



U.S. Department of Education  
Office of Safe and Drug-Free Schools  
Emergency Management for Higher Education



FY 2009 Final Grantee Meeting ♦ Philadelphia, PA ♦ August 5 – 6, 2010

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**EMHE Grantee Showcase #3:  
Survey Results of Disaster-Resilient Universities**

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# Disaster Resilient Universities

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# Introduction

- This study identifies key factors that are important to create a Disaster Resilient University (DRU) and assesses how different colleges and universities across the country have developed and incorporated these key essentials that prepare them to respond to disasters effectively.
- These elements provide a model and visionary direction for universities to adopt in order to create the capacity and readiness to tackle emergencies.
- This research study will answer the following research questions:
  - Why it is important to be a DRU and how a campus can become disaster-resilient?
  - What key elements are important to create a DRU?
  - How have grants and federal funding helped to develop disaster resilient systems?
  - What roles, responsibilities and activities external community partners play in creating disaster resilient universities and colleges?

# Key Elements Identified Through Literature

- Through a literature review the following key elements were identified for creating a disaster resilient university:
  - Culture of Preparedness
  - Emergency Management Plans
  - Continuity of Operations Plan
  - Leadership Support
  - Community Partnerships
  - Emergency Information Management
  - Training & Exercises

# Disaster Resiliency

- FEMA's Disaster Resistant Universities Initiative (vulnerability and risk analysis plus mitigation actions).
- A paradigm shift from the concept of disaster *resistance* to disaster *resilience* (Tierney & Bruneau, 2007).
- The National Research Council (NRC) (2009) defines resiliency as “[t]he response to stress at individual, institutional, and societal levels categorized as the characteristics that promote successful adaptation to adversary” (p. 2).
- According to Kunreuther & Useem (2010), resilience entails the ability and capacity to “cushion potential losses through inherent or explicit behaviors in the aftermath of a disaster and through a learning process in anticipation of a future one” (p.11).

# Disaster Resiliency

- Britton & Lindsay (n.d.), define resilience as the “ability of systems to absorb change and to either bounce back, or to shift to new points of stability” (p.52).
- Kendra & Wachtendorf (2003) believe that “resilience appears to be as much a set of attitudes about desirable actions by organizational representatives as it is about developing new capabilities” (p.11).
- Resiliency is not only a multifarious concept but also an ideal, since no community or organization can be fully resilient and secure from disasters and their impacts (Twigg, 2007).

# Culture of Preparedness

- Disasters have taught us that “even the best laid plans are utterly worthless if citizens are not prepared to receive, understand and execute them” (Light, n.d.).
- The DOE/ FEMA/DHS provide several resources to assist institutions in their preparedness efforts (*Safe School Initiatives*, DHS reports on vulnerabilities, on-site visits to identify possible hazards and threats, financial assistance and grants, FEMA training courses).
- A well prepared campus:
  - Caters to and prepares for various types of disaster and crises (Mitroff et al. ,2006)
  - Has methods and systems that collect cues signaling early warnings of crises (Mitroff et al., 2006)

# Culture of Preparedness

- A multi-department and interdisciplinary disaster management team (Mitroff et al., 2006).
- Buy-in and support from a number of internal and external stakeholders (Mitroff et al., 2006).
- Partners with students and faculty members for crisis-reduction efforts (DOE, 2007).
- Markets procedures, protocols and plans via websites and posters (DOE, 2007).
- Has multi-cultural community outreach campaigns and tailored programs for special needs populations (Kiefer et al., 2006).
- Develop a culture of preparedness through policy and curricula (DOE, 2009).
- Encourages openness between faculty and students (DOE, 2009).
- Has opportunities of training exercises (DOE, 2007).

