. At this date, the program has existed approximately two years and the number of students has increased from a mere eight to more than 80. The student population seems unique given that more than two-thirds of its students minor in Fire Administration and a lesser number in Law Enforcement and Justice Administration. The applied program consists of eight core courses taught largely in the classroom and to a lesser degree online; an internship is required. The program has a well developed network of supporters from local, state and federal emergency management and has applied to have the first university chapter of the Illinois Emergency Services Management Association, which has been approved by the IESMA Executive Board.

Growth of the Profession and Educational Opportunities/Future of Emergency Management

An examination of the educational programs related Emergency Management revealed a number of interesting facts in the United States:

- More than 77% of the programs reported having 15 or fewer students, and the bulk of programs reported the public sector as their primary focus. Significantly less considered the private sector, an area of great need, to be their focus.
- Although most programs are relatively new, 77% of those responding reported an increase in student numbers between 2004 and 2007.
- Of the Emergency Management Programs offered, 38 of the 121 (31% - the highest number) were for certificates, and 15 of 121 (12%) were for reported were for concentrations in a Master's degree.
- Most of the programs (88%) had three or fewer full-time faculty, with 28% actually reporting no full-time faculty for their programs.

There is great interest and growth in this field and a growing realization of the critical role of academia in business administration.

The Use of Ancient Military Texts to Unite the Two Fields

The military has now been mandated to migrate from its current disaster management structure to that of NIMS, a process that will take some time to accomplish. The importance of disaster management to businesses today is clear and educating businesses managers an important topic. Just now are these types of courses and programs available in schools of business. Business is well versed in traditional management concepts, but less with continuity of operations planning. Very few are being educated in the NIMS IUCS, NRF, and other critical documents to provide the optimal interaction of, and cooperation between, sectors in the preparedness, response and recovery from disasters. Other programs training emergency managers outside of the business sector are spending a great deal of time on the practical aspects of disaster management, and in the use of NIMS. However, missing in many of these programs are the traditional business aspects of teamwork and leadership as vital aspects of an optimal response.

It is most interesting that it is in the ancient texts of military strategy that we see these concepts brought together. Three prominent texts based on military strategies and concepts are the The Art of War (Michaelson, 2001), The Book of Five Rings (Musashi, 1982), and The Three Kingdoms (Guanzhong and Roberts, 2005). The Art of War by Sun Tzu was written by a Chinese military strategist over 2000 years ago. It is considered a classic text on strategy, tactics, and logistics

(McKay, 1996). Historic military strategists Napoleon Bonaparte of France, Admiral Togo of Japan and other military strategists through time have used these principles in their planning and conquests. The Book of Five Rings was supposedly written by Miyamoto Murashi, a samurai in the 18th century in Japan. Once again, leadership principles formed the foundation of his path to enlightenment. Other ancient Chinese texts, such as The Three Kingdoms, also dealt with military strategies that are widely used in business today.

The business world has adopted these texts and their concepts into the management world (Rarick, 1996), and used them to create what they have called the Management Warrior. Two recent books, The Art of War for Managers (Michaelson, 2001), and the Art of War for the Management Warrior (Gagliardi, 2007) have clearly adopted the principles of Sun Tzu into success in the field of business. A later text (Rarick, 2007), supposedly written by Sun Pin ,in the4th century BCE and based on Sun Tzu's writings, focuses more on the benevolent aspects of leadership and the abilities and morale of human assets. Tremayne (2008) addresses the five principles of Sun Tzu, the Way, the Weather, the Terrain, Leadership, and Discipline. Aspects of leadership and teambuilding can be found threading their way through these concepts.

This paper proposes that the worlds of emergency management and business can be brought closer together through a more direct application of Sun Tzu's principles in the world of Disaster Management education

In his work on business lessons from military strategy, Hans Widmer (1980) addressed not only those Sun Tzu principles that focus on the enemy and his weakness, but on the principles of leadership and team building that enhance ones ability to successfully compete.

Discussion

A first step in creating a composite syllabus clearly identifying Sun Tzu principles is to connect those principles with emergency management subjects and audiences addressed. Table 1 provides this critical analysis. It serves as a first step in creating a composite syllabus incorporating ancient lessons that can lead to more effective and efficient emergency management.

Course modules in my Disaster Management graduate program are being developed to take advantage of these principles to demonstrate how they are operationalized. This will provide an appreciation for, and understanding of, disaster management as a skill set of selected concentrations in Graham School of Management.

