



DRC Dispatch

Volume 2, Issue 2

October 2013

From the Director's Desk

Dear DRC Alums and Friends,

We are pleased to send you an abbreviated "Extra Edition" of the *Dispatch*, to relate some good news and interesting events from the summer, and to provide some updated information on the DRC 50th anniversary workshop and celebration.

First, some good news. We are glad to announce that Dr. Rachel Davidson, a core faculty member at DRC and a professor in the Department of Civil and Environmental Engineering, has been promoted to full professor...a great milestone for her and a proud thing for us at DRC. Dr. Davidson is now on a well-deserved but quite busy sabbatical in New Zealand; please see more about her work inside this edition.

And a bit more good news: three of our faculty, Drs. Tricia Wachtendorf, Rachel Davidson, and Joseph Trainor, are part of large-scale partnerships that have been awarded highly prestigious Hazards SEES grants (Science, Engineering, and Education for Sustainability) from the National Science Foundation. These large projects emphasize multidisciplinary research on some of the most demanding questions in the hazards and disasters area and integrate the work of the social, engineering, and physical sciences. This issue of the *Dispatch* features more details about these important projects.

We know everyone is waiting for details on the 50th anniversary workshop. Registration is open! Everyone receiving the *Dispatch* will also receive an emailed invitation with registration details. The theme of the workshop is "environmental crisis," stemming from the idea that our global society is facing a crisis of governance and decision-making on expanding and interwoven dangers across the intersections of social, technical, and natural systems. Tackling the challenge demands not just sustained attention to well-established research directions, but also new knowledge on systems, on interactions across scales, and on implementation of scientific findings: itself a perplexing problem needing careful attention. Invitees include not only longtime DRC friends, but new friends and colleagues from fields with an interest in disaster such as the burgeoning network of scholars in the disasters branch of Science, Technology, and Society, as well as the growing area of implementation science.

We hope you'll enjoy the *DRC Dispatch* Extra Edition, and we'll look forward to seeing everyone register for the workshop!

Best wishes,

Jim Kendra



Inside this issue:

Director's message	1
50th Celebration	2-5
40th past pictures	3-4
Dr. Rachel Davidson promotion	5-6
Recent Student Presentations	7-8
Congratulations	9-10

Register now!!!



Register now!!!

April 30-May 03, 2014

DRC 50th Anniversary

Celebration at the University of Delaware!!!!

“Taking Stock and Taking Action: Disaster Research
and the Challenges Ahead”

Website: sites.udel.edu/drc50thanniversary

Email address: drc-50th@udel.edu



REGISTER NOW!!!

Register now!! Here's another reminder to mark April 30th-May 3rd, 2014 on your calendars for the DRC 50th Anniversary Workshop and celebration. Register by October 31st to get the special workshop hotel rate! Meanwhile, enjoy this picture as a stroll down memory lane back to 1963.



Pictures from the 40th anniversary
and workshop.



Register now for the 50th Celebration!



Dr. Russell Dynes &
Dr. Enrico Quarantelli

From the 40th
Celebration!





Dr. Rachel Davidson promoted to Professor!!

Dr. Rachel Davidson, a core DRC faculty member hailing from the Department of Civil and Environmental Engineering, has been promoted to full professor, a noteworthy achievement reflecting years of progressive successes in research, teaching, and leadership in the scholarly community. She joined DRC in 2007, after teaching at Cornell University and at the University of North Carolina at Charlotte.

Dr. Davidson's research covers risk to infrastructure systems. Some of her recent research has looked at fire spread, such as after the catastrophic Tohoku, Japan earthquake (2011), and after the San Bruno, California gas pipeline explosion in 2010. Another project has looked at integrating loss estimation and decision models to examine the integrated use of retrofit and insurance as mechanisms to manage the risk associated with existing buildings. Her ongoing project emphasizes developing decision support models for hurricane evacuation and sheltering that is risk-based and accounts for the critical uncertainty and dynamics involved in the evolution of a hurricane event. These projects among others all have in common a creative flair for achieving genuine interdisciplinary collaboration between social science and engineering approaches, a research quality that has long been desired in the disasters field but where success has been elusive.

