

# **Five Years after Virginia Tech: An Analysis of Internet and Social Media Use for Campus Emergency Preparedness**

The scenario seemed frightening familiar. Reports of gunfire on the Virginia Tech campus with two people, including a campus police officer, dead filled the Twitterverse. As the drama unfolded, the campus went into lockdown while the authorities tries to figure out what was happening. For many, it was April 2007 once again, when a deranged student first killed two people in a campus dormitory and later went on a rampage, killing 30 other people and himself in a classroom building. But this was December 2011. It turned out that the gunman, Ross Truett Ashley, 22, killed himself 30 minutes after shooting Virginia Tech Police Officer Deriek Crouse. (CNN, 2011)

There were other differences between the two campus shootings. Virginia Tech officials learned hard lessons about communicating with students, faculty and the extended community following the 2007 tragedy. By December 2011, they were more sensitized and better prepared to immediately spread the alarm about a deadly situation on campus, as apparently were college and university administrators across the nation.

The purpose of this study is to gauge the degree to which the nation's colleges and universities have learned the lessons of the Virginia Tech tragedy on this, its fifth anniversary. Specifically, through content analysis, the study examines the degree to which these institutions have adopted the Internet and social media as part of their emergency preparedness efforts.

## **A Difficult Balancing Act**

As any public relations practitioner can tell you, building and maintaining these relationships is difficult, even in the best of times. However, this is a period in which the

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public trust has been shaken by a series of traumatic events, including corporate crimes and bailouts, pedophiles in the locker room, and a decade of war in the Middle East. As a result, the management of critical relationships through the application of public relations strategies and tactics has become more difficult.

A June 2011 survey is indicative of this climate. The Gallup Organization asked adults across the United States how much confidence they had in a number of “institutions in American society.” Only the military, small business, and the police enjoyed either “a great deal” or “quite a lot” of confidence from a majority the respondents -- 78 percent, 64 percent and 51 percent respectively. The percentages for government institutions, such as the U.S. Supreme Court (37 percent), the presidency (35 percent), public schools (34 percent) and Congress (12 percent) fared poorly in comparison. (Gallup, 2011)

This environment of mistrust has also reached onto the nation’s campuses. A study by the non-partisan National Center for Public Policy and Higher Education and Public Agenda found that twice as many respondents believe college administrators are more interested in the their schools’ finances than they were about the educational experience of students. (Keldermann, 2010) President Barack Obama, with an eye on reelection, surprised a lot of college administrators during his January 2012 State of the Union address when he said, “So let me put colleges and universities on notice: If you can’t stop tuition from going up, the funding you get from taxpayers will go down. Higher education can’t be a luxury. It is an economic imperative that every family in America should be able to afford.” (Obama, 2012)

As difficult as the financial environment is, college administrators face an even more difficult balancing act: Weighing the benefits of maintaining an open campus environment that stimulates learning and creativity with those of tightening security in the wake of a recent history of campus violence. Actually, it is not a new problem: Charles Joseph Whitman, 25, a former Marine sharpshooter turned architectural engineering major, climbed with an arsenal of weapons and ammunition to the observation deck of a 307-foot limestone tower in the center of the University of Texas campus on August 1, 1966. From his sniper’s perch high above Austin, Whitman killed 13 unsuspecting people and wounded another 44 before, he, himself, was killed by

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police. Before his rampage, Whitman also killed his wife and mother. (*Time*, 1966) However, it was the April 16, 2007, rampage of Virginia Tech senior Seung-Hui Cho that serves as the cautionary tale for college administrators. Before killing himself, Cho killed 32 students and wounded another 17. The U.S. Department of Education study of the incident found that Virginia Tech officials did not notify students of the potential danger in a timely matter and fined the university \$55,000 under the Celery Act in March 2011. (Gust, 2011) One year later, a seven-member jury in Christiansburg, Va., found the university negligent, saying it failed to notify students of a dormitory shooting earlier in the day in which the first two of Cho's victims were shot. The jury awarded \$4 million in damages for wrongful deaths to the families to two of the 30 students later killed at Norris Hall. They had opted out of an \$11 million settlement between the state and the families of the victims. (CNN, 2012)

