The Next Generation Core Competencies for Emergency Management Professionals:

Handbook of Behavioral Anchors and Key Actions for Measurement

August 2017

Shirley Feldmann-Jensen, R.N; D.P.P.D.; M.P.H.
Steven Jensen, D.P.P.D.
Sandy Maxwell Smith, R.N.; Ph.D.

Acknowledgement

Preparing a future generation of emergency managers in a changing world of hazard and risk governance was the motivation for this significant project. The scope of such foundational work is beyond a single or even a small group of individuals; rather it is the community of emergency management experts, researchers, practitioners, educators, and emergency management students who have given substance and voice to the competencies and their definitions. We are both grateful to and humbled by the remarkable people who freely gave their time and shared their extraordinary knowledge to inform this project.

With deep appreciation, we acknowledge the emergency management educators, who joined us in the Focus Group and conducted the Delphi study as a team: *Bennett, D.M., Carter, S.S., Cwiak, C.L., Phelps, J.R., and Schwartz, R.M.*

The experts who accepted the invitation to be a Delphi participant brought forth the robust quality of the competencies and their definitions. With thankfulness, we recognize the Delphi participants: *Baden, T., Bissell, R., Burkle, F.W., Comfort, L.K., Goss, K., Horton, H., Johnston, D., Jones, A.M., Lindsay, J., Mileti, D.S., Gutierrez, M., Mwarumba, N., Provencio, A., Rosegard, L., Rubin, C.B., Senger, M., Shoemate, J.,* and *Styles-Emerson, A.*

Both groups were invaluable to the work developing the Next Generation Emergency Management Core Competencies and their definitions. Also, consultation with subject matter expert *Gray, E.W.* provided criteria for a specific behavioral anchor and key actions. Conclusively, the support of the FEMA Higher Education Program was central, providing the forum to engage the focus group, and later impetus to refine and build upon the work.

To all the emergency management practitioners, researchers, educators, and students who participated in the numerous listening sessions, we thank you for your bold and specific feedback that has brought this living, evolving charter to its current point. Finally, we recognize and thank the graduate research assistants and undergraduate interns, who reviewed the document; notable mention is extended to *Vigneaux, G.* for his many detailed and constructive reviews.

Table of Contents

Definition of terms 4

Introductory context 5

Using the core competencies 7

Next Generation Core Competencies for Emergency Management Professional 8

Behavioral Anchors for Objectives and Measurement 12

- Operate within the EM framework, principles, and body of knowledge 12
- Possess critical thinking 25
- Abide by professional ethics 30
- Continual learning 38
- Scientific literacy 43
- Geographic literacy 47
- Sociocultural literacy 51
- Technological literacy 56
- Systems literacy 60
- Disaster risk management 67
- Community engagement 71
- Governance and civics 78
- Leadership 88

Bibliography 94

Definition of Key Terms

Adaptive capacity: the ability of a system to adjust to a changing environment in which the system exists.

Collaboration: working in partnership with others toward a shared goal.

Confidence level: the measure of the reliability and validity of a scientific finding, as determined by the type, amount, quality, and consistency of evidence.

Disaster risk: the likelihood of loss of life, injury, or destruction and damage from a disaster in a given period of time.

Governance: the way society manages collective processes, which seek to identify, evaluate, and operate within the context of relational dynamics.

Gray/Grey Literature: various document types produced outside the traditional commercial publication and distribution, in which the quality of review and production can vary. These documents are "produced by all levels of government, academics, business and industry in print and electronic formats that are protected by intellectual property rights, of sufficient quality they are collected and preserved in institutional repositories" (12th International Conference on Grey Literature, 2010).

Forward Mapping: an analytical process for policy implementation, which begins with an objective and proceeds through a sequence of specific steps for achieving the objective.

Innovation: the process of translating an idea into a good or service that creates value or satisfies a specific need.

Interconnection: an understanding that people and places are connected in a dynamic network of global relationships.

Literacy: encompasses knowledge of a particular subject or field when used in conjunction with another concept.

Public value: an organizational process that contributes to societal goals.

Risk management: actions to achieve the reduction of disaster risk.

Sector: a part of society's economy, which can include the private sector, public sector, and nonprofit sector.

Social capital: social relationships that have productive benefits mainly for a common good, and are characterized by reciprocity, trust, and cooperation.

Stakeholder: a person with an interest in or affected by a course of action.

Introductory Context: ***Next Generation Emergency Management Core Competencies***

The world is becoming more interconnected and interdependent with each passing day, transforming the systems we live and work in. Once familiar roles are evolving at an accelerated pace. Interactions between the evolving social, built, and physical environments are creating greater risk complexities. This new terrain has an impact on the practice of emergency management, today and into the future. Therefore, it is important to consider what foundations are needed for emergency management professionals to address evolving risks. The next generation of emergency management professionals must be self-programmable, values-based, flexible, able to adapt to changing cultural models along the life cycle, capable of bending without breaking, and possess the ability to remain inner-directed while evolving with the surrounding society (Castells & Cardoso, 2005). An examination of the drivers of change over the next couple of decades is critical to understanding the competencies that will be at the core of emergency management professionals' successful practice.

In general terms, competencies are job-relevant behaviors, motivation, and knowledge (Harvard University, n.d.). Core competencies were originally characterized as "…the collective learning in the organization...unlike physical assets, which deteriorate over time, competencies are enhanced as they are applied and shared" (Prahalad & Hamel, 1990, p. 81), and addressed the assets relevant to all people at all levels of service. A more current description for core competencies embodies collective learning that integrates and coordinates diverse skills, and invests in strategies that unify the wider organization or stakeholder community. In contrast, *technical* competencies are unique to a specific functional component of the discipline, and are important in accomplishing the tasks and objectives specific to those functions.

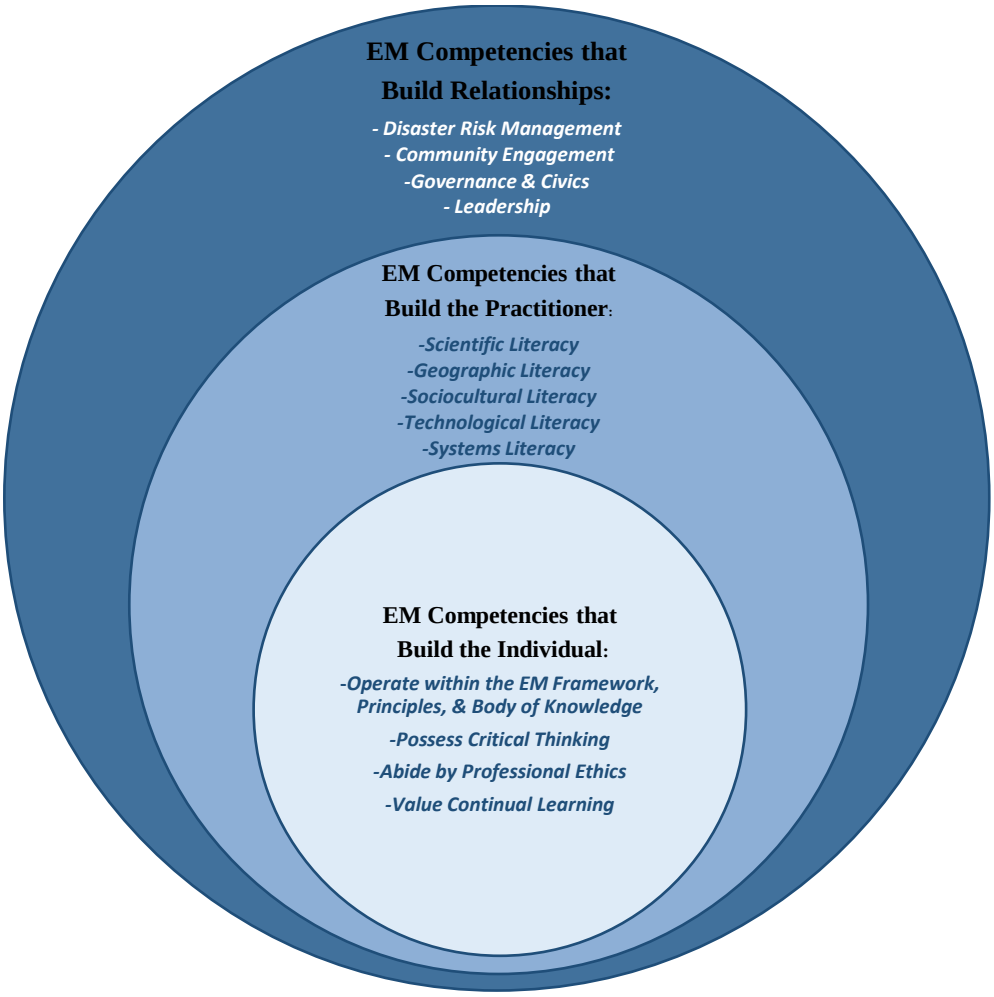
During the 2015 FEMA Higher Education Symposium, interest was expressed for a systematic and comprehensive review of emergency management core competencies for the next generation. Thereby, the FEMA Higher Education Program supported the education community's process of updating the emergency management core competencies, developed by Dr. Wayne Blanchard in 2005, by sponsoring a focus group of regionally diverse educators. The charge given the group was to draft competencies for 2030 and beyond, and conduct a Delphi study for refinement and ratification of the updated competencies. During the two days of on-site work, the focus group reviewed a broad range of literature of global disaster trends and related core competency projects, and debated the drivers of future disasters along with the foundations an emergency manager of 2030 and beyond might require. Agreement was reached on an initial draft of competencies built upon existing emergency management purview and competencies. Focus group members then conducted the multi-cycle Delphi study. The data obtained was amalgamated and qualitatively analyzed. The analytical results served to adjust and refine the competencies and their definitions following each Delphi cycle.

Over the course of 2016, the competencies and definitions derived through the Delphi study were presented in numerous listening sessions. The listening sessions provided data from the wider emergency management community for a final round of qualitative analysis, which

was then triangulated with relevant literature. These processes served to polish the competencies, definitions, and their grouping.

The competencies fall into three nested categories that are interrelated, but have attributes that build the individual, the practitioner, or relationships. The nested categories are illustrated in *Figure 1* below. As a clarifying note, the category of Emergency Management Competencies that Build the Practitioner includes competencies that present a concept in conjunction with literacy; used in this sense, literacy is a more expansive perspective, and encompasses knowledge of a particular subject or field.

Figure 1: *Nested Relationship of the Core Competency Categories that Build Emergency Management Practice*



The behavioral anchors and key actions for each competency were developed in 2017. The process of deriving the behavioral anchors and key actions came directly from the range of literature and theories pertaining to the subject matter within each competency. The levels of the

key actions are designated by the action verb used, and based upon Bloom's Taxonomy. Significantly, the resulting evidence based behavioral anchors and key actions establish a model for competency measures at multiple levels of both education and practice.

Communications are a cross cutting theme among the behavioral anchors and key actions. The components of communications are expressed in varying dimensions throughout the measures. The evidence highlights communications as a set of fundamental proficiencies that underpin the core competencies for emergency management professionals.

The emergency manager's contribution toward reducing disaster risk and building resilient, thriving communities in the midst of high turbulence, uncertain and complex future will be pivotal. And so, it is important to highlight that built into the competencies is provision for equipping future emergency managers to foster more resilient and thriving communities.

Using the core competencies and behavioral anchors

Core competencies are used in a variety of ways. Most commonly, core competencies are used to develop student learning outcomes for training and education programs; core competencies can also provide transparency for workplace performance. Notably, core competencies are ones relevant to all people at all levels of service, and do not address all skills needed. Moreover, it is unrealistic to expect all of these competencies to be fully available in one person.

In using this handbook for academia, one approach is to integrate all the competencies into a curriculum review or new program curriculum. Another way is to incrementally select competencies that are important to build upon existing program goals; and add competencies that are complementary to existing program strengths to achieve balance within an incremental approach.

A model for measurement, designed as a support tool for both education and practice, accompanies the competencies in this document. Behavioral anchors and their key actions are specific examples of behaviors that demonstrate competency. The behavioral anchors and their key actions can be used toward observable performance measures, or generating measurable learning objectives to underpin a higher education program or curriculum. Following each behavioral anchor and its key measures is an illustrated sample learning objective at the undergraduate, master, and doctoral levels. The model provides an easy to use guide for evaluating demonstrated competency levels.

The overarching goal of the work is to establish the next generation emergency management core competencies for practice. This document is designed to support the education processes involved in preparing the emergency management workforce of 2030 and beyond. Future expansion on this work can more explicitly address professional development and workplace performance. Presented on the following pages are the Next Generation Emergency Management Core Competencies, their definitions, and the behavioral anchors and key actions for evaluating demonstrated competency levels.

Next Generation Core Competencies for Emergency Management Professionals
Emergency Management Competencies that Build the Individual
Operate within the Emergency Management Framework, Principles, and Body of Knowledge The emergency management professional utilizes a proactive, anticipatory, and innovative approach for guiding public policy and in the application of the emergency management framework and principles. Emergency management seeks to promote safer, more resilient, and thriving communities. All necessary actions are employed to mitigate against, prepare for, respond to, and recover from threatened or actual hazards. Emergency Management activities must be comprehensive, progressive, risk-driven, integrated, collaborative, coordinated, flexible, and professional (Blanchard, et al., 2007).
Possess Critical Thinking The emergency management professional employs critical thinking to identify and reduce disaster risk in the communities they serve. Critical thinking is a disciplined and multifaceted intellectual process, which involves problem-solving, strategic, adaptive, and innovative thinking. The practice of recognizing relevant evidence, understanding relationships in multi-layered data, and making clear the connections between potential causes and effects is fundamental to decision-making, adaptive actions, and thriving in uncertain environments.
Abide by Professional Ethics The emergency management professional both abides by and champions professional ethics. Professional ethics delineate expected and appropriate conduct, principles, and moral and ethical values that guide practice in the midst of both known and uncertain environments. Ethics must be approached as a totality of principles, not as individual guidelines; together, the sum of principles provides an important foundation for action.
Continual Learning The emergency management professional engages in continual learning as a central means of increasing their efficacy when operating in a dynamic risk environment. Continual learning is about building adaptive capacity through an iterative exchange of new information in relationship to prior understanding. The continual learning process allows ongoing improvement, which is critical to achieving system stability, resilience, and thriving opportunities in the midst of an uncertain and complex future. Continual learners develop and nurture a frame of mind that values and utilizes curiosity, reflection, experience, and the development of new understanding.