# Comprehensive Emergency Management Plan (CEMP)

A CEMP should include and address the following components:

- A **plan activation** component
- **Clear lines of authority** that involve a hierarchy of roles
- **Action steps** that give campus officials the roadmap of what to do depending on a crisis,
- The scope of the plan that explains the **roles and responsibilities of staff and students** at different stages
- Communication methods including a **communications center** that will ensure effective information exchange;

# Comprehensive Emergency Management Plan (CEMP)

- **Redundancy of critical staff** to make sure staff is available in disasters;
- **Clarified media responsibilities** to avoid misinformation
- **Clarified roles for campus security and outside agencies**
- A plan for **business resumption** such as a detailed COOP that will help to restore operations

(Zdziarski et al., 2007)

# Comprehensive Emergency Management Plan (CEMP)

- Compliant with the **four phases of emergency management** (mitigation-prevention, preparation, response and recovery) (DOE, 2009).
- Prepares for **emergency situations and vulnerabilities** that are unique to an institution (DOE, 2009).
- Identifies the **roles of faculty, staff, and students** in different phases and is aligned with government emergency plans (DOE, 2009).

# Comprehensive Emergency Management Plan (CEMP)

- Ensures compliance with the **National Incident Management System (NIMS) and Incident Command System (ICS)** (DOE, 2009).
- Entails addressing the needs of **vulnerable populations** such as special needs populations that might have certain disabilities or might experience language barriers (DOE, 2009).
- Includes detailed **risk assessment** - Four stages: (1) identifying natural and man-made disasters that are a risk to the college or university (2) profiling hazard events (3) creating an inventory of assets (4) estimating losses (FEMA, 2003).

# Continuity of Operations Plan

- A proper comprehensive COOP by an institution defines the roles, functions and priorities for faculty and staff following an emergency as a means to quickly restore a university to a functional status and involves key academic affairs personnel, departmental heads and other important contacts that have stakes involved in ensuring instructional continuity (FEMA, 2003).
- Georgetown University (2009) lists the following steps in its COOP:
  - (1) **Identify** critical operations and functions and the minimum requirements to perform them
  - (2) **Identify** internal and external dependencies
  - (3) **Determine** alternative methods and redundancies
  - (4) **Identify** the steps for recovery and restoration in addition to goals and timelines
  - (5) **Examine** assumptions
  - (6) **Examine** communication methods
  - (7) **Examine** financial issues
  - (8) **Implement** the plan

# Continuity of Operations Plan

Other important features of a COOP may include:

- Emergency instructions should be disseminated ahead of time (Zdziarski et al., 2007).
- Records must be preserved at an off-campus site in order to maintain any key information needed (College of Southern Maryland, 2009).
- A specific timeframe to return to core functional operations should be established (College of Southern Maryland, 2009).
- Alternate arrangements for instructional continuity should be established (College of Southern Maryland, 2009).
- The COOP should be readily available targeting the appropriate audiences and should be updated, evaluated and tested on a yearly basis.

# Leadership Support

- During a crisis, leaders are expected to implement the crisis plan, delegate authority to others when appropriate, remain open to suggestions from stakeholders and respond quickly and efficiently (DOE, 2009).
- The senior leader will develop a crisis team that overlooks disaster-reduction functions and will secure commitment from within and outside the campus by identifying key stakeholders and partnering with them to support opportunities for training and exercises (DOE, 2009).
- The senior leader's strong position within the campus will result in better allocation of resources for emergency management efforts (DOE, 2009).
- It will also help in endorsing and implementing emergency management plans and protocols and in creating internal and external partners that engage in the emergency management process (DOE, 2009).

# Community Partnerships

- Collaborating, networking and partnering with key community actors such as:
  - local emergency management offices
  - media agencies
  - private entities etc. (Verizon Wireless, etc.)
  - local first response units such as fire and rescue
  - public safety and police departments
  - medical and health services
  - nonprofits such as Red Cross and Salvation Army, etc.
- To establish proper collaboration between outside agencies and the campus, two things are very helpful: pre-crisis network building and establishing mutual aid agreements (Zdziarski et al., 2007).

