

**Integrating Emergency  
Management Studies  
into Higher Education:  
Ideas, Programs, and Strategies**

Jessica A. Hubbard, Editor

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## 1

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# Emergency Management Theory: Unrecognized, Underused, and Underdeveloped

Jessica Jensen, PhD

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**T**HE DEVELOPMENT OF THEORY IS critical to any academic discipline; after all, as Kenneth Hoover argues, "the point of any science is to develop a set of theories to explain the events within their range of observation."<sup>1</sup> Theory orients individuals to the purview of a given discipline, inspires research questions, guides methodologies, provides frameworks for data analysis, informs policy development, and aids professionalization of fields served by the discipline.

Scholars associated with emergency management recognize the importance of theory to the development of this emerging discipline. Thomas E. Drabek states that the development of theory should be a "top priority,"<sup>2</sup> and David A. McEntire contends that learning and policy in emergency management must depend on theory development: "All scholars interested in disasters should desire *emergency management theory* (defined broadly as a crucial body of knowledge) if learning is to continue and policies are to be correctly conceived and implemented."<sup>3</sup>

E. L. Quarantelli also ties theory to the development of the field, noting that "the start of the maturing of a field is characterized by the development of explicit analytical frameworks . . . namely theories, models, schemes and hypotheses."<sup>4</sup> And Ronald Perry goes so far as to warn that "the growth of disaster research as a legitimate discipline will be contingent upon increasing efforts at assembling our findings into models and theories (explanations) and testing those theories to identify those that accurately explain and predict."<sup>5</sup>

Although theory building is clearly necessary for the continued growth of the discipline, emergency management has not articulated the purview of theory building,<sup>6</sup> reached consensus on what constitutes theory in the discipline,<sup>7</sup> or set standards for the development of theory.<sup>8</sup> Without agreement on these issues, it is difficult to determine what, if any, theory currently exists to support the discipline. However, if one conceptualizes theory broadly—in keeping with McEntire, who describes it as a body of knowledge comprising theoretical components such as “definitions, concepts, principles, classifications, typologies, models and causal relationships” and defines the discipline of emergency management as the study of how human beings create, interact, and cope with hazards, risks, vulnerabilities, and the events associated with them<sup>9</sup>—then identifying knowledge to support the discipline is relatively simple and straightforward. The purpose of this essay is to present some of the components that make up emergency management theory; discuss their relevance to the discipline; and examine why this body of theory remains unrecognized, underused, and underdeveloped.

## CONCEPTS

Despite its centrality to the discipline of emergency management, an accepted definition of *disaster* has eluded academics associated with emergency management.<sup>10</sup> Yet the lack of an agreed-upon definition—or of the formal adoption of academic definitions for other terms—has not prevented emergency management faculty and students, research, and textbooks from using a number of concepts on a regular basis. As these concepts sensitize individuals to phenomena commonly considered in emergency management, they perform a function in that discipline similar to the function played by norms, roles, and values in sociology and played by social contract, representation, and political capital in political science.

While the concepts may be defined differently from faculty member to faculty member, book to book, research piece to research piece, the shared meanings behind them “create mental images in the minds of those who speak, read, or hear about them.”<sup>11</sup> Both core and secondary concepts in emergency management (see Figure 1-1) contribute to the discipline by providing the lens through which students, faculty, and researchers perceive information, synthesize the work done in other disciplines, and interpret the relevance of that work to the discipline of emergency management. These concepts, which also serve as building blocks for the development of higher-order theoretical components, originated in and are still used by other disciplines, but they are not core to those disciplines; rather, they give form and purpose to the discipline of emergency management.

Figure 1-1. Examples of Concepts in Emergency Management

Core Concepts	Secondary Concepts	
Hazard	Communication	Cascading disasters
Vulnerability	Collaboration	Direct and indirect impacts
Risk	Coordination	Intergovernmental relations
Impact	Response	Command and control
Emergency	Preparedness	Pre-disaster conditions
Disaster	Recovery	Myths
Catastrophe	Mitigation	First responders
Stakeholder	Resilience	Situational awareness
	Sustainability	Emergency operations center
	Special-needs populations	Incident command system
	Emergence	Standardization
	Convergence	Spontaneous and unaffiliated volunteers
	Therapeutic community	Unmet needs
	Sustainable development	Bounded rationality
	Risk amplification and attenuation	
	Agent- and response-generated demands	