Emergency Management Competencies that Build the Practitioner
Scientific Literacy The emergency management professional possesses an understanding and working knowledge of scientific processes, as well as a familiarity with the natural, social, fiscal, and applied sciences. Diverse scientific knowledge is essential as they inform the management and understanding of disaster risk and vulnerability on local, regional, national, and global levels. Scientific literacy is the capacity to objectively and systematically work through complex problems, using the scientific process to identify questions, interpret evidence based findings to inform decision making, and effectively communicate the results to policy makers and the public. Through the use of the scientific process and principles in relationship to hazards, risks, and vulnerabilities, practitioners can deliver enhanced value to enable the communities they serve to thrive.
Geographic Literacy The emergency management professional possesses a foundational and comprehensive understanding of the geographic configurations of hazards, vulnerability, and risk. Geographic literacy comprises knowledge of the earth's physical and human systems, utilizing a spatial foundation where hazards, vulnerability, and risk can be conceptualized. The interconnections, interactions, and implications across complex physical, built, and social environments can be analyzed to track changing disaster risk profiles and inform decision making.
Sociocultural Literacy The emergency management professional recognizes the social determinants of risk, as both the risks for and the effects of disasters are socially produced. A sociocultural foundation provides the lens to examine and understand human behavior, and the individual and collective ways in which humans may affect their relationship to risk, adaptive capacity, and ability to thrive.
Technological Literacy The emergency management professional possesses a fundamental understanding of evolving technologies, their relevant application to practice, and timely adoption of these technologies. Technology refers to the mechanisms or devices developed from the application of scientific knowledge. Integrating emerging or evolving technology into emergency management practice requires an awareness of current innovations, the ability to evaluate their potential utility, the expertise to utilize technologies, and a grasp of the security measures necessary to protect the technology.

Systems Literacy

The emergency management professional sees the whole picture, particularly inter-relationships and patterns of change. Systems literacy helps the emergency management professional synchronize their understanding and practice with the ongoing shift away from a linear and hierarchical human order to one that is characteristically dynamic, complex, and exponential. The focus of systems literacy is on interdependent relationships that produce reactions, changes, and adaptations over time. This scientific foundation provides the emergency management professional a deeper understanding of the present for developing future focused strategies that enable adaptation and the ability to thrive.

Emergency Management Competencies that Build Relationships
Disaster Risk Management The emergency management professional communicates and facilitates disaster risk awareness, assessment, measurement, and reduction across a broad spectrum of stakeholders. Disaster risk management is the application of strategies and policies to prevent new disaster risk, reduce existing disaster risk, and manage the residual disaster risk, ultimately contributing to loss reduction, resilience building, and thriving communities. An understanding of how systems interact to create risk, along with recognition that risk is interdependent with social systems is fundamental to the function.
Community Engagement The emergency management professional is able to facilitate community ownership of risk. Community engagement involves an open dialogue and relationship development that fosters working constructively to reduce the shared disaster risk. The practices of clearly communicating information, giving voice to unheard community members, integrating divergent perspectives, promoting and supporting individuals, families, businesses, and organizations are vital for building the foundation of respect and support for a thriving community.
Governance and Civics The emergency management professional understands how to participate with civic and legal processes, from politics to policy. The way society manages collective processes is referred to as governance, which seeks to identify, evaluate, and operate within the context of relational dynamics including those within power structures. Collaborative processes further expand the achievement of public value by bringing people together across the boundaries of public agencies, levels of government, NGOs, business, and civil society.
Leadership The emergency management professional is comfortable leading within and across organizations. Effective emergency management leadership emphasizes team building, collaboration, collective leadership, and communication connectivity to a wide range of stakeholders, so that the complex risks can be addressed. Leadership is characterized by: informed decision-making, constructive administration and management techniques, fostering a shared vision, empowering others, establishing communication capabilities across varied networks, and creating an outcome oriented environment for continual improvement.

Behavioral Anchors and Key Actions for Measurement

Emergency Management Competencies that Build the Individual

Operate within the Emergency Management Framework, Principles, and Body of Knowledge

The emergency management professional utilizes a proactive, anticipatory, and innovative approach for guiding public policy and in the application of the emergency management framework and principles. Emergency management seeks to promote safer, more resilient, and thriving communities. All necessary actions are employed to mitigate against, prepare for, respond to, and recover from threatened or actual hazards. Emergency Management activities must be comprehensive, progressive, risk-driven, integrated, collaborative, coordinated, flexible, and professional (Blanchard, et al., 2007).

Emergency Management Framework and Principles: Behavioral Anchor 1 (of 9)

Comprehensive: Considers and takes into account all hazards, phases, stakeholders, and impacts relevant to disasters.

Key Actions Undergraduate Level:

1. Explains all phases relevant to disasters and the processes required for each phase.
2. Lists stakeholders potentially impacted by a specific community hazard.

Key Actions Master/Executive Level:

1. Analyzes community disaster risks, stakeholder requirements, and planning for each phase.
2. Compares and contrasts the requirements of a specific hazard for each phase.
3. Develops plans and protocols for addressing all predictable consequences related to potential community hazards.

Key Actions Doctoral Level:

1. Designs and conducts research that further informs comprehensive emergency management.
2. Creates flexible disaster policies with evaluative mechanisms that address all phases, expected and all possible hazards, stakeholders, and impacts.

Sample Learning Objective 1: *Comprehensive*

Undergraduate Level:

Identify and explain each disaster phase.

Master Level:

Analyze community disaster risks, stakeholder requirements, and planning for each emergency phase.

Doctoral Level:

Design and conduct research that further informs comprehensive emergency management.

Emergency Management Framework and Principles: Behavioral Anchor 2 (of 9)

Progressive: Anticipates future disasters and develops community-based frameworks that encourage and support preventive and preparatory actions, which build toward disaster-resistant and disaster-resilient communities.

Key Actions Undergraduate Level:

1. Comprehends disaster-resistance and disaster-resilience practices and frameworks.
2. Lists appropriate preventative and preparatory measures for disaster-resistance.
3. Gathers information for assessing strategic preventative and preparatory actions.

Key Actions Master/Executive Level:

1. Manages community-based programs for creating disaster-resistant and disaster-resilient communities through the building of adaptive capacity.
2. Assesses and plans for known hazards and anticipates hazards that may emerge in the future.
3. Implements strategic actions for building a disaster-resistant and disaster-resilient community.
4. Assembles multi-disciplinary teams to address current and anticipated hazards.

Key Actions Doctoral Level:

1. Develops policies that are adaptive and flexible for building disaster-resistant and disaster-resilient communities.
2. Produces research that further enhances the ability of emergency management practice to be anticipatory and adaptable.
3. Directs research exploring effective practices for creating disaster resistant and resilient communities.
4. Works at a transdisciplinary level; blurs disciplinary boundaries to incorporate practices from a variety of fields to better serve the population.

Sample Learning Objective 2: *Progressive*

Undergraduate Level:

Identify structures conducive to organizational and community adaptation.

Master Level:

Assess and plan for known hazards and anticipates hazards that may emerge in the future.

Doctoral Level:

Produce research that further enhances the ability of emergency management practice to be anticipatory and adaptable.

Emergency Management Framework and Principles: Behavioral Anchor 3 (of 9)

Risk-driven: Utilizes sound risk management principles, such as hazard identification, risk and vulnerability analyses, and impact analysis, in assigning priorities and resources.

Key Actions Undergraduate Level:

1. Demonstrates knowledge of emergency risks, including natural, human-made, and technological hazards.
2. Identifies existing, emerging, and future hazards and corresponding sources of vulnerability and risk that may have significant effect on the community or organization.
3. Identifies social factors underlying risk and vulnerability.

Key Actions Master/Executive Level:

1. Utilizes available resources effectively and efficiently to manage presented and anticipated risks.
2. Gathers information to inform and understand actions and corresponding probability of success, benefits of success, and consequences of failure.
3. Analyzes present hazard, risk, and vulnerability conditions and predicts how their evolution over time will dictate/shape practice.
4. Develops community-based strategies to reduce existing and emerging risk.
5. Applies management practices from outside of emergency management to address uncertainty and risk.

Key Actions Doctoral Level:

1. Develops policy and determines programmatic priorities based upon measured and anticipated levels of risk to lives, property, and the environment.
2. Recognizes and articulates uncertainty of actions to stakeholders, assumes ownership of consequences, and develops mechanisms to detect and address ineffective or negative unintended outcomes.
3. Designs strategies promoting the creation of community-driven social change that reduces disaster risk.
4. Devises novel solutions to risk and uncertainty and orchestrates their implementation.

Sample Learning Objective 3: *Risk-driven*

Undergraduate Level:

Identify factors that increase and produce risk.

Master Level:

Develop community-based strategies to reduce existing and emerging risk.

Doctoral Level:

Design strategies promoting the creation of community-driven social change that reduces disaster risk.

Emergency Management Framework and Principles: Behavioral Anchor 4 (of 9)

Integrated: Ensures unity of effort among all levels of government and all elements of a community to manage disaster risk.

Key Actions Undergraduate Level:

1. Describes all levels and entities of local and state government, community stakeholders, and members of industry concerned with disaster mitigation, preparation, response, and recovery.
2. Summarizes on-going collaborative efforts among community members and government officials.
3. Explains the value of integrating all stakeholders in the planning and development process.

Key Actions Master/Executive Level:

1. Actively engages key stakeholders of all levels of government and all sectors of a community to unify their emergency management efforts.
2. Collaborates with community, industry, and government leaders.
3. Facilitates framework development through collaborative and participatory processes with stakeholders.

Key Actions Doctoral Level:

1. Inculcates a culture of collaboration among organizations, industry, community members, and government employees.
2. Synchronizes community and industry emergency plans with state and federal plans and programs.
3. Develops frameworks capable of enhancing stakeholder involvement through design, development, implementation, and evaluation.
4. Utilizes a systems view of a community to identify key stakeholders.

Sample Learning Objective 4: ***Integrated***

Undergraduate Level:

Identify all stakeholders and explain the value of including them in the planning and development process.

Master Level:

Facilitate framework development through collaborative and participatory processes with stakeholders.

Doctoral Level:

Integrate a systems view of a community to identify key stakeholders.

Emergency Management Framework and Principles: Behavioral Anchor 5 (of 9)

Collaborative: Creates and sustains broad and sincere relationships among individuals and organizations to encourage trust, advocate a team atmosphere, build consensus, and facilitate communication.

Key Actions Undergraduate Level:

1. Identifies complementary and adversarial stakeholders.
2. Establishes mutually beneficial partnerships with stakeholders.
3. Works towards established partnership goals, including contributing ideas and participating in team activities.
4. Works with others to share information and achieve goals.

Key Actions Master/Executive Level:

1. Identifies complementary and heterogeneous stakeholders and engages with both.
2. Seeks opportunities to develop and maintain positive and productive partnerships.
3. Works together to develop shared goals.
4. Upholds commitment to work collectively toward achievement of shared goals.
5. Develops frameworks to encourage stakeholder involvement and collaboration.

Key Actions Doctoral Level:

1. Fosters an environment that emphasizes knowledge sharing and group participation.
2. Creates a shared vision among all stakeholders that will produce a mutually beneficial outcome.

Sample Learning Objective 5: *Collaborative*

Undergraduate Level:

Identify complementary and adversarial stakeholders.

Master Level:

Seek opportunities to develop and maintain positive and productive partnerships.

Doctoral Level:

Foster an environment that emphasizes knowledge sharing and group participation.

Emergency Management Framework and Principles: Behavioral Anchor 6 (of 9)

Coordinated: Facilitates synchronous activities among all relevant stakeholders to achieve a common purpose.

Key Actions Undergraduate Level:

1. Gathers relevant stakeholder activity information.
2. Networks with others.
3. Relays data within the information sharing framework.

Key Actions Master/Executive Level:

1. Seeks stakeholder unification around a common purpose.
2. Articulates to stakeholders the value of accepting responsibility for specific performance objectives.
3. Clarifies roles of all relevant stakeholders before a disaster.
4. Promotes communication between stakeholders and develops means to stay appraised of changes to practice or focus.

Key Actions Doctoral Level:

1. Develops information sharing frameworks for use among agency and relevant stakeholders.
2. Designs agreements with partnering agencies for mutual benefit.
3. Leads community efforts for clarification of roles and determination of priorities during a disaster.

Sample Learning Objective 6: *Coordinated*

Undergraduate Level:

Gather relevant stakeholder activity information.

Master Level:

Establish the creation of a communications network among stakeholders.

Doctoral Level:

Develop information sharing frameworks for use among agency and relevant stakeholders.

Emergency Management Framework and Principles: Behavioral Anchor 7 (of 9)

Flexible: Uses creative and innovative approaches in solving disaster challenges.

Key Actions Undergraduate Level:

1. Easily considers new approaches, changing conditions, or unexpected obstacles.
2. Adjusts schedule based upon work load priorities.
3. Willing to consider new information and to change.

Key Actions Master/Executive Level:

1. Anticipates changes and positions practice and associated programs for rapid adaptation.
2. Adjusts organizational priorities quickly as situations change, while pursuing vision.
3. Realigns resources to meet changing needs.
4. Implements an action plan for an emerging threat.

