Introduction
My brief discussion first defines and describes what I see is the current status of Disaster Science and Emergency Management. In doing so, I point out current positives and negatives of Disaster Science and Emergency Management. Finally, I discuss opportunities and problems as we still continue to bridge the gap between research and practice. To initiate my discussion, let me first define the two key topics of this paper.

- Disaster Science - social science of disasters, hazards, and risk.

Let me add, that I know the natural sciences and engineering are certainly part of the equation in many cases. For now, I will focus on the social science dimension.

- Emergency Management - the (developing) profession of preparing and planning for, responding to, recovering from, and mitigating for disasters and hazards.

Disaster Science
Today, Disaster Science is a formal academic area of study. Courses, majors, minors, textbooks, graduate programs (including PhDs), program offices in such organizations and NSF and NAS all reflect the standing academic status. Probably we reached the status of a formal academic area sometimes in the late 1990s or early 2000s. We had the research or body of knowledge, institutional support and need, but until then we did not have the academic programs or textbooks (see Neal 2000, 2005, and Phillips 2005 on these related issues).

Yet, as Tierney (2007) points out, the academic field still struggles. For example, we have not integrated our findings into broader social science (or sociological) theory. I see this, for example, in organizational theory, where such topics as formal and informal systems, loosely coupled systems, institutionalized myths, among others are not used, or not “plugged into” broader findings. We have a field can do better. Perhaps we have not done better since we are developing into our own field (Tierney’s comment that perhaps we are perhaps environmental sociology if for another time and place). Furthermore, many of our “disaster findings” are generally couched at the lower end of Merton’s notion of Middle Range Theories. Or drawing upon Mills (1959), we are much closer to Abstracted Empiricism than we are Grand Theory (but if that keeps us away from Parsons, then that is good). In short, if we are some type of a science, we must have better theory. Our application focus probably has inhibited broader theory building.
Emergency Management
In short, we can trace the Emergency Management profession back to the Cold War and Civil Defense. Often, local governments hired retired military members since they had “seen action,” they understood command and control, and they were inexpensive (since many had their 20 years in the military, they had an existing retirement. Structurally, these factors also eliminated diversity in the field. Today, emergency management has reached the threshold of being a formal profession. Training, education, individual certification, state accreditation, and having its own professional organization now exist (Wilson and Oyolo-Yemaieel 2001). The profession in my estimation fully reached this threshold within the last decade (also see Fothergill 2000 for a further description of the technology transfer process). Clearly, the focus on education (such as the FEMA Higher Education Meetings), the Certified Emergency Manager, and the realization over 20 years ago that those in the profession must improve their status all contributed to the professionalization of the field. Yet, as many of us know, maintaining these professional credentials, especially the role of education, continue to be a struggle.

Perspectives of Research Reaching Professionals
One area I will briefly focus on is how Federal planning, preparedness and response documents have generally been void of research, except in one case. As we well know, much of disaster research originated to understand surviving chemical or nuclear war (Quarantelli 1987). Part of my research agenda has focused upon understanding how much of our disaster policy does (or does not) draw upon or use of the research. For example, I found Federal Response Plan became a bureaucratic morass grounded more in Weber’s theory of bureaucracy rather than reflecting the dynamic, flexible, emergent and improvisational nature of effective disaster response. The authors of the document did not draw upon any disaster research (Neal 1993). One of our current major planning and response guide(s), the use of the National Incident Management System (NIMS) also is void of any scientific research findings (Neal and Webb 2006). People with wildfire experience constructed the ideas behind the Incident Command System (and later integrated into NIMS). As a result, NIMS became grounded in ideological views that “it works,” or “if people would just use it right it would work,” or “do you have a better alternative?” than any form of science.

Recently, CPG-101 (Community Planning Guide), Federal guidance on how local government and others should approach preparedness and planning, took a revolutionary approach. In its first chapter, the document actually lays out the planning philosophy while citing key disaster research academic documents on the topic! We can only hope that future planners and managers continue to take an empirically based approach to disaster preparedness and planning, response, recovery, and mitigation.

Moving Forward?
Disaster Science (however defined) now has a number of academic journals, s number of resources for external research funding (including programs at the National Science Foundation), representation with the National Academies, and bachelors’, masters’ and now a handful PhD degrees. In short, it is an academic area of study (Yet, some in the academy still questions its legitimacy).
Emergency Management is now a profession. The Certified Emergency Manager (CEM), job advertisements requiring a combination of at least a bachelor’s degree, degree in emergency management, and certification of offices. Some professionals are even getting PhDs in the field to assist with bridging the gap (Kris Peterson comes to mind as one of the first).

Yet, we need additional steps. As Tierney reminds us on the research side, we could do better with integrating our findings into broader sociological (or other disciplines’) findings. Perhaps we need more bold science for the sake of science (or theory) than “problem solving” (Quarantelli 1993). Otherwise, at best we are engaging in low middle range theory. As (social) scientists, we must do better with creating theory (and here, I do not mean disaster theory). At times, I still encounter other academics who even question that “disasters/hazards/risk/crisis” is even an academic field (e.g., it is just political science, public administration, or even common sense)! Such attitudes then make it more difficult to integrate and publish our findings into broader substantive journals, which then enhance our theory building efforts.

Regarding application, when we continue to see or participate in exercises with the disaster myths, when we see decisions made during disasters grounded in disaster myths, when we hear decision makers talk about disaster myths influencing their decisions (or being surprised that certain myths did not occur), then we must reconsider our efforts. I stay worried when I see a number of “emergency management textbooks,” more focused on telling stories and not citing the research literature (imagine an intro book in another field taking such an approach). I am greatly concerned about the curriculum, instructors and textbooks being used by on-line for profit accredited institutions. As I noted in an article 14 years ago, there is still a strong “anti-book” or even anti-intellectualism strain in the profession (just join an emergency management group on Facebook). In addition, some still think combat or military experience translates directly into emergency management (strains of “command and control” still haunt us, despite the findings, 50 years later). Yet, Emergency Management is more than response, and it is not Command and Control.

**Summary and Conclusions**

Looking back 50 years, both Disaster Science and Emergency Management have both become legitimate areas of study and as a profession. We still struggle to bridge the gap. I do think it will happen, but it will take time. But if we look where we were at 25 years ago, let alone 50 years ago, much has changed, and in my view, most of it for the better. I think our largest challenge for both the Disaster Science and Emergency Management is the anti-education/science strain that runs through our country and parts of our profession now. Clearly, we will face more challenges to obtain potentially decreasing external funding and use it (and God forbid if any of our proposals or research, even implicitly, may be related to trends caused by climate change). In addition, we still see an anti-education bias in the profession. Furthermore, some are now obtaining emergency management degrees from for profit institutions, where we do not really know the content
of curriculum, the instructors (and their qualifications), and their textbooks (are they just laws, stories, or information grounded in the literature).

References

Neal, David M., and Gary Webb. 2006. “Structural Barriers to Implementing the National Incident Management System,” Hurricane Katrina (Christine Bvec, editor), Natural Hazards Center – University of Colorado: Boulder, CO.