For example, *hazard*, simply conceived as anything with the potential to harm human beings, property, and/or the environment, is a core concept in the discipline of emergency management. As one of the primary purposes of the discipline is to discover how human beings create, interact, and cope with hazards, this concept underlies virtually everything taught in classrooms and researched in the field. It is taught in introductory classes and reinforced in higher-level courses. Hazard also underlies research either explicitly (e.g., as the basis for studying the response to a tornado) or implicitly (e.g., as a requisite to studying preparedness). And the concept attunes faculty, students, and researchers to several important considerations as well:

- What has the potential to harm human beings, property, and/or the environment?
- What is the process by which the hazard develops?
- What are the characteristics of the hazard?
- What is the potential impact of the hazard?
- How do the impacts of hazard vary?
- How can (or do) individuals/households, organizations, and/or levels of government prepare for, respond to, recover from, or mitigate against the hazard?

Without the basic concept of hazard and its related considerations, other core concepts would not have meaning vis-à-vis emergency management. Two examples are *vulnerability*, the qualities or characteristics that make human beings, property, and/or the environment prone to the impact of a given hazard; and *risk*, the likelihood or probability that an event related to a given hazard will occur. These two concepts provide a way to assess the factors related to impact for a given area (vulnerability) and allow the spectrum of all possible hazards to be narrowed down to only those hazards most likely for that given area (risk). And through them, students of emergency management can study how humans can or do reduce the impact of, prepare for, and respond to hazards.

One cannot test the concept of hazard; however, the considerations related to it have enabled those within emergency management to explain and predict the question at the heart of the discipline: how do human beings create, interact with, and cope with hazards, risks, vulnerability, and the events associated with them? For example, research has shown that human response to and recovery from hazards varies by hazard characteristics, such as type, duration, forewarning, severity, and scope, as well as by which of those characteristics are conducive to efficient response and recovery efforts. This knowledge allows researchers to explain, at least partially, and predict a slow response versus a quick response, an organized response versus an unorganized response, a speedy recovery versus a lengthy recovery, and so on.

This evaluation of hazard demonstrates that it is, and has been used as, a conceptual foundation for the discipline of emergency management and that it is used, or has been used, in theoretical ways within the purview of that discipline. Upon similar examination, each of the concepts listed in Figure 1-1 has also had a shaping influence on teaching, learning, and research in emergency management. While many of these concepts lack academic definitions and the relationships among them have not been fully explored, their very existence and use show that there is at least one type of theoretical component that can be considered part of a body of emergency management theory—however unrecognized, underused, and undeveloped it may be.

## CLASSIFICATIONS

Classifications, which “show the differences among similar types of phenomena,”<sup>12</sup> are another component of theory that exists within the emergency management discipline. Some classifications in emergency management are already contributing to the discipline because the properties that make phenomena within the classification different from one another have been clearly distinguished. A few examples of well-developed classifications include types of exercises (i.e., tabletop, functional, and full

scale), types of search and rescue (i.e., urban, swift water, air, and rural), and types of sheltering or housing (i.e., emergency, temporary, and permanent).

Some classifications, like types of events (i.e., emergencies, disasters, and catastrophes) are not well developed but are nevertheless vital to the discipline. If emergency management is indeed the discipline that studies how human beings create, interact, and cope with hazards, risks, vulnerabilities, and the events associated with them, then the idea that different types of events can result from humans creating or interacting with hazards, risks, vulnerabilities, and the variables that make the events different is critical to the discipline. Even if one disagrees with the definition of the discipline used in this essay, it is doubtful that anyone could or would deny that teaching and research present emergencies, disasters, and catastrophes as different phenomena.

Indeed, while the community of academics associated with emergency management cannot agree on definitions for each type of event within the classification, the qualitative and quantitative differences among those definitions are routinely referred to in classrooms and to varying extents within research—particularly with respect to emergencies and disasters. The differences between emergencies and disasters are used to explain why the same kind of assumptions and plans used for emergencies cannot be effectively employed in disasters, why individual and collective behavior is different in emergencies and disasters, why humans are better able to manage emergencies than disasters, etc. The differences also allow us to explore how the type of event is related to different types of hazards, risks, and vulnerabilities, as well as the degree to which humans either create or interact within the scope of these hazards, risks, and vulnerabilities to produce a given event.

