



Emergency Management in Technology: Academic Programs Promoting Community Resilience, Disaster Readiness, and Recovery

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Dr. Murphy serves as Co-Principal Investigator on two grants sponsored by the United States Department of Homeland. The purpose of these grants is to establish undergraduate programs in Emergency Management Technology, developing more Emergency Management Practitioners. Dr. Murphy serves as Program Recruiter for the undergraduate Emergency Management Technology Program, and she is the scholarship reviewer for the program. In addition to her role as faculty, Dr. Murphy serves as the advisor for the Jackson State chapters of ATMAE (Association of Technology Management and Applied Engineering) and EPT (Epsilon Pi Tau Technology Honor Society, Delta Beta Chapter). On the national level, Dr. Murphy was pointed by the Epsilon Pi Tau International Office as the Region II Trustee for the Delta Beta Chapter. She was elected as the President of the Research Division of the National Association of Technology (NAIT-now ATMAE) (2007). In 2010, she was elected as Vice-President of the Student Division for ATMAE and President of the Student Division in 2012. Also, she serves at a reviewer for the International Association of Journals and Conferences. Dr. Murphy earned a Bachelor of Science Degree in Industrial Technology from Alcorn State University, Masters of Science in Technology from Mississippi State University, and a Doctor of Philosophy in Technology with an emphasis in Education (Community College Administration Minor) from Mississippi State University.

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Abstract:

The vision of the Center for Community Resilience (CCR) to equip Mississippi's underserved communities with up-to-date skills for better preparedness of natural disasters to minimize loss of life and property; thus, building resilient communities. The CCR's mission is to provide contemporary emergency management and preparedness education and training related to natural disasters (i.e. weather and atmospheric events) for Mississippi's underserved communities; to mitigate loss through effective preparedness and response planning; and to building a pipeline from middle school to higher education that develops future Emergency/Disaster Management professionals, Atmospheric Scientists/Meteorologists, Psychologists, and Journalists who effectively disseminate public information. In addition to natural disasters, the CCR will provide public safety response training instead of man-made disasters that may occur during or after a natural disaster/major weather event, specifically for responders serving underserved communities in this engagement in practice paper.

Introduction:

Natural disasters have a significant and lingering impact on our nation and render more loss of life and destruction of property. As an example, large fires have destroyed highly affluent neighborhoods across California, Texas, and Florida. Floods and flash floods have killed hundreds of people around the world each year, more than any other weather event. Catastrophic flooding, as a result of Hurricane Harvey, left many people stranded. Tornadoes cause widespread property damage, clearing slabs and flipping mobile homes. Tornadoes are also most common in the central part and Great Plains regions of the United States; thus, including Mississippi (U. S. Tornadoes, 2016).

As researcher Quarentelli has predicted (1996 and 2001) the increase of disasters and the emergence of new and more impactful disasters, there would be an increase of death and injury with greater economic impact (Philips, Neal, & Webb, 2012). Several studies have been done to identify people most vulnerable to natural disasters. Often, the poor and the elderly are the most easily impacted. In 2011, Brooks and Longwith took another look at the vulnerable and underserved groups from those identified in the late 80s and determined men were more likely to die than women; the elderly were more likely to die than any other group; people in permanent homes were less likely to die than those in mobile homes. While the study would suggest that elderly men living in mobile homes would be most likely to die in a tornado event, overall the poor and elderly remain the most vulnerable and underserved groups. With these factors under consideration, this paper examines how multi-disciplinary emergency preparedness related academic programs in higher education and collaboration with the National Weather Service and other emergency response entities to prepare the underserved and vulnerable of Mississippi for weather events; thus, developing a weather-ready nation. In addition to helping Mississippi citizens becoming weather-ready, the Center for Community Resilience aims to build a pipeline from middle school to higher education that develops future Emergency/Disaster Management professionals. Through such community, higher education, and emergency response agencies engagement in practice; these outcomes from this program yields to be a model in which other Historically Black Colleges and University academic programs.