It didn't take long for college administrators across the nation to take steps to fill gaping holes in emergency notification procedures exposed by the Virginia Tech tragedy. When a man walked onto the stage during an ocean science lecture at Northern Illinois University and opened fired with a shotgun just 10 months later, they were much better prepared to deal with the ensuing chaos. Within minutes of the shootings, Virginia Tech officials reached out to their NIU counterparts to help them cope with the crisis. To their credit, NIU officials had already researched the Virginia Tech tragedy and had already learned valuable lessons from their colleagues in Blacksburg.

"Our first priority was to get a warning out there," Vice President for Public Affairs Melanie Magara said. "Our first message on the web site was very simple: Gunman on campus. Remain in rooms and offices. Campus in lockdown." (Cobb, 2008) NIU also issued emergency alerts via e-mail, voicemail, and the university's hotline. (Putting Lessons to Work) The university's computer servers – recently updated to handle high-volume traffic in the event of crises – registered almost 4.4 million hits in the first hour and 14 million by the end of the day.

NIU students did what Virginia Tech students had done just 10 months earlier: They took it on their own to use social media to reach out to concerned family and friends. This was especially important in the early stages of the crisis, when cell phone traffic spiked to more than 14 times its normal level. A 19-year-old student in the process

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of transferring to NIU created a “Pray for Northern Illinois University Students and Family” Facebook group within 90 minutes of the incident. Within five hours, almost 10,000 people had joined the group. (Pang, 2008)

In a post-Virginia Tech world, college administrators have moved to enhance emergency notification procedures and technology. Through the implementation of building alarms, enhanced public address systems, text and e-mail messaging and social media networking, colleges and universities are using emergency notification systems as a stopgap measure when other violence preventative politicizes and systems fail.

However, it has also been argued that college communication efforts to heighten awareness of the threat of violence may have, in fact, been counterproductive. “Intuitively, we assume that if students are aware of the potential for violence they will be more cautious,” researchers Kelly Mitchell and Shari Veil wrote. “However, by conceptualizing rampage school shootings as terrorist activities, literature on terror management theory implies that reminding students about violence in a social culture that does not value tolerance has the potential to increase aggression toward students who are considered different. We suggest that safety campaigns, which do not encourage holistic acceptance of community groups, have the potential to widen the gap between conflicting worldviews.” (2009)

“When it comes to the complex intersection of campus safety and mental health, questions of what counts as sufficient warning signs and how universities should respond to them often end up in court,” *Time* reported in the aftermath of Virginia Tech. Just a few months prior to the Blacksburg tragedy, Hunter College agreed to pay \$65,000 to a student who had been expelled as a suicide risk. “However much time colleges put into their efforts, there’s no surefire way to protect violent behavior,” *Time* reported. (Lindenberger, 2007)

#### **Public Relations, Crises and Risk Communications**

For the purposes of this paper, public relations is defined as “the values-driven management of relationships between an organization and the publics that can affect its success.” (Guth & March, 2006) For more than a generation, Grunig and Hunt’s two-way

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asymmetric model of public relations, one involving a free and flow of information between and organization and its stakeholders, has been hailed as the ideal model of professional practice. (Grunig & Hunt, 1984) More recently, the notion of two-way symmetry as the normative public relations model has been challenged as being simplistic and unrealistic. Led by Professor Glen Cameron, a team of researchers stated that the four-model approach “fails to capture the complexity and multiplicity of the public relations environment.” (Cancel, Cameron, Sallot & Mitrook, 1997) Instead, they proposed a contingency theory of accommodation in public relations, saying that the practice of public relations rests somewhere within a continuum from *pure accommodation* (where one builds trusts and maintains important relationships) to *pure advocacy* (where one argues on behalf of a particular cause or position). (Cancel et al.) During the first decade of this century, a European-born theory of public relations, *the reflective paradigm*, has gained acceptance in the United States. The reflective paradigm often referred to as *reflection*, focuses on simultaneous interactions with a broad range of stakeholders and recognizes that organizations can achieve only as much as society permits. (Van Ruler & Vercec, 2009)