As the example above shows, the theoretical component of classifications is already providing a means to explain and compare phenomena within the purview of emergency management. There are at least a dozen additional classifications that either are being used or are available for use in the discipline, even though some are more developed than others. The failure to recognize, fully use, and further develop these classifications may prohibit the growth of emergency management theory, but it does not mean that theory, at least in the form of classifications, does not exist.

## TYOLOGIES

Typologies, another component of theory, compare phenomena of a similar type by the characteristics that make them different from one another. Many typologies that are directly related to the discipline of emergency management should be recognized as part of emergency management theory. Typologies are valuable because they not only allow explanation and comparison but also can be applied in research; according

to McEntire, their value "for theory cannot be overestimated."<sup>13</sup> Two of the best known typologies related to emergency management are the DRC (Disaster Research Center) Organizational Typology<sup>14</sup> and Gary Kreps's D-T-R-A Typology,<sup>15</sup> but among the dozens of others that should be recognized as part of emergency management theory are the following:

- Typology of Local Emergency Management Arrangements<sup>16</sup>
- Crisis Typology<sup>17</sup>
- Heuristic Typology of Governmental Crisis Response Patterns<sup>18</sup>
- Typology of Organizational Improvisation in Disasters.<sup>19</sup>

Typologies that are directly related to the discipline of emergency management are not often used in research beyond the work of the scholars who created them,<sup>20</sup> nor are they incorporated into the curriculum of emergency management higher education programs. Kreps's typology, for example, while ignored, would be useful in the development of knowledge and theory in emergency management and may itself qualify as a theory (depending on how theory is eventually defined within the discipline). The D-T-R-A Typology reflects the four structural components that Kreps observed in the initiation of disaster response efforts: domains, tasks, resources, and activities.<sup>21</sup> Domain is a "function of an organized response"; tasks are "how a domain is accomplished"; resources are "people and their many capabilities, commodities, and equipment"; and "activities are the interdependent actions of individuals, groups, and organizations which articulate the raw materials of organization (human and material resources) with collective representations (domains and tasks) of what is happening."<sup>22</sup> With this typology, response efforts can be identified on a continuum ranging from a formal organized response (in which domains and tasks precede resources and activities) to a wholly emergent response (in which resources and activities precede domains and tasks). As Kreps contends, "this set of four elements is necessary and sufficient for organization but no single pattern in their relationship can be assumed."<sup>23</sup>

As it provides a way to understand how human beings cope with the events associated with hazards, risks, and vulnerabilities, Kreps's typology clearly would be of value to the discipline of emergency management; however, other researchers have not extensively tested it. And until it is applied in further research and consistently taught, discussed, and analyzed in the context of higher education programs, its full theoretical value in this context is unlikely to be discovered. The same statement can be made for the other typologies that are ignored by the emergency management academic community.



## THEORETICAL MODELS

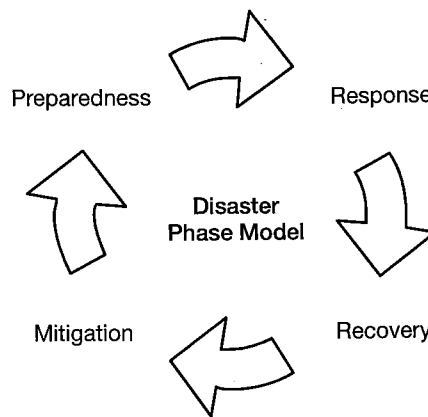
Many theoretical models, or "charts that show theoretical links between different variables or relationships in or among groups,"<sup>24</sup> have the potential to dramatically influence the development of the emergency management discipline and theory building. However, because very few of them are well known, they have not been recognized, used, or developed to the extent necessary. Such models in emergency management include the following:

- Disaster Phase Model<sup>25</sup>
- Source, Channel, Message, Receiver, Effect, Feedback Communication Model<sup>26</sup>
- Demand Capability Model<sup>27</sup>
- Pressure and Release Model<sup>28</sup>
- General Model of Evacuation Behavior<sup>29</sup>
- Protective Decision Model<sup>30</sup>
- Emergent Human Resources Model<sup>31</sup>
- Fitting Concurrent Information Search Processes to the Emergency Management System: A Preliminary Model<sup>32</sup>
- Contextual Model of Hazards<sup>33</sup>
- Model of Professional Design in Emergency Management<sup>34</sup>
- Recovery as an Interdependent Process<sup>35</sup>
- Outline of Findings of Variables Related to Accuracy of Hazard Perception<sup>36</sup>
- Outline of Components and Links Relating to Level of Preparedness<sup>37</sup>
- Causal Model of Hazard<sup>38</sup>
- Hypothetical Model of Causal Relationships Related to Social Amplification of Risk<sup>39</sup>
- Systems Model of Warning System<sup>40</sup>
- Model of Response to Pre-impact Warnings<sup>41</sup>
- Theoretical Model of Disaster Response Effectiveness<sup>42</sup>
- Systems Model of a Warning System<sup>43</sup>
- Typology of Human Adjustments to Hazards.<sup>44</sup>

