



Natural Hazards Observer

Volume XL • Number 2

November 2015

HOMELESSNESS AND DISASTERS



VULNERABLE YET RESILIENT
By Marc Settembrino

"EVERY DAY IS A DISASTER"
By Jamie Vickery

SKID ROW REALIZATIONS
By June Gin

THE MISSION OF THE NATURAL HAZARDS CENTER is to advance and communicate knowledge on hazards mitigation and disaster preparedness, response, and recovery. Using an all-hazards and interdisciplinary framework, the Center fosters information sharing and integration of activities among researchers, practitioners, and policy makers from around the world; supports and conducts research; and provides educational opportunities for the next generation of hazards scholars and professionals. The Natural Hazards Center is funded through a National Science Foundation grant and supplemented by contributions from a consortium of federal agencies and nonprofit organizations dedicated to reducing vulnerability to disasters.

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On the Cover

Threnody



Homeless individuals on Los Angeles' Skid Row, home to the nation's largest concentration of unsheltered homeless.

December 2009 © Jon Jablonsky

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WELCOME to this year's final issue of the *Natural Hazards Observer*, dedicated to homelessness and disasters.

In January 2013, my friends and I volunteered for the New York City Point-in-Time (PIT) count of unsheltered homeless individuals. This survey takes place every year and the data, like data from other PIT counts across the country, is used by the U.S. Department of Housing and Urban Development for its biannual reports on homelessness in the United States.

Our survey site was located on the border between two of Brooklyn's most dangerous neighborhoods, Brownsville and East New York. It was an extremely cold New York winter night and the streets were completely deserted when we left the school where we had gathered to get our instructions. For the next four hours, we combed an area of about one square mile, looking for people who were sleeping rough in plain sight. Two police officers—tasked with keeping us safe that night—followed us from a distance.

After a fruitless search, we were on our way back to the school when we met four homeless men who had gone outside to smoke on the stoop of a shelter. We briefly spoke to them and they explained that the homeless didn't sleep on the streets in that particular part of Brooklyn. After all, there were plenty of shelters and vacant houses were one could rest during cold winter nights, so no need to sleep on a park bench or on the sidewalk.

The experience exposed one of the most glaring flaws in the survey: it fails to include homeless people sleeping in non-visible locations, which, according to Coalition of the Homeless, could make up as much as 40 percent of the unsheltered homeless population. That night, a mere 350 unsheltered homeless were counted by volunteers in the whole of Brooklyn, likely a low number in a borough that is home to more than 2.5 million people. Granted, New York City—although it has the largest sheltered homeless population in the country—has relatively low numbers of unsheltered homeless individuals. However, they aren't that low and, according to Coalition of the Homeless, the PIT data on unsheltered homeless is an educated guestimate at best.

Homeless Veteran © VEMEC



Although PIT counts fall short of painting an accurate picture of overall homelessness, they can serve another important function. They give volunteers who survey areas with large numbers of unsheltered homeless the opportunity to get closer to individuals experiencing homelessness, both in physical, as well as emotional, proximity. For a brief moment, the person collecting data is exposed to the same conditions as the homeless and might understand their daily hardships a little bit better.

That was the case with two contributors to this issue when they took part in the 2013 PIT count. June Gin surveyed Los Angeles's skid row, which has the country's largest concentration of unsheltered homeless. Marc Settembrino surveyed a food bank in Osceola County, Florida, a county characterized by widespread family homelessness. Both described their experiences as eye-opening and humbling and that participation has informed their research since.

In their articles, Settembrino, Gin, and the Natural Hazards Center's Jamie Vickery, assess homelessness in the context of disaster planning and response. Written from perspectives that include those of homeless individuals and of homeless service providers, all three describe situations that demonstrate the amount of work left to be done in this field. Their articles analyze what has been done so far to include homeless populations in disaster planning, identify existing challenges and gaps, and formulate recommendations for the future to make life safer for society's most exposed and vulnerable members.

The remainder of the issue marks the fifth anniversary of the Canterbury earthquakes in New Zealand. Julia Becker and David Johnston of the New Zealand research institute GNS Science evaluate the response of social science research in the disaster's aftermath and how research collaborations can save time and minimize disruptions in the community after large-scale events. A second article, which I wrote in collaboration with Jane Morgan, examines the role of art in community building in Christchurch.

As my first year as *Observer* editor is coming to a close, I would like to take this opportunity to thank you for all the enthusiastic and encouraging feedback and support we've received in the past twelve months. Many changes have been realized, yet many more improvements are yet to come.

Last but not least, on behalf of the Natural Hazards Center, I would like to wish you a wonderful holiday season and a very happy New Year.

I hope you'll enjoy this *Observer*.

Elke Weesjes
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Vulnerable Yet Resilient

Homelessness and Disaster Response in the United States

By Marc R. Settembrino

AS YOU ARE READING THIS, more than 500,000 Americans are homeless. Many will sleep in homeless shelters; others will sleep in tents or other makeshift accommodations. The latter are exposed to a range of weather-related hazards. They represent some of the most vulnerable people in society and must be incorporated into emergency plans. Paradoxically though, homeless individuals can also be assets to their communities during disasters.

Nearly five years ago, I volunteered in the annual Point-In-Time Count (PIT) of people experiencing homelessness. That day, my group was tasked with surveying food banks in Osceola County, Florida, a county characterized by high poverty rates and widespread family homelessness. It was a gorgeous Florida winter morning—the sun shone warmly in a cloudless sky while a gusting breeze kept us cool. Bad weather was expected in the afternoon, but I wasn't too worried about it. As a native Floridian, I am used to tumultuous afternoon storms.

When we arrived at the food pantry, the line stretched the length of the building, with more people queuing up at the rear of the line. As I began my interviews, I found that many participants were concerned about the afternoon weather forecast, specifically a tornado warning that had been issued. I asked a woman standing in line what she planned to do and she told me she intended to go to the library because it is a safe place and she wouldn't be asked to leave.

Before this conversation, I had never thought about what homeless individuals do when the weather gets bad. Curious to find out more, I combed several academic databases and was surprised to find little research on this topic. The studies that were available at the time included "Research as Social Action in the Aftermath of Hurricane Andrew" (Cherry and Cherry 1996), a pioneering study on the impact of Hurricane Andrew on the homeless in South Florida, and Thomas Drabek's "Disaster Evacuation Responses by Tourists and Other Types of Transients." The fact that these two studies were the only works of consequence made me decide to dedicate my dissertation research to homelessness and disaster preparedness and response.



Workin' Hard, 2006 Life in Umoja Village © Danny Hammontree

The conversations I had during the PIT count opened my eyes to the many hazards to which homeless individuals are exposed. I followed that realization with research on natural hazards vulnerability among men experiencing homelessness in Central Florida (Settembrino, 2013; Settembrino, 2015), and a Quick Response Program study on the effects of Hurricane Sandy on homeless shelter services and their guests in New Jersey (Settembrino, 2013; Settembrino, Forthcoming).

In both of these studies I employed qualitative research methods, including ethnographic observations at homeless shelters and interviews with shelter workers and homeless individuals. In my research on homeless men in Central Florida, I learned that social stigma, special medical needs, and chronic unemployment aggravate exposure to hazards among individuals experiencing homelessness (Settembrino, 2015). However, I also learned that despite social vulnerability to natural hazards, homeless men are able to mitigate some risks by fortifying their campsites and relying on social networks and public spaces to stay safe (Settembrino, 2013).

Similarly, my research on the effects of Hurricane Sandy on homeless shelters and their clients found that although the homeless are vulnerable to major disasters such as hurricanes, they might also have important skills that can be useful in disaster response (Settembrino, 2013; Settembrino forthcoming). Reflecting on my research, I have begun

to see that it's possible for someone to be both vulnerable and resilient.

Social vulnerability perspective

In my research, the social vulnerability perspective has been a useful framework for understanding why those at the margins of our society, such as the homeless, bear a disproportionate burden in disasters.

Historically, disasters have been viewed as acts of god that we as humans can prepare for, but have little control over. With the introduction of the social vulnerability perspective in the early 1990s, an important shift occurred in disaster research. Social scientists—rather than deeming disasters as random and indiscriminate acts of god—began to consider social and economic systems that generate vulnerability and argued that disaster risk is distributed in ways that reflect existing social inequalities (Aptekar and Boore, 1990; Morrow and Enarson, 1998; Peacock et al., 1997).

As a result, disaster researchers and policy makers identified a number of groups as more vulnerable than others, including children, the elderly, women, racial minorities, the poor, immigrants, and individuals with physical or mental disabilities (Cutter et al., 2003). These groups differ from one another, yet when viewed through a social vulnerability perspective, they have things in common, such as limited access to vital economic and social resources, limited autonomy and power, and low levels of social capital (Morrow, 1999).

The social vulnerability perspective and the identification of vulnerable groups that followed have helped focus attention on the groups most at risk during and in the aftermath of disaster (Peek and Stough 2010). However, ensuing research on social vulnerability has tended to focus on one vulnerability factor (such as gender, race, age, or socioeconomic status) instead of examining the complex intersections between these factors (Morrow and Phillips 1999).

Clusters of vulnerability

We see a clustering of vulnerability factors in homeless populations—perhaps more than in any other vulnerable group—that can translate in an amplified risk in disaster.

A homeless individual's geographic location, for example, significantly influences his or her exposure to hazards. We see that urban areas generally have more services and shelters available to the homeless compared to suburban and rural areas. As such, people experiencing homelessness outside of the central city may have to travel further to access services. This can lead to longer exposure and greater physical risk to weather related hazards. Some of my respondents recognized this problem. Carrie, a caseworker serving rural Osceola County¹ told me, "We try

¹ Osceola County doesn't have any emergency shelters, instead they rely on hotel vouchers and a few transitional housing units that are mostly for families.



© Wiredforlego 2012

Take Back the Land - A Grassroots Movement

By: Elke Weesjes

On October 23, 2006, a newly formed group of activists, local residents, and homeless individuals called Take Back the Land occupied a vacant lot in the Liberty City section of Miami, Florida. At that time, the plot of land had sat vacant for about eight years after low-income housing was demolished, yet not replaced with the affordable homes that the city had promised. Miami-Dade County had allocated \$8.5 million that was wasted on architects, consultants and other overhead.

"The county is stealing, the city is not rebuilding, what are we supposed to do?" said Max Rameau, Take Back the Land co-founder in a 2007 interview with *Times*, "We wouldn't be able to get away with this if the government wasn't involved in corruption and there were viable alternatives" (Klarreich 2007).

Rameau and his peers, in response to the low-income housing crisis that gripped Miami in the early 2000s, built a fully functioning urban shantytown and called it Umoja Village, named after the Swahili word for unity. Over the following six months, more than 150 formerly homeless people found a place to sleep and to call home.

The Village was run like a well-oiled machine. Residents voted on the rules of their community and were part of its development and maintenance. They cooked and cleaned and built showers, a library, and a welcome center. Some used the physical safety and food security to recharge and save up money in order to secure permanent housing. While living on the land, several residents who struggled with alcohol and drug dependency became clean and returned to school or found employment.

Police, the city of Miami, and Miami-Dade County officials were unable to evict the residents or organizers due to the landmark agreement *Pottinger v. City of Miami*, a lawsuit over police harassment of the homeless. The suit was filed in 1988 by the American Civil Liberties Union on behalf of all

Continues on page 6.



Lunch Time, Life in Umoja Village 2006 © Danny Hammontree

to get bus passes through Lynx bus. Unfortunately, Lynx won't donate bus passes. A lot of these residents are like 'it takes me one single day just to get one thing done because I have to walk two hours to this place.'"

Besides geographical factors, social factors such as age, race, gender, sexual orientation, mental health, and physical health or ability will also affect the ways homelessness and disaster are experienced. In my research, I met several men who have chronic illnesses including diabetes, arthritis, and emphysema. These conditions are often made worse because of their housing status and create additional challenges during severe or inclement weather.

I also discovered that a disproportionate percentage of homeless youth (roughly 40 percent) identifies as lesbian, gay, transgender, or queer (LGBTQ)(NCEH 2014). We know that LGBTQ people experience discrimination and even violence in their daily lives. There is also evidence that LGBTQ disaster survivors have been discriminated against in emergency shelters and by federal aid policies (D'Ooge 2008). Therefore, I anticipate that the intersections of sexual orientation, gender identity, and housing status may complicate how LGBTQ people experiencing homelessness negotiate their risk to hazards and during disasters.

The homeless disproportionately struggle with mental illness and substance abuse as well. The National Coalition to End Homelessness reports that nearly one in five people experiencing homelessness suffer from serious mental illness. Additionally, 38 percent of homeless individuals are dependent on alcohol and as many as 26 percent abuse other drugs. Edington (2009) notes that disruptions associated with disasters can cause hardships on individuals with mental illness or who are drug or alcohol dependent. Those concerns were reflected in my research in Atlantic City, where I learned that some homeless avoid emergency shelters because they did not want to experience withdrawal symptoms².