Key Actions Doctoral Level:

1. Designs creative and innovative approaches in solving disaster challenges.
2. Generates alternative options, evaluates option feasibility, and recommends processes to meet changing conditions.

Sample Learning Objective 7: *Flexible*

Undergraduate Level:

Identify in case studies situations where the rate of adaptation was slower than the rate of change.

Master Level:

Identify the importance of receiving prompt feedback from the operational level and incorporating it into practice and overarching documents.

Doctoral Level:

Generate alternative options, evaluate option feasibility, and recommend processes to meet changing conditions.

Emergency Management Framework and Principles: Behavioral Anchor 8 (of 9)
Professional: Values a science and knowledge-based approach based on education, training, experience, ethical practice, public stewardship, and continuous improvement.

Key Actions Undergraduate Level:

1. Describes the benefits of professional development.
2. Joins a professional organization, demonstrating commitment to emergency management as a profession.
3. Participates with appropriate local emergency management teams and associations.
4. Applies to earn professional certification.
5. Discusses the benefits of a professional code of ethics.

Key Actions Master/Executive Level:

1. Administers professional development activities, and evaluates them for continual improvement.
2. Actively participates in a professional emergency management organization, as a commitment to the emergency management profession.
3. Participates with appropriate local and state emergency management associations.
4. Seeks to hold professional certification.
5. Integrates the professional code of ethics in all professional processes and decisions.

Key Actions Doctoral Level:

1. Designs professional development curriculum.
2. Advises a professional emergency management organization as a commitment to the profession.
3. Supports professional certification processes.
4. Advocates and supports wide application of the professional code of ethics.

Sample Learning Objective 8: *Professional*

Undergraduate Level:

Write a paper differentiating the benefits of various professional development activities.

Master Level:

Write a paper proposing a professional development activity analyzing benefits gained.

Doctoral Level:

Create the curriculum for a professional development course.

Emergency Management Framework and Principles: Behavioral Anchor 9 (of 9)

Body of knowledge: Considers, utilizes, and values the growing body of emergency management literature to support actions improving processes across all hazards and phases toward building disaster resilient communities.

Key Actions Undergraduate Level:

1. Describes the benefits of a scientific body of knowledge in emergency management.
2. Identifies and retrieves foundational emergency management literature.
3. Annotates key emergency management literature.

Key Actions Master/Executive Level:

1. Differentiates seminal emergency management literature from literature presenting new evidence.
2. Outlines the range of disciplines that published emergency management literature may be found.
3. Integrates emergency management literature to support new or improving programmatic processes.

Key Actions Doctoral Level:

1. Teaches others how to find, interpret, and apply existing emergency management literature.
2. Builds upon existing emergency management literature, contributing new evidence to further the body of knowledge.
3. Presents new emergency management research in peer reviewed forums.

Sample Learning Objective 9: ***Body of knowledge***

Undergraduate Level:

Write an annotated bibliography containing foundational emergency management literature.

Master Level:

Write a proposal which integrates emergency management literature to support it.

Doctoral Level:

Create within a curriculum an exercise for conducting a literature review applied to an emergency management topic.

Possess Critical Thinking

The emergency management professional employs critical thinking to identify and reduce disaster risk in the communities they serve. Critical thinking is a disciplined and multifaceted intellectual process, which involves problem-solving, strategic, adaptive, and innovative thinking. The practice of recognizing relevant evidence, understanding relationships in multi-layered data, and making clear the connections between potential causes and effects is fundamental to decision-making, adaptive actions, and thriving in uncertain environments.

Critical Thinking: Behavioral Anchor 1 (of 3)

Problem identification and problem-solving: Recognizes and verifies both opportunities and problems, evaluates a wide range of data to inform options, identifies and manages existing constraints, and uses reliable methodology to recommend a course of action in achieving the desired outcome.

Key Actions Undergraduate Level:

1. Identifies and describes relevant problems and opportunities.
2. Recognizes the need for critical information and gathers it from a variety of sources to better interpret the problem and inform action.
3. Reports findings and points out the need for action.
4. Contributes to shaping practices and policies, taking into consideration present and future political, organizational, and individual realities.

Key Actions Master/Executive Level:

1. Proactively seeks opportunities where improvements can be made, and facilitates their achievement.
2. Independently researches an issue thoroughly: gathers information from a wide range of sources, and reliably identifies critical patterns, trends, and relationships in the data.
3. Collaborates with others to develop relevant options toward achieving desired outcomes.
4. Conveys decision criteria, evaluates the options, and recommends option selection.

Key Actions Doctoral Level:

1. Anticipates interactions that are not readily apparent and formulates hypotheses about the connections.
2. Introduces conceptual frameworks that guide analysis.
3. Tests new ideas and perspectives, and integrates them into a practical form.
4. Fosters and supports others in the scientific processes of interpreting information for problem-solving.

5. Anticipates desirable future conditions, compares conditions that are most probable, and develops strategy for managing the discrepancy.

Sample Learning Objective 1: ***Problem identification and problem-solving***

Undergraduate Level:

Demonstrate knowledge of the information gathering and evidence based processes.

Master Level:

Apply the scientific skills and methods of emergency management research, including the gathering, analysis, and interpretation of data; and articulate the policy implications derived.

Doctoral Level:

Generate a conceptual framework for analysis of an emergency management application.

Critical Thinking: Behavioral Anchor 2 (of 3)

Strategic thinking processes: Establishes, prioritizes, and implements evidence based long term strategies consistent with reducing disaster risk; adjusts plans as needed for both the short and long terms, and makes the most of opportunities to manage disaster risk.

Key Actions Undergraduate Level:

1. Gathers information to support development of strategy options consistent with achieving overall disaster risk management vision.
2. Summarizes community disaster risk and vulnerabilities to further inform development of strategic plans.
3. Assists strategy implementation projects and plans, based on the established strategic priorities and objectives.
4. Gathers information to assess strategic goal attainment.

Key Actions Master/Executive Level:

1. Carefully considers priorities and generates strategy options consistent with achieving overall disaster risk management vision.
2. Organizes multilayered data, identifies trends and primary relationships to evaluate reliability of strategy options over time.
3. Bases upon evidence the selection and development of a long-term pathway and evaluative mechanisms.
4. Administers strategy development and implementation, allocating tasks and resources to achieve objectives.
5. Measures and evaluates strategic performance to inform strategy adaptation and directionality.

Key Actions Doctoral Level:

1. Creates a vision of the future to affect and guide change.
2. Initiates rigorous processes for the establishment of long-term strategies toward the overall disaster risk reduction goal achievement.
3. Designs methodology for translating new disaster risk management knowledge into practice.
4. Develops criteria for strategy selection and development.
5. Negotiates diffusion targets.
6. Generates evaluation measures.

Sample Learning Objective 2: ***Strategic thinking processes***

Undergraduate level:

Observe a specific community disaster risk and write a report on associated vulnerabilities.

Master/Executive level:

Validate strategy options through the synthesis of multilayered data.

Doctoral level:

Formulate criteria for strategy selection.

Critical Thinking: Behavioral Anchor 3 (of 3)

Flexible, innovative, adaptive thinking processes: Is alert to changing conditions, integrates new information, considers alternative tactics, and readily adapts approaches to the fluctuating disaster risk environment.

Key Actions Undergraduate Level:

1. Identifies sources of change for work tasks, situations, and environment.
2. Willingly adjusts to new information and changing conditions with a positive attitude.
3. Modifies work plan based upon feedback from co-workers and stakeholders.
4. Identifies possible ways to do things based upon current information.
5. Demonstrates persistence for solutions amid changing circumstances.

Key Actions Master/Executive Level:

1. Distinguishes change in comprehensive practices within and between organizations.
2. Demonstrates flexibility and openness to new perspectives, solicits and brainstorms ideas, and encourages others to value change.
3. Connects and reframes ideas from multiple sources.
4. Weighs and prioritizes alternative solutions for integration into existing framework.
5. Selects and implements the approach based on evidence.
6. Re-assesses priorities as evidence changes to continue decreasing disaster risk.

Key Actions Doctoral Level:

1. Anticipates changes and new interactions in society and the physical environment based upon an understanding of the present and past states.
2. Examines new and possible interactions between systems/environments from multiple perspectives.
3. Develops criteria for policy option selection.
4. Postulates a new line of thought; combines diverse ideas in unique ways or makes connections between different systems.
5. Envisions new models with alternative ways to define and view issues.

Sample Learning Objective 3: *Flexible, innovative, adaptive thinking processes*

Undergraduate level:

Describe ways to modify practices when presented with new information.

Master / Executive level:

Update an existing strategy framework based upon new evidence.

Doctoral level:

Propose new questions for innovative and meaningful research.

Abide by Professional Ethics

The Emergency management professional both abides by and champions professional ethics. Professional ethics delineate expected and appropriate conduct, principles, and moral and ethical values that guide practice in the midst of both known and uncertain environments. Ethics must be approached as a totality of principles, not as individual guidelines; together, the sum of principles provides an important foundation for action.

Professional Ethics: Behavioral Anchor 1 (of 7)

Respect: Actualizes honoring of individuals and groups of people by promoting dignity, diversity, and the rights of others; recognizes and respects the weight of their own actions as they work in communities.

Key Actions Undergraduate Level:

1. Discusses respect as a key cornerstone of professional ethics.
2. Finds satisfaction in responding to others respectfully.
3. Understands the role of respect while interacting with communities.
4. Interacts with others in a tactful manner.
5. Displays an open, non-judgmental attitude regarding differences of opinion.

Key Actions Master/Executive Level:

1. Exemplifies respect of others in all situations.
2. Encourages others to exhibit respect in daily work.
3. Articulates respect for the uncertainty surrounding actions and understands uncertainty materializes within communities.
4. Evaluates policies for integration of respect of all living organisms (present and future).
5. Meets with colleagues and listens to their perspective on organizational policies and procedures.
6. Recognizes power differentials in communities and works to ensure equal representation during stakeholder engagement.

Key Actions Doctoral Level:

1. Addresses power inequities within organizations.
2. Establishes ethical frameworks within an organization/agency that addresses respect of all people.
3. Promotes dignity, diversity, and the rights of others.
4. Interacts with public interest groups with opposing viewpoints, while conducting the organization's work.

Sample Learning Objective 1: *Respect*

Undergraduate Level:

Interpret the care of others in a disaster situation as a means of respecting individuals.

Master Level:

Deconstruct a case study for analyzing the rights of individuals and groups of people.

Doctoral Level:

Design policies for promoting diversity within organizations.

Professional Ethics: Behavioral Anchor 2 (of 7)

Veracity: Demonstrates truthfulness and accuracy of facts, and abstains from misrepresentation in all situations.

Key Actions Undergraduate Level:

1. Defines veracity as consistent, truthful, and accurate presentation of facts.
2. Describes an example of veracity.
3. Identifies the importance of veracity.
4. Gathers and reports information accurately.

Key Actions Master/Executive Level:

1. Prepares reports with truthful and accurate information.
2. Compares and contrasts the various forms of communicating facts that exemplify veracity.
3. Devises reporting systems to support accuracy of facts during unfolding events.

Key Actions Doctoral Level:

1. Designs a methodology that demonstrates veracity in data gathering, analysis, and reporting of findings.
2. Generates approaches that support accurate information gathering and reporting in all situations.

Sample Learning Objective 2: *Veracity*

Undergraduate Level:

Describe an example of veracity within a case study.

Master Level:

Prepare a research report accurately discussing data.

Doctoral Level:

Defend the veracity of data analyzed and the resulting implications.

Professional Ethics: Behavioral Anchor 3 (of 7)

Justice: Embodies a sense of obligation to the common good and treats others equitably and fairly; honors the rights of all species (present and future) when making decisions regarding the distribution of resources.

Key Actions Undergraduate Level:

1. Considers all stakeholders' interests while reviewing disaster case studies.
2. Responds to others' stated needs fairly and objectively.

Key Actions Master/Executive Level:

1. Anticipates the needs of others.
2. Willingly works for the common good and displays no partiality.

Doctoral Level Key Actions:

1. Examines organizational policies regarding the treatment of employees and amends policies so that the rights of all employees are honored.
2. Evaluates complex situations for the fair distribution of resources.

Sample Learning Objective 3: *Justice*

Undergraduate Level:

List different ways justice could have been applied in a case study.

Master Level:

Analyze policies and procedures that contribute to a fair allocation of disaster risk management resources.

Doctoral Level:

Evaluate policies and practices to monitor just allocation of disaster risk management resources.

Professional Ethics: Behavioral Anchor 4 (of 7)

Integrity: Displays consistency between belief and action in all arenas of life.

Key Actions Undergraduate Level:

1. Defines integrity as consistency between belief and action.
2. Reflects upon a personal behavior from a time where ethical beliefs and actions were not aligned.

Key Actions Master/Executive Level:

1. Leads a project team with consistency between belief and action.
2. Examines organizational policies and procedures for evidence of consistency between belief and action.
3. Conducts personal behavior in a way that beliefs and actions are aligned.

Key Actions Doctoral Level:

1. Designs a simulation for organizations that integrates consistency between belief and action.
2. Defends theory with consistent alignment of actions to support it.

Sample Learning Objective 4: *Integrity*

Undergraduate Level:

Identify integrity evidenced in a disaster case study.

Master Level:

Compare and contrast organizational policies and procedures with organizational vision and mission for consistency of stated beliefs.

Doctoral Level:

Design a simulation for organizations that integrates consistency between belief and action.

Professional Ethics: Behavioral Anchor 5 (of 7)

Service: Acts to help others; is altruistically motivated. Puts others first, operating beyond the ego.

Key Actions Undergraduate Level:

1. Conveys a positive attitude when interacting with others.
2. Volunteers on campus or in the local community without reward.
3. Participates in tasks to help others.