# Emergency Information Management

- Emergency information management is “the sending and receiving of messages to prevent or lessen the negative outcomes of crisis and thereby protect the organization, stakeholders, or industry from damage” (Coombs, 1999, p. 4).
- Three crucial steps in emergency information management: information gathering, information processing and processed information dissemination.
- **Information gathering:** gather as much accurate information as possible about the crisis from as many applicable sources as possible, i.e. the fire department, police department, national weather service, public works, the public, etc. (Kapucu et al. 2008).

# Emergency Information Management

- **Information processing:** information is carefully analyzed to ensure accuracy and specific information is translated into messages that can be easily comprehended by the public. (Kapucu et al. 2008).
- **Information dissemination:** requires multiple and redundant communication methods (Emergency Alert Systems, Email, Text Messaging, School Websites and the use of social networking mediums) , timely notification, threat information that is unique to the emergency at hand, and a single voice for communicating all information (Kapucu et al. 2008; National Clearinghouse for Educational Facilities, 2008a; Cohen, 2008).

# Training & Exercises

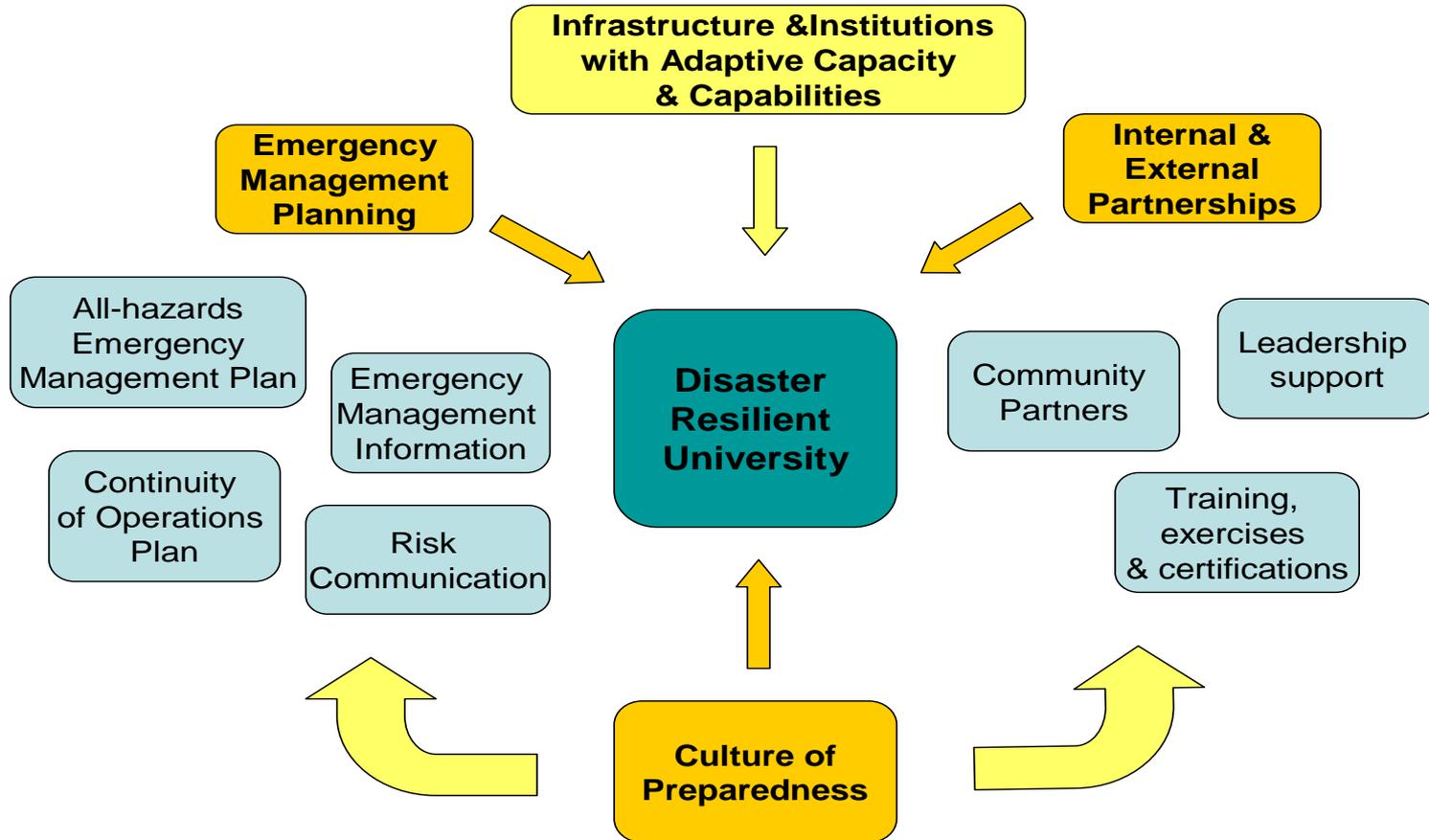
- Several training activities can be used on campus to prepare individuals for crises:

**Tabletop exercises:** “discussion-based activities that can be used in crisis-management training to assess the effectiveness of a plan while handling operational and communication challenges” aimed at solving problems collaboratively (Zdziarski et al., 2007, p. 192).

**Simulations:** these require proper planning involving a number of key players that would be actually involved in a crisis to make it as realistic as possible (Zdziarski et al., 2007). A pre-drill and post-drill survey is an important part of a simulation or drill.

**Certifications:** ICS Courses for campus personnel and FEMA Independent Study courses including classes on hazards preparation and response.

# Key Elements of a DRU



# DRU Survey Description

- A survey was administered from March 2010 – April 2010
- A comparison with other universities and their programs provides a roadmap of where UCF's emergency management plans are and what we need to improve and achieve to enhance our current programs and plans.
- **Sample Description:**
  - The DRU listserv, DoE EMHE 2008 grant recipients, and FEMA Disaster Resistant University grant recipients
  - The majority of the respondents: Emergency Managers, EM Coordinators, Directors and Assistant Directors of Office EM, Risk Management, EH&S, Coordinators of Emergency Planning and Business Continuity
  - **88.9%** (of the 45 respondents) university, **8.9%** college, **2.2%** community college

# Results: Culture of Preparedness

- **42.7%** of the 97 respondent's report that their campus community is well prepared to manage disasters and emergencies (7.3% strongly agree while 35.4% agree)
- **78.4%** report that they conduct a number of trainings and exercises on campus to create awareness about emergency management plans and procedures
- **78.4%** report that the culture in their campus focuses on information sharing between different departments
- **74.3%** of the respondents also report that they focus on information sharing with outside organizations

# Results: Emergency Management Plans

- **85%** of the respondents indicate that an all-hazards comprehensive emergency management plan has been developed and implemented
- **79.6%** comprehensive plan compliant with NIMS requirements, while **56%** indicate that their plans are reviewed annually
- **35%** of the respondents have a FEMA approved Hazard Mitigation Plan
- **62.4%** of the respondents regularly conduct vulnerability assessments and profile hazards
- **54.2%** of the respondents adequate resources to implement and maintain a comprehensive emergency management system

# Results: Continuity of Operations Plan

- 52% (N 75) has Continuity of Operations Plan and 69.2 % out of these COOP is NIMS compliant
- 73.2% COOP incorporates and addresses payroll, 60-70% indicate that class schedules, transportation, food services, timeline for restoring functionality, internal and external dependencies , an off-campus site to preserve records and key information, and alternate arrangements for instructional continuity are all addressed
- Only 36.4% report that they cover stipends in their COOPs (9.1% strongly agree, 9.1% agree while 18.2% somewhat agree)