Increasingly, disaster researchers have begun to identify

2 I learned that emergency shelters in Atlantic City were staffed with nurses from a local methadone clinic to ensure that patients could continue their treatment (Settembrino, 2013).

homeless people living in the Miami. The agreement, which was finally reached in 1998, placed limits on the power of Miami City police officers to arrest homeless individuals for committing certain life-sustaining conduct misdemeanors, such as cooking over an open fire or blocking a sidewalk. It also requires police and other city officials to respect homeless people's property rights. Furthermore, the judge decided that homeless individuals who had been wrongly arrested between 1984 and 1998 would receive \$1,500 in compensation.

Aware of these rights, Taking Back the Land was able to create Umoja. The creation of the Village was a protest as well as a solution to the housing shortage. The initiative enjoyed broad support in the community and was featured in national newspapers. Because of this widespread recognition and support, Umoja Village was able to withstand numerous attempts by government officials, who tried to find ways around the Pottinger agreement to evict its residents.

In April 2007, the Village celebrated its six-month anniversary by announcing several campaigns, including the replacement of the wood shanties with more durable structures; building a water well; engaging in local anti-gentrification and pro-housing campaigns; demanding legal rights to the land

Continues on page 7.



Victory on Barlett Street Rochester: Windom Family Get Back their Home for the Holidays after 18 year Struggle and Several Protests 2012 © Take Back the Land Rochester



Unity, Life in Umoja Village 2006 © Danny Hammontree



Kids, Life in Umoja Village 2006 © Danny Hammontree

the homeless population as a separate vulnerable group (Morrow 1999, Peek and Fothergill 2004, Paidakaki 2012), yet emergency management agencies are just beginning to incorporate the homeless into their planning. Emergency plans often fail to specify the particular needs of homeless individuals, instead categorizing their needs within the needs of all special populations. The unintended consequence of this failure to explicitly include homelessness in definitions has resulted in a denial of services (Edgington, 2009).

In order to be more effective, emergency managers should identify the homeless as a distinct vulnerable population, be aware of clustered vulnerability factors, and involve communities, service providers, and the homeless themselves at all levels of planning and response. Several government and non-government organizations are developing tools and guidelines to assist emergency managers and homeless service organizations to meet the needs of the homeless. Examples include the soon-to-be-launched Homeless Toolkit by the Veterans Emergency Management Evaluation Center (VEMEC) and the Disaster Planning for People Experiencing Homelessness Guide from the National Health Care for the Homeless Council (NHCHC). These are important tools that emergency man-

from the City of Miami; acquiring land and build low-income housing.

Just three days after its anniversary, an unexplained fire burned Umoja Village down to the ground. There were no casualties or injuries, although Miami police arrested 11 residents and activists for attempting to remain on the land. The city erected a barbed wire fence around the property that same day.

In response, Take Back the Land regrouped and initiated a bold campaign, which sparked a national movement that is still active today. The group “liberates” vacant government owned and foreclosed homes in Miami and moves homeless families into them. In addition, the organization wages so-called eviction defenses by physically blockading homes to prevent police from evicting families.

Rameau felt encouraged to continue his fight against homelessness.

“Umoja Village challenged our sense of what was possible here,” he said in a 2011 interview with *Miami New Times*. “People realized you don’t have to ask the government to change—you can force it to change” (Elfrink 2011).

Rameau isn’t concerned about the fact that Take Back the Land is basically promoting illegal squatting. “Take Back the Land’s primary concern is not with what is legal or illegal, but what is moral and immoral,” Rameau said during an interview on PBS. “And we think it is immoral to have vacant homes on one side of the street and homeless people with nowhere to live on the other” (PBS 2009).

At the time of the Pottinger agreement there were roughly 8,000 sheltered and unsheltered homeless in Miami-Dade County. This number has decreased to 4,152 today, partially due to improved economic conditions but also to local efforts supported by the state. The county is making progress, but, as the numbers show, there is still a lot of work to be done.

Taking Back the Land activists promised not to back off from its campaigns until homelessness in the United States is eradicated.

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Max Rameau, US HUD Take Over Town Hall 2007 © Miami Workers Center

agers can use to plan for the needs of people experiencing homelessness in their communities.

While I argue that the homeless are a vulnerable population that emergency managers should be prepared to serve, my research has also found that many homeless people have developed strategies to protect themselves and their property from severe and inclement weather. Moreover, homeless shelters and their guests can be assets to their communities during crisis.

Resilience and resourcefulness

To be homeless means that one is fully exposed to the elements and, as such, homeless individuals are among the most vulnerable people in our society. I have learned through my research that weather events that someone with a house might consider a nuisance can be a major concern for those experiencing homelessness. For instance, extreme temperatures and rainy days can prevent homeless individuals from accessing services, food, and even finding adequate shelter. As one of my participants, Tony, explained to me, “When it’s raining out, you can’t move around as much, ya know what I mean? You might have to not eat that day.”

For the above reasons, it is clear the homeless population should be considered as a specific group vulnerable to the impact of disasters. But belonging to a vulnerable group doesn’t mean individuals can’t be resilient. In fact, I found that people experiencing homelessness can be skilled risk managers—they are able to assess situations and make decisions quickly to protect themselves and their property. They use social networks to find temporary shelter; locate safe public spaces, such as libraries or shopping malls, when emergency shelter is not available; and take steps to fortify their campsites from wind and rain. The quotes below demonstrate some of the ways that my participants assess and mitigate risks associated with natural hazards:

“You don’t wanna be down a hill. Ya’ know what I mean? You wanna be higher up. You know? You don’t wanna be



Eddie Windom-Bey Celebrates his Sweet Victory after a Successful Eviction Defense 2013 © Take Back the Land Rochester

in a ravine or anything like that... I’ve been doin’ this for about three years now so I’m a little bit smart about it... you gotta just pick the right spots... I [also] take the tarp and I drape it over the top of the tent and kinda put it on an angle so the rain goes in a certain direction...when it hits.” – Tony

“You can do what’s called ditching your tent you just ... take your camp shovel which you have to have, or around here you can just dig with your hands and get most of the sand. But, I don’t know, you dig a small ditch along the side of your tent and you pile up what you took from the inside. That’ll protect from a lot of incoming water.” – Frank

Even while they manage the daily hardships of lack of shelter, homeless individuals can be assets to their communities during disasters, as well. In my study of the effects of Hurricane Sandy on the homeless in New Jersey, I looked at two homeless shelters—the Hoboken Shelter and the Atlantic City Rescue Mission. I learned that both the shelters and their guests played important roles in the disaster response by receiving, processing, and distributing donated items almost immediately after the storm passed.

Additionally, some of the guests in the Hoboken shelter regularly volunteered—in non-disaster situations—in the shelter kitchen, serving more than 500 meals a day to the hungry. These guests transferred those skills to the response efforts in Hoboken, where they volunteered with the Red Cross to feed those displaced by the storm. Participants who were part of this group of volunteers spoke of their work with pride, noting that it was rewarding to help their neighbors in crisis. In Atlantic City, pre-disaster homeless worked for FEMA to process claims by storm victims in their community.

Although the shelters and their guests helped their communities respond to and recover from Sandy’s impact, they were not previously included in local emergency plans. Since the storm, however, representatives from both

the Hoboken Shelter and the Atlantic City Rescue Mission have served on local long-term recovery boards.

Conclusion

Historically our emphasis in research and practice has been on how housed populations prepare for, respond to, and recover from disasters. This approach is largely pragmatic. Major disasters can leave thousands of people homeless in an instant. In recent years however, a growing number of researchers (and service providers) have recognized the importance of understanding and preparing for the individual access and functional needs of homeless populations during disasters. Because much of their research is largely exploratory, we are often left with more questions than answers.

My research has pointed toward what seems like an unlikely conclusion—that the homeless are both vulnerable and resilient to hazards. They can be both in need and beneficial in recovery. My hunch is that this paradox is not new and can probably be found in all vulnerable populations. After all, the skills needed to navigate society as a member of a vulnerable population, apply to situations when “normal” society becomes vulnerable. Which is why they can be physically vulnerable, yet individually resilient.

I encourage practitioners to include the homeless in their planning processes. Emergency managers can reach out to local coalitions for the homeless and community-based organizations to begin to understand the context of homelessness in their communities. Equally important, though, would be for emergency managers to work directly with the homeless to identify their specific access and functional needs—and also to understand how their skills might be integrated into response efforts. Ultimately, we may not be able to solve the social problem of homelessness. However, as a community of researchers and practitioners, we can certainly find ways to make life safer for the exposed members of our society and capitalize on their expertise.

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Author

MARC SETTEMBRINO is a community sociologist who studies social inequality within the context of disaster. His research has examined how people experiencing homelessness and homeless service providers prepare for, experience, and recover from disasters. Findings from these stud-

ies will appear in future issues of the *International Journal of Mass Emergencies and Disasters* and the *Journal of Emergency Management*. His recent work includes a study on the relationship between sexual orientation, gender identity, and hurricane risk perception and preparedness, and a community vulnerability assessment of Tangipahoa Parish, Louisiana. He received his PhD in Sociology from the University of Central Florida in 2013 and also holds MA and BA degrees in Sociology from the University of South Florida. He is currently Assistant Professor of Sociology at Southeastern Louisiana University where he teaches courses on social inequality, globalization, disaster vulnerability, and research methods. This summer he will offer a study abroad course in Cuba to study globalization, disasters, and resilience. Please e-mail him for more information about his research, or to join him in Cuba: Marc.Settembrino@selu.edu



“Every day is a disaster”

Understanding the Challenges Faced by Homeless Service Organizations in Disaster Planning and Response

Pic 1. Homeless in Colorado 2013 © Jeffrey Beal

By Jamie Vickery

ON THE DAYS OF September 11 through September 15, 2013, multiple counties along the Colorado Front Range experienced unprecedented rainfall that resulted in substantial flooding and pockets of devastation outside of designated flood plain zones. Those floods constituted the largest disaster in Colorado’s history, taking the lives of ten people and leaving thousands displaced. The floods washed away streets, soaked basements in muddy, sandy, and even toxic waters, and dramatically changed landscapes. The physical destruction was glaring; many people lost their homes and cars, and several Colorado trails and parks were substantially damaged (pic 2).

Perhaps not as widely mentioned as the floods’ economic and physical destruction were the effects of the disaster on one of the state’s most vulnerable populations. Many pre-disaster homeless persons in Colorado lost their campsites, clothes, tents, identification cards, medicine, and a number of other belongings critical to their day-to-day lives. While their losses were not as economically significant as those of their housed counterparts, they still suffered a devastating loss of materials and psychological wellbeing. As a result, homeless service organizations expanded their roles to address homeless individuals’ heightened levels of need.

As a sociologist interested in the social causes and effects of disasters, my research focuses on the flood experiences of homeless individuals—and the organizations that serve them—following the 2013 floods (Vickery 2015). This article takes a more narrow focus in discussing the challenges faced by homeless-service organizations in Boulder, Colorado, in preparing for and responding to the floods. In doing so, I call attention to the larger social conditions that strain nonprofit and community-based organizations, making them unable to adequately prepare for, respond to, and recover from disaster.

Boulder, Colorado

Boulder County was one of the most heavily affected

counties in Colorado during the floods, with four deaths, over 200 homes destroyed, and an expected \$217 million in flood recovery costs over the ensuing five years (Boulder County 2015). The city of Boulder, and Boulder County more broadly, also comprise a significant homeless population; roughly 20 homeless-service organizations, initiatives, and shelters in the area work with more than 2,500 clients a year.

Through several interviews with staff, public officials in Boulder, and homeless individuals, I gained critical insights into how homeless persons and local homeless-service organizations experienced disaster. Most importantly, I am able to highlight the difficulties experienced by a subset of the population that often has no voice and is largely overlooked in both scholarship and emergency-management practice.

The floods in Boulder illustrate the difficulties posed during disaster for unsheltered homeless individuals and the organizations that serve them. However, these local experiences cannot be understood without acknowledging the social and environmental conditions that contribute to increasingly utilized and under-resourced homeless-service providers. Client base vulnerability, climate change, and a growing reliance on social-service organizations to meet basic human needs should be taken into account when trying to understand how organizations are exposed to disaster, and how they can effectively prepare for disaster.

Vulnerability of the homeless

Vulnerability is a state or characteristic that makes an individual or group more likely to experience negative effects from exposure to adverse conditions and influences one’s ability to anticipate, manage, and recover from disasters (Wisner et al. 2004). Extremely poor people are especially vulnerable due to a lack of material and social resources necessary to effectively prepare for, respond to, and recover



Pic 2. Popular recreational area along Boulder Creek, September 14th, 2015.
© Jamie Vickery



Pic 3. Comparison picture of Boulder Creek near the city's public library taken on September 14th, 2013 (left), and nearly a year after on August 13th, 2014 (right).
© Jamie Vickery

er from disaster (Fothergill and Peek 2004). Homeless individuals often lack income, resource networks, access to transportation, and political influence (Elvrum and Wong 2012). Mental illness, physical disability, alcoholism and drug abuse are also prevalent among the homeless (Walters et al. 2014). While not overlooking the resilience of homeless individuals, these factors intensify the challenges posed by natural disasters and may make it increasingly difficult for these individuals to successfully manage the effects of disaster.