Key Actions Master/Executive Level:

1. Commits to on-going volunteer opportunities in the community.
2. Demonstrates motivation to invest in academic/professional community activities.

Key Actions Doctoral Level:

1. Prioritizes volunteer service opportunities as evidence of professionalism.
2. Articulates a philosophy of servant leadership.
3. Consistently considers others first in decisions.

Sample Learning Objective 5: *Service*

Undergraduate Level:

Describe the personal benefits of volunteering without extrinsic rewards.

Master Level:

Analyze the relationship of intrinsic rewards with professional volunteerism.

Doctoral Level:

Evaluate community needs and designs a volunteer service project to address the need.

Professional Ethics: Behavioral Anchor 6 (of 7)

Duty to protect: Considers the moral obligation to avert harm (both present and future) and works toward a common good; facilitates community building, cognizant that all actions have consequences affecting people and performance.

Key Actions Undergraduate Level:

1. Participates with team members and engages community members to achieve desired outcomes.
2. Describes practices that can harm community goals.
3. Identifies opportunities to improve community capacities through citizen participation.

Key Actions Master/Executive Level:

1. Collaborates with others to develop viable options for community challenges.
2. Examines policies to ensure they promote common goals and do not harm.
3. Establishes relationship with community stakeholders to validate usefulness of proposed products and services.
4. Recognizes, evaluates, and balances competing stakeholder interests.

Key Actions Doctoral Level:

1. Facilitates community members in designing solutions to community problems.
2. Defends unpopular community goals that are built upon ethical standards.
3. Designs and develops programs to address critical community requirements.

Sample Learning Objective 6: ***Duty to protect***

Undergraduate Level:

Classify various disaster response practices as harmful or beneficial to the present and future environment.

Master Level:

Organize community response efforts for sustainability and resiliency.

Doctoral Level:

Hypothesize ways to respond to community challenges that coalesce groups of people.

Professional Ethics: Behavioral Anchor 7(of 7)

***Integrates ethical principles within stakeholder discourse*:** Guides ethical decision making across multiple stakeholders, who have varying interests, to derive public value.

Key Actions Undergraduate Level:

1. Discovers a common base within a stakeholder group.
2. Introduces ethical considerations into a stakeholder discussion.

Key Actions Master/Executive Level:

1. Incorporates ethical principles into stakeholder discourse.
2. Compares and contrasts public value with costs.
3. Upholds ethical considerations in stakeholder decision making.

Key Actions Doctoral Level:

1. Evaluates public value and economic outcomes in relationship to initial costs.
2. Advocates for ethical principles within stakeholder decision making.

Sample Learning Objective 7: *Integrates ethical principles within stakeholder discourse*

Undergraduate Level:

Introduce ethical considerations into a stakeholder discussion.

Master Level:

Incorporate ethical principles into a stakeholder deliberation discourse.

Doctoral Level:

Advocate for ethical principles within a stakeholder decision making process.

Continual Learning

The emergency management professional engages in continual learning as a central means of increasing their efficacy when operating in a dynamic risk environment. Continual learning is about building adaptive capacity through an iterative exchange of new information in relationship to prior understanding. The continual learning process allows ongoing improvement, which is critical to achieving system stability, resilience, and thriving opportunities in the midst of an uncertain and complex future. Continual learners develop and nurture a frame of mind that values and utilizes curiosity, reflection, experience, and the development of new understanding.

Continual Learning: Behavioral Anchor 1 (of 5)

Reflects and questions: Seeks to expand personal knowledge on a regular basis, and allows ideas to be challenged and modified because personal knowledge limit awareness exists; the hallmark of continual learners is humility.

Key Actions Undergraduate Level:

1. Distinguishes between belief, opinion, and evidence based knowledge.
2. Continually seeks to grow understanding on a range of topics.

Key Actions Master/Executive Level:

1. Applies epistemological principles to situations.
2. Compares and contrasts environment needs relative to existing knowledge.

Key Actions Doctoral Level:

1. Identifies areas requiring dialogue and formal inquiry.
2. Designs processes for formal inquiry.
3. Researches evolving conditions to optimize collaboration in inquiry.

Sample Learning Objective 1: *Reflects and questions*

Undergraduate level:

Summarize the essential frameworks of epistemology.

Master level:

Compare and contrast a need in the practice environment relative to existing knowledge.

Doctoral level:

Generate a research design for a specific question.

Continual Learning: Behavioral Anchor 2 (of 5)

Understands confidence levels: Appreciates the importance confidence levels have in the pursuit of understanding, reduction of inquiry duplication, and expansion of the body of knowledge.

Key Actions Undergraduate Level:

1. Explains what the degree of confidence is.
2. Describes how we know what we know and the influence of confidence on further learning and actions.

Key Actions Master/Executive Level:

1. Assesses confidence levels of existing literature to inform further inquiry.
2. Questions confidence levels when not justified by the research.
3. Communicates confidence levels to assist in decision making.

Key Actions Doctoral Level:

1. Evaluates methods to assess confidence in the findings toward continually refining the body of knowledge.
2. Develops ways to help communities understand confidence levels for better decision making.

Sample Learning Objective 2: ***Understands confidence levels***

Undergraduate level:

Illustrate how confidence levels are derived and communicated.

Master level:

Review and assess a research journal article to determine the confidence level of the findings and what that means for decision making in practice.

Doctoral level:

Evaluate a research methodology in relationship to the confidence levels of the findings.

Continual Learning: Behavioral Anchor 3 (of 5)

Contributes to a body of knowledge that spans disciplines: Focuses inquiry at the intersection of relevant disciplines to gain a fuller understanding of the drivers of a problem, and builds the body of knowledge in emergency management.

Key Actions Undergraduate Level:

1. Identifies different disciplines contributing to understanding of an issue.
2. Understands transdisciplinary, multidisciplinary, and interdisciplinary methods.

Key Actions Master/Executive Level:

1. Differentiates transdisciplinary, multidisciplinary or interdisciplinary processes of inquiry.
2. Identifies changing needs, and applies collaborative principles of inquiry to the situation.

Key Actions Doctoral Level:

1. Integrates areas requiring dialogue and further research into formal inquiry.
2. Designs a formal inquiry that is interdisciplinary, multidisciplinary, or transdisciplinary in approach.

Sample Learning Objective 3: ***Contributes to a body of knowledge that spans disciplines***

Undergraduate level:

Identify the different disciplines contributing to understanding of an emergency management issue.

Master level:

Differentiate transdisciplinary, multidisciplinary and interdisciplinary processes of inquiry.

Doctoral level:

Design an inquiry with a research team that spans disciplines.

Continual Learning: Behavioral Anchor 4 (of 5)

Engages others in inquiry: Demonstrates willingness to challenge and transform mental models and engage others, whether casually in discourse or through formal scientific processes.

Key Actions Undergraduate Level:

1. Demonstrates the processes of reasoning together in a group task.
2. Cultivates an attitude conducive to mutual inquiry and learning.

Key Actions Master/Executive Level:

1. Distinguishes conditions which favor or impede collaboration in inquiry.
2. Works constructively with others to optimize conditions for inquiry.

Key Actions Doctoral Level:

1. Supports group processes to widen understanding of the issue at hand.
2. Establishes benchmarks for optimizing collaborative learning.
3. Researches evolving conditions to optimize collaboration in inquiry.

Sample Learning Objective 4: ***Engages others in inquiry***

Undergraduate level:

Demonstrate the processes of reasoning together in a group task.

Master level:

Conduct a collaborative inquiry in a group project.

Doctoral level:

Develop methods and benchmarks to enhance collective inquiry.

Continual Learning: Behavioral Anchor 5 (of 5)

Seeks practical applications for public value: Engaged learning includes application as an essential part of inquiry, seeking ways in which we can improve the world around us even if it is in some small aspect.

Key Actions Undergraduate Level:

1. Respects the importance of research translated to action, and practices informing research needs.
2. Describes what comprises applied research.
3. Illustrates design thinking processes.

Key Actions Master/Executive Level:

1. Seeks opportunities to engage researchers to explore complex problems.
2. Guides a design thinking process with stakeholders.
3. Evaluates an applied research.

Key Actions Doctoral Level:

1. Collaborates with practitioners to identify applied research needs.
2. Facilitates formal methods of applied research.
3. Develops an evaluation tool.

Sample Learning Objective 5: ***Seeks practical applications for public value***

Undergraduate level:

Illustrate the importance and process of moving research to practice, and practice informing research.

Master level:

Conduct an evaluation of an applied research project.

Doctoral level:

Develop an applied research evaluation tool.

Emergency Management Competencies that Build the Professional

Scientific Literacy

The emergency management professional possesses an understanding and working knowledge of scientific processes, as well as a familiarity with the natural, social, fiscal, and applied sciences. Diverse scientific knowledge is essential as they inform the management and understanding of disaster risk and vulnerability on local, regional, national, and global levels. Scientific literacy is the capacity to objectively and systematically work through complex problems, using the scientific process to identify questions, interpret evidence based findings to inform decision making, and effectively communicate the results to policy makers and the public. Through the use of the scientific process and principles in relationship to hazards, risks, and vulnerabilities, practitioners can deliver enhanced value to the communities they serve to thrive.

Scientific Literacy: Behavioral Anchor 1 (of 3)

***Knowledge and understanding*:** Demonstrates an appreciation of scientific processes and how their applications to practice benefits humanity**.**

Key Actions Undergraduate Level:

1. Uses technical terms appropriately.
2. Reads and understands science articles in both popular media and scholarly journals.
3. Engages in conversation about the key points and correctness of a media science article.
4. Explains the relationship between science information quality and the methods used to produce the information.

Key Actions Master/Executive Level:

1. Integrates technical terms into day to day inquiries and applications.
2. Reads and understands the implications of peer reviewed scientific articles.
3. Weighs the science information quality in relationship to both the source and the methods used to produce the evidence.
4. Effectively communicates scientific information to influence policy and practical processes in risk and vulnerability reduction.

Key Actions Doctoral Level:

1. Teaches technical terms and their definitions to others.
2. Generates scientific study information for publication.

3. Participates in the peer review process to assess science information quality and the methods used to produce the information before publication.
4. Effectively communicates and disseminates new hazard, risk, and vulnerability findings derived from the scientific process of inquiry.

Sample Learning Objective 1: ***Knowledge and understanding***

Undergraduate:

Read a science article and write a report about the science information quality in relationship to the source and the methods used to produce the information.

Master:

Read a grouping of related science articles and write a report comparing and contrasting the methods and data analysis quality of the articles.

Doctoral:

Conduct a scientific study and write a publishable report to communicate the research processes and findings**.**

Scientific Literacy: Behavioral Anchor 2 (of 3)

***Find and evaluate credible literature sources*:** Begins the scientific process with a review of reliable scientific literature; finds and evaluates credible sources of literature to support the inquiry and development of an argument.

Key Actions Undergraduate Level:

1. Explains the value of peer reviewed scientific literature.
2. Identifies biases that may exist in gray literature and other less reliable literature sources.
3. Finds and selects credible scientific literature to inform and support a specific topic.
4. Uses evidence from credible literature to inform inquiry.

Key Actions Master/Executive Level:

1. Compares and contrasts the quality and biases between scientific peer reviewed sources, gray literature, and other less reliable literature sources.
2. Finds and categorizes high quality scientific studies on a specific topic of inquiry.
3. Utilizes high quality scientific publications to support an evidence based position.

Key Actions Doctoral Level:

1. Integrates credible scientific literature sources to identify areas of research needs.
2. Contributes to scientific literature through conducting and publishing a peer reviewed scientific inquiry.
3. Conducts a peer review of a scientific inquiry for publication.

Sample Learning Objective 2: *Find and evaluate credible literature sources*

Undergraduate level:

Find and select high quality scientific literature to inform and support a specific topic.

Master level:

Utilize high quality scientific publications to support an evidence based position.

Doctoral level:

Integrate credible scientific literature sources to identify areas of research needs.

Scientific Literacy: Behavioral Anchor 3 (of 3)

***Inquiry and problem-solving processes*:** Applies and integrates scientific process in the presentation and evaluation of an argument, relates the argument to the existing evidence, and draws conclusions.

Key Actions Undergraduate Level:

1. Asks, finds, or determines answers to questions derived from experiences.
2. Describes, explains, and predicts natural occurrences.
3. Poses and evaluates arguments based on existing evidence.
4. Uses fact based decision making.

Key Actions Master/Executive Level:

1. Categorizes high quality scientific studies and use the evidence to promote the common welfare.
2. Applies scientific concepts and processes to problem-solving, decision making, and policy development.
3. Utilizes scientific publications to support an evidence based position.
4. Assimilates evidence based decision making into the organization and/or research recommendations.
5. Applies conclusions from inquiries.

Key Actions Doctoral Level:

1. Uses existing literature to identify areas of research needs.
2. Writes clear problem statements and research questions, which drive new data gathering and analysis.
3. Designs and conducts a scientific inquiry.
4. Recommends policy action based upon analytical evidence of research conducted.
5. Mentors and supervises students in the scientific research process.

Sample Learning Objective 3: *Inquiry and problem-solving processes*

Undergraduate level:

Pose and evaluate arguments based on existing evidence.

Master level:

Categorize high quality scientific studies and use the evidence to promote the common welfare.

Doctoral level:

Write a clear problem statement and research question that will drive a new inquiry, data gathering, and analysis.

Geographic Literacy

The emergency management professional possesses a foundational and comprehensive understanding of the geographic configurations of hazards, vulnerability, and risk. Geographic literacy comprises knowledge of the earth's physical and human systems, utilizing a spatial foundation where hazards, vulnerability, and risk can be conceptualized. The interconnections, interactions, and implications across complex physical, built, and social environments can be analyzed to track changing disaster risk profiles and inform decision making.