Project Details:



Farmer Billy Whitten in Mississippi Delta surveys his 1,400 acres of farmland where he won't be able to plant this year. It now resembles a lake as it drowns in slow-receding floodwater. (Courtesy of Fox News/ Charles Watson-- <https://www.foxnews.com/us/mississippi-farmers-flooding-crops-planted>)

Underserved Populations: Underserved populations, also called “at-risk” populations, are those that are particularly “at risk of poor physical, psychological, or social health” before or after a disaster. For this project; the CCR defines underserved populations as disabled persons, elderly, lower socio-economically categorized persons, limited English to non-English speaking persons, etc. Overall, underserved communities entail those communities lacking sufficient resources and the ability to mitigate and/or properly prepare instead of forecasted disasters. Such insufficiencies render these communities vulnerable.

According to the Centers for Disease Control and Prevention (CDC), social vulnerability (in regards to the underserved) refers to the resilience of communities when confronted by external stresses on human health and stresses such as natural or human-caused disasters or disease outbreaks. Also, the CDC created a Social Vulnerability Index (SVI) by identifying the specific populations most at risk because of their socioeconomic status, household composition, minority status, and language, or housing and transportation. Information on social vulnerability should be combined with information on a neighborhood’s exposure to risk factors to identify areas that may need additional assistance before, during, and after a disaster. For example, a neighborhood along the Mississippi Gulf Coast with a large elderly population would be at greater risk of devastation from hurricanes than a similar neighborhood further inland (Bakkensen, et. al., 2017).

To provide an example, research and experience have demonstrated that underserved populations suffer disproportionality during disasters. A study of 1,089 people affected by Hurricane Katrina in Louisiana, **Mississippi**, and Alabama found that 28% of those who didn’t evacuate couldn’t leave because of limited means (Fritz Institute, 2006). Of those who couldn’t evacuate, for this reason, 71% said they had nowhere else to go, 37% didn’t have a car, and 36 % couldn’t leave their homes without assistance. Furthermore, 84% of those with limited means had household incomes of less than \$50,000; 58% were African-American; 66% were women; 57% said their highest level of education was a high school diploma or less, and 32% had a physical disability. When preparing residents for disasters, officials must consider various living conditions within their community and the underserved populations. Emergency Managers and other officials have wrestled with developing relationships with these groups for decades, and it’s still a challenge for many (Pittman, 2011). With this in mind, it is imperative to develop meaningful partnerships among Emergency and response agencies, higher education communities, and the community-at-large to enhance resiliency.

Problem Statement:

The Ideal: Communities in Mississippi should be well prepared and properly notified before weather events and pending disaster ever occur. According to the Mississippi Emergency Management Agency (MEMA), its mission is to safeguard Mississippi and its citizens by fostering a culture of preparedness, executing timely response during disaster, and quickly restoring quality of life post-event (www.mema.org). As MEMA has been successful in fulfilling its mission, collaboration with university-led centers would further expand the ability to building more resilient communities as they mitigate, prepare for, respond to, and recover from natural and/or man-made disasters—especially those unique to Mississippi.

The Reality: According to an article published in News Mississippi (Ulmer, 2014), Mississippi is 7th on a list of ten for the likelihood of natural disasters. As explained by Meteorologist, Steve Wilkinson, the probability of natural disasters in Mississippi is very high as the climate and location supports the formation of severe and sometimes devastating storms. Mr. Wilkinson further indicated that, Mississippi is in “tornado belt” and that Mississippi is along the Gulf Coast which is impacted by hurricanes. In 2019, tornadoes and flooding plagued Mississippi. According to WLBT News, Gov. Phil Bryant announced that President Donald Trump declared Clarke, Clay, Itawamba, Kemper, Monroe, Oktibbeha, Warren and Yazoo Counties as federal disaster areas in June (Lee, 2019). This declaration resulted from severe storms, winds, tornadoes, and flooding that surged through Mississippi on April 13th and 14th. As of August 2019, Mississippi is still resiliently recovering from flooding with eight counties begin declared federal disaster areas (MEMA News, 2019). According to an "Ag Fax" article, 20 of the 82 Mississippi counties are "designated natural disaster areas". How can Mississippians better prepare and respond to current and forth-coming disasters and further mitigate the loss of life and property? How can underserved populations gain access to needed disaster preparedness information, preparedness training, and resources?