The stigma of homelessness further intensifies homeless individuals' vulnerability. Sociologist Kai Erikson argues that the homeless are often viewed and treated as something "less than human" or as a public nuisance (Erikson 1995). As a result, homeless people may be less likely to seek shelter or aid during disasters. During the 2013 Colorado Floods, several homeless individuals were initially turned away from a Red Cross shelter because they lacked a home address—despite being in dangerous conditions and having lost shelter and belongings (Meltzer 2013). A staff member at a local homeless service organization reflected on the incident: "They told us they could come over [to the public disaster shelter]. We gave them bus passes to go over there and they wouldn't take them. They treated the homeless really, really bad... Just because they're homeless doesn't mean they don't count."

During the floods, staff from homeless-service organizations in Boulder County discussed being much more than service providers; they are also advocates for their clients. This role was particularly evident when the aforementioned public disaster shelter initially turned away homeless individuals. Homeless-service providers had to step in on behalf of the homeless community to guarantee their access to the resources offered to other "housed" survivors. Many of my interviewees expressed their frustration over the event and called for broader public attention to the view that disenfranchised groups are more than solely a nonprofit concern. As one participant explains, "it shouldn't just be nonprofits worrying about the poor and

the physically frail ... the vulnerable."¹

The wooded areas along the creek shown above (pic 3) are known camping locations for the homeless community. Here, they dry out their clothes, wash supplies, and rest. The floods damaged many areas along Boulder Creek, and some individuals are still displaced from their former camping grounds to this day, partly because landscape changes and city ordinances keep them out of these areas. Lacking access to camping and recreational areas along the creek and close to downtown Boulder, many individuals have been pushed further outside of their community and into more risky environments in the mountains. In addition to hindering access to familiar campsites, the floods also continue to have a negative effect on the already limited affordable housing market in the Boulder area, which further limits homeless individuals from finding and acquiring stable housing (Wallace 2013).

Fortunately, homeless-service organizations in Boulder did not experience a dramatic long-term increase in clientele following the floods. However, their roles as basic-needs service providers were strained during the disaster, as they were called upon to assist with recovery-related services for their clients, such as distributing vouchers for clothes and food, replacing lost belongings, and acting as a mediator between some clients and FEMA. Homeless individuals who were typically self-sufficient before the floods, such as those who opted to camp instead of seeking emergency shelter, needed assistance from homeless service organization after the disaster. One homeless shelter in Boulder had to open its emergency sheltering services earlier than anticipated as a result of the floods, despite the

¹ At the time, emergency shelters in Boulder were either not open, experienced damage, or were not resourced enough to take in additional clients outside of the winter sheltering season (e.g., funds for resources and staffing). Further, some staff members experienced flood damage and/or were unable to commute. It was a challenge for many organizations to find the staff and resources needed to shelter and provide services to the homeless community.



fact that they initially did not have the money or other resources to provide adequate staffing and services to their clients.

Furthermore, the ability of homeless-service organizations to prepare for disaster was severely hampered due in large part to a lack of resources—time, money, and staffing.

A frayed “safety net”

U.S. nonprofit and community-based organizations act as safety nets for vulnerable populations in many ways, including food and rental assistance, career training, and health services (Ritchie et al. 2010). Yet, because of growing rates of extreme poverty, income inequality, lack of access to jobs that offer a living wage, and cutbacks in federal and state funded programs, these organizations have struggled to keep up with increasing demand (Belsie 2015; Shaefer and Edin 2014; Tierney 2013; Williams 2010). As a result, safety-net organizations face challenges in effectively preparing for, responding to, and recovering from a disaster event. This, in turn, may increase the vulnerability of low-income and homeless individuals who depend on them. For example, in meeting with homeless service providers in Boulder following the 2013 floods, many providers stated that disaster planning was low on their organization’s list of concerns. “Everyday is a disaster,” some said. With limited resources, their efforts center on addressing basic day-to-day needs, such as case management, food distribution, and emergency shelter.

Climate change: making matters worse

The problem of disaster under preparedness among the homeless and homeless-service providers will only become more critical in the future, as climate change will cause more frequent disasters and magnify hazards. Climate change is an evolving “threat multiplier” that will result in many environmental and socio-demographic changes (Furr 2011). For example, as sea levels rise, coast-

al communities are increasingly threatened by changing weather patterns that may intensify droughts, wildfires, rainfall, heat and severe storms. These phenomena will increase the risks faced by unsheltered homeless individuals who may not be able to escape the harmful effects of rising heat levels and poor air quality (Ramin and Svoboda 2009).

A better understanding of the disaster vulnerability of homeless populations, and the organizations that serve them, is essential for effective disaster planning. Even so, emergency management plans often neglect the unique vulnerabilities of the homeless. As both governments and organizations begin to plan for future extreme events, which are expected to increase with climate change, consideration of homeless individuals will yield more inclusive and comprehensive protection for this uniquely vulnerable population.

Preparedness recommendations

I gained many valuable insights and recommendations from homeless service organizations and homeless individuals who experienced the 2013 floods. These recommendations may be useful for other community-based and nonprofit organizations providing critical social services, and they are meant to complement preexisting organizational preparedness recommendations offered at local, state, and federal levels.

Nonprofit and community-based organizations must open lines of communication with one another about how they will mobilize and coordinate in a disaster event, especially if they provide overlaps in services and/or serve similar client bases. The preexisting connections between homeless-service organizations were helpful during and after the floods in identifying clients’ unmet needs and eventually finding sources of shelter for the homeless community. Any efforts to streamline response and recovery services will benefit recipients of aid and the organizations



Pic 4. Homeless man asleep near 13th street in Boulder 2005 © MGG

themselves as they find ways to capitalize on resources available in their social service network.

Homeless-service providers should note areas where homeless people commonly congregate in their local communities. Fliers, phone calls, and verbal announcements about where to go for resources during and following a disaster at these locations are critical in order to get the word out to homeless individuals who may not have access to other means of communication. The organizations must also create or build upon meaningful connections with key members of the homeless community in order to identify gatekeepers who will likely have influence and the ability to communicate effectively to various members of the community. Such individuals were crucial during the 2013 floods in that they were able to relay information from service organizations to other homeless individuals (and vis-à-vis) about where to seek shelter and access resources.

While this research is focused on the experiences of homeless-service providers in Boulder, Colorado, the findings speak to some of the difficulties imposed upon other community-based and nonprofit organizations elsewhere in preparing for, responding to, and recovering from disasters. Underfunded and overburdened nonprofit and community-based social service organizations, such as homeless shelters and mental health organizations, are often ill-equipped during disasters to effectively aid those most vulnerable, despite a growing need for their services (Ritchie et al. 2010; Tierney 2013). Research on community-based and nonprofit organizations' ability to effectively manage risk and response to hazards and disasters is especially pertinent as FEMA continues to stress the importance of a whole community approach to emergency management (FEMA 2015).

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SKID ROW REALIZATIONS

Planning for Homeless Individuals
During Disasters

By June L. Gin

Skid Row 2007 © Abhijit Patil

WHEN I FIRST MOVED to Los Angeles in 2011 to become a researcher with the Veterans Emergency Management Evaluation Center (VEMEC), little did I know, that I would be conducting field research in Skid Row, home to the nation's largest concentration of unsheltered homeless. Unsheltered homeless populations live outdoors and so are among one of the most at-risk groups during disasters and face imminent physical danger during storms, wildfires, and extreme temperature events. Adding to the problem is the fact that rates of mental and physical disabilities and substance dependency are high among the homeless, heightening the challenges they face during and after disasters. Despite these compounded risks, homeless individuals' distinct needs are often overlooked in disaster planning, response, and recovery. And that's not all—these vulnerable individuals have often been barred from accessing benefits intended for victims of disaster displacement, including disaster shelters.

Our research team at VEMEC first learned of the exclusion of homeless populations from disaster relief and recovery resources during a panel at our 2011 Department of Veterans Affairs' Comprehensive Emergency Management Program Evaluation and Research Conference. We

heard stories of emergency managers answering calls from homeless people stranded outdoors in Florida during Hurricane Jeanne in 2004 and being trapped in flooded encampments during flash flooding in Tennessee. Moved by these stories, the VEMEC team joined with the U.S. Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response (ASPR) to begin discussing solutions and approaches to address this issue with experts in the field of homelessness and emergency management. In the past four years, we have collected tools, best practices, guidelines, and resources to help providers of health care and social services collaborate effectively with emergency managers and disaster relief providers and ensure that homeless populations and their needs are included in disaster planning¹.

These efforts culminated in the creation of a Toolkit for Integrating Homeless Populations into Disaster Preparedness, Response, and Recovery, which will be released to the public in January 2016.

¹ In creating the toolkit, the VEMEC team has worked with ASPR's At-Risk Populations, Behavioral Health and Community Resilience Division (ABC) and the U.S. Department of Housing and Urban Development's (HUD) Special Needs Assistance Program (SNAPS) Office

Faced with the reality of homelessness

While I could have learned about homelessness and its impact on disaster vulnerability anywhere in the United States, living in the city of Los Angeles—with its thousands of homeless individuals living in tents, cars, and makeshift shacks—has afforded me unique insights into the daily challenges homeless individuals face.

The harsh reality of homeless people's daily lives became especially clear when I volunteered for the biannual 2013 Point-in-Time (PIT) homeless count² on L.A.'s skid row, a 54-block area of downtown L.A. My research had already taken me to the area's social service organizations, where I interviewed leaders and staff, so I wasn't a stranger to the conditions in which people lived. I had seen the sidewalks covered with tents, tarps, and mattresses and the shopping carts filled with residents' possessions. But I had yet to learn the lessons that the survey, which would bring me closer to my homeless neighbors than I'd ever been, would reveal.

From 8 p.m. to midnight on three nights in January, I joined several thousand of my fellow Angelinos in braving the cold (by California standards) temperatures to administer the PIT count survey. PIT count organizers had assigned us areas of homeless sidewalk encampments to survey. Our goal was documenting respondents' names, taking photos, and examining their needs so that homeless service organizations could provide outreach and assistance to them in the future.

Volunteering for the PIT count was an amazing and humbling experience. Our team was headed by a veteran who worked as a drug counselor at a skid row organization. The desolate streets were lined with warehouses and abandoned buildings. Rats startled us as they scampered along the rough concrete while we walked the two blocks to our survey site. I realized there was no way I could survive sleeping on these streets for even a single night without being depressed or frightened.

Several of those surveyed were veterans—even some of my fellow surveyors were homeless veterans trying to help others. The first night, we met a veteran who has been sleeping on the skid row streets for more than 20 years. The second night he recognized us and came over. By then, we had VA outreach forms that enabled us to connect veterans with available services. We were also accompanied by Vet Hunters, a non-profit organization located in South El Monte, California, that helps homeless veterans obtain housing and other services.

The founder of Vet Hunters, Joe Leal, was part of our team that night. Leal showed the veteran the VA form and asked him about his situation: "How long have you been homeless?" Leal asked. The veteran let out an audible sigh in response and said nothing else. Leal repeated the sigh, saying, "When I hear that, that tells me you've been out

here for years." "I've been out here half my life," the veteran responded.

Leal gave him shoes and socks—a much appreciated gift—and asked him whether he had ever gone to the VA for health care or housing assistance. The veteran explained that the last time he was at the VA was five years ago and hadn't heard of their housing programs. We tried to get him to fill out the VA form, but he said, "I don't have time. I've got to get back to my spot before someone else takes it."

As he departed, Leal said, "That's okay. At least we've got his name. We'll come back on our own time and look for him again. And we got him some shoes and socks."

As a disaster researcher, I thought of the lessons I learned from that brief conversation. First, things that we take for granted—shoes and socks—are items vital for survival for individuals experiencing homelessness. Second, since he had previously made use of the VA we knew he was eligible for VA health care, and possibly for VA housing as-

**Things that we take for granted—
shoes and socks—are items vital for
survival for individuals
experiencing homelessness.**

sistance and other benefits that could help economically disadvantaged veterans recover from disaster. This led me to realize that in a disaster, it would be valuable for a case manager to ask about veteran status. Third, outreach to homeless individuals is a tougher job than it appears because of the everyday challenges they face on the streets. Although we would like to think of it as a simple matter of filling out a form that only takes a few minutes, the homeless veteran engaged in a cost-benefit analysis of weighing the risk of losing his bed or tent spot for the night—a loss that could have devastating consequences to his health, safety, and survival. It's important to remember this perspective. In disaster planning, similar oversights can easily occur if we don't include those who are familiar with the daily routines of homeless people when key decisions are made.

Besides gaining insights into the reality of homelessness, I also volunteered for the PIT count because I wanted to help collect the data that decision makers use to create policies concerning the homeless. This data helps identify trends that cause planners to think more specifically about the needs of the homeless. In turn, while developing the Toolkit, knowing the trends in homelessness helped us identify subpopulations of homeless individuals—for instance, people with disabilities, or people with who might not evacuate without their pets—and consider their needs as we developed guidance for emergency planners.