Geographic Literacy: Behavioral Anchor 1 (of 3)

Interaction: Recognizes the world is made of physical, built, and social systems, which interact in multifaceted ways, producing varying levels of risk and vulnerability.

Key Actions Undergraduate Level:

1. Differentiates physical and social geography.
2. Summarizes the perspectives of human and physical features; including the location of places, the distribution of landforms and water bodies, geophysical hazards, the current political, economic, cultural landscape, and the historical influences on these boundaries.
3. Organizes raw data into a usable and easily understood form.
4. Utilizes maps and images to explain relationships between a geographic location, the existing and evolving hazards of that location, and the social dynamics of disaster risk in that location.

Key Actions Master /Executive Level:

1. Determines a range of sources that will be helpful to answer compelling disaster risk questions.
2. Employs geographic data, tools, and techniques to understand disaster risk patterns and processes.
3. Illustrates meaningful context for the interactions of the physical and social geography of a given location.
4. Analyzes variations in spatial patterns between social, built, and physical environments to track changing disaster risk profiles.
5. Integrates geographic reasoning in decision making and establishing strategic disaster risk management priorities, goals, and solutions.

Key Actions Doctoral Level:

1. Continually seeks and tests patterns, relationships, and connections between social, built, and physical environments to detect changes in disaster risk.

2. Incorporates spatial analysis in methodological approaches.
3. Facilitates societal decision making utilizing geographic reasoning.
4. Engages in an iterative process of refining claims and counterclaims with reliability and validity, acknowledging any limitations.

Sample Learning Objective 1: *Interaction*

Undergraduate Level:

Explain the relationship between a geographic location, the existing hazards of that location, the built environment of that location, and the social dynamics of disaster risk in that location.

Master Level:

Form arguments from evidence regarding the relationship between a geographic location, the existing hazards of that location, and the social dynamics of disaster risk in that location.

Doctoral Level:

Generate a hypothesis about a relationship between a geographic location, an existing hazard of that location, and the social dynamics of disaster risk in that location.

Geographic Literacy: Behavioral Anchor 2 (of 3)

Interconnection: Inquiries are based on an understanding that people and places are connected in a dynamic network of global relationships.

Key Actions Undergraduate Level:

1. Observes and explains how people and places are connected in a dynamic network of global relationships.
2. Acts responsibly in the interconnected world.
3. Recognizes the interconnections between people and places are continually evolving and changing the nature of interactions.

Key Actions Master / Executive Level:

1. Conducts analysis based on an understanding that people and places are connected in a dynamic network of global relationships.
2. Applies a systematic and spatial reasoning to environmental and social issues.

Key Actions Doctoral Level:

1. Designs inquiries to gain new knowledge about complex relationships between people and place.
2. Incorporates historical, social, and geographic connections into instruction.

Sample Learning Objective 2: *Interconnection*

Undergraduate Level:

Explain how people and places are connected in a dynamic network of global relationships.

Master Level:

Apply systematic and spatial reasoning to a community risk reduction problem.

Doctoral Level:

Integrate historical, geographical, and social connections into a curriculum.

Geographic Literacy: Behavioral Anchor 3 (of 3)

Implications: Applies geographic reasoning, which involves connections and interactions of physical, built, and social systems, to influence decision-making processes toward reducing hazard risk and vulnerability.

Key Actions Undergraduate Level:

1. Demonstrates a systematic decision-making process.
2. Acts in ways that promote the common good.
3. Argues against costly choices.
4. Advocates for decisions that will increase community resilience and reduce disaster risk.

Key Actions Master / Executive Level:

1. Recognizes a community disaster risk problem, and weigh options for individual and collective action to reduce the identified problem.
2. Evaluates the cost benefit implications of an option for individuals, communities, and the environment.
3. Advocates for land use planning, emergency preparedness and response, public safety, security, and quality of life.
4. Endorses systematic decisions that promote the common good.

Key Actions Doctoral Level:

1. Formulates options that promote the common good.
2. Develops collaborative processes for community disaster risk reduction.
3. Creates groundwork for positive community breakthroughs.

Sample Learning Objective 3: *Implications*

Undergraduate level:

Apply a decision-making process that includes recognition of the interactions between physical and social systems.

Master Level:

Make a recommendation based upon a systematic analysis of the connections and interactions between the social and physical arrangements.

Doctoral Level:

Integrate systematic decision making into curriculum and instruction.

Sociocultural Literacy

The emergency management professional recognizes the social determinants of risk, as both the risks for and the effects of disasters are socially constructed. A sociocultural foundation provides the lens to examine and understand human behavior; and the ways in which humans, both individually and collectively, through political and legal processes, may affect their relationship to risk, adaptive capacity, and the ability to thrive.

Socio-cultural Literacy: Behavioral Anchor 1(of 3)

Social determinants of disaster risk: Advances the understanding of others concerning the relationship between social factors and disaster risk concentration.

Key Actions Undergraduate Level:

1. Summarizes how the origins of disaster are in the everyday workings of society.
2. Describes how the social determinants of disaster risk can influence disaster recovery.
3. Reviews external news and information to learn about economic, political, and social trends that affect the work of the emergency manager.

Key Actions Master / Executive Level:

1. Identifies and analyzes the social factors that contribute to disaster risk in the community.
2. Determines priorities for community disaster risk management efforts weighing economic, political, and social trends.
3. Advocates for adaptive capacity building actions.

Key Actions Doctoral Level:

1. Tests relationships of specific contributory social factors and disaster risk.
2. Produces new knowledge regarding the relationship between human behavior, organizational performance, adaptation, and disaster risk reduction strategies.
3. Conducts translational research to establish processes of integrating risk reduction and adaptive capacity building knowledge into practice.

Sample Learning Objective 2: ***Social determinants of disaster risk***

Undergraduate level:

Explain how the social determinants of disaster risk can influence disaster recovery outcomes.

Master level:

Analyze the economic, political, and social trends in a specific location and recommend priorities emerging from the analysis.

Doctoral level:

Generate a research question that explores a social factor relationship to disaster risk.

Socio-cultural Literacy: Behavioral Anchor 2 (of 3)

Politics, political, and legal processes: Influences relationships and advocates for the resiliency of others through the collective action of political and legal processes.

Key Actions Undergraduate Level:

1. Understands existing legal frameworks surrounding disaster risk.
2. Explains how political and legal processes can influence disaster preparedness, mitigation, response, and recovery.
3. Demonstrates advocacy interest to improve resiliency of others through political and legal processes.

Key Actions Master / Executive Level:

1. Evaluates existing political and legal processes for their effectiveness on disaster preparedness, mitigation, response, and recovery.
2. Identifies and engages community relationships that can influence policy, ordinance, and legal changes to improve community resilience.
3. Advocates for adaptive capacity building legal processes.

Key Actions Doctoral Level:

1. Tests relationships between specific political and legal processes, and disaster risk.
2. Conducts analysis to establish options and recommendations for improving legal processes addressing risk reduction and adaptive capacity building.

Sample Learning Objective 2: *Politics, political, and legal processes*

Undergraduate level:

Explain how political and legal processes can influence disaster preparedness, mitigation, response, and recovery.

Master level:

Evaluate existing political and legal processes for their disaster preparedness, mitigation, response, and recovery effectiveness.

Doctoral level:

Test relationships between specific political and legal processes, and disaster risk.

Sociocultural Literacy: Behavioral Anchor 3 (of 3)

Building adaptive capacity: Cultivates and models an environment of inclusion and diversity. Values and gives voice to differences toward achieving collective pre-disaster capability building and disaster risk reduction goals.

Key Actions Undergraduate Level:

1. Objectively identifies capabilities, capacities, and constraints of the community.
2. Demonstrates fairness and respect toward people with different customs, backgrounds, and beliefs within the community.
3. Clearly communicates relevant disaster risk reduction information so that others can understand.
4. Listens carefully to others, takes time to understand their point of view, and asks appropriate questions.

Key Actions Master / Executive:

1. Identifies and analyzes the social and institutional sources of resilience, and forms action priorities for expanding pre-disaster capabilities.
2. Seeks opportunities to promote the inclusion of diverse voices in community pre-disaster capability building.
3. Builds a diverse team with a variety of skills for pre-disaster capability building and disaster risk reduction.
4. Upholds the dignity of those most affected by disaster risk, and examines own biases to avoid insensitive actions.

Key Actions Doctoral:

1. Researches and measures the social and institutional sources of resilience to further inform capacity building.
2. Instructs and fosters the development of others in pre-disaster capability building and disaster risk reduction.
3. Brings together different cultures, ideas, and experiences to facilitate disaster risk reduction action opportunities.
4. Advocates the value of the role existing customs and organizations hold within communities.

Sample Learning Objective 3: ***Building adaptive capacity***

Undergraduate level:

Identify capabilities, capacities, and constraints of a specific community.

Master level:

Present and defend the value of including diverse voices in community pre-disaster capability building.

Doctoral level:

Examine the constructs of social capital in a research project.

Technological Literacy

The emergency management professional possesses a fundamental understanding of evolving technologies, their relevant application to practice, and timely adoption of these technologies. Technology refers to the mechanisms or devices developed from the application of scientific knowledge. Integrating emerging or evolving technology into emergency management practice requires an awareness of current innovations, the ability to evaluate their potential utility, willingness to access expertise to utilize technologies, and a grasp of the security measures necessary to protect the technology.

Technological Literacy: Behavioral Anchor 1 (of 4)

Utilizes technology: Uses existing appropriate technologies in emergency management practice.

Undergraduate Level Key Actions:

1. Demonstrates ability to apply established technologies in support of all phases of emergency management.
2. Utilizes technologies and accesses data.
3. Compares the range of technologies available and examines appropriateness for emergency management use.

Master/Executive Level Key Actions:

1. Identifies problems and can fix systems or oversee the fix during normal operations and in emergency operations.
2. Administers the utilization of diverse systems in support of emergency management.
3. Builds teams that can utilize and improve usage of technical systems.

Doctoral Level Key Actions:

1. Evaluates human factors in utilizing technical systems to improve decision making.
2. Collaborates with technology partners or otherwise utilize technology to augment existing practices or produce new ones.

Sample Learning Objective 1: *Utilizes technology*

Undergraduate level:

Operate essential technologies in the emergency management function.

Master level:

Integrate a range of technologies into emergency management practice.

Doctoral level:

Evaluate human factors in the utilization of technologies given the challenging operating environment.

Technological Literacy: Behavioral Anchor 2 (of 4)

Evaluation of technology: Assesses existing and emerging technologies that benefit or can benefit emergency management; in the process, demonstrates understanding of both advancing technology and the progressive practice of emergency management.

Undergraduate Level Key Actions:

1. Demonstrates a working level knowledge of developments in technology.
2. Describes appropriate technologies for emergency management.
3. Identifies potential points for improvement of technology use.

Master/Executive Level Key Actions:

1. Proposes and implements the policy and programs to meet identified needs with technological solutions.
2. Establishes a working relationship with technology providers.
3. Monitors, evaluates, and continually improves applied use of technological systems.

Doctoral Level Key Actions:

1. Conceptualizes new applications for existing and emerging technologies.
2. Conceives new application for existing technologies in emergency management.
3. Develops evaluation metrics for utilization of technological systems.
4. Simulates the organizational capabilities, technologies, and human factors to determine optimal technological solutions.

Sample Learning Objective 2: *Evaluation of technology*

Undergraduate level:

Demonstrate a proficient use of a range of technologies.

Master level:

Evaluate a technology application.

Doctoral level:

Develop evaluation metrics for technological systems use.

Technological Literacy: Behavioral Anchor 3 (of 4)

Advances the use of technologies: Adopts and incorporates appropriate new technologies into emergency management practice.

Undergraduate Level Key Actions:

1. Assists teams and suppliers to implement new systems.
2. Explains technology systems to new users.

Master/Executive Level Key Actions:

1. Guides teams in the adjustment to new technologies.
2. Directs new technology application and implementation.
3. Assesses areas where teams need to improve technological proficiency.
4. Uses technology to facilitate the creation of a networked-approach to emergency management with the capacity to continuously engage stakeholders.

Doctoral Level Key Actions:

1. Works across disciplines to develop diffusion of innovation strategies.
2. Conceptualizes and develops policy for new technology applications.

Sample Learning Objective 3: ***Advances the use of technologies***

Undergraduate level:

Assist in the implementation of new technologies.

Master level:

Coordinate the implementation of new technologies or new applied use of technology.

Doctoral level:

Research the diffusion of technology innovations in the emergency management context.

Technological Literacy: Behavioral Anchor 4 (of 4)

Assesses the legal, ethical, and social implications of technology: Considers ethical, legal, and social implications when determining appropriateness of a technology application for emergency management.

Undergraduate Level Key Actions:

1. Identifies legal, ethical, and social elements in the employment of a technology.
2. Gives examples of legal, ethical, and social implications an emerging technology could have.

Master/Executive Level Key Actions:

1. Conducts an analysis of the legal, ethical, and social aspects for a possible technology application.
2. Makes decision for technology use based upon evidence for appropriateness, and alignment with legal, ethical, and social considerations.

Doctoral Level Key Actions:

1. Anticipates legal, ethical, and social consequences of emerging technologies, and conducts a scholarly inquiry in relation to emergency management application.
2. Formulates an assessment guide for new technology applications.

Sample Learning Objective 4: ***Assesses the ethical, legal, and social implications of technology***

Undergraduate level:

Give examples of legal, ethical, and social implications an emerging technology could have.

Master level:

Conduct an analysis of the legal, ethical, and social aspects for a possible technology application.

Doctoral level:

Formulate an assessment guide for new technology applications.