Of the models listed above, the Disaster Phase Model is one of the only ones that is both widely recognized and used in emergency management. Lowell Carr first introduced the concept of disaster phases in 1932, suggesting that there was an inherent "sequence pattern" to disasters.<sup>45</sup> Since then, the phase approach to the conceptualization and study of disasters has been adapted and built upon.<sup>46</sup> The model stems from the National Governors' Association *Emergency Preparedness Project: Final Report*<sup>47</sup>

and, as currently envisioned (see Figure 1-2), conceptualizes disasters as “the defining events” within four-phases.<sup>48</sup>

Figure 1-2. Common Depiction of the Disaster Phase Model



There are limitations to the Disaster Phase Model. McEntire criticizes it for oversimplifying emergency management:

*For years, comprehensive emergency management (CEM) has organized EM functions in to useful, but perhaps oversimplified, disaster phases and has been the traditional theory in the field. However, it is vital to recognize that a single perspective can limit understanding. As an illustration, CEM has trouble capturing the wider political, economic, and cultural ramifications of disasters.<sup>49</sup>*

David Neal goes further in his criticism, pointing to issues with temporal overlap between phases, difficulty placing activities within phases, and the “stifl[ing][of] how researchers define and study disasters, and how practitioners manage disasters.”<sup>50</sup> And yet it would be difficult to isolate a model that has had more impact on the discipline of emergency management. McEntire himself points out that “mitigation, preparedness, response and recovery have played a significant role in establishing the field and categorizing distinct emergency management functions”;<sup>51</sup> and the contribution of the model goes beyond emergency management functions as the phases “have helped organize the thinking, activities, research, and policy for hazards management.”<sup>52</sup>

The model is so integrated into the emerging discipline that it is not even identified in introductory textbooks such as George Haddow and Jane Bullock’s *Introduction to Emergency Management* in 2006 or Michael Lindell, Carla Prater, and Ronald Perry’s

*Introduction to Emergency Management* in 2007.<sup>53</sup> Higher education programs use it routinely to structure courses and curriculum, and researchers often place their work and/or research interests within the context of the phases of disaster.

While the Disaster Phase Model is not testable, it does imply several propositions that can be, and to varying extents have been, tested by empirical research:

- There are periods before, during, and after a disaster when human beings can engage in various types of activity related to disaster events.
- Certain types of activities are suited to specific phases.
- Actions taken in one phase have an impact on the outcomes of other phases.
- Meeting the needs generated by disasters requires activity in all the phases.
- Use of the phase approach will improve the ability of humans to adapt to disasters.

The Disaster Phase Model has provided a framework from which researchers have generated and tested countless research questions, and its implied propositions can be, and have been, used to partially explain and predict why disasters occur the way they do, when they do, where they do. Its impact on emergency management illustrates the power that theoretical models can have; therefore, the available models within the discipline should be incorporated into research and classrooms.

## PROPOSITIONS AND PRINCIPLES

Like the concepts and classifications previously discussed, propositions or what McEntire would term "causal relationships"<sup>54</sup> are components of theory that are already used both explicitly and implicitly in teaching, research, and practice in emergency management. Numerous researchers have prepared overviews of emergency management propositions and the literature from which they were generated.<sup>55</sup> Additionally, most research articles related to emergency management either test propositions or suggest propositions for future testing. Examples of the propositions that Dennis Mileti, Thomas Drabek, and Eugene Haas report include the following:

- "As the specificity of emergency functions increases and responsibility narrows, agreement on authority increases."<sup>56</sup>
- "The effectiveness of the performance of the emergency and emergency preparedness functions varies directly with the predictability of the disaster agent."<sup>57</sup>
- "The less the degree of solidarity in the community, the slower the recovery."<sup>58</sup>