Disaster risk

The increasing homeless population in LA County is an especially worrying trend. Driven by soaring rents, low

² The U.S. Department of Housing and Urban Development (HUD) requires all Continuums of Care—local planning bodies that coordinate all homelessness services in a community—to conduct a Point-in-Time (PIT) count of unsheltered homeless persons every other year (odd numbered years)



Gin with her group at the Skid Row Homeless Count © June Gin

wages, and high unemployment, the number of homeless grew 12 percent from 39,463 to 44,359 in the past two years. The unsheltered segment of this population (31,018) has increased an astounding 23 percent since the 2013 PIT Count (LAHSA 2015). This trend underscores the urgency and importance of creating local disaster response plans that include the needs and circumstances of the homeless.

Planners, should consider, for example, that unsheltered individuals (like the veteran I met on skid row) might be reluctant to evacuate because they risk of losing a sleeping space or possessions. It should be recognized that they have a more difficult time being prepared, because they might not be able to stockpile supplies or take other measures to protect themselves during disaster. Nor do they always have access to computers, newspapers, and televisions where they can get disaster warnings (Edgington 2014). Trust can also be an issue—individuals who are undocumented, who struggle with addiction or mental health problems, or who have a history of incarceration might not trust the authorities who deliver disaster information.

Even those individuals who actively seek help often don't receive it, or receive it too late. There are many examples of homeless individuals being denied access to disaster resources. The Federal Emergency Management Agency declared homeless people ineligible for disaster relief and housing assistance (Tierney 2007; Phillips 1989) during the 1989 Loma Prieta earthquake in California. There are multiple examples of the homeless being turned away from disaster shelters—in the Loma Prieta quake, during Hurricane Andrew in 1992, and most recently during Superstorm Sandy in 2012. Instead, these individuals are steered toward existing homeless shelters, even though the disaster-specific shelters provide more comprehensive services (i.e. remaining open around the clock and offering three meals a day).

Similarly, the pre-disaster homeless individuals were denied entry to American Red Cross disaster shelters during the 2013 Colorado Floods until Red Cross officials instructed volunteers not to deny entry to anyone based on housing status (Vickery 2014). During severe storms in 2014 in Pensacola, Florida, Red Cross and FEMA damage assessments initially overlooked the damage that homeless en-



Homeless Veteran © VEMEC/Shutterstock

campments had sustained. It wasn't until two weeks later that encampment residents found their way to FEMA officials and received much needed aid (Adamo 2014).

Simply living outdoors poses a separate set of physical risks in disasters. The unsheltered homeless are especially susceptible to extreme weather events, such as temperature extremes, storms, floods, and wildfires, which are likely to become more frequent with climate change (Brodie and Svoboda 2009). Homeless encampments frequently flood because they tend to be located in low-lying areas where the land is less desirable land and more likely to be vacant. For example, in December 2014, LA firefighters rescued a homeless couple who lived on the banks of the LA river when unexpected rainstorms caused the water to swell and surge. It took an elite swift water rescue team two hours to bring the husband and wife to safety (Klein and Klemack 2014).

Given that these factors increase disaster vulnerability, homeless individuals need extra assistance from community-based organizations, disaster relief providers, and government agencies. Communities, however, are not always well prepared to address their needs. The homeless are often excluded from relief efforts after disasters, thanks at least in part to poor pre-event planning and a lack of coordination and resources.

But there is hope. Awareness is growing, and more and more communities around the country are developing initiatives to address disaster needs of people experiencing homelessness. Solutions include improving coordination and communication between community organizations, local emergency management agencies, disaster relief organizations, and healthcare providers. In L.A., homeless service providers worked with the Los Angeles Police Department to create the Skid Row Interagency Disaster Plan that ensures organizations providing shelter, housing, and meals are able to work together and communicate with city emergency responders during an event.

The Toolkit

Since 2011, VEMEC team has worked with federal partners to identify successful local initiatives and launch a national conversation about how to ensure that other communities

will follow suit. Together we identified three areas with the greatest need for improvement:

- Coordination and Communications
- Technical Assistance and Training for CBOs
- Guidance for Health Care Providers

We invited experts to speak about solutions and next steps at a 2013 Workshop to Integrate Homeless Populations into Disaster Preparedness, Planning and Response. Based on their feedback, ASPR and VEMEC decided to develop a Toolkit aimed at practitioners—emergency managers, disaster professionals, community-based service providers, and healthcare providers—to help them plan, prepare, and work together to care for homeless populations during disasters.

We formed workgroups around the three priority areas. ASPR led the workgroup that developed guidance for health care providers, and the HUD SNAPS office, along with VEMEC, wrote guidelines and recommendations to improve coordination and communication between sectors, including public health departments, CBOs, and local emergency managers who all have a stake in caring for homeless populations during disasters. I worked with partners to identify existing best practices in technical assistance and training aimed at helping CBOs prepare and develop Continuity of Operations³ plans.

Our three workgroups began with a literature review, but quickly found a lack of written material when we looked for recommendations about how disaster-care for homeless populations could be improved. Undeterred, we turned to experts for further guidance. The ASPR team collaborated with a group of experts that included health care providers, researchers, federal grants administrators, emergency managers, and public health officials. The SNAPS and VEMEC teams interviewed more than 30 state and local emergency managers, executive directors and staff at CBO providers, and members of the Voluntary Organizations Active in Disasters (VOAD). We spoke to founders of innovative community initiatives including L.A.'s Skid Row Interagency Disaster Collaborative.

The Toolkit will be released to the public in January 2016. As we disseminate this living document to emergency managers, service providers, and healthcare providers nationwide, we hope to hear about and incorporate other ways communities have integrated homeless populations in disaster planning. We invite practitioners, policymakers, and researchers to share their experiences and contribute their knowledge to this emerging field. Next, we intend to translate the Toolkit into a web-based training program. We believe the Toolkit will offer communities across the country a menu of ideas for including the homeless in their own disaster preparedness, response, and recovery plans.

³ A Continuity of Operations Plan (COOP) is a document that an agency or organization uses to ensure that its most critical functions can continue to be performed during emergencies, and resume after disruption. While it is often a government document, disaster planners note that non-profit organizations should also have COOPs.

Conclusion

When I heard about homeless people having to be rescued from the raging floodwaters of the L.A. River, I think of the homeless veteran that night on skid row who couldn't afford to stay another minute to complete paperwork that might lead to housing after two decades on the streets. People like him will continue to make choices shaped by the reality of daily survival—choices that may increase their disaster vulnerability or delay their disaster recovery. These individuals will continue to be vulnerable to disasters until we are able to end homelessness.

Until then, the Toolkit builds these lessons. As one emergency manager framed it: "The population you don't plan for before a disaster is the population that will exhaust 90 percent of your resources during a disaster." This lesson was not lost on the team of firefighters who risked their own lives rescuing the homeless couple from the river. The Toolkit, which outlines ways that emergency managers can improve risk communication to homeless individuals and work closely with homeless service agencies, offers ideas to help communities avert such harrowing events and future tragedies. Until we are able to end homelessness in the US, communities will need these and other lessons to help their homeless neighbors weather the dangers of disasters and rebuild their lives afterwards.

Homeless Veteran © VEMEC/Shutterstock



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Previously, Gin served as community research and outreach manager at the Bay Area Preparedness Initiative (BayPrep), a joint initiative of the Fritz Institute and San Francisco Community Agencies Responding to Disasters (SF CARD), and community partners. She piloted a program to enhance the disaster preparedness of safety-net providers for vulnerable populations, including homeless, elderly, and special-needs populations, and people in poverty, facilitating their ability to attain preparedness standards. Gin received her PhD in Environmental Sociology from the University of Michigan School of Natural Resources and Environment. Her doctoral fieldwork involved ethnographic interviews and participant observation with community organizations representing vulnerable populations in San Francisco and Oakland, CA. She holds an MA in Public Policy from Claremont Graduate University and a BS in Environmental Policy Analysis and Planning from UC Davis.



Call for Submissions

The *Observer* invites readers to submit items of interest for publication in upcoming issues. The *Observer* is undergoing a makeover and many more exciting changes are in the pipeline. Throughout this process we would love to hear from you. All comments and suggestions are welcome.

Our mission is to close the gap between scientists, policy makers, and practitioners by providing coverage of disaster issues, recent disaster management and education programs, hazards research, political and policy developments, resources and Web sites, upcoming conferences, and recent publications. We are looking for papers and field reports that help narrow the aforementioned divide. In addition we are looking for book reviews that contribute to the debates and discussions in the field of disaster research.

The deadline for the next issue of the *Observer* is January 1, 2016.

Please send items of interest to
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Guiding Research Collaborations:

LESSONS FROM CHRISTCHURCH

By Julia Becker and David Johnston

A MAGNITUDE 7.1 EARTHQUAKE shook Darfield, a rural area of Canterbury, on September 4, 2010 at 4:35 a.m. The nearby city of Christchurch, New Zealand's second largest city, was also impacted by the tremor. Overall, damage was moderate—ground shaking and associated liquefaction caused damage to unreinforced buildings and infrastructure, such as road, rail, water and wastewater systems and communications (Potter et al., 2015). There were few serious injuries and no deaths. The Darfield Earthquake was followed by protracted aftershocks, the most damaging of which was a magnitude 6.3 on February 22, 2011. This aftershock was much closer to Christchurch and caused the collapse of two multi-story buildings and numerous other unreinforced structures. A total of 185 people were killed and another 200 were seriously injured.

The September quake set off a flurry of research activity. Through our roles in the Natural Hazards Platform¹ we helped coordinate the many researchers coming to study the earthquake. In large-scale events, research collaborations can save time and energy and minimize disruption in the community—but such collaborations are better planned for in advance of events and their agendas must include practitioners and community needs.

Five years after the earthquake, this article looks back on the social science research environment after the occur-

rence of the Darfield and Christchurch earthquakes. We consider what arrangements worked best for researchers during this time and what lessons can be learned for research response to future disasters.

A coordinated approach to research

Discussions about what social science research to undertake—and who should undertake it—began almost immediately after the September quake and continued for more than a week. Disaster researchers from New Zealand were among the first to have these discussions and organize research projects related to the earthquakes. Those who had previously worked in the Canterbury area were best positioned to organize and conduct post-earthquake research, since they had established relationships with relevant organizations and the public.

Other researchers were also interested in studying the event. These included local researchers (e.g. from Canterbury, Lincoln, and Otago universities, as well as local non-governmental agencies) whose communities had been affected and who, therefore, had a stake in recovery². Additionally, international disaster scholars wanted to study the Canterbury quakes.

Given the widespread and varied interest, we realized that a coordinated approach to research was necessary to ensure research topics were identified and communicated, repetitive studies were limited, and research results were easily accessible to local agencies.

To achieve this, we created a basic electronic spreadsheet of projects being conducted by members of the Natural

¹ We, both social science researchers, work for the Joint Centre for Disaster Research at GNS Science, a New Zealand research organization that focuses on, among other things, natural hazards; and Massey University. Our organizations belong to the Natural Hazards Research Platform, which was set up in 2009 to coordinate hazards research in New Zealand and to help research providers and end-users work more closely together. The Platform is organized into five themes, one of which is Societal Resilience (Social Sciences) led by David. Within this structure, researchers—with David as theme leader—developed an approach to coordinate and manage social science research into the Darfield earthquake.

² The local element was especially important, since research participants seemed more engaged with researchers that had experienced the disaster and could understand how they felt.

Hazards Research Platform and their colleagues, as well as research gaps that practitioners wanted filled. We then formed working groups to address projects in four thematic areas—business and insurance sector response and recovery, community resilience, emergency response, and recovery policy and practice. These groups met by teleconference every few weeks to give updates on their projects and draw on research linkages within the working group. The approach enhanced information flow and collaboration.

This system was working very well for us, until the devastating February 22 aftershock. Researchers were asked to place all non-essential research on hold to give emergency responders a chance to manage the operational elements of the disaster and to allow the community to recover from the psychosocial impacts. After a hiatus of several months, most non-essential social science research activities resumed.

Many social science researchers studying the Canterbury earthquakes shared a strong focus of working with agencies to improve recovery outcomes. For example, the Christchurch Earthquake Recovery Authority Wellbeing Survey, which tracks recovery over time, was developed and run by a consortium of researchers and government agencies (Morgan et al. 2015). Another way researchers assisted the community was by providing support and advice on issues related to psychosocial recovery (Mooney et al. 2011). More recently, a team of researchers from GNS Science has been involved in the Christchurch Replacement District Plan process, which provides input and conducts reviews for a new local government land use plan. Participating in the recovery process generated extra work for researchers, but were also rewarding since researchers can see their work being used to improve public policy and community development.

Take-home messages

Now that five years has passed since the Darfield earthquake, it is possible to look back and see what worked in terms of our research response. First, it is clear that coordination of research around a disaster is essential. It guarantees that unnecessary duplication of research is avoided, that the best teams—including local representation—are developed to do the research, and that conflicts are managed.