Systems Literacy

The emergency management professional sees the whole picture, particularly inter-relationships and patterns of change. Systems literacy helps the emergency management professional synchronize their understanding and practice with the ongoing shift away from a linear and hierarchical human order to one that is characteristically dynamic, complex, and exponential. The focus of systems literacy is on interdependent relationships that produce reactions, changes, and adaptations over time. This scientific foundation provides the emergency management professional a deeper understanding of the present for developing future focused strategies that enable adaptation and the ability to thrive.

Systems Literacy: Behavioral Anchor 1 (of 4)

Guides information flow: Establishes channels and protocols for information to flow freely through a complex system allowing parts to make continual adjustments consistent with the state of the whole system.

Note: *Information drives a complex adaptive system, both internally in adaptation among its constituent parts and externally in an exchange with the environment. The combined flow of information allows different views of multiple issues, with the information product being much more than the sum of the parts. The mutual information shared throughout the system enables structural change to match the environment (Comfort, 1994).*

Undergraduate Level Key Actions:

1. Defines complexity and complex adaptive systems.
2. Explains key principles of complex adaptive systems.
3. Identifies the key information flows for a healthy system.
4. Gathers information for evaluation.
5. Assists in communication processes to diffuse key information.

Master/Executive Level Key Actions:

1. Ensures information flow is timely, accurate, and distributed throughout the system.
2. Communicates the "mission" and ensures it is well understood throughout the system.
3. Empowers organizations to act within reasonable bounds, so as to keep others informed.
4. Establishes expectations for self-synchronization between parts.
5. Manages the conditions which may favor or impede collaboration.

Doctoral Level Key Actions:

1. Anticipates evolving conditions and disseminates findings to optimize collaboration.
2. Appraises human factors affecting information processing and communicates findings for improvements.

Sample Learning Objective 1: ***Guides information flow***

Undergraduate level:

Explain information systems, their theoretical frameworks and applications.

Master level:

Outline information flows within and between organizations under adverse conditions.

Doctoral level:

Reframes the information role in emergency management to augment adaptation within a complex system.

Systems Literacy: Behavioral Anchor 2 (of 4)

Guides action between the parts and the whole: Facilitates conditions conducive to achieving the desired outcome state; recognizes the priority of the current state of the system, and synchronously directs the individual parts of the system to move toward the anticipated state.

Note: *Complex systems function through mutual adjustment of the parts relative to each other to stabilize the whole and achieve the mission. "No system can remain stable, unless the parts are able to vary in order to protect the whole" (Wildavsky, 1988, p.77).*

Undergraduate Level Key Actions:

1. Assists in communicating the mission.
2. Describes the establishment of incident management.
3. Explains the management structure processes: staffing status, clarity of individual roles, and the operational communications processes.
4. Gathers information on the system function/stability.

Master/Executive Level Key Actions:

1. Communicates the mission.
2. Simulates an establishment of incident management.
3. Determines functioning of system parts: staffing of positions is adequate, roles are understood, and communications processes are in place.
4. Prioritizes stability of the whole system.
5. Establishes conditions which favor collaboration within and across systems.
6. Observes and evaluates the stability of the system function, and synthesizes findings into a report.

Doctoral Level Key Actions:

1. Co-creates a shared mission statement for a system exercise/test.
2. Facilitates instruction on complex adaptive systems theory and its application to practices.
3. Synthesizes existing and emerging research literature to optimize collaborative practices and inform practice innovations.

Sample Learning Objective 2: ***Guides action between the parts and the whole***

Undergraduate level:

Restate complex adaptive systems theory and discuss how it applies to practice.

Master level:

Illustrate ongoing complex adaptive systems in all phases of emergency management.

Doctoral level:

Synthesize existing and emerging research literature and make recommendations to inform practice innovations.

Systems Literacy: Behavioral Anchor 3 (of 4)

Guides understanding of the wider environment: Utilizes and interprets information from the wider environment and sensing equipment, then communicates the derived situational awareness, and facilitates adjustments to the changing environment.

Note: *A system's adaptation to change in the wider environment depends upon the rate of change and the system's capacity to understand the evolving situation. The adaptive process stems from new knowledge that is created and offered back to the wider system. The process can lead within the system to a mutual pattern of organizational learning, which can be critical for a complex endeavor such as disaster response (Comfort, 1994).*

Undergraduate Level Key Actions:

1. Identifies and lists sensing systems in the wider environment.
2. Participates in a team that interprets or maps incident information from remote sensing or the wider environment.
3. Describes communication conditions conducive to rapid dissemination of information and incorporation of feedback.
4. Explains adjustments made in relationship to the changing environment.

Master/Executive Level Key Actions:

1. Lists and categorizes technological sensing capabilities available along with emerging innovations that can benefit sense-making in a specific location.
2. Interprets data from the wider environment.
3. Supports the sense-making process.
4. Communicates actionable intelligence for the system.
5. Facilitates system adjustments to the changing environment.

Doctoral Level Key Actions:

1. Designs a novel information gathering approach with remote sensing equipment.
2. Synthesizes remote sensing frameworks, sense-making processes, and complex adaptive systems concepts.
3. Analyzes and draws conclusions from complex wider environment data.
4. Makes recommendations for actionable system change for adjustment to the changing environment.

Sample Learning Objective 3*: Guides understanding of the wider environment*

Undergraduate level:

Participate on a team that interprets incident information from the wider environment or maps remote sensing data.

Master level:

Interpret data from remote sensing equipment or the wider environment.

Doctoral level:

Analyze and draw conclusions from complex wider environment data.

Systems Literacy: Behavioral Anchor 4 (of 4)

Guides innovation processes: Works in partnership with others, and utilizes a range of resources available within the system to establish an innovative solution to a pressing problem.

Note: *Complex systems have an inherent capacity for creative innovation, which is essential for adaptive capacity. Innovation allows organizations, in concert with their partners, to rearrange available resources to respond to unexpected threats or modify the response to known threats.*

Undergraduate Level Key Actions:

1. Reports on issues requiring innovative approaches.
2. Participates in a team working group.
3. Identifies and accesses resources that support and substantiate the team project.
4. Works in partnership with others in the innovation process.

Master/Executive Level Key Actions:

1. Recognizes the need to engage in innovative processes on a specific issue.
2. Utilizes a range of resources available in the system to support and inform the issue at hand.
3. Organizes a team to develop creative options for a specific issue.
4. Collaborates with others in the innovation process.
5. Identifies and assesses the emerging options.
6. Applies and assesses the selected option to practice.

Doctoral Level Key Actions:

1. Facilitates creative processes in a working group for innovative problem-solving.
2. Collaborates across organizations to gain wider involvement and ideas.
3. Synthesizes a range of complex resources to inform option generation.
4. Integrates evaluation criteria to guide option selection.

Sample Learning Objective 4: *Guides innovation processes*

Undergraduate level:

Participate in a team working group.

Master level:

Collaborate with others on an innovation solution process.

Doctoral level:

Facilitate the creative processes in a working group for innovative problem-solving.

Emergency Management Competencies that Build Relationships

Disaster Risk Management

The emergency management professional communicates and facilitates disaster risk awareness, assessment, measurement, and reduction across a broad spectrum of stakeholders. Disaster risk management is the application of strategies and policies to prevent new disaster risk, reduce existing disaster risk, and manage the residual disaster risk, ultimately contributing to loss reduction, resilience building, and thriving communities. An understanding of how systems interact to create risk, along with recognition that risk is interdependent with social systems is fundamental to the function.

Acknowledgement: The extensive experience with disaster risk management frameworks of New Zealand (NZ) can be found in their *Civil Defence Emergency Management Competency Framework (2009)*, which provides a substantive resource. Because of New Zealand's expertise, many of the key actions for this competency were derived from the NZ framework.

Disaster Risk Management: Behavioral Anchor 1 (of 3)

Communicates and interprets hazards and risks: Clearly communicates and explains hazard risks to a wide range of stakeholders.

Key Actions Undergraduate Level:

1. Identifies hazards and their potential consequences.
2. Demonstrates awareness of the social, economic, natural, and built environments of communities.
3. Promotes awareness of hazards and risks to partners and community members.

Key Actions Master/Executive Level:

1. Compares and contrasts hazards and their potential consequences.
2. Examines the combined elements of risk and their implications.
3. Communicates clearly the influence of social, built, and physical environments interaction on disaster risk.
4. Applies knowledge of interdependencies of environments to potential disaster risk management strategy.

Key Actions Doctoral Level:

1. Integrates understanding of the social, economic, natural, and built environments of communities to communicate a holistic picture of risk.

2. Generates a research design to explore the relationship between disaster risk and social factors contributing to that risk.

Sample Learning Objective 1: ***Communicates and interprets hazards and risks***

Undergraduate level:

Promote awareness of hazards and risks to partners and community members.

Master level:

Communicate clearly the influence of social, built, and physical environments interaction on disaster risk.

Doctoral level:

Integrate understanding of the social, economic, natural, and built environments of communities to communicate a holistic picture of risk.

Disaster Risk Management: Behavioral Anchor 2 (of 3)

Understand and apply disaster risk management: Provides a structured process using disaster risk management frameworks for identifying and managing risk.

Key Actions Undergraduate Level:

1. Supports the development of a risk profile.
2. Applies awareness of the elements of risk to risk analysis and evaluation.
3. Supports the establishment of priorities and development of risk treatment options for risks identified.

Key Actions Master/Executive Level:

1. Applies understanding of hazards and risk to the development of a risk profile.
2. Applies understanding of the elements of risk to risk analysis and evaluation.
3. Establishes priorities and develops risk treatment options for risks identified.
4. Communicates and consults with partners and communities, as appropriate, on residual risk and risk treatment options.
5. Ensures views of partners are considered in the risk management process.
6. Advocates within own organization for risk treatment.
7. Promotes risk management principles to key individuals, partner organizations, and communities.

Key Actions Doctoral Level:

1. Champions risk management principles and process within own organization and across other organizations.
2. Provides insights for others in understanding the risk management process.
3. Influences across organizations to ensure effective, coordinated, multi-agency risk treatment programs.

Sample Learning Objective 2: ***Understands and applies risk management***

Undergraduate level:

Explain the application of risk management frameworks.

Master level:

Apply a risk management framework to a specific situation.

Doctoral level:

Advance the application of risk management frameworks.

Disaster Risk Management: Behavioral Anchor 3 (of 3)

Monitor, evaluate, and review risk management processes and outcomes: Monitors, evaluates, and reviews risk management processes and outcomes.

Key Actions Undergraduate Level:

1. Identifies new literature informing hazards, risks, and vulnerabilities.
2. Monitors and updates information about known and emerging hazards and risks.
3. Reviews and updates the risk profile.

Key Actions Master/Executive Level:

1. Identifies research to ensure gaps in understanding about hazards, risks, and vulnerabilities are addressed.
2. Considers the impacts of future trends within the social, economic, natural, and built environments on risk analysis and evaluation.
3. Evaluates trends, progress, and effectiveness of disaster risk reduction programs.

Key Actions Doctoral Level:

1. Generates criteria and framework for monitoring and evaluation processes.
2. Evaluates and adapts new methodologies for continual improvement in disaster risk management.

Sample Learning Objective 3: ***Monitor, evaluate, and review risk management processes and outcomes***

Undergraduate level:

Explain how risk management frameworks are highly specific in their application.

Master level:

Assess the shifts in risk due to changing vulnerability utilizing a risk management framework.

Doctoral level:

Evaluate and compare new methodologies for continual improvement in risk management.

Community Engagement

The emergency management professional is able to facilitate community ownership of risk. Community engagement involves an open dialogue and relationship development that fosters working constructively to reduce the shared disaster risk. The practices of clearly communicating information, giving voice to unheard community members, integrating divergent perspectives, promoting, and supporting individuals, families, businesses and organizations are vital for building the foundation of respect and support for a thriving community.

Community Engagement: Behavioral Anchor 1 (of 4)

Involves key stakeholders: Identifies the range of people and organizations affected by the disaster risk issue, takes action to involve the stakeholders, and builds strategic partnerships to focus on the disaster risk exposure.

Key Actions Undergraduate Level:

1. Identifies the people and organizations that are affected by the discreet disaster risk.
2. Explains constraints to reducing disaster risk.
3. Interprets where people are in the current state of disaster risk.
4. Identifies reasons for opposing views.
5. Gives examples of what can be achieved to reduce the risk as a community.
6. Encourages all stakeholders to contribute.

Key Actions Master/Executive Level:

1. Actively seeks opportunities to support people and organizations affected by the discreet disaster risk.
2. Designs individual and collective strategies for involving stakeholders.
3. Considers both complimentary and adversarial viewpoints.
4. Establishes common ground for stakeholder interest and involvement.
5. Connects disaster risk reduction strategies to community values to promote a community based solution.
6. Promotes a vision of the desired shared outcome produced through stakeholder engagement.

Key Actions Doctoral Level:

1. Generates a stakeholder and option feasibility analysis.
2. Creates a vision for a shared outcome with stakeholders.
3. Evaluates the stakeholder involvement process and incorporates feedback into subsequent engagements.

Sample Learning Objective 1: ***Involves key stakeholders***

Undergraduate Level:

Identify people and organizations affected by a discreet disaster risk.

Master/Executive Level:

Design strategies for involving stakeholders.

Doctoral Level:

Generate a stakeholder position analysis.

Community Engagement: Behavioral Anchor 2 (of 4)

Cultivates partnerships and mutual respect: Identifies opportunities to form partnerships and establishes two-way information flow for building both social capital and collective capacity to work with each other; these processes underpin the evolution toward community disaster risk ownership and participation in disaster risk reduction activities.

Key Actions Undergraduate Level:

1. Stimulates conversations that improve disaster risk awareness, acceptance, and alternative solutions.
2. Demonstrates effective and inclusive disaster risk communication with stakeholders from all levels of understanding.
3. Listens to differing points of view and promotes mutual understanding.
4. Takes a proactive approach to meet stakeholder information needs in a consistent, effective, and timely manner.
5. Keeps current on formal and informal communications.
6. Demonstrates knowledge of when to stand firm and when to accommodate.
7. Produces clear and articulate oral and written communications with all stakeholders.
8. Identifies opportunities to improve partnership capacities.