Table 1: Examples of Mississippi Underserved Populations (571,000 MS below poverty)
 (from U.S. News and World Report, 2018 and 2019 citations from John Mutter, author of "The Disaster Profiteers: How Natural Disasters Make the Rich Richer and the Poor Even Poorer.")

Disaster Type	Impact
Natural Disasters (various)	May not have cellphones, broadband or regular use of technology that will keep them abreast of looming danger
Natural Disasters (various)	Cheaper houses are less safe, without the strong foundations or reinforcements that can make the difference between a blown-away home and one with some window damage.
Flood	Flood insurance must be bought separately from homeowners insurance, not likely or able to purchase

Solution:

Communities must build solid plans of action for Community Resilience (CR). To assist communities and its underserved populations, the CCR’s goal is to assist the State of Mississippi in creating a culture of preparedness. Through efficient and effective preparedness, the CCR will serve as one of the leading entities ensuring that Mississippians can recover quickly from incidents, especially those underserved populations. Moreover, the CCR will assist local Emergency Management specialists, educators, public and private organizations and underserved communities with the ability to mitigate, prepare, respond, recover and more successfully bounce back from adverse weather-related events. This will be accomplished by the following:

- 1) Community training and outreach (targeting the underserved communities and vulnerable populations)
 - a. Collaborate with National Weather Service to provide general information on weather safety and education (events will be designed according to MS weather season)

- b. Visit with area schools to inform about careers in Emergency Management, Meteorology, and Psychology (focusing on Disaster Mental Preparedness)
 - c. Host additional community-based workshops and events
- 2) Educational training for First Responders, Emergency Management Specialists (public and private sector), and other specialists related disciplines
 - a. Conduct virtual reality simulation training and table-top interactive activities
 - b. Provide Continuing Education Units (CEUs) and Certificate/Certification Training
 - i. Emergency Preparedness for Natural Disasters
 - ii. Community Disaster Resilience Training
 - iii. Behavioral and Emotional Disaster Response
 - iv. Communication of Emergency Alerts and Notification (reaching multi-generations)
 - 1. Traditional
 - 2. Contemporary (Social Media)
 - v. Ground (Face to Face) and Online
- 3) Generation Next: Discipline Awareness and Workforce Development (developing next generation of Emergency Management specialists, Meteorologists/Atmospheric Scientists, and Psychologists and Social Scientists Psychology (focusing on Disaster Mental Preparedness)
 - a. Visit area schools to explain aforementioned disciplines, degree and professional requirements, and career and salary projections
 - b. Host annual summer camps for middle and/or high school students
 - c. Develop Teen-Community Emergency Response Teams (CERT) (with CERT training as a part of the summer camp) for local high schools/communities
 - d. Allow summer camp participants to participate in research symposiums at JSU
 - e. Establish such as a recruitment tool for JSU academic programs
- 4) Research Endeavors
 - a. Conduct quantitative, qualitative, mixed, etc. research to aid Emergency professionals in “lessons learned” to improve response and recovery efforts
 - b. Provide research results with CCR partners to aid in more effective preparedness initiatives
 - c. Host research symposiums for current and aspiring Emergency Management specialists
 - d. Present and publish Community Based Participatory Research to add to the body of knowledge, etc.