WE FOUND IT WAS ESSENTIAL THAT RESEARCHERS WORK CLOSELY WITH PRACTITIONERS AND AGENCIES TO CREATE RESEARCH THAT SUPPORTS RECOVERY OUTCOMES.

We found it was essential that researchers work closely with practitioners and agencies to create research that supports recovery outcomes. Existing relationships with practitioners and the agencies involved helped with that

FRUITS OF THE CANTERBURY COLLABORATIONS

A short summary of some recently published social science studies of the Canterbury Earthquakes.

By: David Johnston

To reduce earthquake casualties in the future, it is important to understand how people behaved during and immediately after the shaking in Canterbury and how their behavior exposed them to the risk of death or injury.

Most previous studies have relied on an analysis of medical records and/or reflective interviews and questionnaire studies. In Canterbury, we were able to combine a range of methods to explore behaviors linked to earthquakes and the cause of injuries related to those behaviors.

In New Zealand, the Accident Compensation Corporation (a national health payment scheme run by the government) allowed researchers to access injury data from over 9500 people from the Darfield (4 September 2010) and Christchurch (22 February 2011) earthquakes (Johnston et al. 2014).

The injuries were analysed for demography, context of injury, causes of injury, and injury type. From the injury data inferences about the related human behavior were derived. We were able to classify the injury context as direct (immediate shaking of the primary earthquake or aftershocks causing unavoidable injuries), action (movement of person during the primary earthquake or aftershocks causing potentially avoidable injuries), and secondary (cause of injury after shaking ceased). A review of the data showed that three times as many people were injured in the Christchurch earthquake as in the Darfield earthquake (7171 vs 2256), with primary shaking causing two-thirds of the injuries from both earthquakes. This research clearly demonstrates that where people were, and the actions they took, during and after earthquakes influenced their risk of injury. Gender differences in the total numbers injured were significant and causes were varied. Further work is needed to explain the reasons for gender differences (Ardagh et al. 2015, Johnston et al. 2014).

A second study examined people's immediate responses to earthquakes in Christchurch, New Zealand and compared responses to the 2011 earthquake in Hitachi, Japan (Lindell et al. 2015).

To collect data, surveys were undertaken in both of the locations. Questions in the survey asked participants what actions they took immediately after the Christchurch and Hitachi earthquakes and explored any factors that may have influenced these actions. The data reveals notable similarities between the re-

process, but relationships still could be developed post-disaster if researchers were committed to working in the Canterbury area in the long-term.

Future disasters will undoubtedly occur, and when they do, pre-planning will greatly enhance the effectiveness of researchers that provide useful advice during response and contribute to evidence-based information for recovery. Strong pre-disaster relationships between individuals and research organization help coordinate collaboration during a disaster. Having structures in place, such as strong pre-disaster relationships between both individuals and research organizations— will speed up the coordination of collaboration during a disaster. In terms of specific structures and tools, we found setting up working groups and developing a spreadsheet of activities to be tremendously effective. These initiatives provided researchers opportunity to join together, share ideas, identify research gaps and interests, and form effective collaborations in topic areas where there was mutual interest.

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Authors

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DAVID JOHNSTON'S research has developed as part of multi-disciplinary theoretical and applied research programme, involving the collaboration of physical and social scientists from several organisations and countries. His research focuses on human responses to volcano, tsunami, earthquake and weather warnings, crisis decision-making and the role of public education and participation in building community resilience and recovery.

sponses of the populations in each city, such as fear and taking protective action. There were also some differences. Christchurch residents were more likely to drop, cover and hold than those from Hitachi and less likely to immediately evacuate buildings. However, both studies showed at-risk populations needed more education around appropriate action to take during earthquakes.

One further study has developed a systematic process and coding scheme to analyse video footage of human behavior during strong earthquake shaking (Lambie et al. 2014).

The CCTV Earthquake Behavior Coding scheme provides an alternative method to objectively identify what individuals do during earthquake shaking as well as the social and physical context that influence behavior. Preliminary results from analysis of CCTV data from the Christchurch Hospital during the 22 February event show the immediate response of most people was to hold the walls and/or other people. Very few dropped their bodies to lower positions. This study is continuing and aims to comprehensively document the range of people's actions during an earthquake.

Recommendations

From these studies a number of recommendations for injury prevention and risk communication can be made.

In general, improved building codes, strengthening buildings and securing fittings will reduce future earthquake deaths and injuries. However, the high rate of injuries received from acting inappropriately (e.g. moving around) during or immediately after an earthquake, suggests that further educative role about appropriate behavior during and after earthquakes, is needed.

In New Zealand, as in the United States and the rest of the world, public education efforts, such as the Shakeout exercise (<http://www.shakeout.govt.nz/>) are trying to address these behavioral aspects of injury prevention.

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Clockwise: Ballerina Mural by Owen Dippie, Christchurch © Jocelyn Kinghorn, Soundgarden © Jocelyn Kinghorn, Pallet Pavillion © Ewan McIntosh

A CREATIVE REBIRTH

Public Art and Community Recovery in Christchurch

By Elke Weesjes

AFTER THE FEBRUARY 2011 earthquake, the center of Christchurch, especially its central business district, looked like a war zone. Nearly five years later, although some buildings still sit crumbling, awaiting demolition or repairs, most of the city center has been rebuilt. During the reconstruction efforts that began in the immediate aftermath of the disaster, public art began to pop up all over the city. These artworks, like colorful Band-Aids, have not only covered up Christchurch's physical wounds, they have also very effectively helped communities come together and recover from psychological trauma. The grassroots artists and the support they received from government agencies also have become a model for other communities well beyond New Zealand as they heal from

natural disasters.

New Zealand, as its nickname The Shaky Isles suggests, is accustomed to earthquakes. The Southern Alps, a mountain range that forms the spine of the South Island, is one of the most visible and active examples of plate tectonics in the world. Last year alone there were a whopping 89 quakes measured at 5.0 magnitude or higher in the country as a whole (Geonet, 2015). However, few earthquakes have been as physically devastating as the 6.3-magnitude tremor that struck almost directly under the center of Christchurch, South Island's largest city, on February 22, 2011. This tremor, which killed 185 people and severely damaged the city and its surrounding suburbs, was part of a sequence of earthquakes in the district of Canterbury



Mural by Adnate © Peter Adonis

that began with the 7.1-magnitude Darfield Earthquake on September 4, 2010¹. The Canterbury Earthquake Sequence, was of greater length and intensity than any earthquake event in New Zealand's recorded history.

Community recovery

In the two years following the devastating February 2011 earthquake, 13,000 aftershocks (with a magnitude greater than 2.0) were recorded (Froggatt, 2015). Studies have shown that these aftershocks caused acute stress symptoms in already traumatized survivors and compounded the effects of the initial earthquakes (Canterbury University, 2013). Keen to address psychological disruptions, such as loss of a loved one, a job, or a home, the New Zealand government began to work on a coordinated response.

In his May 11, 2011 briefing to the Prime Minister, Chief Science Advisor Peter Gluckman argued that the recovery of Canterbury should be primarily judged in terms of people feeling that they are coping with their lives and livelihoods, rather than just in physical terms. In order to accelerate this process of mental recovery, Gluckman called for a comprehensive and effective psychosocial recovery program that emphasized resilience, community participation, and wellbeing:

"[This program] needs firstly to support the majority of the population who need some psychosocial support within the community (such as basic listening, information and community-led interventions) to allow their innate psychological resilience and coping mechanisms to come to the fore, and secondly to address the most severely affected minority by efficient referral systems and sufficient specialized care" (Gluckman 2011).

Insufficient attention to the first group, Gluckman explained, will likely increase the number represented in the second group.

In his briefing, Gluckman warned of tension between survivor's desire for an immediate response and the need for planning and risk reduction. This tension, according to Gluckman, can make survivors frustrated and angry, and it can exacerbate other symptoms, like feelings of loss and grief. To minimize this process, he called for the promo-



Mural by Rone © Jocelyn Kinghorn

tion of local empowerment and engagement by working closely in a collaborative way with the affected population. "A feeling of self-efficacy and community efficacy assist the population in reactivating their coping mechanisms," Gluckman said. "Local governance, empowerment and ownership have been shown to facilitate recovery" (Gluckman, 2011).

Gluckman's advice did not go unheeded: Helping people cope with the social and psychological impact of the earthquakes became—and continues to be—a cornerstone in the government's management of the Christchurch recovery. Immediately after his briefing, government and nongovernmental agencies began to work together to develop a layered wellbeing-support system. This system included community information hubs, a helpline for survivors, free counseling services, and All Right?—a marketing campaign launched in 2013 to support Cantabrians to improve their mental health and wellbeing (CERA).

These efforts accumulated in the Community in Mind strategy, which was approved by the New Zealand cabinet in February 2014. This strategy, targeted for greater Christchurch, set out to help communities drive their own recovery through, among other things, community engagement initiatives (CERA).

Community engagement

In the past five years, myriad community engagement initiatives in Christchurch have rebuilt and strengthened community ties, which, according to Gluckman, is vital for emotional recovery. Sometimes this engagement was limited to informing communities of decisions made by the government—for example, decisions related to land rezoning— and giving communities opportunities to better understand the implications of these decisions. Other engagement initiatives have actively sought community input to inform government decisions. The design of the Christchurch Earthquake Memorial is a good example of a project that attracted enormous community involvement. Out of 331 entries, six designs were shortlisted in an international design competition, which ran from July to August 2014. The public and a so-called First Knowledge



Public Art © Jocelyn Kinghorn



Sound Garden © Jocelyn Kinghorn

Group—bereaved families and individuals who were seriously injured from the earthquake—were asked to give feedback and advice to the Minister for Canterbury Earthquake Recovery, Gerry Brownlee, in selecting the winning design¹.

Two other engagement initiatives are worth noting. The hugely successful city-wide Share an Idea campaign was held in May 2011. It generated more than 106,000 ideas for the Christchurch City Council's planning team to consider for the design of a new city (NV Interactive). A similar, ongoing, initiative is called Let's Talk. Launched in April 2011 by the Waimakariri District Council, Let's Talk encourages community feedback and canvassed local opinions on projects related to land use in the Waimakariri District to the north of Christchurch (Waimakariri District Council).

Art and recovery

Parallel to these official initiatives to facilitate community engagement, grassroots efforts emerged with the same goal, but in this case through art. Artworks, including impromptu installations such as the Sound Garden (a garden that features plants, seating, and musical instruments made from recycled materials and junk) and a Summer Pallet Pavilion (a community center made of 3,000 wooden pallets) strengthened community ties, accelerated emotional recovery, and improved overall quality of life (Gap Filler 2015).

Both installations were initiatives of Gap Filler, a collaborative community group formed after the earthquakes to develop innovative ways to make temporary use of empty city spaces². The group's projects, created for and by the

community, were instantly popular among Christchurch's residents, who had lost their movie theaters, cafes, bars, and clubs and were in need of entertainment as well as a place to meet with peers to share stories and process trauma. Furthermore, the act of building the installations became a cathartic experience for survivors and gave them a sense of self-efficacy.

Gap Filler's whimsical response to the earthquakes triggered a grassroots movement of people who found creative ways to revitalize the city and its suburbs. The community-led project Mural Madness beautified bare walls and vacant spaces in New Brighton, a seaside suburb in Christchurch that was severely hit by the earthquakes, while the local public art project From the Ground Up did the same but then in the city (Mural Madness 2014 & Ironlak 2013).

A large-scale public art event, Christchurch Stands Tall, was another positive sign of recovery. This event, held in the summer of 2014-2015, celebrated the Christchurch that is rising up and standing tall. For 12 weeks, the city's streets, parks, and open spaces were taken over by 49 giraffes decorated by both well-known and undiscovered artists. Another 50 giraffe calves were sponsored by schools and decorated by their students. At the end of the exhibition, the large giraffes were auctioned off. The event raised more than US \$3 million for local charities, including Gap Filler (Christchurch Stands Tall 2015).

There were more striking examples of projects that meant to lift residents' spirits and help the process of emotional healing. The Temple of Christchurch project explored emotional release, healing, and closure. It followed the tradition of the Burning Man festival, where each year thousands of people build a temple on site in the Nevada desert. Participants of the festival are invited to come and bring their own pain, troubles, and trauma to be expressed on the walls and then be burnt away on the last night. In Christchurch, artist Hippathy Valentine and his team took the Burning Man concept and reimagined it to allow people to find emotional release through art and writing therapy, and to help people deal with experiences they hadn't been able to process yet. The project also facilitated com-

¹ Last May, Brownlee announced that the winning design is a marble memorial wall etched with the names of earthquake victims. Visit for more information: <http://ccdu.govt.nz/our-progress/announcements/wall-design-chosen-for-earthquake-memorial-13-may-2015>

² The Pallet Pavilion was built by volunteer power over 6 weeks in late 2012, it was deconstructed early 2014. The Sound Garden opened in October 2013 and, after a short hiatus, is back up and running on 100 Peterborough Street. (<http://www.gapfiller.org.nz>)



Christchurch Stands Tall © Christchurch City Library



Temple of Christchurch © Jocelyn Kinghorn



Christchurch Stands Tall © Christchurch Stands Tall

munal dialogue over a common experience through reading what other people had written (Life in Vacant Spaces 2013).