Key Actions Master/Executive Level:

1. Makes use of specialized knowledge to stimulate conversations that improve disaster risk awareness, acceptance, and alternative solutions.
2. Explores partnership opportunities and mutually develops shared goals.
3. Fosters an inclusive environment that emphasizes knowledge sharing and group participation.
4. Coordinates communication efforts to ensure information sharing is inclusive and effective for all stakeholders.
5. Facilitates agreement by constructively resolving differences of opinion.
6. Presents disaster risk information, ideas, and positions clearly and respectfully; guides collective action toward disaster risk reduction goals.
7. Prepares and disseminates clear and articulate oral and written communications for all stakeholders.
8. Integrates learning systems to continually improve relationships and social capital assets.

Key Actions Doctoral Level:

1. Generates clear and articulate oral and written communications for all stakeholders.
2. Conducts data gathering interviews with stakeholders about the current disaster risk situation.

3. Detects the perception of the current disaster risk situation at all levels of understanding.
4. Assesses key relationships to leverage social capital assets and enhance capacity.
5. Evaluates capabilities, capacities, and constraints.
6. Conducts stakeholder interaction analysis for developing learning system processes.
7. Conducts an analysis of partnership factors and interactions over time.

Sample Learning Objective 1: ***Cultivates partnerships and mutual respect***

Undergraduate Level:

Demonstrate effective and inclusive disaster risk communication for all levels of understanding.

Master/Executive Level:

Explore a partnership opportunity and mutually develop shared goals.

Doctoral Level:

Assess key relationships to leverage social capital assets and enhance capacity.

Community Engagement: Behavioral Anchor 3 (of 4)

Creates public value: Facilitates a community learning process through communications, dialogue, negotiation, and cooperation; establishes collective disaster risk reduction goals appropriate for present and future conditions.

Key Actions Undergraduate Level:

1. Explains the principle of shared value and how it is determined.
2. Applies civic and democratic principles when working with others to face current disaster risk reality.
3. Explains the details and trajectory of no action on the current disaster risk.
4. Compares the details and trajectory of collective action addressing the current disaster risk.
5. Builds on successful community ideas to gain further momentum toward goals that benefit the community.
6. Supports the participating community members in making definitive disaster risk choices.
7. Clearly identifies the new reality the community wants.

Key Actions Master/Executive Level:

1. Integrates civic and democratic principles when supporting community disaster risk decision making.
2. Focuses the comparative details and trajectory between status quo and collective action addressing the current disaster risk.
3. Integrates community input to propose high leverage interventions.
4. Negotiates strategic direction and long term opportunities to best meet a community's evolving needs.
5. Supports the participating community members in making definitive disaster risk choices.
6. Builds community confidence through clear reflection on the constructive, collaborative decisions and actions.

Key Actions Doctoral Level:

1. Identifies, analyzes, and communicates public disaster risk problem for change.
2. Collaborates as a subject matter expert to differentiate trajectories of status quo and collective action on the disaster risk issue.
3. Fosters community acceptance of the current disaster risk and readiness for change.
4. Integrates community input to propose high leverage interventions.
5. Analyzes processes and procedures for improvement.
6. Collects information on community disaster risk action and tests the model.

Sample Learning Objective 2: ***Creates public value***

Undergraduate Level:

Explain the details and trajectory of no action on the current disaster risk.

Master/Executive Level:

Focus comparative details and trajectory between status quo and collective action addressing the current disaster risk.

Doctoral Level:

Synthesize information on community disaster risk action and test the model.

Community Engagement: Behavioral Anchor 4 (of 4)

Establishes a process for expanded engagement and continual learning: Supports community networks through ongoing improvement of collective disaster risk reduction goals and interventions.

Key Actions Undergraduate Level:

1. Maintains communications and engagement with existing stakeholders.
2. Advances stakeholder involvement.
3. Extends participation invitations to more community stakeholders.
4. Carries out disaster risk intervention with stakeholders.
5. Builds upon collaborative successes.

Key Actions Master/Executive Level:

1. Navigates an awareness of goals, goal refinement, and solutions while maintaining relationships and supporting consensus.
2. Continually seeks wider stakeholder opportunities and participation.
3. Collaboratively determines courses of action to widen mutual goals.
4. Establishes processes for continual learning and outreach.
5. Evaluates and updates plan regularly with stakeholders.
6. Implements effective means for monitoring partnership process.

Key Actions Doctoral Level:

1. Develops metrics for monitoring partnership process.
2. Creates implementation plan with pilot /demonstration projects.
3. Evaluates the partnership process and attainment of mutual goals.
4. Generates refined goals based on evidence from pilot projects.

Sample Learning Objective 4: ***Establishes a process for expanded engagement and continual learning***

Undergraduate Level:

Extend participation invitations to more community stakeholders.

Master/Executive Level:

Establish processes for continual learning and outreach.

Doctoral Level:

Develop metrics for monitoring partnership process.

Governance and Civics

The emergency management professional understands how to participate within civic and legal processes, from politics to policy. The way society manages collective processes is referred to as governance, which seeks to identify, evaluate, and operate within the context of relational dynamics including those within power structures. Collaborative processes further expand the achievement of public value by bringing people together across the boundaries of public agencies, levels of government, NGOs, business, and civil society.

Governance and Civics: Behavioral Anchor 1 (of 6)

Considers policy options in relationship to the stakeholders: Identifies and analyzes a hazard risk issue for action, policy options to consider, the stakeholders' positions on the issue, the feasibility of the policy options, and the feasibility of engaging in a collaborative process with stakeholders.

Undergraduate Level Key Actions:

1. Understands what constitutes a poor versus effective policy.
2. Compare and contrast an effective policy with a poor policy.
3. Recognizes factors that determine policy effectiveness.
4. Explains a disaster risk issue framing process.
5. Describes the stakeholder identification process in the disaster risk issue.
6. Summarizes the need for and feasibility of a collaborative action with stakeholders.

Master/Executive Level Key Actions:

1. Diagnoses and frames the fundamental disaster risk issue.
2. Identifies and categorizes both complementary and adversarial stakeholders.
3. Compares and contrasts policy options to address the disaster risk issue.
4. Analyzes the feasibility of the policy options in relationship to the stakeholder's position.
5. Distinguishes conditions that favor or impede collaboration with stakeholders.

Doctoral Level Key Actions:

1. Reviews the policy analysis for refinement of processes.
2. Evaluates evolving conditions capable of detracting from or improving optimal collaboration.
3. Develops new approaches that will advance the collaborative governance.

Sample Learning Objective 1: ***Considers policy options in relationship to the stakeholders***

Undergraduate level:

Identify stakeholders surrounding a specified disaster risk issue.

Master level:

Categorize both complementary and adversarial stakeholders, and then analyze the feasibility of the policy options in relationship to the stakeholder positions.

Doctoral level:

Review the generated policy analysis for refinement of functions.

Governance and Civics: Behavioral Anchor 2 (of 6)

Political and legal: Analyzes access to, the relational dynamics of, and the ramifications from those in positions of political power in connection to the disaster risk issue. Considers the legal parameters for a collaborative process, and assesses the potential implications of political access, policy, and legal parameters, including when to obtain legal assistance and involve legal counsel in the collaborative process as applicable to the risk issue.

Undergraduate Level Key Actions:

1. Appreciates the importance of relationships in all sectors and levels of emergency management.
2. Finds and utilizes valid electronic legal resources.
3. Explains laws and legal issues related to a disaster risk problem.
4. Identifies potential legal implications in a case study or a particular policy initiative.
5. Illustrates the point at which legal counsel should be sought.

Master/Executive Level Key Actions:

1. Establishes relationships in all sectors and levels of emergency management.
2. Conducts a search for the legal underpinning of an existing policy.
3. Prioritizes laws and legal issues related to a disaster risk problem.
4. Appropriately seeks legal counsel regarding a collaborative process for a disaster risk issue.
5. Determines legal counsel to involve in a collaborative process.

Doctoral Level Key Actions:

1. Generates a political feasibility analysis to inform a collaborative process on a disaster risk issue.
2. Anticipates and communicates potential legal implications regarding a collaborative process for a disaster risk issue.
3. Evaluates the outcomes of a government regulation on emergency management functions.

Sample Learning Objective 2: *Political and legal*

Undergraduate level:

Objectively discuss laws and legal issues related to a disaster risk problem.

Master level:

Find, evaluate for validity, and utilize legal resources.

Doctoral level:

Evaluate the outcomes of a government regulation on emergency management functions.

Governance and Civics: Behavioral Anchor 3 (of 6)

Brings people together across sectors: Initiates bringing a wide range of stakeholders together; engages stakeholders in a process to identify mutual goals that address the disaster risk issue at hand, and shares the vision for greater public value.

Undergraduate Level Key Actions:

1. Invites stakeholder group to the initial meeting.
2. Relates the vision for public value.
3. Maintains communications to build relationships and team development.
4. Summarize the processes established for the stakeholder group.
5. Transcribes the collective goal development.

Master/Executive Level Key Actions:

1. Initiates bringing both complementary and adversarial stakeholders together to address a disaster risk issue.
2. Communicates clearly the vision for public value.
3. Facilitates authentic dialogue, relationship development, and team building.
4. Establishes process design and decision-making practices.
5. Guides collective goal development and builds coalitions.

Doctoral Level Key Actions:

1. Generates evaluation metrics for collaborative working group.
2. Analyzes improvement options for continued work together.

Sample Learning Objective 3: *Brings people together across sectors*

Undergraduate level:

Write a draft invitation letter for a stakeholder gathering.

Master level:

Simulate bringing a wide range of stakeholders together to address a disaster risk issue.

Doctoral level:

Generate evaluation metrics for collaborative working group.

Governance and Civics: Behavioral Anchor 4 (of 6)

Builds social capital through collective processes: Facilitates dialogue on the issue bringing the stakeholders together, guides exploration of options, negotiates differing views, cultivates shared learning, and builds social capital in the establishment of shared goals.

Undergraduate Level Key Actions:

1. Applies tools for managing discussion, and articulates areas of agreement and mutual learning.
2. Develops active listening skills.
3. Recognizes the importance of building political acumen.
4. Practices effective political communication for influencing others, negotiating conflict, and brokering agreements.
5. Discusses how an ethics base is important to building social capital.

Master/Executive Level Key Actions:

1. Facilitates systematically team building, group dynamics, and mutual learning processes.
2. Listens carefully to understand others' perspectives and identifies areas where the varying narratives can intersect throughout the group.
3. Seeks win-win solutions to meet shared interests.
4. Supports shared value within a group to unify the individuals around a common purpose, fostering social capital.
5. Builds coalitions of agreement toward establishing shared goals.
6. Encourages collaborative processes to collectively achieve the shared goal.

Doctoral Level Key Actions:

1. Adapts application of an ethics model for multi-stakeholder deliberation processes.
2. Establishes criteria to evaluate the processes of collaborative governance policy development.
3. Writes a case study teaching tool based on an actual collaborative governance policy development process.

Sample Learning Objective 4: ***Builds social capital through collective processes***

Undergraduate level:

Practice effective political communication for influencing others, negotiating conflict, and brokering agreements.

Master level:

Systematically facilitate team building, group dynamics, and mutual learning processes in a team project setting.

Doctoral level:

Write a case study teaching tool based on an actual collaborative governance policy development process.

Governance and Civics: Behavioral Anchor 5 (of 6)

Implementation: Supports collaborative processes to collectively achieve the shared policy goal through forward mapping and planning. Expands collaboration to establish mutually supported components of constituency involvement, governance structures, monitoring/evaluation agreements, and continual improvement cycles.

Undergraduate Level Key Actions:

1. Discusses the role of governance structures and constituency involvement.
2. Identifies the role of constituencies in policy implementation.
3. Summarizes the steps for the shared policy goal implementation planning.
4. Interprets a forward mapping visual for a policy/program implementation planning.
5. Identifies potential risks to successful policy goal implementation.
6. Describes the public information approach for implementing the shared policy goal.
7. Defines change management.

Master/Executive Level Key Actions:

1. Outlines shared policy goal implementation planning and the associated change management processes.
2. Facilitates collective policy/program implementation planning to achieve the shared goal.
3. Constructs a forward mapping visual for policy/program implementation planning.
4. Plans for potential risks to implementation of the shared policy goal.
5. Integrates evaluation and continual improvement in the implementation planning process.
6. Guides the development of a public information strategy.
7. Expands stakeholder group constituency involvement and wider governance structures.

Doctoral Level Key Actions:

1. Develops metrics to evaluate the shared policy goal implementation processes and outcome effectiveness.
2. Provides evaluation feedback for improving approaches to shared policy/program goal implementation.
3. Designs a curriculum integrating policy implementation planning with policy and governance processes.

Sample Learning Objective 5: *Implementation*

Undergraduate level:

Summarize steps for policy implementation planning in a short essay.

Master level:

Construct a forward mapping visual for shared policy/program goal implementation.

Doctoral level:

Design a curriculum integrating policy implementation planning with governance processes.

Governance and Civics: Behavioral Anchor 6 (of 6)

Evaluation and continual improvement: Supports the processes of continual improvement through monitoring, evaluation, and implementation of improvements, with a mindfulness of possible unintended consequences.

Undergraduate Level Key Actions:

1. Discusses the relationship between monitoring, evaluation, and continual improvement.
2. Contributes to information gathering for evaluation reports.