While organizations and individuals have struggled with the best way to communicate during crises since Cain killed Able, a scholarly focus on crisis communication can be traced to the fallout – political, not literal – of the Three Mile Island nuclear power plant accident in 1979. The growth of the Internet and social media has created additional impetus in the drive to understand how best to plan for, react to and mitigate the effects of crises, defined by Laurence Barton as “a major, unpredictable event that has potentially negative results. The event and its aftermath may significantly damage an organization and its employees, products, services, financial condition and reputation.” (Barton, 1993)

The discipline of emergency management – sometimes known as crisis management, disaster management or contingency planning – involves four phases: mitigation (an attempt to identify, minimize and eliminate potential hazards), preparedness (the planning phase, in which contingency plans are developed in anticipation of a variety of crisis scenarios), response (the execution of the crisis plan with the mobilization of necessary resources), and recovery, (the effort to return the

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situation to normalcy, to learn the lessons from the experience, and to mitigate future occurrences). (Haddow & Bullock, 2004) These four steps closely parallel those of the public relations process, research (mitigation), planning (preparedness), communication (response) and evaluation (recovery). This is not surprising, in that the essence of emergency management – as with public relations – is communication to preserve and enhance relationships.

Another model that mirrors this approach is Crisis and Emergency Risk Communication or CERC. It was proposed by health communications concerned that the more traditional four-step model does not take into account the differences between risk communication, which focuses on “known probabilities of negative consequence and how they can be reduced,” and crisis communication, “messages regarding current state or conditions regarding a specific event.” (Reynolds & Seeger, 2005) CERC is a five-step model: precrisis (risk messages, warnings and preparations), initial event (uncertainty reduction, self efficacy and reassurance), maintenance (ongoing uncertainty reduction, self efficacy and reassurance), resolution and evaluation. (Reynolds & Seeger) However, as risk communication consultant Peter M. Sandman notes, risk communication carries its own risk. “One major reason why officials neglect pre-crisis communication is fear of fear,” Sandman said. He cited months of internal debate over how aggressively to warn the public about a possible influenza pandemic. “A heartfelt reluctance to frighten people was one of the oft-repeated reasons to avoid emphatic pandemic warnings. (2006)

### **Crisis Communication and the Internet**

The introduction of the World Wide Web in 1990 opened new communication possibilities for emergency management agencies. While the Internet as we know it was in its infancy and unknown to most, some within the emergency management community were quick to grasp its importance. Ronald E. Rice wrote in 1990 that a variety of computer-mediated communication and information systems such as e-mail and voice mail could prove useful in overcoming “temporal, geographical, retrieval [and] distribution” changes during crises. (Rice, 2003) In addition to its communication possibilities, the Web allows EMAs to engage in issues management by scanning the

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environment for potential threats. “World Wide Web pages are being used to supply information as well as elicit commentary and problem solution advice from stakeholders and stake seekers,” writes R.L. Heath. (1997)

The terror attacks in 2001 vividly demonstrated the role of the Internet during crises. According to the Pew Internet & American Life Project, an estimated 50 percent of Internet users, approximately 53 million people, went online looking for information about the attacks and its aftermath in the three weeks following attacks. “Nearly three-quarters of Internet users (72 percent) used e-mail in some way related to the events – to display their patriotism, contact their family and friends to discuss events, reconnect with long-lost friends, discuss the fate of friends, and share news.” Pew concluded that the Internet had become the town commons of the 21st century. (Pew Internet and American Life Project, 2001)