These creative grassroots responses to Christchurch's tragedy inspired more formal institutions to follow suit. For example, the Christchurch Art Gallery, the city's pre-eminent art institution, was also driven to the streets, albeit out of necessity. Because the Gallery has been closed since February 2013, its curators decided to take art out onto the streets with its Outer Spaces program, which continues to exhibit new works of art across the city (Boosted 2013). Through this program, the Gallery wants to ensure that Christchurch's creative community stays in the city. By commissioning murals on walls across town, Outer Spaces provides work for artists who lost their studios (Bergman 2014).

Individual artists also have contributed to the city's emotional recovery. In 2012 Peter Majendie created an installation, *Reflection of Loss of Lives, Livelihoods and Living in Neighborhood*, in the heart of Christchurch. Where a church once stood⁴, 185 distinct white chairs each represent a life lost. The installation, which was immediately dubbed Christchurch's unofficial earthquake memorial, sits on 185 square meters (2,000 square feet) of grass, representing new growth and regeneration (Boyd 2012). As with other official initiatives that are generally slowed down by red tape, it took five years before the design of the official earthquake memorial was chosen. Majendie, on the other hand, recognized the immediate need for a place where survivors and bereaved families can commemorate

the lives lost. In an interview with news Web site *Stuff*, Majendie said the installation has served a useful purpose in lieu of an official memorial. "I think the chairs thing has been quite a tangible help to the grieving process," he said. (Mann, 2015).

Antony Gormley also contributed a commemorative piece of art. This world-renowned British sculptor, who was commissioned by the Christchurch City Council Public Art Advisory Group, created two identical sculptures to commemorate the earthquake. One was recently placed mid-current in the Ōtākaro Avon River, offering a point of reflection and contemplation in a natural environment. The second figure will be installed in the Northern Quadrangle of the Arts Centre of Christchurch in early 2016 in celebration of the site's restoration and the resilience of the people of Christchurch. In an interview with news Web site *Press*, Gormley said he wanted the sculptures to play a part in Christchurch's healing process: "I believe in the therapeutic potential of art," he said. "In objectifying a moment of pleasure or pain it can release us from the pull or continued return, whether of addiction or depression. The challenge (in the case of Christchurch) was to find both a location and a language to carry this potential. I wanted to make something that was in recognition of a traumatic change, but which could also take some part in its healing" (Gates, 2015).

A creative model of recovery

The explosion of creativity after the February 2011 earthquake has surprised many people and has prompted accolades from the national arts community. Stephen Wainwright, chief executive of Creative New Zealand, the national arts development agency of the New Zealand government, told *Stuff* that Christchurch "has been blessed by so many people who have responded (to the earthquake) so cleverly and creatively ... People are positive about the

³ The Gallery suffered secondary structural damage during the quake, but will reopen later this year, for more information visit: <http://christchurchartgallery.org.nz>.

⁴ The installation was moved from the Oxford Tce Baptist Church to the site of another quake-destroyed church, St. Paul's Trinity Pacific Presbyterian Church. For more information visit: <http://www.stuff.co.nz/the-press/christchurch-life/7877321/185-Empty-Chairs-moved>.



Empty Chairs 2014 © Rose Holley

arts and there is a greater awareness of the arts' ability to contribute to social cohesion and the economy of the city" (Feeny, 2015).

In the past five years, Christchurch and its residents have come a long way. The city today is an exciting center of creative energy and a shining example of urban resilience. So much so that researchers have argued that Christchurch can serve as a guide and a model for recovery, especially for developed countries (Kwok Shi Min, 2014). The art-based initiatives discussed in this article have made—and continue to make—an important contribution to social wellbeing and community development.

The biannual Canterbury Earthquake Recovery Authority Wellbeing Survey underscores how Canterbury's emotional and physical recovery is well underway. The April 2015 survey revealed that 79 percent of respondents rated their quality of life as "good" or "very good," while 22 percent reported an improvement in quality of life from 12 months prior. These are the highest results for both questions in the six times the survey has been conducted (CERA 2015).

Some challenges, however, still persist. Nineteen percent of residents still feel stressed, compared with 8 percent before the earthquake. With its Community in Mind strategy, the government addresses this need for ongoing psychosocial support. Targeted services continue to support individuals and communities still working through the recovery process. Alongside these efforts from above, grassroots artists and community-based organizations will also continue to create spaces that encourage survivors to emotionally heal.

It sounds like an old cliché, but in every disaster there's opportunity. The graffiti artists, muralists, installation artists, and urban gardeners, for whom the devastated city was a blank canvas, commemorated and beautified, showed how disaster spawned revival and innovation. As such, they set an example that motivated Cantabrians to face trauma before seizing this tragedy as the start of something new and perhaps something better. These grassroots efforts, strengthened by government support, illustrate how people can restore social and emotional terra firma

after disaster, even to the Shaky Isles!

Special thanks to collaborator Jane Morgan, General Manager, Social and Cultural Outcomes at Canterbury Earthquake Recovery Authority (CERA)

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***Standing in the Need
Culture, Comfort, and Coming
Home after Katrina.***

Katherine E. Browne, 2015
ISBN 978-1-4773-0737-3
(Paperback)
245 pages \$24.95
University of Texas Press

By Elke Weesjes

Ethnographic fieldwork is an artful balancing act between distancing and immersing, revealing and concealing. Ethnographers, and other quantitative researchers are required to get close to the social group they study to gain perspective of the group, as well to be trusted with behaviors often withheld from outsiders. They are also expected to maintain critical distance so that they are objective observers, rather than unfiltered advocates for the group.

Katherine Browne, author of *Standing in the Need*, would be the first to admit that finding this balance isn't easy, and perhaps even impossible, especially when studying a group for a long period of time. She made some unconventional choices when it comes to her methods, which aren't necessarily in line with standard practices in her field and will undoubtedly upset some purists. Her book, an ethnography of a large African American bayou family in the aftermath of Hurricane Katrina, is a shining example of anthropology at its most revealing.

Browne, a professor of anthropology at Colorado State University, studied a large family from Louisiana, that had lost nearly everything during Katrina. For eight years, from 2005 to 2013, she tracked members of the Johnson-Fernandez family and chronicled their lives during different stages of their recovery. Browne's distinct approach included revealing her subjects' identities. She even drafted detailed kinship charts and included portraits of family members, photographs of their homes (or what was left of them), their neighborhood, and their family gatherings.

Over the course of her field research, Browne grew incredibly close to her subjects, especially members of the Peachy Gang. The Gang consisted of roughly 150 descendants of Alma "Peachy" Johnson (1909-1984) and McKinley James (1896-1964) who were evacuated from St. Bernard Parish, just southeast of New Orleans, to Dallas, two days before Katrina made landfall.

Browne's research began as a film documentary, which probably explains her unconventional choice to reveal her subjects' full identity. Together with filmmaker Ginny Martin, she followed the Peachy Gang. Over 20 months, Browne and Martin documented its members' experiences in Dallas and the beginning of the group's recovery after they returned to their bayou environment. (*Still Waiting: Life After Katrina* was first broadcasted on PBS stations

across the country during the second anniversary of Katrina.)

Browne uses the Gang as a vehicle to tell a much wider story about cultural rituals (often centered around food), local practices, the distinct bayou speech, and unusual yet fascinating family structures. The author aptly demonstrates how recovery agencies' lack of awareness of these unique habits, practices, language, and structures has seriously hampered psychological and physical recovery after Katrina. However, a perhaps unintended result of her methods is that while she is very critical of recovery agencies such as the Federal Emergency Management Agency and its program The Road Home, she lacks that same kind of critical eye when it comes to the family she is studying. Browne, seemingly aware of this shortcoming, explains in the book's preface that what she experienced in the field became personal—as illustrated by her memoir-esque use of the first-person-singular.

As such, *Standing in the Need*—intended for interested general readers, agents of recovery, and students of disaster—tells not one, but two, closely intertwined, stories. One tracks the disaster recovery of an extensive yet tight-knit African American family. The other documents the experiences of a white anthropologist who immersed herself in African American bayou culture and transitioned from outsider to integrated insider—even by her subjects' accounts. She became a loving and committed friend of the Johnson-Fernandez family.

This transition to insider is particularly evident in Browne's relationship with the four living daughters of Peachy Johnson: Cynthia, Katie, Roseana, and Audrey, who are at the center of Browne's study. The women grew up in Verret, a small town in lower St. Bernard Parish. Katrina completely inundated the parish and destroyed the



sisters' homes. While trying to stay positive, their journey of recovery, meticulously documented by Browne, has been long and frustrating, characterized by setbacks, delays, and broken promises.

Rhizome-like connectedness

In her book, Browne uses a rhizome, a horizontal plant stem that sends out roots and shoots from its nodes, as a metaphor to describe the interconnectedness between members of the Johnson-Fernandez family. Like a rhizome, the individuals of the family form a dense tangle of nonhierarchical and interdependent relations that feed off a shared life source, the rootstock, which is firmly planted in the soil of the bayou. According to Browne, the rhizome nature of family life is common in the Greater New Orleans region and has kept families together for generations. These families have their own emotional ecosystem and members do not spend time mourning in private. For instance, they sought comfort after the hurricane through daily cultural rituals and family practices that reinforced everyone's connection to each other.

Many of these daily rituals and cultural practices center around eating, and food is a common theme running through the book. It is clear that food and, more specifically, eating together as a family, was the Peachy Gang's most important emotional coping mechanism. But, as Browne notes, this relationship between food and emotion is not unhealthy, as is often the case with "emotional eating." The family's comfort foods were whole and mostly healthy. The meals, so carefully prepared by the women and the men in this family, begin and end very close to home, with locally sourced bayou ingredients such as crayfish, shrimp, crab, okra, collards, and mustard greens. When the family evacuated they were plucked from the source of everyday food traditions and lost not just the food but the ties to the bayou and to each other.

Once back in their familiar bayou environment, the family could access those traditional ingredients. But the cramped FEMA trailers they were living in for years didn't have the kitchen or the space to make the elaborate meals that were so vitally important for their emotional and physical wellbeing.

Adding insult to injury

Not being able to cook a proper bayou meal was only one of the many problems that arose while living in a FEMA trailer. Browne observes that while it was a challenge for the family to adapt bayou life to the foreign environment of Dallas, once back home the constraints imposed by the trailers cut off even more forms of sharing. Living in little individuated spaces compartmentalized people in unfamiliar ways and undermined family life as the Peachy Gang knew it.

Of all the people we meet in the book, Katie, one of Peachy Johnson's daughters, gets the shortest end of the stick. Katie, who lost one leg due to diabetes, ordered a trailer built to Americans with Disabilities Act (ADA) specifications, with a ramp, to put on the lot where her destroyed home sat. Unfortunately, what FEMA delivered to her was one with aluminum steps. One day, as Browne vividly describes, Katie fell while trying to hop onto the steps, and she severely damaged the leg that had been amputated just under the knee. Her injury didn't speed up the process of getting a suitable trailer, shockingly; by the time FEMA delivered—five months after her fall—the stump of Katie's leg was so badly compromised that she was never again able to wear the prosthesis she wore when Browne first met her.

Precarious balancing act

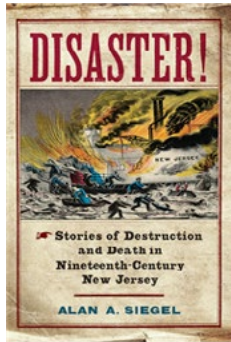
That ordeal seems to be a turning point in Browne's study. She was already close to Katie, but the injustice the author witnessed solidified their friendship. Later in the book Browne unmistakably crosses the line between observer and advocate. Browne decides to help Katie get her Road Home check. Pretending to be Katie—only the person on the case file was authorized to call the helpline—Browne wanted to find out why, after seven months, Katie still hadn't received her check. Browne exploited her vast experience with bureaucrats and was eventually able to procure the answers that Katie couldn't glean.

The intimacy of the author and subject's relationship becomes especially clear after Katie died. She suffered a massive stroke in 2007 and eventually passed away four years later, just two weeks after being diagnosed with lung cancer. Browne, who spoke at the funeral, was mentioned in the program as Katie's "loving and committed friend."

Critical distance

It is clear that Browne is less concerned than most of her peers are with striking the balance between being an insider and an outsider, and at times she is unable to maintain a critical distance. In her defense, she never set out to be an objective observer. She informs her readers right off the bat that this is a personal story, an ethnographic memoir. Other ethnographers (Venkatesh 2008; Goffman 2014) who chose to change names, places, and the order of events to protect their resources have been criticized for lacking accountability and for fabricating. The people whose lives are chronicled by Browne, however, are present and accountable in multiple ways, their talk is transcribed very accurately, they are called by their real names, and the photographs Browne included do not only capture personal images but also social relationships. The benefit of her all revealing approach is that the link between the evidence she gathered during her field research and her conclusions

is crystal clear. Although critics might feel that she failed the precarious balancing act, I think that the end justifies the means. Her book is a beautifully written, compelling and insightful ethnography and it should be considered a valuable contribution to the field.