The contribution of propositions varies widely, depending on the extent to which they have been repeatedly tested and found to be true. One proposition that was discovered, tested repeatedly, and is now taken as fact within the emergency management community is that as the scope and severity of an event increases, so too does the amount of aid arriving on scene. Samuel Henry Prince first suggested the relationship between event characteristics and the amount of aid that arrives at the scene.<sup>59</sup> Later, when Charles Fritz and John Mathewson observed the same phenomenon in 1957, they termed it "convergence."<sup>60</sup> Continuing research has reinforced the proposition that convergence varies with severity and scope of an event.<sup>61</sup> As the proposition has been tested repeatedly over time, additional propositions have been generated to explain how convergence varies by other characteristics of the hazard involved, what types of needs are generated by the event or the related response effort, who participates and what they attempt to do, and what strategies and tactics are employed to manage convergence.<sup>62</sup>

Hundreds, if not thousands, of propositions, such as the one discussed above, have been generated through research related to hazards, risks, vulnerabilities, and ways in which people cope with their associated events. These propositions have the potential to be powerful explanatory and predictive tools, but they have not been discussed within emergency management classrooms, much less repeatedly tested. However, when propositions have been derived from research, and repeated research efforts have shown them to be true, they are sometimes formalized as principles—or what McEntire describes as "the ideal or preferred conditions promoted by academics."<sup>63</sup>

Once formalized, such principles should be used to ground research, higher education, and the professions served by the discipline. Several researchers have summarized many of the principles that are directly related to emergency management.<sup>64</sup> Drabek's principles of preparedness are quoted as examples:

- Preparedness is a continuous process.
- Preparedness reduces unknowns during an emergency.
- Preparedness is an educational activity.
- Preparedness is based on knowledge.
- Preparedness evokes appropriate action.
- Resistance to emergency preparedness is a given.<sup>65</sup>

These and myriad other principles of emergency management were in most cases developed prior to the existence of higher education programs in emergency management and are used today to guide learning and frame research. As David Alexander

states, "there is ample scope for basing the teaching of disaster studies on verifiable generalizations."<sup>66</sup>

Drabek's "planning is a continuous process" principle, for example, implies that planning for events related to hazards, risks, and vulnerabilities is not a onetime activity done in the scope of an afternoon, a week, or a year. Instead, it must develop over time and be periodically updated. The literature offers several research-based justifications for the need for continuous planning.<sup>67</sup> The principle also implies that planning is a process. As Erik Auf der Heide puts it, "One of the greatest impediments to disaster preparedness is the tendency to believe that it can be accomplished merely by the completion of a *written* plan. Written plans indeed are very important, but they are *only one* of the requirements necessary for preparedness."<sup>68</sup> A number of researchers concur,<sup>69</sup> finding that the emphasis mistakenly tends to be "on the product rather than the more important planning *process*."<sup>70</sup> Although this principle is integrated into the curriculum of higher education programs, its relevance to the discipline and its contribution to theory development, research, and/or assumptions that underlie it are rarely, if ever, discussed. Furthermore, although research findings continue to reinforce the principle that planning is best when it is both continuous and a process, researchers often do not relate their findings to this existing principle in emergency management.

As with the preceding example, the core curricula of emergency management programs and of introductory and phase-related textbooks routinely present principles; but these principles are not typically discussed in theoretical terms. Faculty and students often take principles for granted as somewhat obvious truisms of emergency management; however, most of the existing principles were derived from considerable research and are in fact among the types of theoretical components that most closely resemble "theories" in other disciplines (depending, of course, on the discipline's definition of theory).

### UNRECOGNIZED, UNDERUSED, AND UNDEVELOPED THEORY

While researchers, faculty, and students have often said that there is no theory in emergency management, or no emergency management-specific theory, this essay has sought to identify various theoretical components that are, in fact, directly related to the discipline of emergency management. In most cases, these components have been in existence for decades. In fact, as Quarantelli suggests, "one would be hard pressed to point to the production of new theories, models, explanatory schemes and/or master hypotheses about the phenomena that are notably different from what have been around for some time."<sup>71</sup> But despite their widespread use within emergency management, these theoretical components have not yet been recognized formally within the

discipline as theory much less for the role that they currently perform or can perform in the development of the discipline. They have not been claimed for the emergency management discipline, formally recognized as the theoretical foundation for its continued growth, or consistently incorporated into research and teaching as theory.