Michaelson's Sun Tzu: The Art of War for Managers (2001) provides a concise and well-organized approach to address teaching needs in emergency management courses. It is apparent that course content must include instruction about a broad array of resource people/agencies in order to convey these principles of management.

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Table 1. Sun Tzu’s Transitional Table

SUN TZU STRATEGIES	EMERGENCY MANAGEMENT EXAMPLE TOPICS	MANAGEMENT OF PEOPLE
<p>ST 1 – Laying Plans</p> <ul style="list-style-type: none"> • Thoroughly Assess Conditions • Compare Attributes • Look for Strategic Turns 	<p>Planning</p> <ul style="list-style-type: none"> • Hazard Identification • Hazard and Risk Analysis • Preparedness and mitigation planning 	<ul style="list-style-type: none"> • Coordinator = Emergency Manager • Find, know and utilize hazard specialists • Trainers and practitioners • Planning teams
<p>ST 2 – Waging War</p> <ul style="list-style-type: none"> • Marshall Adequate Resources • Make Time Your Ally • Everyone Must Profit From Victories • Know Your Craft 	<p>Preparedness</p> <ul style="list-style-type: none"> • Have supplies • Understand timing • Give credit to specialists • Training 	<ul style="list-style-type: none"> • Coordinator • Logistics people • News media • Trainers
<p>ST 3 – Attack by Stratagem</p> <ul style="list-style-type: none"> • Win Without Fighting • Strength Against Weakness-Always • Beware of “High-Level Dumb” • Obey Fundamental Principles 	<p>Mitigation</p> <ul style="list-style-type: none"> • Risk reduction • Retrofitting • Brainstorming • Be opportunistic 	<ul style="list-style-type: none"> • Coordinator • Team • Outside experts • Team problem solving • Jurisdiction-wide network
<p>ST 4. Disposition of Military Strength</p> <ul style="list-style-type: none"> • Be Invincible • Attain Strategic Superiority • Use Information to Focus Resources 	<p>Team Building</p> <ul style="list-style-type: none"> • Have a strong team • Understand solutions • Obtain customer input 	<ul style="list-style-type: none"> • Coordinator • Policy/decision makers • Department heads • Customers
<p>ST 5. Use of Energy</p> <ul style="list-style-type: none"> • Build a Sound Organizational Structure • Apply Extraordinary Force • Coordinate Momentum and Timing 	<p>Network Building</p> <ul style="list-style-type: none"> • Have a network for all needs • Establish efficient communication • Communicate success 	<ul style="list-style-type: none"> • Coordinator • Jurisdiction-wide specialists • Technology specialists • Audience
<p>ST 6 – Weakness and Strength</p> <ul style="list-style-type: none"> • Take the Initiative • Plan Surprise • Gain Relative 	<p>Learn-Learn-Learn</p> <ul style="list-style-type: none"> • Be knowledgeable • Knowledge is power • Cross-Train 	<ul style="list-style-type: none"> • Coordinator • Emergency Manager

<ul style="list-style-type: none"> • Superiority • Seek Knowledge • Be Flexible 	<ul style="list-style-type: none"> • Learn from team members • Use knowledge combinations 	<ul style="list-style-type: none"> • State trainers • EMI trainers • Team members • Sets of team members
<p>ST 7 – Maneuvering</p> <ul style="list-style-type: none"> • Maneuver to Gain the Advantage • Achieve the Critical Mass • Deceive Your Competitor • Develop Effective Internal Communications • Gain the Mental Advantage 	<p>Partnershiping</p> <ul style="list-style-type: none"> • Combine needed resources • Leverage resources • Generate enthusiasm • Improve behaviors and outcomes • Lead with strategy and tactics 	<ul style="list-style-type: none"> • Coordinator • Team members • Local officials • State officials • Federal officials • Media • Trainers
<p>ST 8-Variations of Tactics</p> <ul style="list-style-type: none"> • Consider Tactical Options • Prepare Adequate Defenses • Avoid the Faults of Leadership 	<p>Adjust to Circumstances</p> <ul style="list-style-type: none"> • Decision making • Shifting to new paradigms • Self discipline 	<ul style="list-style-type: none"> • Coordinator • Decision-makers • Managers and funding streams • Team members
<p>ST 9 – On the March</p> <ul style="list-style-type: none"> • Occupy Strong Natural Positions • Always Seek the High Ground • Make an Estimate of the Situation 	<ul style="list-style-type: none"> • Be what you are and know your limits • Establish a good team reputation • Understand human nature 	<ul style="list-style-type: none"> • Coordinator • Team members • The public
<p>ST 10-Terrain</p> <ul style="list-style-type: none"> • Know Your Battlefield • Obey the Laws of Leadership • Fight Only the Battles You Can Win • Know Yourself; Know Your Opponent 	<ul style="list-style-type: none"> • Vulnerability assessment • Obey the laws of leadership • Accomplish what can be accomplished • Personalize to overcome apathy 	<ul style="list-style-type: none"> • Coordinator • Hazard specialists • Building officials • News media
<p>ST 11-The Nine Varieties of Ground</p> <ul style="list-style-type: none"> • Choose a Favorable Battleground • Shape Your Opponents Strategy • Make Victory the Only Option • Plan Coordinated Efforts • Press the Attack 	<ul style="list-style-type: none"> • Address the problems your customers consider most critical • Work toward the political base • Perpetuate success to maintain reputation 	<ul style="list-style-type: none"> • Coordinator • Politicians • Team members • Stakeholders • Managers • Counterparts in other locations