Another Pew study conducted two years later showed Americans saw the Internet as both a potential target of and safeguard against terrorist attacks. Just under half of those surveyed feared cyber attacks against the U.S. business sector. One-in-five respondents (one-in-three among young adults) favored the creation of warning systems using cell phones and pagers – four years *before* the Virginia Tech tragedy. (Pew Internet and American Life Project, 2003) By 2005, it was reported that nearly half of organizations experiencing national crises were integrating the Internet into their responses. (Taylor & Perry, 2005) In the aftermath of Hurricane Katrina, researchers suggested that Internet users facing crises prefer interactive information sources to those that are static. Three out of four dispersed New Orleans residents who went online during the crisis reported visiting an online discussion forum. More than half said they posted messages. (Procopio & Procopio, 2007)

It has taken some time, but organizations appear to be finally taking advantage of the Internet’s capabilities when responding to crises. However, progress has been slow. A content analysis of 2001 *Fortune* 500 company Web sites revealed that the majority did not have dedicated pressrooms where media content is centralized. (Callison, 2003) This, in turn, was a deterrent to journalists. A 2003 study found that the reporters considered themselves to be “only moderately reliant upon web sites as sources” and that

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online newsrooms “ have a long way to go before being fully accepted with confidence by journalists as newsgathering tools.” (Hachigian & Hallahan, 2003)

Even emergency management professionals have demonstrated reluctance in adopting the Internet and, later, social media, as part of their public information strategies. A 2007 content analysis of the nation’s state emergency management agency (EMA) websites concluded that, at least when it comes to media relations, state EMAs were not tapping into the Internet’s full potential. (Guth, 2007) A follow-up study survey of state EMA public information officers and their agency’s websites concluded that contrary to their stated intent, state EMA web sites appeared to place a greater emphasis on reaching internal and local/state public safety stakeholders than they did the citizens of their state or the news media that reach them. While the respondents saw moderate value in using the Internet during emergency conditions, they did not see the Internet equal to the more traditional communications media, such as radio and television. The study also found that less than half of the EMA web sites provided the identity of the public information officer, his/her direct telephone number and a direct e-mail address. (Guth & Alloway, 2009)

### **Crises and Social Media**

Even as public and private organization crisis plans began to incorporate the Internet during the last decade, a new and more complex challenge faced emergency planners: the emergence of social media. Largely as the result of the Virginia Tech and Northern Illinois University experiences, the nation’s colleges and universities have chosen to follow the lead of their most important stakeholders, their students. More than any other demographic or psychographic group, young adults have embraced social media. According to the Pew American Life and Internet Project, 94 percent of ages 18-29 use the Internet. Only 12-17 year-olds have a slightly higher percentage of use. The 18-29 year-old cohort also uses its cells phones for texting, taking pictures, accessing the Internet, e-mailing and viewing photos and videos than its elders. They also have more Facebook pages, organize more events via text messaging, have their own blogs and communicate through Twitter than any other age group. According to Pew, motivations

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for social networking come down to either staying in touch with family (ages 50+) or friends (under 50). (Madden, 2011) A February 2012 study of Internet habits found that “male and younger respondents were more confident in their ability to conduct a wide variety of online activities” and that “younger users tended to engage in a greater breadth of online activities.” (St. Jean, Rieh & Yang, 2012)

As crisis researcher Whitney Holmes notes, the emergence of social media are changing the crisis communication landscape. (2008) Evidence to that effect has already been presented in connection to the Virginia Tech and Northern Illinois University shootings. More evidence came as recently as February 2012, when a disturbed Chardon (Ohio) High School student killed three people and wounded two others. Kenneth Trump, president of National School Safety and Security Services of Cleveland said that “ballooning” social media are making it more difficult for school officials and family to keep on top of warning signs. (Paulson, 2012) However, unlike earlier school shooting incidents in which parents were frantic to learn whether their children had been harmed, *The Cleveland Plain Dealer* reported that social media helped to calm an otherwise chaotic scene. “As parents hurried up to the corner of Charon and Maple avenues, they formed a line on the sidewalk without much complaint and waited for authorities to release students one-by-one,” the newspaper reported. (Scott, 2012) Holmes notes that social media help a community – local and cyber – make sense of events and aids in the crisis response. However, she also notes that social media are also sources of misinformation and could, in some cases, trigger crises. (Holmes, 2008)