A sabbatical in New Zealand provides a good opportunity to tackle some of these ideas in a different setting. Recovery from the 2010 and 2011 Christchurch earthquakes is still ongoing, complicated by the sheer extent of the destruction throughout the urbanized area. Rachel has been meeting with scientists and officials throughout the affected area and is finding many unusual and important aspects of this disaster. Among them, the disaster was actually comprised of a sequence of damaging earthquakes over the last two years including an M7.1 in September 2010, M6.3 in February 2011, M6.4 in June 2011, and M6.2 in December 2011. The damage to the heart of this modern city was severe and extensive, with approximately 75% of the buildings in the central business district (CBD) having been demolished (1800 buildings). Christchurch also had an extremely high penetration of earthquake insurance (about 95% of homeowners had it), and thus many have referred to the recovery as being insurance-led. The response and recovery included cordoning off the entire CBD for a month and "red zoning" large sections of the residential area that have particularly high liquefaction and rock fall risk so that they will not be inhabited moving forward. There are many important lessons to learn that can inform disaster management in the U.S. and elsewhere. Apart from research successes, Dr. Davidson has been a prominent leader in the risk field. She recently completed a term as president of the Society for Risk Analysis, one of the principal organizations devoted to all aspects of risk. Numerous awards for scholarship and teaching include the Dorothy G. Swanson Excellence in Teaching Award from the Cornell University College of Engineering, and the highly prestigious National Science Foundation Faculty Early Career Development (CAREER) award.

Congratulations to Rachel on her promotion! We enjoy being in touch with her by email and Skype, but we'll look forward to her return to DRC and to hearing in full detail about her experiences.





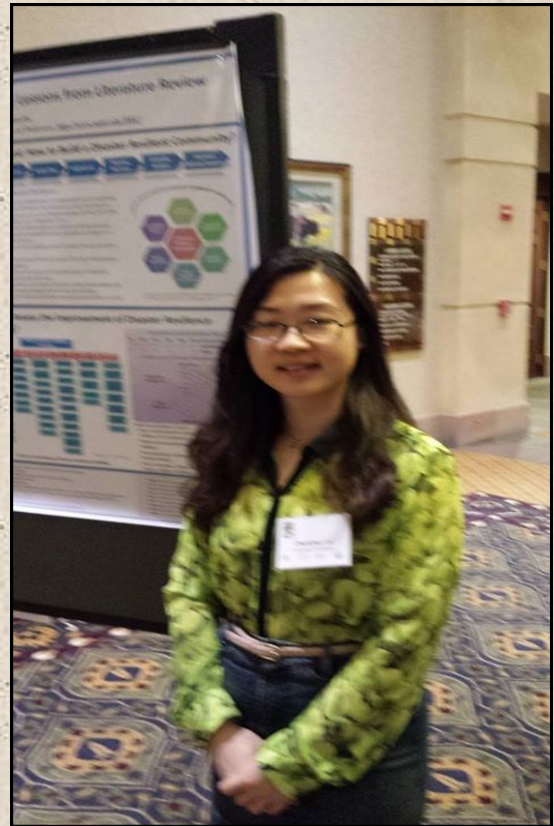
Professor Rachel Davidson on site in New Zealand during her current sabbatical research.



Recent Student Presentations

38th Annual Natural Hazards Research and Applications Workshop
Saturday, July 13 through Tuesday, July 16, 2013
Broomfield, Colorado

On July 13, DISA student Chunjing Liu gave a poster presentation at the Natural Hazards Workshop in Broomfield, CO. The presentation focused on "The Review of Resilience Research and Practice in Disaster Management."



On July 13, DRC/DISA students Lauren Clay and Alex Greer, DRC post-doc Kimberly Gill, and DRC director Jim Kendra gave a poster presentation at the Natural Hazards Workshop in Broomfield, CO. The presentation focused on "Disaster Mental Health Response: Lessons Learned from a Case Study of the 1974 Xenia Tornadoes."

Pictured are Alex & Lauren with their poster.

On July 17, DISA PhD student Ziqiang Han presented "The Effect of Social Capital on Perceived Disaster Recovery: A Longitudinal Study Based on the 2008 Wenchuan Earthquake in China" at the IRCD meeting following the Natural Hazards Center Workshop in Broomfield, Colorado.



On July 17, DRC/DISA alum Eric Best and current DRC research assistant/DISA PhD student Alex Greer presented "Size Doesn't Matter: The Complicated Relationship between National Offshore Oil Spill Events, Framing, and Policy" at the IRCD meeting following the Natural Hazards Center Workshop in Broomfield, Colorado.

On July 17, DRC research assistant/Sociology MA student Samantha Penta, DRC director James Kendra and DRC associate director Tricia Wachtendorf, presented "The Value of Preparedness: Organizational Culture and Disaster Preparedness in Delaware Nursing Homes" at the IRCD meeting following the Natural Hazards Center Workshop in Broomfield, Colorado. Samantha is pictured below during her presentation.