The failure of the emergency management higher education community to acknowledge the existing body of theory may be explained any number of ways. For instance, McEntire suggests that obstacles to the development of emergency management theory include

- The lack of consensus on a definition for disaster
- Usage of the term "emergency management" to represent the discipline
- Shifting hazard focuses within the academic community interested in disaster studies
- Establishment of empirical patterns that may have been derived outside of the context in which they operate
- The involvement of both private and public sectors in emergency management
- Prioritization of phases
- Overreliance on the literature from founding disciplines
- Disagreement about paradigms which should guide development of the field
- Lack of agreement on the value of research and theory in emergency management.<sup>72</sup>

However, one could argue that the primary reasons why emergency management has yet to "own" its theory include the sudden emergence of the discipline, the shared nature of the subject matter with other disciplines, the origin of the body of knowledge, the applied or problem orientation of the research that has produced the available theory, and the lack of "emergency management" scholars.

Emergency management is a new discipline, "the nature, purposes, and boundaries [of which] are in question."<sup>73</sup> While the first academic degree program in emergency management was established in 1985 at the University of North Texas (UNT), the vast majority of such programs emerged suddenly after the September 11, 2001, terrorist attacks. They developed out of a perceived need to have a cadre of professionals trained to deal with disasters rather than from the concerted effort among academics to solidify a discrete and autonomous discipline or "a body of knowledge or branch of learning characterized by an accepted content and learning."<sup>74</sup>

Because emergency management programs were conceived from the outset as an applied discipline, emergency management theory has not been a priority. Programs and curricula designed to train students to apply the knowledge and theoretical components identified in this essay appear to have been introduced only insofar as the

faculty involved in the development of the programs was aware of their existence and the components made students better prepared to enter the workforce. As degree programs have developed, however, there has been a growing awareness that students must be educated as well as trained, and that theory must thus guide learning.

Determining what theory should guide learning has been challenging in part because the subject matter of interest to those in emergency management overlaps with that in other disciplines. In the words of McEntire and Marshall, the "location of emergency management in academia, and its relation to various disciplines [has posed] epistemological problems."<sup>75</sup> This is evidenced by the fact that many emergency management degree programs are housed within a variety of disciplinary departments. As Alexander summarizes the issue, "part of the problem of training has to do with the failure of a coherent academic field to emerge from the welter of disciplines that have had a hand in the study of disasters."<sup>76</sup> Hazards, risks, vulnerabilities, and the events associated with them have been of interest to scholars in geography, geology, economics, anthropology, sociology, political science, public administration, psychology, communications, and other disciplines. Scholars who participated in the development of the work related to emergency management were therefore interested in studying hazards, risks, vulnerabilities, and/or how humans cope with the events associated with them, but from the perspective of their discipline. Thus, it has been easier for faculty teaching emergency management programs to rely on the paradigms, theory, and theoretical frameworks native to the discipline in which they were educated rather than to have to identify theory that might be specifically in the domain of "emergency management." As Alexander notes, "specialisation has inhibited the development of theory."<sup>77</sup>

"Specialization" had several consequences for the research being conducted. Because researchers were first and foremost members of their discipline, they published their work primarily in their disciplines' journals. Rather than relating their findings to the work being done on the subject in other disciplines, they tended to either relate their findings to their home discipline or not relate their findings to anything at all beyond the scope of their research question(s). Furthermore, the problem orientation of researchers and academics in other disciplines has limited the development of theory.<sup>78</sup> As Kathleen Tierney states, "researchers have often been more concerned with solving problems that are important for governmental institutions and practitioners than with advancing theory."<sup>79</sup> Thus, all the theory discussed in this essay was developed by these other disciplines; it is spread out in thousands of books, journal articles, research reports, and databases; and it is as yet unrecognized, underused, and undeveloped by the discipline of emergency management.

All the reasons presented herein go a long way toward explaining why the body of emergency management theory has been largely ignored, but perhaps the most relevant explanation is that there are as yet no "emergency management" researchers or "emergency management" academics. The potential for emergency management researchers and academics has existed only since North Dakota State University offered the first doctoral program in emergency management; it has recently increased with the inception of doctoral programs at the University of Delaware (in disaster science and management) and the University of Oklahoma, Stillwater (in fire and emergency management administration) in 2009.

Students, particularly doctoral students, must first be educated in the existing theory and challenged to undertake careful evaluation of it, analyze how each component contributes to the discipline, establish linkages within components of similar types and across components of different types, and begin studies that either test or build upon the components. Until doctoral students are taught emergency management theory and learn to use it when conducting their research, emergency management theory will not be recognized, used, and developed as it should be.

#### Endnotes

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