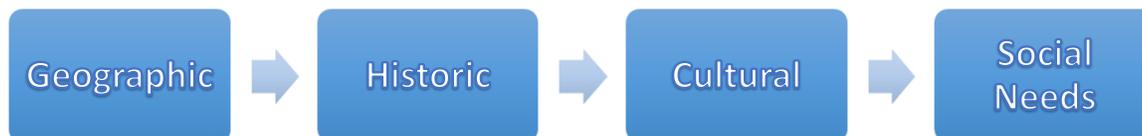
First Responders Research & Training: The CCR will conduct and reach out to first responders to help them effectively cope with stress. As their name implies they are usually the first on the scene to face traumatic, dangerous and challenging events. They are also the first to reach out to disaster survivors and provide emotional and physical support to them. Everyone responds to, processes and copes with trauma in different ways. Research suggests that first responders are at risk to suffer from psychological complaints, such as depression, Post Traumatic Stress Disorder, substance abuse and social dysfunction (Fullerton, Ursano & Wang, 2004; Wagner, Heinrichs & Ehlert, 1998). Research efforts would include surveys, focus groups, etc. to examine workplace characteristics, social support systems, and other factors related to resilience.

The CCR will provide evidence-based psychological resilience training to equip first responders with the skills needed to cope with trauma. Research suggests that preparedness training with regards to

behavioral health should be provided to first responders before they begin work (Brooks et. al, 2016) to ensure that they can handle the stress of work. Quevillon et al., (2016) reported that if they have feelings of being well prepared and doing a good job that these feelings would serve as a protective mechanism against behavioral health issues and conditions.

Community-Based Participatory Research (CBPR): Research suggested that in the aftermath of major disasters, such as Hurricane Katrina, indicate that “professional-only” approaches were not effective in engaging the community (Goldman & Coussens, 2007). Community-Based Participatory Research (CBPR) has been identified as an effective strategy to involve members of vulnerable communities in a collaborative approach to emergency preparedness, response, and recovery). Goldman & Coussens further asserted that a CBPR strategy emphasizes respectful co-learning and empowering partnerships among researchers, practitioners, and communities. Partnerships can be strengthened by the joint development of research agreements regarding design, implementation, analysis, and dissemination of the results.

Benefits of CBRP with unique considerations for communities:



Many times, the concerns or needs of underserved/vulnerable populations often are not sufficiently considered during the planning, implementation or recovery phases. CBPR provides them an opportunity for their voices to be heard and provides them a chance to give their opinions, thoughts, etc. about past planning and response. Members of these communities not only have a seat at the table but the opportunity to rebuild it if necessary. Community-based participatory research approaches can increase awareness and customize disaster reduction strategies to meet a community’s unique needs. CBPR approach to research is needed in underserved communities to evaluate performance, form partnerships, and build capacity for sustainability (Gamboa-Maldonado et. al., 2012). The CCR at JSU will implement the CBPR approach to education and train underserved populations in Mississippi on emergency/disaster preparedness regarding inclement weather events.

Interdisciplinary Programs & Agency Partnership:

The Department of Civil & Environmental Engineering and Industrial Systems & Technology-Emergency Management Technology program: The mission of the Industrial Systems and Technology program is to provide a nationally accredited program, which serves the technical, managerial, and communication needs of persons desiring to enter or advance professionally in an Industrial Systems & Technology related career. In 2011, Emergency Management Technology concentration was established for the degree in The Industrial Systems and Technology (IS&T) BS. It is accredited by the Association of Technology, Management, and Applied Engineering (ATMAE), which recognizes the attainment of certain professional goals and standards for technology and to encourage continuous quality improvement through a voluntary and comprehensive evaluation process.

The Emergency Management Technology major focuses on disaster prevention, planning, preparedness, response, mitigation, and recovery. The curriculum covers needs and issues, operations management, planning and response, and terrorism and is designed to provide students with a global outlook, interpersonal skills, and emergency management knowledge and skills. Emergency management is the discipline of dealing with and avoiding risks. It is a discipline that involves preparing for disaster before it occurs. This undergraduate specialization provides an overview of public safety research, theory, and principles within an emergency management framework. The curriculum focuses on such topics as emergency planning and decision-making, homeland security, disaster response and recovery, and hazard identification and mitigation. Emergency Management Technology will serve as the lead and focal point of this project.