### **Methodology**

A list of 2,019 U.S. colleges and universities compiled by the University of Texas at Austin and posted on its website ([www.utexas.edu/world/univ/alpha](http://www.utexas.edu/world/univ/alpha)) served as the sampling frame for this systematic sampling. A total of 162 colleges and universities in 45 states and Puerto Rico were analyzed between January 3 and March 3, 2012. Enrollment figures (undergraduate and graduate) for each college or university were gleaned from the College Board’s website (<http://collegesearch.collegeboard.com>). Upon completion of data collection, the schools were ranked according to their enrollment and

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placed within one of three enrollment categories: high (greater than 7,000 students, n=52), medium (2,000-7,000 students, n=56) and low (less than 2,000 students, n=54). The College Board website also provided information on each school's governance status as a public, private, religiously affiliated and/or historically black institution. These are not mutually exclusive classifications. The decision rule for newsroom and emergency information accessibility was based on the ability to reach the desired information within one hyperlink from the website's home page – including links hidden within pull-down menus. When the presence of an emergency notification system was not readily apparent, the website's search engine was used to make that determination. The determination of whether a website's link to emergency information was prominently displayed on the home page was based on whether it was clearly visible within the main display area of the website – as opposed to either being hidden within a pull-down menu or buried with a small font at the bottom of the page.

### **Analysis**

Of the 162 college and university websites analyzed, 72 were public institutions and 90 were private. Fifty-four of the private schools had a religious affiliation and 36 of were non-secular. Ten schools in the sample were considered historically black colleges and universities (HBCU).

A majority of the schools sampled, 75.3 percent, have information about their emergency notification systems on their websites. However, this information was more prevalent the website of public institutions (83.3 percent) than on those of all private schools (68.9 percent), religiously affiliated private schools (70.3 percent) and non-secular private schools (66.7 percent). The percentage of HBCUs websites with emergency notification information (80.0 percent) is consistent with the percentage of the overall sample. Size of enrollment also appears to be a factor, with emergency notification information on 90.4 percent the high enrollment schools, compared to 76.8 percent for medium enrollment schools and 59.3 percent for low enrollment schools.

As Table 1 on the next page shows, this pattern generally continues in a multivariate analysis by the school's size and governance. A break in this pattern came in

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the cross-tabulation of private school into two categories, those with a religious affiliation and those that are non-secular in their governance. The private schools with religious affiliations had a higher percentage across all enrollment classifications compared to their non-secular counterparts. Another anomaly is present among medium enrollment schools with religious affiliation – none of 19 schools in that category had emergency notification information on their websites.

Enrollment Classification	Governance				
	Public	Private (All)	Private Religious	Private Non-Secular	HBCU
Low	57.1	59.6	59.4	60.0	33.3
Medium	77.3	76.5	0	66.7	100
High	90.7	88.9	100	83.3	100

Overall, only 38.9 percent of the college and university websites sampled had emergency information available within one hyperlink of the home page (including links in draw-down menus). Less than half (47.2 percent) of the public institutions had emergency information accessible from their home pages. However, that was higher than all private schools (32.2 percent), religiously affiliated private schools (33.3 percent), and non-secular private schools (30.6 percent). Again, emergency information accessibility among HCBUs (50.0 percent) was consistent with the percentage of the overall sample. When it came to the size of the institution, emergency information was accessible within one hyperlink from the home pages of 51.9 percent of the high enrollment schools, compared to 39.3 percent for medium enrollment schools and 29.3 percent for low enrollment schools.

The prominence of emergency/safety information was considerably lower in all cross-tabulations. On a majority of sites, links to safety or emergency preparedness information were located at the bottom of the home page (an area where some Internet users would have to scroll their screens to find it), in a significantly smaller font size than used in the home page's major display area or in a pull-down menu. Overall, only 15.3 percent of the websites in the sample gave links to emergency information a prominent

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place on the home page. Among public institutions, emergency information prominence was 23.6 percent, compared to 8.9 percent in all private institutions, 9.3 percent for private religiously affiliated schools and only 8.3 percent of the private non-secular schools. The figure for HBCUs (30.0) percent was considerable higher, but that may be more a reflection of the relatively small sample size and the larger margin of error.