Congratulations!

Congratulations to DRC Core Faculty Member Joe Trainor and colleagues from collaborating institutions on their NSF Science, Engineering and Education for Sustainability (SEES) grant: Next Generation Resilient Warning Systems for Tornadoes and Flash Floods.



Integrated Warning Systems

Professor works to improve weather warnings for tornadoes, flash floods.

University of Delaware disaster researcher Joe Trainor wonders how close a tornado must be for people to say, “Man, glad I got the warning.”

And even then, he wonders how they will react: Will they seek shelter or look for more information? Will they understand where they were in relation to the danger? What other individual, household, and system traits influence how people process these kinds of risks? Funded by a four-year, \$3 million Science, Engineering and Education for Sustainability (Hazards SEES) grant from the [National Science Foundation](#), Trainor, assistant professor in the [School of Public Policy and Administration](#) and core faculty at the [Disaster Research Center](#), is working with colleagues across the country to improve weather warnings for short-fuse events like tornadoes and flash floods. The work parallels [UD research on hurricane mapping, which also received Hazard SEES funding](#). (This new grant mechanism, established by the NSF to facilitate interdisciplinary research, has been awarded to about 10 percent of all applicants.) While Trainor’s UD colleagues are examining hurricanes, which often give researchers and responders a two- to three-day window to prepare, Trainor and his team are working with events that have an average of 15-18 minutes of lead time. “In that short window, a lot of activity needs to happen and we do not fully understand how all the pieces come together yet,” said Trainor. As part of a team of researchers from the University of Massachusetts-Amherst and Colorado State University, he and his colleagues are seeking to build a better understanding of what it takes to make an “integrated warning system” work better. Through their interdisciplinary approach, engineers will improve radar technologies that sense what is happening in the atmosphere, meteorologists will use this technology to “better predict hazards,” computer scientists will develop tools (through web, social media and mobile devices) to deliver this information in more specific space and time, and social scientists will work to understand how these advances impact risk perceptions and protective behaviors of real people.

Congratulations!

Congratulations to DRC core faculty Rachel Davidson and Tricia Wachtendorf, and their colleagues at partner institutions, on their NSF Science, Engineering and Education for Sustainability (SEES) grant: Dynamic Integration of Natural, Human, and Infrastructure Systems for Hurricane Evacuation and Sheltering.



Hurricane Research

Team studies new methods to support hurricane evacuation decision-making.

Dr. Rachel Davidson and Dr. Tricia Wachtendorf have received a \$3 million Science, Engineering, and Education For Sustainability (Hazards SEES) grant from the National Science Foundation to create a fundamentally new approach to modeling hurricanes.

In a truly collaborative project, Davidson, professor of [civil engineering](#), will work with co-principal investigators at other institutions to integrate a set of hurricane scenarios into an engineering model to support evacuation decisions. The integrated model will allow the team to track how the hurricane moves and will create storm surge, wind speed and flooding maps that can be interchanged and overlapped. This dynamic new model would offer a more accurate picture of when and where evacuation orders should be issued, as well as the potential impact on viable evacuation routes and shelter options. Meanwhile Wachtendorf, associate professor of [sociology](#), will examine the decisions people make over the duration of a hurricane and specifically at what points during a storm the information generated from Davidson's model would be most useful to the "end users," such as residents, emergency responders and government officials. Together, Wachtendorf and Davidson, along with colleagues from the University of North Carolina-Chapel Hill, Cornell University, University of Oklahoma and Stony Brook University, hope to develop a new paradigm for understanding and managing how people make decisions as a storm progresses. "What are the time markers that are important? When do we issue warnings?" asks Wachtendorf, DRC's associate director. "How much time do emergency responders need to review data before meeting with government officials, and when do they push that information out to the public?" To better answer these questions, Wachtendorf anticipates that a hurricane during summer or fall 2014 will allow her and her graduate students the opportunity to conduct in-field observations, face-to-face interviews, and focus groups with emergency responders and decision makers.

Disaster Research Center

166 Graham Hall
111 Academy Street
Newark, DE 19716

Phone: 302-831-6618
Fax: 302-831-2091



You can follow us
on Facebook at
The Disaster
Research Center
and also on Twitter
at: [DRC@udel.drc](https://twitter.com/DRC@udel.drc)

A MINI issue! Your input is always welcome! If you have any information or updates
that you would like posted in the next issue,

please feel free to contact the DRC

or me personally.

Here's to a good Fall semester!

Best Regards, Gail Kracyla

Email: prissy@udel.edu