The Department of Psychology: The Department of Psychology works to enhance student's knowledge of psychological principles and practices through scholarship, research, undergraduate service-learning, and graduate clinical training. The mission of undergraduate education in the department is to expose students to the breadth and depths of the various fields of psychology. Students are encouraged and taught to think critically about psychological issues and to understand the value of empirical investigation. The department seeks to foster each student's appreciation for the field of psychology and its applications to individual and social problems. The department is dedicated to high standards of original inquiry and personal growth. Students are taught that sound research and scholarship serve to expand knowledge and improve the quality of peoples' lives.

Psychosocial resilience and disaster mental health plays an important role in terms of community resilience and disaster preparedness. Disasters are stressful events not only for individuals who suffer from personal loss but also for the community at large (Roudini, et. al, 2017). Researchers identified that psychosocial resilience is a normative response to traumatic events. Disasters are stressful events not only for individuals who suffer from personal loss but also for the community at large (Khankeh et al., 2011; Norris et al., 1999). The Department will provide information at the community level to promote change throughout the disaster preparedness, response, relief, and recovery process. The department will conduct research and provide training that enhances a community's ability to respond, recover, and prosper from serious disruption, especially among underserved populations.

The Department of Journalism & Mass Media-Risk Communications: Before, in the midst, and after a disaster leader is often called upon to share information with the public, the media, and other stakeholders. Organizations must communicate early and frequently with multiple stakeholders to prevent panic and implement an orderly response plan the government and other decision-makers need to know what response efforts ongoing, and what type of further assistance are required to coordinate relief. The Department of Journalism & Mass Media will assist with how people perceive risk and how best to frame messages to help them cope with emergencies and make informed decisions, especially among underserved communities.

National Weather Service (Jackson, MS): The National Weather Service (NWS) provides weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy. NWS has played a key role in protecting American lives and properties for over a century. The timely provision of reliable weather, water, climate, and environmental information has supported the Nation's social and economic development. NWS offices in communities across the United States and its territories, supported by regional and national centers, provide the authoritative

information needed by Americans, including national, regional, state, tribal, and local authorities, to plan, prepare, mitigate, and respond to natural and human-caused events (National Weather Service, n.d.).

Public and Private Collaborations:

It is evident that collaboration between private and public sectors improves the ability of the community to prepare, respond to and recover from a disaster. The CCR will work to bring underserved communities, government entities, private and public sectors, faith-based organizations, academicians and community organizations together to meet the needs of underserved populations. Fostering relationships with multi-organizational partnerships and coalitions is an exemplary organizing technique to ensure the involvement of a wide range of local community members. The collective effort brings greater capabilities to the initiatives and provides greater opportunities to reach agreement throughout the community and influence others to participate and support activities. The critical step in building these partnerships is to find the overlapping and shared interests around which groups and organizations when they are brought together. Partnerships can only be successful when all parties benefit from the relationship.

The National Research Council (2011) reported having identified specific examples of the private and public sectors working to reduce the effects of disasters. State and Federal governments have acknowledged the importance of collaborations to create planning for disaster preparedness and response. Researchers (Patton, 2007; Waugh & Streib, 2006) and policymakers (DHHS, 2010; FEMA, 2010; NRC, 2011) suggested that collaboration between private and public sectors can further improve and increase the disaster resilience of a community.