**Table 2**  
Presence of Home Page Features (by percentage and rank)

Features	All	Governance					Enrollment		
		Public	Private (All)	Private Religious	Private Non-Secular	HBCU	Low	Medium	High
<b>Academics</b>	99.3 (1)	98.6 (1)	100 (1)	100 (1)	100 (1)	100 (1)	100 (1)	98.2 (1)	100 (1)
<b>Admissions</b>	97.5 (2)	97.2 (2)	97.8 (2)	98.15 (2)	97.2 (2)	100 (1)	100 (1)	96.4 (2)	96.2 (2)
<b>Athletics</b>	82.7 (7)	86.1 (5)	75.9 (7)	90.7 (4)	63.9 (6)	100 (1)	75.9 (7)	85.7 (5)	86.5 (7)
<b>Alumni</b>	86.4 (5)	91.7 (4)	82.2 (6)	87.0 (6)	75.0 (7)	100 (1)	83.3 (4)	82.1 (6)	94.2 (3)
<b>Contact Information</b>	87.0 (4)	86.1 (5)	87.8 (4)	85.2 (7)	91.7 (3)	80.0 (6)	83.3 (4)	87.5 (4)	90.4 (5)
<b>Donors</b>	84.7 (6)	84.2 (7)	84.4 (5)	94.4 (3)	69.4 (5)	100 (1)	83.3 (4)	82.1 (6)	88.5 (6)
<b>Emergency Information</b>	38.9 (8)	47.2 (8)	32.2 (8)	33.3 (8)	30.6 (8)	33.3 (8)	25.9 (8)	39.3 (8)	51.9 (8)
<b>Newsroom</b>	92.0 (3)	93.0 (3)	91.1 (3)	90.7 (4)	91.7 (3)	80.0 (6)	92.6 (3)	89.6 (3)	94.2 (3)

As shown in Table 2 above, emergency/safety information ranks last in all cross-tabulations of eight common features either found on college and university website home pages or within one hyperlink of the home page.

College and university website newsrooms, for the most part, appear to be regularly updated. Overall, 86.4 percent of the newsrooms within the sample had been updated with in the previous 30 days. Public colleges and universities (90.3 percent) had a slightly higher percentage of updated newsrooms than private institutions (83.3 percent), religiously affiliated private schools (90.7 percent), private non-secular schools

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(77.8 percent) and HBCUs (80.0 percent). When it came to the size of the institution, 94.2 percent of high enrollment school newsrooms were recently updated, compared to just 87.5 percent of medium enrollment schools and 77.8 for low enrollment schools.

An overwhelming majority of the colleges and universities within the sample have embraced social media and have links to social media sites on their websites. Once again, governance and enrollment appear to influence the degree of social media acceptance/use. Overall, 83.3 percent of the schools in the sample had links to social media. Public schools, again, had a higher percentage (91.7 percent) than private schools (76.7 percent), private religiously affiliated schools (79.6 percent), private non-affiliated schools (72.2 percent) and HBCUs (80.0 percent). High enrollment schools (90.4 percent) linked their websites to social media at a higher rate than medium enrollment schools (83.9 percent) and low enrollment school (75.9 percent).

### **Discussion**

The “good news” coming out of the study is that it appears that the nation’s colleges and universities, for the most part, have learned important lessons from the Virginia Tech tragedy. Although there is an absence of baseline data prior to the April 2007 campus shootings, this study shows that approximately three out of four schools in the sample had emergency notification information on their websites. While it is probably a stretch to say that the reason an even greater number of schools are reaching out to stakeholders through social media is a result of the Virginia Tech tragedy, this is, nevertheless, a positive development. As the Pew reported indicated, the Internet and social media are the channels young people prefer – making them an excellent conduit for emergency information during crises. (Madden, 2011)