Master/Executive Level Key Actions:

1. Produces a plan for evaluating outcomes in measurable terms during implementation planning.
2. Prepares for conducting an evaluation: obtains research permissions, research tools, information materials for participant disclosure and consent, and determines data collection strategy.
3. Analyzes the evaluation data gathered, the degree the objectives were attained, and the progress toward the desired outcome, with sensitivity for unintended consequences.
4. Writes the evaluation report, identifies areas for improvement, and develops strategy to continuing working toward the desired outcome while correcting any unintended consequences.

Doctoral Level Key Actions:

1. Designs monitoring and evaluation metrics and instrument.
2. Tests the applicability of continual improvement processes in emergency management initiatives.
3. Synthesizes existing knowledge for continual governance improvement within the context of disaster risk reduction.

Sample Learning Objective 6: ***Evaluation and continual improvement***

Undergraduate level:

Explain in a short essay the monitoring/evaluation relationship to continual improvement cycles.

Master level:

Analyze evaluation data; focus on the degree the objectives were attained and the progress toward the desired outcome.

Doctoral level:

Design monitoring and evaluation metrics and instruments supportive of continual improvement.

Leadership

The emergency management professional is comfortable leading within and across organizations. Effective emergency management leadership emphasizes team building, collaboration, collective leadership, and communication connectivity to a wide range of stakeholders, so that the complex risks can be addressed. Leadership is characterized by: informed decision-making, constructive administration and management techniques, fostering a shared vision, empowering others, establishing communication capabilities across varied networks, and creating an outcome oriented environment for continual improvement.

Leadership: Behavioral Anchor 1 (of 4)

Inspires a shared vision: Supports and informs the creation of shared vision with a network of community stakeholders. Communicates clearly how people can contribute to achieve the vision, so that mutual adjustments can be made in concert with others.

Key Actions Undergraduate Level:

1. Comprehends shared vision and its process of creation.
2. Illustrates shared vision and desired product.
3. Plays a supportive role in the development of a shared vision that provides direction for the organization.

Key Actions Master/Executive Level:

1. Considers the strategic view during the development of a vision and direction.
2. Articulates the vision and direction to gain commitment from key partners.
3. Helps others see linkages between the organization's vision, values, systems, and processes.
4. Champions outcomes in high-level strategies and plans.

Key Actions Doctoral Level:

1. Guides development of a shared vision and the means to communicate it effectively.

Sample Learning Objective 1: ***Inspires a shared vision***

Undergraduate level:

Describe strategic planning processes.

Master level:

Guide a simulated strategic planning process.

Doctoral level:

Evaluate the means for communicating a vision and provide feedback for implementing improvements.

Leadership: Behavioral Anchor 2 (of 4)

Creates an empowering environment: Identifies and negotiates constraints to enable others in the organization to successfully pursue its vision.

Undergraduate Level Key Actions:

1. Demonstrates drive and enthusiasm when participating in activities.
2. Values and contributes to a workplace where diversity of thought is leveraged.

Master/Executive Level Key Actions:

1. Appropriately delegates responsibilities to others.
2. Seeks to encourage the ideas of others and builds upon the ideas others generate.
3. Develops the ability of others to perform and contribute to the organization by providing ongoing feedback and opportunities to learn through formal and informal methods (NZ MCDEM, 2009).

Doctoral Level Key Actions:

1. Fosters a sense of responsibility in others.
2. Anticipates organizational shifts and devises new information processes to enable others continued pursuit of the vision.
3. Develops curriculum that highlights the relationship between organizational vision, organizational change, change management, and adaptation.

Sample Learning Objective 2: ***Creates an empowering environment***

Undergraduate level:

Demonstrate in actions the importance of deep engagement in work.

Master level:

Encourage the ideas of others through discussion and build upon their ideas for next action steps.

Doctoral level:

Foster responsibility in others through a classroom group project.

Leadership: Behavioral Anchor 3 (of 4)

Resolves conflict: Resolves conflict that may emerge within the organization or between the organization and the community it serves. Promotes a vision of a shared outcome and facilitates agreement by constructively resolving differences of opinion.

Key Actions Undergraduate Level:

1. Explains conflict management frameworks.
2. Identifies reasons for opposing views.
3. Bases viewpoint on evidence.
4. Demonstrates knowledge of when to stand firm and when to accommodate.
5. Demonstrates respect for diversity of thought.
6. Phrases ideas in a way that avoids negative reactions.
7. Maintains objectivity in uncomfortable situations.
8. Keeps current on formal and informal communications.
9. Takes a proactive approach to meet stakeholder information needs in a consistent, effective, and timely manner.

Master/Executive Level Key Actions:

1. Conducts a discussion on conflict management frameworks.
2. Considers both complimentary and adversarial viewpoints.
3. Anticipates counter-arguments and constructively supports position with evidence.
4. Facilitates agreement by constructively resolving differences of opinion.
5. Fosters an inclusive environment that emphasizes knowledge sharing and participation.
6. Promotes a vision of the desired shared outcome.
7. Integrates learning systems to continually improve relationships and social capital assets.

Doctoral Level Key Actions:

1. Assesses key relationships to leverage social capital assets and enhance capacity.
2. Prepares a lecture on conflict management frameworks.
3. Conducts an analysis of relationship factors and interactions over time.
4. Advocates for diversity of thought.

Sample Learning Objective 3: ***Resolves conflict***

Undergraduate level:

Explain conflict management frameworks.

Master level:

Critique both complimentary and adversarial viewpoints on a specific issue.

Doctoral level:

Prepare a lecture on conflict management frameworks.

Leadership: Behavioral Anchor 4 (of 4)

***Strategic decision making that influences others toward change*:** Develop strategic plans created through participatory process within and between organizations.

Key Actions Undergraduate Level:

1. Aligns actions to a strategic direction flowing from the vision.
2. Contributes constructively to change by challenging assumptions.

Key Actions Master/Executive Level:

1. Drives change by constructively challenging assumptions and seeking solutions.
2. Makes informed, conclusive, and timely decisions based on all available information and analysis.
3. Leads diverse groups towards a shared vision.
4. Demonstrates understanding of the implications of decisions made.

Key Actions Doctoral Level:

1. Establishes criteria for strategic planning processes.
2. Develops an evaluation tool for refining strategic planning processes.

Sample Learning Objective 4: ***Strategic decision making that influences others toward change***

Undergraduate level:

Explain strategic planning processes in a short essay.

Master level:

Direct a simulated strategic planning process.

Doctoral level:

Develop an evaluation tool for refining strategic planning processes.

Bibliography

Aitsi-Selmi, A., Murray, V., Wannous, C., Dickinson, C., Johnston, D., Kawasaki, A.,…Yeung, T. (2016). Reflections on a science and technology agenda for 21st century disaster risk reduction: Based on the scientific content of the 2016 UNISDR science and technology conference on the implementation of the Sendai framework for disaster risk reduction 2015-2030. *International Journal of Disaster Risk Science, 7,* 1-29.

Blanchard, B. W. (2005). *Top ten competencies for emergency management*. Retrieved from https://training.fema.gov/HiEdu/docs/Blanchard%20-%20Competencies%20EM%20HiEd.doc

Blanchard, B. W. (2007). *Background "think piece" for the Emergency Management Roundtable meeting EMI, March 5-6, 2007 on what is emergency management? And what are the principles of emergency management.* Retrieved from https://training.fema.gov/hiedu/emprinciples.aspx

Blanchard, B. W., Canton, L. G., Cwiak, C. L., Goss, K. C., McEntire, D. A., Newsome, L.,…West, D. (2007). *Principles of emergency management supplement.* Emmitsburg, MD: Federal Emergency Management Agency. Retrieved from Emergency Management Institute website https://training.fema.gov/hiedu/emprinciples.aspx

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objective, handbook I: The cognitive domain.* New York: David McKay Co. Inc.

Castells, M. (2009). *The rise of the network society* (2nd ed.). Oxford, UK: Blackwell Publishers.

Castells, M., & Cardoso, G. (Eds.). (2005). *The network society: From knowledge to policy*. Washington, D.C.: Johns Hopkins Center for Transatlantic Relations. Available from https://www.umass.edu/digitalcenter/research/pdfs/JF_NetworkSociety.pdf

Center for Disease Control and Association of Schools of Public Health. (2010). *Public health preparedness and response: Core competencies model (Model No. 1).* Retrieved from https://www.cdc.gov/phpr/documents/perlcpdfs/preparednesscompetencymodelworkforce-version1_0.pdf

Civil Defense of Emergency Management. (2009). *Civil defense emergency management: Competency framework*. Wellington, New Zealand: Ministry of Civil Defense and Emergency Management.

Comfort, L. K. (1994). Risk and resilience: Inter-organizational learning following the Northridge earthquake of 17 January 1994. *Journal of Contingencies and Crisis*

Management, 2(3). Retrieved from https://onlinelibrary.wiley.com/doi//10.111/j. 1468-5973.1994.tb00038.x/full#references

Comfort, L. K. (1994). Self-organization in complex systems. *Journal of Public Administration Research and Theory: J-PART*, 4(3). 393-410. Retrieved from http://www. Jstor.org/stable/1181895

Cwiak, C. L., Campbell, R., Cassavechia, M. G., Haynes, C., Lloyd, L. A., Brockway, N., …Senger, M. (2017). Emergency management leadership in 2030: Shaping the next generation meta-leader. *Journal of Emergency Management, 15*(2), 81-97.

Drabek, T. E. (1990). *Emergency management: Strategies for maintaining organizational integrity.* New York: Springer-Verlag.

Etkin, D., Feldmann-Jensen, S., Smith, S., & Jensen, S. (2016). Toward a substantive dialogue: The case for an ethical framework in emergency management, Part 2. *Australasian Journal of Disaster and Trauma Studies, 20,* 49-53.

Farace, D. J. & Frantzen, J., (Eds.). (2010). Proceedings from: *Twelfth International Conference on Grey Literature: Transparency in grey literature*. Amsterdam: Grey Literature Network Service.

Feldmann-Jensen, S., Jensen, S., Smith, S., & Etkin, D. (2016). Toward a substantive dialogue: The case for an ethical framework in emergency management, Part 1. *Australasian Journal of Disaster and Trauma Studies*, 20 (1), 45-47.

Federal Emergency Management Agency [FEMA]. (2012). *Strategic foresight initiative*. Retrieved from https://www.fema.gov/strategic-foresight-fema

Federal Emergency Management Agency [FEMA]. (2012). *Crisis response and disaster resilience 2030: Forging strategic action in an age of uncertainty*. Washington, DC: Department of Homeland Security.

Federal Emergency Management Agency[FEMA]. (2016). *The next generation emergency management core competencies.* Retrieved from Federal Emergency Management Agency Higher Education Program website: https://training.fema.gov/hiedu/docs/emcompetencies/ngcc final competencies 4-28-2016.pdf

Harvard University, (n.d.). *Competency Dictionary*. Development Dimensions International Inc. Retrieved from https://apps2.campusservices.harvard.edu/.../harvard_competency_dictionary_comple...

Jensen, J. (2013). *Report of the 2013 Disciplinary Purview Focus Group: Scholarship and research to ground the emerging discipline of emergency management*. Emmitsburg, MD: Federal Emergency Management Agency Higher Education Program.

Jensen, S., Feldmann-Jensen, S., Johnston, D., & Brown, N. (2015). The Emergence of a globalized system for disaster risk management and challenges for appropriate governance. *International Journal of Disaster Risk Science, 6*(1), 87-93.

Johnson, C. E. (2017). *Meeting the ethical challenges of leadership: Casting light or shadow.* Los Angles: Sage.

Knights, J. (2017). *Ethical leadership: How to develop ethical leaders.* Retrieved from: https://www.crcpress.com/go/the_transpersonal_leadership_white_paper_series_how_to_develop_ethical_lead?utm_source=Routledge&utm_medium=cms&utm_campaign=160500001

Lagadec, P. (2005). *Crisis management in the 21st century: Unthinkable events in inconceivable contexts*. Ecole Polytechnic, Centre de Nationale de la Recharche Scientifique, Paris

Lewis, C. W., & Gilman, S. C. (2012). *The ethics challenge in public service: A problem-solving guide* (3rd ed.). San Francisco: Jossey-Bass.

New Zealand Ministry of Civil Defence Emergency Management [NZ MCDEM]. (2009). *Competency framework*. Wellington (NZ): Ministry of Civil Defense and Emergency Management. Technical Standard [TS 02/09].

Moore, K. D., & Nelson, M. P. (Eds.). (2010). *Moral ground: Ethical action for a planet in peril.* San Antonio: Trinity University Press.

Organization for Economic Co-operation and Development [OECD]. (2014). *Competency framework: Learn, Perform, Succeed*. OECD Publishing. Retrieved from https://www.oecd.org/careers/competency_framework_en.pdf

Policy Consensus Initiative and University Network for Collaborative Governance. (2011). *UNCG Guide to Collaborative Competencies*. Policy Consensus Initiative: Portland, OR.

Prahalad, C.K., & Hamel, G. (1990). The core competence of the corporation, *Harvard Business Review, 68*(3), 79–91.

Stroh, D. P. (2015). *Systems thinking for social change: A practical guide for solving complex problems, avoiding unintended consequences, and achieving lasting results.* White River Junction, VT: Chelsea Green Publishing.

United Nations General Assembly. (2016). *Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction.* Washington, DC: Government Printing Office.

United Nations International Office for Disaster Reduction [UNISDR]. (2015). *Sendai framework for disaster risk reduction 2015-2030*. United Nations Office for Disaster Risk Reduction: Geneva, Switzerland.

United States Department of Health and Human Services, National Institutes of Health. (2017). *NIH competencies dictionary*. Retrieved from https://hr.od.nih.gov/workingatnih/competencies/core/default.htm

United States Office of Personnel Management. (2012). *Guide to senior executive service qualifications.* Washington, DC: Government Printing Office.

Wildavsky, A. B. (1988). *Searching for safety*. New Brunswick (U.S.A) and London (U.K.): Transaction Publishers.