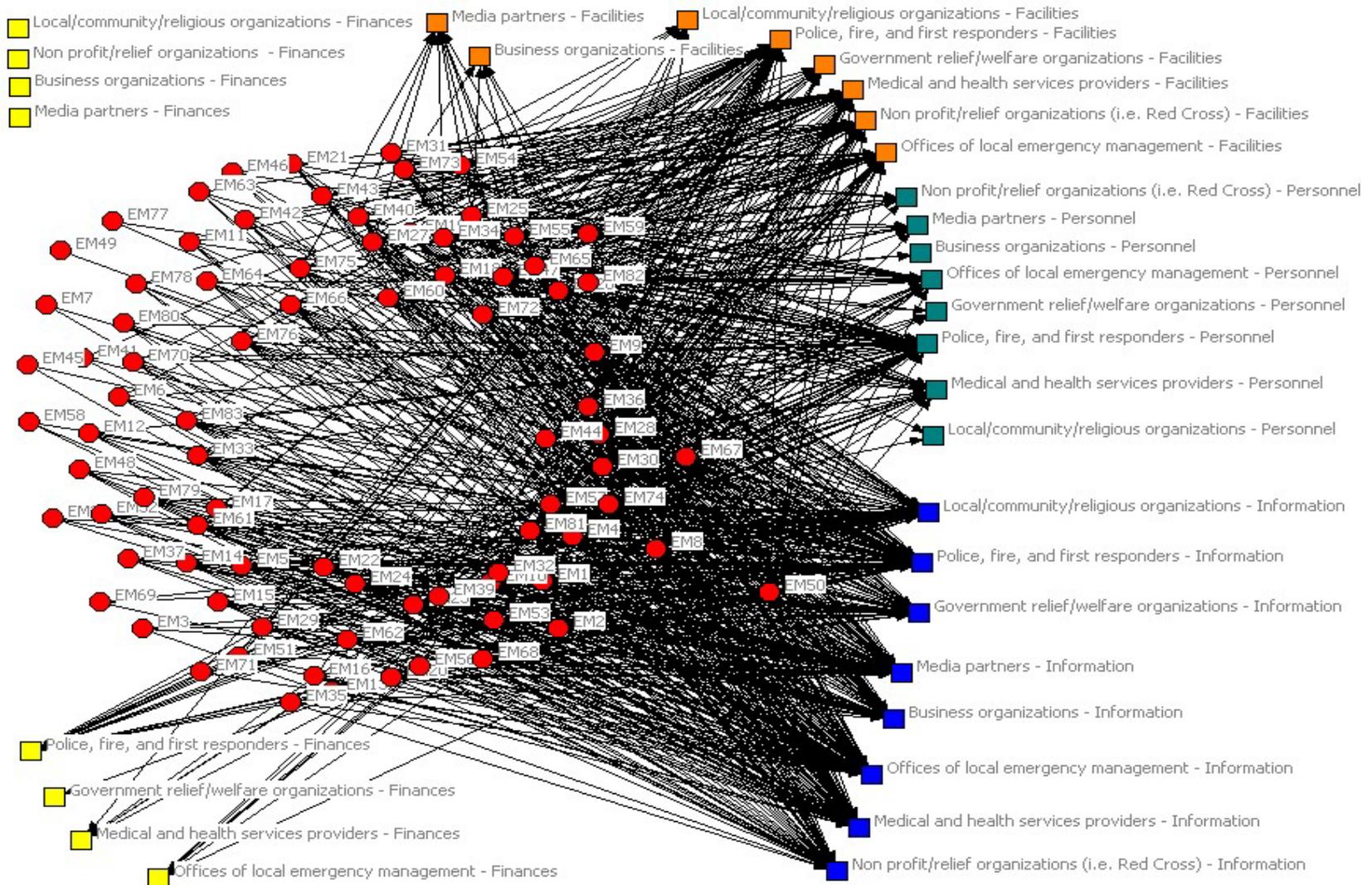
# Results: Leadership Support

- **74.2%** of the respondents indicate that they have a formal campus emergency management/campus safety advisory committee
- **87.1%** of the respondents indicate that their university leadership (president /provost / chancellor) actively supports emergency management at their university/college
- **85.8%** also indicate that their institution has established an Incident Commander to manage and resolve incidents on campus