The so-call “bad news” is that there appears to be a reluctance to prominently promote emergency preparedness on college websites. Only one-in-three schools in the sample had a link to emergency/safety information on their home page, and less than half of those had it prominently displayed. The results suggest several plausible explanations. Websites can be targeted to multiple audiences for a variety of purposes. While colleges and universities must communicate with a wide range of stakeholders, both internal and

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external, the ranking of features found on the sample institutions' home pages suggest that recruitment of new students and the promotion of the institutions are the highest priority. Reminding prospect students and donors that the world is a dangerous place may be seen as poor marketing. However, as communications consultant Sandman noted, there is the “fear of fear” factor – that promoting emergency preparedness might lead to a self-perpetuating siege mentality. (Sandman, 2006) There is also a third, practical possibility: It is reasonable to assume that the advent of an emergency on campus would result in the use of the school's website home page as a source of emergency information – much as NIU had done. Considering the apparent awareness and the widespread installation of emergency notification systems, this seems a reasonable assumption.

The study suggests that public colleges and universities, which operate under state and federal open records laws, tend to both have and promote emergency preparedness on their websites more than their private counterparts. The pattern remains consistent in the cross-tabulation by enrollment classification. Public colleges and universities also tend to promote social media more than private schools. Because it is the nature of public agencies to operate in a culture of transparency, this is not a surprise. The differences between private religious and private non-secular schools do not appear to be statistically significant.

The size of colleges and universities also appears to be a factor in the presence and promotions of emergency preparedness information on their websites. The larger the enrollment – and, presumably, the larger the staff resources – the more likely it is that this kind of information would be readily available. Here, again, the differences between private religious and private non-secular schools do not appear to be statistically significant.

Although the number of HBCUs in the sample is small and not conducive to an accurate statistically analysis, the figures can be viewed as indicators that their emergency preparedness practices are in Internet are consistent with the overall sample.

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### **Future Actions and Summary**

For the first time since the horrors of April 2007, we have a real sense of the impact the Virginia Tech shootings have had on U.S. colleges and universities. In at least the area of communicating with students, faculty and staff, significant progress has been made. However, as recent events at Pennsylvania State University have taught us, not all threats come from outside violent intruders. If nothing else, the Jerry Sandusky child sexual abuse scandal demonstrates the need for administrative proactivity at all levels and against all dangers.

While the Penn State tragedy was beyond the scope of this research – the events in State College unraveled after the conclusion of data collection – some of its findings are, nevertheless, relevant. While the circumstances at the two institutions are dramatically different, independent investigations came up with a strikingly similar conclusion: The fear of bad publicity resulted in poor communication practices with tragic consequences. (Freeh, Sporkin & Sullivan, 2012 and Gust, 2011)

Most, but not necessarily all, college and university administrators should be commended for the actions they have taken since April 16, 2007, to better communicate with and protect their stakeholders. It is also important to remember the difficult balancing act they face – maintaining an open learning environment while, at the same time, protecting those who enter that environment from unwelcomed intruders with mayhem on their minds. While it is important to strike a reasonable balance between these conflicting values, it is also important to remember that while people may want to believe that something bad will not happen on their campus, they also have a practical, legal and moral responsibility to assume that it could and to plan for it. As Virginia Tech and, most recently, Penn State administrators have painfully learned, these actions must be taken with a high degree of transparency and accountability.

As Virginia Tech and subsequent incidents of random violence have shown us, those emergency plans should incorporate communication with key stakeholders through media they prefer – especially social media. This paradigm shift presents both opportunities and challenges for all emergency managers. On the one hand, social media

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have opened additional avenues of gathering and disseminating emergency information. However, communicating outside traditional mass media require additional monetary and human resources – not to mention time -- when economic and political conditions have stretched existing capabilities.

Content analysis has the benefit of being unobtrusive research that, from a time management standpoint, provides the investigator with a high degree of flexibility. However, it does not uncover the individual web master's motivations for managing his or her website in a particular manner. Therefore, a logical follow-up would be either interviews with or surveys of college and university webmasters. Also considering that elementary and secondary schools have their own sad history of senseless violence, a study conducted that at level would also be beneficial.

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