

KNIGHT, UMD
DHS Coastal Resilience Center
Education Project Work Plan
1/1/2016 – 12/31/2017

1. **Project Title.** Development and Testing of a Project Management Curriculum for Emergency Managers
 - **Principal Investigator.** Sandra K. Knight, PhD, PE, D.WRE, D.NE, Senior Research Engineer, Department of Civil and Environmental Engineering, University of Maryland, College Park. Lead investigator for research and key advisor for emergency management training and curricula content.
 - **Principal Investigator.** John Hart Cable, Director, Project Management Program, A. James Clark School of Engineering, University of Maryland. Lead advisor for Project Management curricula and certification.

2. **Other Education Participants/Partners.**
 - Gerald E. Galloway, PhD, PE, NAE, Glenn L. Martin Institute Professor of Engineering, Department of Civil and Environmental Engineering, University of Maryland
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3. **Short Project Description.**

Whereas, emergency management can be described as a managerial function to protect communities and help them reduce vulnerabilities by coordinating and integrating activities that improve the capabilities to mitigate against, respond to, recover from and prepare for natural and man-made hazards;¹ project management can be described as a process to apply specific knowledge, skills, tools and techniques to project activities to meet certain requirements.² **The goal of this educational work plan is to develop and test an educational and training curriculum that prepares professionals to manage and deliver disaster-related project(s), by merging the unique challenges of emergency management with the capabilities and technologies introduced by applying project management processes.** By incorporating modern project management organizational processes, technologies, and skills, emergency managers will be able to manage and execute disaster-

¹ [https://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20\(w-o%20draft\).pdf](https://training.fema.gov/hiedu/docs/emprinciples/0907_176%20em%20principles12x18v2f%20johnson%20(w-o%20draft).pdf)

² <http://www.pmi.org/About-Us/About-Us-What-is-Project-Management.aspx>

related projects and meet resilience goals more effectively and efficiently. By building disaster resilient concepts and emergency protocols and goals into project management processes, project managers will be equipped to contribute to a more sustainable and disaster-resilience future.

4. **Abstract.** Emergency management, particularly as it relates to mitigating against, preparing for, responding to and recovering from a disaster, could greatly benefit by implementing the processes and skills in modern project management. The goal of this educational work plan is to develop and test an educational and training curriculum that prepares professionals to manage and deliver disaster-related project(s), by merging the unique challenges of emergency management with the capabilities and technologies introduced by applying project management processes. By incorporating modern project management organizational processes, technologies, and skills, emergency managers will be able to manage and execute disaster-related projects and meet resilience goals more effectively and efficiently. By building disaster resilient concepts and emergency protocols and goals into project management processes, project managers will be equipped to contribute to a more sustainable and disaster-resilience future.

There does not currently exist an explicit program that merges emergency management and project management curriculum for the purposes of advanced learning or certification for practitioners. The program will be developed to support existing certifications, and both degree and non-degree programs. Practitioners in emergency management and project managers who carry out emergency management activities will have the opportunity to hone their knowledge and skills through a set of courses that will be offered through the existing UMD Project Management Program. Additionally, through collaboration and coordination with existing accreditation programs, specific emergency training institutes (like the Emergency Management Institute), other academic institutes of higher learning, and DHS supported programs, targeted training materials and short-courses will be developed and opportunities identified for providing the broadest access possible for practitioners.

The proposed research comprises three distinct phases: 1) understanding the requirements and needs of practitioners and developing a disaster-focused project management curriculum to be offered within the UMD Project Management program, 2) developing training and short course curriculum that align with existing certification programs, and 3) executing initial course offerings and/or training programs for delivering the developed approaches and technologies to practitioners.

5. **Background.** Natural Disasters between 2003 and 2012 resulted in estimated global average annual economic losses of \$156.7 billion and average annual deaths of 106,654³. Following the tremendous losses that come with these disasters, come billions of dollars for emergency management activities that must be managed by federal, state and local agencies and/or organizations. For instance, the federal disaster appropriations following Hurricane Sandy were approximately \$58 billion⁴ and were dispersed via many programs and agencies with specific regulatory or policy requirements for execution. Disaster relief funds such as these are spent to get communities back on their feet by replacing or rebuilding critical

³ Guha-Sapir D, Hoyis Ph., Below R. *Annual Disaster Statistical Review 2013: The Numbers and Trends*. Brussels: Center for Research on the Epidemiology of Disaster (CRED): 2014

⁴ <https://www.congress.gov/113/plaws/publ2/PLAW-113publ2.pdf>

infrastructure, key facilities, businesses and homes. Further, the organized response to a disaster shares all the characteristics and has all the organizational needs of a built project. It is also well understood that building resilience into our built, social and environmental systems prior to an event has recurring benefits to disaster losses. Therefore resources are often allocated for mitigation following a disaster as well as on “sunny days.”

Managing the influx of funding from many disparate sources and for many purposes and projects related to response, recovery, and mitigation, can be daunting. Additionally, in a disaster or post-disaster environment, to minimize cascading and long-term impacts of a slow recovery, there is often a tension between building back quickly and building back better. Emergency managers are often assigned to lead many of the emergency activities and oversee the execution of large programs in the wake of disaster that are funded through federal and state programs. Also agencies and organizations (federal, state and local governments, utilities, non-profits, private industry, etc.) with a strong reliance on contract support and expertise, may be responsible for the response and recovery for sector-specific projects or program execution (marine transportation, healthcare, supply chain, utilities, etc.). Therefore it is imperative, in this often urgent environment, that project and emergency managers have the right training and educational skills to effectively deliver projects on-time and on-budget while being considerate of the needs of the community and planning for a resilient future.

Project management education and training in the United States has accelerated in recent years. Some of this has been focused on disaster management. For example, the Project Management Institute has supported research on managing aid relief projects, looking at case histories between 2007 and 2009⁵. The result of this effort identified common traits of successful disaster response and recovery projects, including, in particular, effective stakeholder engagement. Sound engagement enables stakeholders to share a common vision of the project as the team is working toward successful outcomes. This comports well with the recovery efforts that were employed under the National Disaster Recovery Framework by the emergency management community following Hurricane Sandy. Community engagement and stakeholder involvement were critical in decisions that went into post-disaster recovery projects. But much needs to be done to bridge the two disciplines of project and emergency management.

The University of Maryland, Center for Disaster Resilience through this funding program and with its academic, agency, non-profit and private partners, intends to develop and test courses for a project management curriculum that both trains project managers for emergencies and provides project management skills to emergency managers. UMD has a proven track record in educating project management professionals. As one of the first accredited programs by the Project Management Institute, the school has been offering classes since 1999. UMD’s Project Management School Director, John Hart Cable, received the “Distinguished Contribution” award from PMI in 2012 for his work in accrediting PM academic programs worldwide. In addition to a dedicated staff of project management and engineering faculty, the facility is equipped with long distant learning technology to offer

⁵ Steinfort, Paul and Derek H. T. Walker, 2011, “What Enables Project Success: Lessons for Aid Relief,” 2011. <http://www.pmi.org/Learning/research-completed-research/what-enables-project-success.aspx>

online courses and advanced video conferencing to connect with students where and when it best meets their needs.