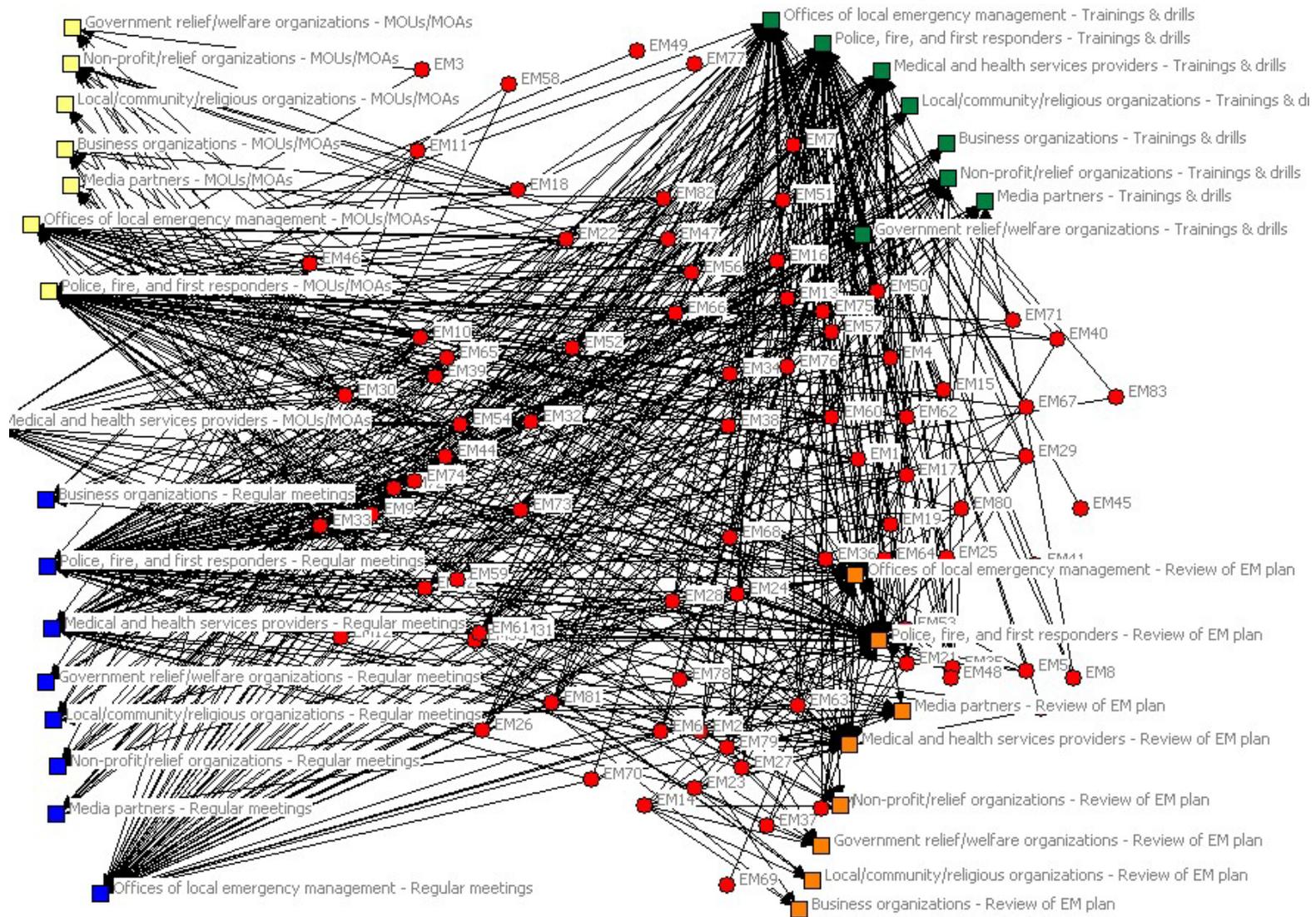
# Results: Community Partnerships

- Police, fire, and first responders are the most popular entities universities and colleges collaborate with, while religious organizations are the least popular community partners followed closely by business organizations
- Training and drills seem to be the most popular activity that universities carry out with groups such as police, fire, and first responders ( 85.9%), offices of local EM (69.4%), medical and health service providers (67.2%)
- Only few respondents indicate that they share finances with police, fire and first responders (15.9%), offices of local emergency management (9%), government relief organizations (2%) and medical and health services providers (7.1%)

# Community Partners and Resources Shared



# Activities with Community Partners



# Results: Emergency Information Management

- The most important source for gathering information about threats is the National Weather Service
- Using simple language to explain what is going on and including specific action to be taken by students, staff, and faculty in the warning message are considered effective strategies
- Using e-mail, text messaging system, website, responding to rumors with factual information, using protocols as the impetus to activate Emergency Notification System (ENS) are the most important strategies to utilize to disseminate information
- **86.8%** has a written crisis and risk communication plan

# Results: Training & Exercises

- **69%** has adequate resources to implement and maintain comprehensive training programs (12.7% strongly agree, 32.4% agree, while 23.9% somewhat agree)
- **73.2%** key staff and faculty are trained in ICS and NIMS courses (19.7% strongly agree, 18.3% agree, while 35.2% somewhat agree)
- **43.6%** students, faculty and staff avail FEMA IS courses
- Tabletop exercises and ICS and NIMS training seem to be the most popular types of exercises in university/college campuses, while full-scale exercises and evacuation site visits are the least popular type of exercises/drills

# Grants and their Impact

- Out of the 65 respondents , 15 report that they have received funds from DOE, 19 report receiving funds from FEMA, 15 from DHS and 4 from DOJ.
- Other agencies that had provided grants were: United Educators, Department of Energy, UASI, Criminal Justice Council and NJ State Police Grant.