The National Research Council (2011, p. 5) reported that “Private-public collaboration is more sustainable if it begins as a bottom-up enterprise at the grassroots level—instigated by a leader or organization in the community—rather than dictated top-down from a command-and-control structure.” The report further recommended that “new efforts to support and nurture community-level resilience-focused private-public collaboration could include research and demonstration projects aimed at enhancing disaster resilience at the community level and documenting best practices. Recognizing that private-public partnership and broad community mobilization are needed to improve the disaster resilience of communities; DHS might sponsor a series of research and demonstration projects across the nation. The new projects could fully integrate research and practice, beginning with the initial phase of project development, and could be conceptualized as living laboratories that provide opportunities for both researchers and practitioners (NRC, 2011, p.107).”

The CRC will provide the opportunity to add to the literature concerning private and public collaborations about fragile communities of color and those that are socially vulnerable. How do private and public organizations support, prepare and plan in these communities? Often underserved communities do not trust governmental agencies due to past social injustices, continuous inequalities, fear of governmental control, and deportation. Emergency preparedness is everyone’s responsibility. The CRC posit that responsibility of preparedness in fragile communities lies not only with government agencies, but also with engaged and mobilized community residents, community coalitions, educational entities, private businesses, and non-governmental organizations.

CCR-Beneficial:

The CCR will provide a springboard into increasing the number of disadvantaged (economically and educationally) students from underrepresented backgrounds including those who are veterans who are interested in and prepared to undertake education to enter, graduate and pursue a career in emergency/disaster management and preparedness.

As the largest Historically Black College and University (HBCU) in the State of Mississippi, JSU has a long-standing history in providing community engagement and researching issues regarding underserved communities. HBCUs are often the nurturing space for students from underserved communities in their pursuit of higher education and shaping their career aspirations. Despite the difficulties of working with underprepared students, JSU does an outstanding job of getting at-risk students to cross the stage in a cap-and-gown. JSU has the faculty expertise and research capacity to train future professionals in emergency/disaster management and preparedness.

In 2017, during the Department of Homeland Security's (DHS) Coastal Resilience Center (CRC) hosted the first HBCU Flood and Hurricane meeting, Congressman Bennie Thompson stated that "a mission for HBCU's is to train future professionals to provide a talented, local workforce for major emergency management functions. We want to, over time, grow that product so we have it here locally." The CCR housed at JSU will serve as the landscape where the seeds are planted, nurtured, and cultivated to harvest the next generation of emergency management professionals who are prepared to strengthen fragile communities.

Broader Impacts: Jackson State University is already well-positioned to house the Center for Community Resilience (CCR) under the College of Science, Engineering, and Technology (CSET). Since 1877, JSU has been providing young men and women opportunities that will empower them to succeed in an increasingly complex world. It is the only "Urban University" in the state that already has a mission to be a model urban learning community for highly motivated students from diverse backgrounds, where original research and experiential learning are integrated into rigorous and internationally prominent programs in the arts, humanities, and the sciences.

The benefits to the State of Mississippi will be great, by conducting research, hosting training, community outreach events and symposiums that promote safety and preparedness in underserved communities we can educate people directly. There will be opportunities to engage the community and provide them with the tools they need to remain safe before, during and after a natural disaster. The implementation and success of this project will mean more people have the knowledge and skills to survive a natural disaster, especially those in underserved communities. By identifying vulnerable groups, more effort can be made to funnel the proper resources into those communities. For example, resources like increased internet access, perhaps more sirens in rural communities or stronger signals for all-hazard radio towers would benefit large numbers of people that currently have limited access to those lifesaving tools.

Sustainability Plan-Table 2:

Project Design & Implementation		
Sustainability Factor	Sustainability Objective(s)	Sustainability Actions
<p>Change Theory</p> <ul style="list-style-type: none"> • Target Population: <ul style="list-style-type: none"> ○ Outreach & Prep. <ul style="list-style-type: none"> ▪ <i>Underserved</i> ▪ <i>Low-Socio Economic</i> ○ Education/Training <ul style="list-style-type: none"> ▪ <i>Current and New Emergency Man Spec.</i> <ul style="list-style-type: none"> • CEU, Certificates/Certifications ○ Further Workforce <ul style="list-style-type: none"> ▪ <i>6th to 9th graders</i> <ul style="list-style-type: none"> • Provide intro and info regarding careers • Host interactive summer camps • Needs to be met: <ul style="list-style-type: none"> ○ Mississippi is 7th on a list of ten for the likelihood of natural disasters with a high probability of disasters as climate & location support formation of severe storms ○ 571,000 Mississippians are below the poverty level and need proper notifications and assistance in times of weather events. 	<ul style="list-style-type: none"> • Identify local underserved populations • Host Disaster Training workshops in the communities • Develop a curriculum for courses in Emergency Man., Psychology of Disaster, and Journalism for CUEs, etc. • Host summer camps (annually) to introduce related disciplines. Work with school counselors to track students pursuing related STEM disciplines. 	<ul style="list-style-type: none"> • Community-based participatory research, increase awareness and customize the disaster reduction strategies. • Develop survey instruments and survey EM specialists and students to evaluate the impact of workshops and summer camps. • Necessary modifications will be made.
Financial Resources & Strategies		
Sustainability Factor	Sustainability Objective(s)	Sustainability Actions
<p>Cost of Project (years 1-3):</p> <ul style="list-style-type: none"> • \$798,404.26 (overall total) • \$296,231-yr 1, \$268,276.63-yr 2, \$233,896.63-yr 3 <p>Potential Funding Sources and Partners:</p> <ul style="list-style-type: none"> • C-Spire (\$30,000) 	<ul style="list-style-type: none"> • Identified agencies have been contacted to support workshops, summer camps, and assist CCR in 	<ul style="list-style-type: none"> • CCR will work closely with these partners and establish

<ul style="list-style-type: none"> • AT&T Foundation (\$30,000) • State Farm Disaster Preparedness Grants (\$50,000) 	<p>producing community disaster materials.</p> <ul style="list-style-type: none"> • With the above activities credits (i.e. logos (per requests) and acknowledgments) on printed educational materials • CCR will invite reps from agencies to volunteer during community outreach disaster prep workshops, and serve as guest presenters during summer campus. Reps will also be invited to serve on the advisory board. 	<p>additional partnerships.</p> <ul style="list-style-type: none"> • CCR will recruit and engage these partners and community volunteers with assisting in community outreach and education ventures. • CCR will solicit advice from partners regarding improvement for programs, services, and educational ventures (i.e. curriculum development)
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Team Members Experience with Community Outreach:

The CCR Team has been fortunate to develop competencies and mastery through involvement in a host of Emergency Management and Disaster Response trainings and events. These involvements included such events and National Weather Service and Emergency Managers workshop, Hurricane Katrina Disaster Response, Mississippi Medical Response training, and many more. Involvement in such training and events have allowed the CCR Team to further establish and nurture partnership with emergency agency, which is vital in the CCR fulfilling its mission. See examples below:



Dr. Jessica L. Murphy (on the right), Professor of Emergency Management, recognized as an Ambassador for a "Weather-Ready Nation" by the National Weather Service in Jackson, MS. Ms. Fecelia Bowser (on the left) of the National Weather Service presented the certificate.



Drs. Dawn McLin and Jessica L. Murphy invited MEMA Representative, Ms. Lauren Schultz (on left) to discuss the MEMA 4 Kids "Weather Readiness" program to designated undergraduate courses. Students were about to participate in the MEMA 4 Kids initiative and earn service hours and academic credit.

Conclusion:

Having more people know how and where to access disaster information and how to respond to the information would be one of the greatest benefits. Educating and saving lives using a multidisciplinary team approach is the ultimate goal of the project. CCR will help with professional development and expose a new generation of young women, particularly those of color to STEM fields.

A huge benefit of this project will be the opportunity to present the project to the community and other professional scientists. Members of the emergency management, social science, engineering, and atmospheric science community will also have a chance to share their research, products, and services related to preparedness and safety.

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