<ul style="list-style-type: none"> • Learn Winning Ways 	<ul style="list-style-type: none"> • Mutual support of team members and stakeholders • Engender availability of team members and stakeholders • Learn success from experience and from others 	
<p>ST 12 – Attack by Fire</p> <ul style="list-style-type: none"> • Be Disruptive and Intrusive • Consolidate Your Gains • Exercise Restraint 	<ul style="list-style-type: none"> • Focus on service for long term success • Be creative in convincing the doubters • Give credit to those who benefit from successes • Combine good politics with good science 	<ul style="list-style-type: none"> • Coordinator • The public • Doubters • Stakeholders • Politicians • Science specialists
<p>ST 13 – Employment of Secret Agents</p> <ul style="list-style-type: none"> • Invest in Intelligence Resources • Establish and Active Intelligence System • Practice Counterintelligence 	<ul style="list-style-type: none"> • Gain the required knowledge for the required needs • Keep decision makers knowledgeable • Be careful in stating sensitive information 	<ul style="list-style-type: none"> • Coordinator • Decision-makers • Managers • Stakeholders • The public

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Dr. Hagen is Director of the Disaster Preparedness and Management Certificate Program at the Graham School of Management, Saint Xavier University in Chicago. The program provides education and training for those responsible for helping their organizations prepare, respond, and recover from both manmade and natural disasters. He is a certified Emergency Response Coordinator, a Certified Public Health Administrator, and is certified by the Department of Homeland Security as a Master Exercise Planner. Dr. Hagen is also Director of the Public and Nonprofit Management program. He is a Professor of Public Health and Epidemiology, and served as Deputy Executive Director of the DuPage County Health Department from 1999 to 2005. Prior to joining the health department, Dr. Hagen was Professor of Public Health at Benedictine University, and before that spent 12 years at Loyola University Medical Center, where he served as Associate Professor of Microbiology, Assistant Dean for Research, and Assistant Dean for Basic Sciences. Dr. Hagen is also a licensed Nursing Home Administrator, and has worked in this area to prepare long term care organizations for the special needs of vulnerable populations.

During the federal TOPOFF 2 full-scale exercise in the Chicago area during 2000, Dr. Hagen served as a public health Incident Commander. He was a presenter for the TOPOFF 3 National Biological Seminar, moderator of Advanced Distance Learning Exercise panels, and a mentor for the New Jersey Venue during preparation for that event. He has worked to train hospitals in several emergency preparedness areas, including communication, isolation and quarantine, and SNS issues. In 2005 and 2007, Dr. Hagen worked as consultant during the Alaska Shield/Northern Edge Military Exercise in Alaska. Dr. Hagen has lectured extensively in the area of emergency preparedness, most recently at the International Emergency Management Society Meeting in South Korea and Croatia. He also worked in post-Chernobyl, post-Soviet Union Ukraine with the health ministry to study recovery issues and to assess public health needs.

Dr. Hagen is a graduate of Michigan State University and obtained his M.S. from the University of Montana. He was trained as a research microbiologist at Loyola University Medical Center, where he earned a Ph.D. He also holds a Master's Degree in Public Health from Benedictine University, and a Master's Degree in Business Administration from Saint Xavier University.