- 24 respondents indicate that they haven't received any type of external funding in the form of grants from agencies and departments.
- 70% of universities and colleges that received grants indicate that their institution qualifies as a disaster resilient university while 56% that hadn't received any grants suggest that their university qualifies as a disaster resilient university.

# Comparison between Universities with grants and without grants

	<b>With Grants</b>	<b>Without Grants</b>
<b>Our campus is well-prepared</b>	Agree	Somewhat Agree
<b>We focus on information sharing with outside organizations</b>	Agree	Somewhat Agree
<b>We have developed and implemented a comprehensive EM plan</b>	Strongly Agree	Agree
<b>Our institution's intra-departmental operability communication equipment is sufficient for the campus</b>	61%*	41%*
<b>We have a FEMA approved Hazard Mitigation Plan</b>	50%*	31%*
<b>We have developed a Continuity of Operations Plan</b>	61%*	41%*
<b>Our institution has adequate resources to implement and maintain comprehensive training programs</b>	73%*	65%*
<b>Students, faculty and staff avail FEMA Independent Study certification courses on their campus</b>	58%*	26%*
<b>Key staff and faculty are trained in ICS and NIMS courses</b>	82%*	29%*

(\* includes strongly agree, agree and somewhat agree responses)

# Overall Survey Results

- **13%** respondents are very confident that their university qualifies as a DRU, **18.8%** indicate that they agree that their university qualifies as a DRU, while around **30%** report that they somewhat agree that their university qualifies as DRU

Additional features for creating DRUs identified by some respondents were:

- More national and local mandates for institutions of higher education to improve emergency management plans
- More support from local and regional emergency management organizations
- Buy-in and financial support in terms of increased budgets from upper level management is important to implement NIMS/ICS and develop detailed emergency management
- An improved personnel selection criterion for emergency managers at universities and colleges

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# Thank You!

## Questions & Comments?

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