Disaster!
*Stories of Destruction and Death in
 Nineteenth-Century New Jersey*
 Alan A. Siegel
 ISBN 978-0-8135-6459-3 (Hardcover)
 224 pages \$29.95
 Rutgers University Press

By Elke Weesjes

People, according to author Alan Siegel, have been fascinated by disaster since the time of the biblical flood. After all, he explains in the introduction of his book *Disasters!*, almost all cultures tell ancient stories of catastrophic events that devastated the land and annihilated the people. Siegel's book is meant to satiate this macabre appetite for death and destruction.

The book chronicles five different types of disasters—fires, steamboat disasters, train wrecks, shipwrecks, and natural disasters—that befell the people of New Jersey in the 19th century. It is primarily written for a lay audience interested in disaster or New Jersey history, yet its content, based almost exclusively on newspaper articles, might also be useful for academics interested in 19th century disaster news reporting.

Prone to large-scale disasters

The Victorian era, with its rapid urbanization and industrialization, was prone to large-scale disasters. Fires, for example, were common in 19th century urban America, where many buildings were densely inhabited, ramshackle wooden structures, heated with fireplaces and lit by oil and gas lamps. It only took one careless moment to set a building ablaze. Fires, especially with non-existent or poorly staffed and equipped fire brigades, could spread at a frightening speed. Besides occurring in densely populated urban areas, the worst fires in 19th century New Jersey happened on the Jersey Shore, according to Siegel.

Of all the seaside resort fires described in the book, the devastating fire that set ablaze the Mount Vernon hotel in Cape May is the most remarkable. The building, like most other hotels at the time, was entirely constructed of wood. Able to accommodate an astounding 2,100 visitors, it was trumpeted as the largest hotel in the world when it was built in 1855-1856. Even before it was completed, the hotel, which wasn't much more than a giant wooden tinderbox, burned to the ground. Unable to escape and overcome by

the dense smoke, the hotel manager, his two daughters, one son, and the housekeeper perished in the flames. The culprit arsonist, the wife of an Irishman who claimed the hotel manager owed him \$100, was arrested just days after the fire.

The fire wasn't an isolated event: Cape May was plagued with several other equally devastating fires throughout the 19th century. Inexplicably, the author notes, the loss of several hotels failed to alert Cape May's town leaders to the dire need for a city fire department. Rather than taking a cue from these tragic events, the hotels were rebuilt as soon as they had burned down. Eventually, the era of Cape May's grand hotels came to a fiery end in 1879, when the third major conflagration in a little more than 20 years broke out in the Ocean House hotel. The fire spread and destroyed some of the resort's oldest and biggest hotels. Cape May never fully recovered from what the New York Times called "the most destructive fire which has ever visited any sea-side resort" (p. 16).

The Victorian Era was a period of stunning and historic advances in science and engineering. People were hungry for greater speed and capacity, often at the cost of safety. The shipwrecks, steamboat disasters, and train wrecks, so vividly described by Siegel, were often caused by overcrowding, technical failures leading to fires and explosions, and non-existent safety laws.

Maritime disasters stand out as particularly deadly and gruesome. In New Jersey, according to Siegel, more people died in shipwrecks along the Jersey Shore than from all other 19th century catastrophes combined. The worst and best-documented wreck was that of the New Era on November 13, 1854. The ship, carrying 384 passengers, had left Germany on September 28, 1854. After a very tumultuous crossing during which a cholera outbreak killed 40 people, the ship struck a sand bar off Deal Beach. The sea was so rough that rescue boats could not reach the stranded vessel until the next day. Rescuers were able to save 135, mostly male, passengers who had been strong enough to hold on to the capsized boat for more than 24 hours.

Of heroes and villains

This disaster and all the other catastrophes described by Siegel captured the attention of contemporaries and, in some cases, spurred new regulations and innovations to avoid future tragedies. Siegel's stories, based on newspaper articles, successfully highlight the different manner in which heroes, villains, and survivors were described by reporters and understood by the public.

His methodology, albeit interesting for aforementioned reasons, also contributes to an overall one-dimensionality that can't be disguised by the author's beautiful writing style. It seems that journalists at the time were primarily focused on giving a detailed and sensational account of a disaster's destruction and of the occasional hero's actions.

The impact of disasters on survivors' lives and livelihoods is largely neglected. As a result the stories compiled by Siegel feel somewhat pragmatic and lack a certain element of compassion toward people who had been duped by these devastating tragedies.

The book teaches us an important lesson: during the Victorian era, which was characterized by widespread poverty, disease, and frequent disasters, people were emotionally desensitized to suffering. They weren't interested in a story about survivors who lost everything in a fire. They didn't want to hear about the emotional impact of losing a loved one in a sea of flames. The average reader wanted to know who lit the fire, how high the flames were, and how the heroic firefighters put it out. Journalists responded to this need and news reports of calamities, all similar in style and content, became commonplace in newspapers.

Because Siegel chose to base his compilation on these news reports and did not further contextualize the accounts, his book seems somewhat repetitive and doesn't keep you engrossed from start to finish. However the individual chapters are well written and very vivid. For this reason *Disaster!*, besides being of interest for a lay audience, makes for an excellent reference book for scholars interested in secondary sources that discuss natural and manmade disasters.



Vaccines—Calling the Shots
NOVA
Sonya Pemberton 2015
53 min.

By Elke Weesjes

Earlier this year the debate between pro-vaxxers and anti-vaxxers once again flared up when a measles outbreak caused widespread concern.

The debate got so heated that even President Obama put in his two cents worth and urged families to vaccinate their children so the country can maintain its so-called herd immunity. In the United States, herd immunity—created when a critical portion (93-95 percent) of a community is inoculated against contagious diseases—is 94.7 percent. However, these numbers aren't spread evenly and in certain states they are significantly lower. In Colorado, for example, only 81.7 percent of children had the two-dose Measles Mumps Rubella (MMR) vaccination, compared with 99.7 percent in Mississippi.

Vaccines—Calling the Shots addresses the worrisome decline in immunization rates nationwide. In a well-rounded and balanced way, it looks at the importance of vaccines and clearly concludes that they are safe and effective, without downplaying the generally mild risks vaccines can pose.

The documentary, which aired last August on PBS, takes

viewers are taken around the world to track epidemics. It also explores the science behind vaccinations and how parents wrestle with vaccine-related questions. The film's conclusion leaves no room for interpretation: It is our shared responsibility to inoculate our children even when infection rates fall to zero. Only then can the resurgences of once eradicated diseases like measles and whooping cough be avoided.

Unfortunately, as a recent study found, it is nearly impossible to change an anti-vaxxer's mind. The study, by political scientist Brendan Nyhan of Dartmouth College and three colleagues (2014), examined multiple strategies for communicating about the safety and importance of vaccines. Its findings, published in the journal *Pediatrics*, concluded that current public health communications about vaccines are not effective. In fact, as Nyhan and his peers found, for some parents they may actually increase misperceptions or reduce vaccination intention. Attempts to increase concerns about communicable disease of correct false claims about vaccines may be especially likely to be counterproductive.

For example, scientists have worked tirelessly to confirm Dr. Andrew Wakefield's controversial 1998 small-scale study that argued there was a link between autism and the MMR vaccine. In response to Wakefield's study, scientists examined the medical records of hundreds of thousands of children. But study after study revealed that whether the children were vaccinated or not, the rates of autism were the same. Eventually, as Alison Singer of the Autism Science Foundation notes in *Vaccines*, no one could repli-



cate Wakefield's findings and the study was shown to be fraudulent and was consequently withdrawn.

Dissatisfied with the outcome of these studies, a group anti-vaxxers helped fund a six-year study looking into the effects of vaccinations on the neurological development and social behavior of rhesus macaque (a type of monkey) infants. The study concluded that there was no evidence at all for a link between vaccines and autism. The anti-vaxxers who helped fund the study, weren't happy with its findings, which were published in the Proceedings of the National Academy of Sciences in early October, and they wanted to see a re-analysis of the data.

Reviews of *Vaccines* published on anti-vax websites, and their readers' statements in the comment sections, show a similar kind of stubbornness and they state that all the studies mentioned in the documentary are part of a big pharmaceutical conspiracy.

For all these reasons, *Vaccines* is unlikely to convince the staunch anti-vaxxer. However, with its clear and non-sense approach, the documentary might reach parents who are on the fence.



Where Was God?
Stories of Hope After the Storm
 Travis Palmer 2014
 2014
 89 min.

By Elke Weesjes

Seven children were killed when an EF5 tornado hit Plaza Towers Elementary School in Moore, Oklahoma,

on May 20, 2013. They joined a total of 24 victims who lost their lives in this devastating disaster. The question on many people's lips was, why did the school not have a tornado shelter? But the question central to this documentary is, where was God?

This documentary, now available on Netflix, looks at the role that faith played as the people of Moore pieced their lives back together. Among the survivors interviewed were parents of students who were at Plaza Towers when the tornado struck. Some of their children survived, others didn't. For religious and nonreligious viewers alike, it might be hard to digest that some of these parents feel that God saved their children's lives, while other, equally religious parents, tell heartbreaking stories of children who weren't saved. Rather than answering its central question, the documentary raises another even more pressing one: If God is able to save one life, why didn't he save all?

This is exactly the question Scott and Stacey McCabe, parents of Nicolas, one of the school children who was killed, mulled over. Scott McCabe witnessed the lifeless body of his only child being pulled from underneath the rubble. In a tearful testimony, the McCabes share their experiences and their most intimate emotions, including

anger at God, as well as defeat, inadequacy, and helplessness. They are not alone. All the parents in this documentary who lost a child share the same emotions.

Paradoxically, after a period dominated by anger at God and the whole world, they all have found comfort in their faith and in each other. Scott McCabe, who wasn't religious before the tornado, joined the church. He and his wife, who, unlike her husband, had been a member of the Baptist church prior to the disaster, have made it their mission to show that God is a loving God, and that there is hope. Of all those interviewed, they seem the most practical. In addition to speaking in public about their spiritual journey, they are also working tirelessly to get storm shelters installed in every Oklahoma school.

Where was God? has a missionary feel and is in many ways a mouthpiece for the Southern Baptist church and its disaster relief efforts. The documentary isn't particularly well edited. For instance, it repeatedly digresses to discuss personal stories unrelated to the disaster, such as Alcohol Anonymous meetings and abortions. As a result, the documentary loses momentum after about 45 minutes. The remaining 45 minutes drag on, exacerbated by the very slow piano music that accompanies the film. For these reasons it isn't surprising that *Where was God?* was not reviewed in any of the mainstream media. Nevertheless, for all its flaws, it is an important documentary for those who want to gain insights into how people find—or struggle to find—comfort in faith in the aftermath of a disaster.

There is a lot of research that looks at religion in disaster situations. For example, Torry (1986), Gillard and Patton (1999) Smith et al. (2000), Schmuck (2000), and Bankoff (2004) all argue that religion may serve as a coping strategy in the face of recurring hazards or disasters among Muslim, Hindu and Christian communities. Others studies examine the role of faith organizations in disaster-risk reduction and disaster response. The studies also emphasize that religious groups, besides garnering the trust of local communities, are usually well integrated within these communities and thus often able to respond to disaster in a very short time span (see, for example Ali, 1992, Bolin and Bolton, 1986, and Fountain et al., 2004, Merli, 2005).

In the case of Moore this certainly rang true: Oklahoma Baptist Disaster Relief was on site immediately. They assisted more than 1200 families, prepared more than 200,000 meals, and purchased 63 homes for underinsured survivors.

This documentary, as supported by disaster research, makes it clear that faith within our society helps its followers cope with disasters. The church is a place where survivors, long after relief organizations and the media have left, can share their trauma and find comfort.

Conferences and Training

Below are some recent announcements received by the Natural Hazards Center. For a comprehensive list of upcoming hazards-related meetings and conferences, visit our Web site at www.colorado.edu/hazards/resources/conferences.html.

December 2-3, 2015 Advancing and Redefining Communities for Emergency Management Emergency Management Community Collaborative
San Diego, California

Cost and Registration: \$650, open until filled

This conference will highlight the latest evidence-based tools and practices in emergency management to further community resilience. Topics include building healthcare coalitions, developing a resilient workforce, measuring disaster readiness, and behavioral health for disasters.

December 8-10

7th International Conference on Geoinformation Technologies for Natural Disaster Management
Waterloo Institute for Disaster Management
Al-Ain United Arab Emirates

Cost and Registration: \$500, open until filled

The conference will provide a forum to present ongoing research and ideas related to earth observations and global change, natural hazards and disaster management studies with respect to geospatial information technology, remote sensing, and global navigation satellite systems. The conference will hold pre-conference workshops, keynotes, panel discussions and technical sessions.

December 8-10, 2015

AHIMTA Educational Symposium
All Hazards Incident Management Teams Association
Denver, Colorado

Cost and Registration: \$340 open until filled

This conference will address challenges faced by incident command professionals and focus on building leadership skills. Topics include all-hazards search and rescue, situational awareness and social media, rural departments in large-scale incidents, National Guard roles in all-hazards response, and traffic incident management.

December 12-14, 2015

Dhaka Conference on Disability and Disaster Risk Management
Bangladesh Ministry of Disaster Management and Relief and others
Dhaka, Bangladesh

Cost and Registration: \$250, register before November 30

This conference will collect ideas implementing the Sendai Framework for Disaster Risk Reduction, advocate for disability inclusion in policy matters, and exchange practices and knowledge related to disability and disaster management. Topics include disaster-concerned policies and frameworks for people with disabilities, disability inclusive disaster risk and management practices, and contribu-

tions by people with disabilities to the field of disaster and crisis management.

December 14-18, 2015

AGU Fall Meeting American Geophysical Union
San Francisco, California

Cost and Registration: \$560, open until filled

This meeting will address the latest trends, discoveries, and challenges in earth and space sciences. Topics include science for disaster risk reduction, asteroid risk and planetary defense, tsunami observation and modeling, science-based communication strategies for disaster, marine geohazards, ionospheric modeling of disasters, and using geodesy to model volcano change.

January 26-28, 2016 CBRN First Response The Development Network UK Bristol, England

Cost and Registration: \$3,000, open until filled

This conference will explore increasing preparedness for and responding to chemical, biological, radiological, and nuclear (CBRN) threats in ways that reduce risk for responders, infrastructure, and the environment. Topics include global politics and CBRN defense strategies, the wider ramifications of the Syrian Conflict, use of chemical agents by Boko Haram, safeguarding the public from chemical suicides, CBRN decontamination solutions for first responders, and the use of unmanned aerial vehicles to distribute chemical payloads.

January 27-29, 2016 Annual FLASH Conference Federal Alliance for Safe Homes Orlando, Florida

Cost and Registration: \$450, open until filled

This conference will examine issues of disaster safety and resilience from an all-hazards perspective. Topics include the unveiling of a new national hurricane initiative, a look back at historic disasters, best practices in earthquake resiliency, leveraging traditional and digital risk communication tools, and the latest in resilient construction techniques.

March 2-3, 2016 Critical Infrastructure Protection and Resilience Europe The Hague Security Delta, International Association of CIP Professionals, and others

The Hague, Netherlands Cost and Registration: \$480 before February 4, open until filled

This conference will focus on physical and cyberthreats to critical infrastructure, infrastructure system preparedness, and Europe's ability to withstand and collaborate during critical infrastructure attacks. Topics include infrastructure resilience in the transport industry, threat detection and management, using modeling to enhance preparedness and response, and cybersecurity standards, laws, and analysis.

Below are descriptions of some recently awarded contracts and grants related to hazards and disasters. Please see <http://www.nsf.gov/awardsearch/> for more information.

Doctoral Dissertation Research: Unaccompanied Homeless Youth

Award Number: 1519101. Principal Investigator: Matthew Desmond. Co-Principal Investigator: Jasmin Sandelson. Organization: Harvard University. NSF Organization: SES Start Date: 09/01/2015. Award Amount:\$11,762.00.

Collaborative Research: A Micro-empiric Examination of the Economic Effects from Natural Disasters in Dense Urbanized Areas: The Case of Hurricane Sandy and New York City

Award Number: 1462880. Principal Investigator: Ingrid Ellen. Organization: New York University. NSF Organization: CMMI. Start Date: 09/01/2015. Award Amount: \$219,294.00.

Collaborative Research: Online Hazard Communication in the Terse Regime: Measurement, Modeling, and Dynamics

Award Number: 1536347. Principal Investigator: Jeannette Sutton. Organization: University of Kentucky Research Foundation. NSF Organization: CMMI. Start Date: 09/01/2015. Award Amount: \$256,103.00.

Hazards SEES: Persistent volcanic crises resilience in the face of prolonged and uncertain risk

Award Number: 1521855. Principal Investigator: Greg Valentine. Co-Principal Investigator: Marcus Bursik, E. Bruce Pitman, Abani Patra. Organization: SUNY at Buffalo. NSF Organization: SES. Start Date: 09/01/2015. Award Amount:\$2,875,000.00.

Hazard SEES: An Integrated Approach to Risk Assessment and Management in Responding to Land Falling Hurricanes in a Changing Climate

Award Number: 1520683. Principal Investigator: Ning Lin. Co-Principal Investigator: James Smith, Guy Nordenson, Michael Oppenheimer. Organization: Princeton University. NSF Organization: AGS. Start Date: 09/01/2015. Award Amount: \$2,734,526.00.

I-Corps: Clean Water by Nature

Award Number: 1560579. Principal Investigator: Norma Alcantar. Organization: University of South Florida. NSF Organization: IIP. Start Date: 09/15/2015. Award Amount: \$50,000.00.

RAPID: Scalability and Sustainability in Uncertain Environments: Recovery from the Nepal Earthquakes of April 25 and May 12, 2015

Award Number: 1559687. Principal Investigator: Louise Comfort. Co-Principal Investigator: James Joshi; Organization: University of Pittsburgh. NSF Organization: CMMI Start Date: 10/01/2015. Award Amount: \$46,327.00.

RAPID: Disaster as a Catalyst for Social-Ecological Transformation

Award Number: 1560661. Principal Investigator: Jeremy Spoon. Organization: Portland State University. NSF Organization: BCS. Start Date: 11/15/2015. Award Amount: \$29,998.00.

Revealing Hidden Safety Hazrds Using Workers' Coocetive Bodily and Behavioral Response Patterns

Award Number: 1538029. Principal Investigator: Changbum Ahn. Co-Principal Investigator:Terry Stentz, Mehmet Vuran. Organization: University of Nebraska-Lincoln; NSF Organization: CMMI. Start Date: 01/01/2016. Award Amount:\$350,000.00.

Natural Hazards Engineering Research Infrastructure: Experimental Facility with Large, Mobile Dynamic Shakers for Field Testing

Award Number: 1520808. Principal Investigator: Kenneth Stokoe. Co-Principal Investigator: Brady Cox, Patricia Clayton. Organization: University of Texas at Austin. NSF Organization: CMMI. Start Date: 01/01/2016. Award Amount: \$755,349.00.

Doctoral Dissertation Research: Mapping Community Exposure to Coastal Climate Hazards in the Arctic: A Case Study in Alaska's North Slope

Award Number: 1523191. Principal Investigator: Robin Leichenko. Co-Principal Investigator: Michael Brady. Organization: Rutgers University New Brunswick. NSF Organization: PLR. Start Date:10/01/2015. Award Amount:\$13,590.00.

Natural Hazards Engineering Research Infrastructure: Experimental Facility with Twelve-Fan Wall of Wind

Award Number: 1520853. Principal Investigator: Arindam Chowdhury. Co-Principal Investigator: Ioannis Zisis, Peter Irwin. Organization: Florida International University. NSF Organization: CMMI. Start Date: 01/01/2016. Award Amount: \$863,835.00.

The Natural Hazards Center Seeks a New Director

We are preparing to say goodbye to Professor of Sociology and Natural Hazards Center Director Kathleen Tierney, who will step down in August of 2016. A search has been launched for her successor. This fulltime, tenured position will be filled at the rank of advanced associate or full professor.

The following departments are participating in the search: anthropology, economics, environmental studies, geography, and sociology. The director position is in the University of Colorado Institute of Behavioral Science's Environment and Society Program, however, the successful applicant's tenured home will be in one of these five departments.

The new director will be expected to provide leadership and vision on hazards research and management in the Center's research and knowledge dissemination programs, as well as to secure funding for Center activities. Please feel free to share this news widely. To read the full job description and submit an application, please visit the job posting on the University of Colorado Boulder Web site.

For more information, visit: <https://www.jobsatcu.com/postings/110665>

Study Abroad Program Cuba

The Department of Sociology & Criminal Justice at Southeastern Louisiana University invites students to participate in our study abroad program to Cuba, May 21-29, 2016. The trip will focus on, environmental sociology, including urban and sustainable agriculture, disaster preparedness and resilience, and Cuban history and culture. Students from other institutions and non-students are welcome to participate in this program exciting program! Undergraduates will earn 6 hours of course credit and can choose from three elective courses: Food Sustainability and Society, Globalization, Disasters and Resilience, or Independent Study. Graduate students may earn 3 hours of course credit. (Students will need to work with their respective institutions to determine if and how many credits may transfer). For more information please contact Marc Settembrino at Marc.Settembrino@selu.edu.

Call for Proposals: Weigh In at the Natural Hazards Workshop

While Thanksgiving might mark the beginning of the holiday season for many of you, for us at the Natural Hazards Center it's the kickoff to Workshop season—and we want your help!

The foundation of every great Natural Hazards Work-

shop is built from the knowledge and expertise of our colleagues in the hazards and disaster community, and we're hoping you'll share yours. We're looking for proposals from people who'd like to serve as panelists at the 41st Annual Natural Hazards Workshop in Broomfield, Colorado, from July 10-13, 2016.

The Workshop isn't your typical event. We bring a wide range of professionals, academics, and other disaster experts from multiple disciplines together on interactive panels that result in lively discussions that help bridge the gap between research and practice. We hope you'll lend your voice to the conversation.

To submit a successful proposal, read a little more about our program structure and panelist responsibilities. You'll also find lots of tips on our Proposal Submission Form when you're ready to submit. We can't wait to hear from you!

For more information, visit: <http://www.colorado.edu/hazards/workshop/>

Ph.D Research Assistantship University of Washington

A Ph.D. research assistantship is available at the University of Washington to study critical infrastructure disaster resilience using natural language processing, expert elicitation, machine learning, and simulation modeling. Stipend (11mo/yr) and tuition waiver is available for a minimum of three years. A strong preference is for the Research Assistant to be enrolled in the Ph.D. program in UW's Department of Human Centered Design and Engineering (HCDE). However, students enrolled in a different UW department will be considered (e.g., Computer Science and Engineering, iSchool, Civil and Environmental Engineering, Geography, or Urban Design and Planning). Minimum responsibilities will include expert workshop design and facilitation, qualitative and quantitative data compilation, qualitative and quantitative data analysis, and programming of a simulation of model of how various critical infrastructure are restored and recovered after minor and major disturbance events. Knowledge of Python is required (or evidence that the language can be learned quickly).

Applicants may be admitted to the HCDE Ph.D. program after completing either an undergraduate degree or a master's degree in HCDE or a relevant field (up to 30 credits of master's work may be applied toward the 105-credit Ph.D. requirement). Since HCDE is a relatively new discipline, applicants can be expected to represent a wide range of backgrounds.

Anyone interested in the opportunity should contact Dr. Scott Miles (principal investigator) at milessb@uw.edu

Deadline: December 15, 2015

Call for Case Studies

The National Wildlife Federation is issuing a call for climate change adaptation case studies to highlight in a national report on ecological approaches to natural hazard risk reduction to human communities. They're particularly interested in hearing about innovative uses of natural and nature-based features to reduce impacts from floods, heavy precipitation and storms, sea level rise, erosion and related hydro-meteorological hazards to human communities. For this project, the National Wildlife Federation is specifically interested in hearing about projects that reduce risks to human communities while generating ecological co-benefits to fish and wildlife habitat. Potential areas of focus for the case studies include, but are not limited to:

- Conservation of existing natural systems
- Restoration or management of ecological processes (e.g. water or sediment flow, plant community succession)
- Risk reduction measures that include nature-based features that mimic natural processes
- Hybrid gray-green infrastructure for stormwater management, flood risk reduction, and protection against coastal storms.
- Local zoning and land use policy that intentionally incorporates natural buffers to flood hazards
- Managing fish, plant, or wildlife species in ways that increase ecological and community resilience.

The deadline for submissions: December 7, 2015

Ready, Set, Search!

The New Natural Hazards Library Catalog Is Online

The Natural Hazards Library is happy to announce the launch of HazLib, our new online library catalog. Library

users can now explore the entirely revamped, modern interface, which offers robust search options and easy navigation to quickly and conveniently access our extensive library holdings and resources.

Features such as improved search options—including multifaceted searching that allows users to customize results based on author, topic, and other elements—provide just the right resources, while the ability to virtually browse the library's shelves will expand the breadth of your research.

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We are constantly adding new holdings, so visit us often and send any suggestions, questions, or comments to hazctr@colorado.edu.

Call for Participation

Master's Degree in Information Systems for Emergency Management Survey Information Systems for Crisis Response and Management

The education committee of Information Systems for Crisis Response and Management (ISCRAM) is requesting participation from emergency management professionals and academics in determining the curricula needs for a degree program with a concentration on information systems in EM professions. The four-section survey will assist ISCRAM in establishing guidelines for master's-level degrees. Participation is anonymous and input from individuals in related fields is welcome.

Deadline: Available for a limited time

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Natural Hazards Observer

ISSN 0737-5425

Printed in the USA.

Published bimonthly. Reproduction with acknowledgment is permitted and encouraged.

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