2014 Annual Report

Dare to be first in disaster research.

University of Delaware | Disaster Research Center

message from THE DIRECTOR

We're pleased to provide the 2014 Annual Report. 2014 was full of events for DRC, not least of which was the celebration of our 50th anniversary with a workshop in May. Although most of our documents point to the establishment of DRC in 1963, we thought that a celebration within the 2013-2014 academic year still counted as the "fiftieth!"

At this three-day workshop and celebration we were pleased to welcome—and welcome back—DRC alums and friends to a series of panels and talks on wide ranging topics meant to stimulate discussion and get us thinking about what might be the disaster topics that will engage researchers over the next few years. In addition to the scientific dimension, of course there were social events, like the introductory meet-and-greet that featured the highly-popular mashed-potato bar. And to wrap up the event we enjoyed a barbecue and cake—artfully formed as a faultline. DRC presented awards of recognition to DRC cofounders Russell Dynes and E.L. Quarantelli, and received proclamations from the Governor and from the Senate of Delaware.

DRC was active in disseminating research findings to various audiences. In particular, DRC staff and students were conspicuous at the quadrennial meeting of the International Sociological Association in Yokohama, participating in a number of presentations as part of ISA's RC-39, the International Research Committee on Disasters. In large part due to some generous donations, we were able to support travel of four students to present their research.

The UD chapter of the International Association of Emergency Managers continued to develop its range of activities, including its first-ever fundraiser to support their mission of professional development and community service, and their (and DRC's) first participation in Newark's Community Day activities. Here, with posters, handouts, and kids' games we spread the word on disaster preparedness.

Throughout this report you'll find summaries of all our activities in research, teaching, and service: the main elements of DRC's mission. We are grateful to DRC's expanding family of students, alums, and friends who have supported us and who continue, in their diverse occupations, to advance the cause of disaster science and disaster management practice. Please let us hear from you from time to time.

All good wishes,

Jim Kendra

about the DISASTER RESEARCH CENTER

First in the World Devoted to the Social Scientific Study of Disasters

The Disaster Research Center was founded in 1963 and now, over fifty years later, DRC continues to celebrate success in research, training, and service to the disaster community.

While much of the research at DRC has been interdisciplinary throughout its existence, DRC has embarked on a new era as the Center builds on and maintains its foundation in social science while broadening its activities to embrace more explicitly interdisciplinary, multidisciplinary and cross-disciplinary research.

Flooding in Scottsdale, AZ resulting from Hurricane Norbert (2014) | Photo by Jon Roig

THE DISASTER RESEARCH CENTER'S
50TH ANNIVERSARY

The Disaster Research Center (DRC) commemorated its 50th anniversary in 2014 with a workshop and celebration. The workshop, "Taking Stock and Taking Action: Disaster Research an d the Challenges Ahead," was held at Clayton Hall from April 30 through May 2 and followed by a celebratory barbeque at the Courtyard Marriott on Saturday, May 3rd. Many of DRC's earliest pioneers, including Russell Dynes - one of the founding directors of DRC and professor emeritus of sociology at UD - and leading disaster researchers, practitioners, and academics in the field participated in the workshop and anniversary events.

The premise of the workshop was that we are living in the midst of a "second environmental crisis," an unfolding disaster era as compelling, but not as recognized, as the environmental crisis of the 1960s: a complex of seemingly intractable hazards across the intersections of natural, social, and technical systems. Rapid urbanization, growing populations, global economic adjustments, environmental degradation, decaying infrastructure, climate change, and technological failures of every description create a universal risk milieu whose origins and outcomes are hard to identify and for which ameliorative steps are elusive. This crisis demands new research directives that build new theory, explore new methods, and that foster synthesis and integration of ideas that can be useful in creating more adaptive risk management institutions.

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

At the anniversary workshop, more than 100 participants joined DRC in scoping out research directions. Twenty-eight speakers, representing six countries and a multitude of states throughout the U.S., facilitated nineteen working sessions that engaged workshop participants in discussion about particular disasters or disaster themes and their implications for research and further refinement of practice. In addition, speakers presented in three plenary sessions: the history of disaster research, how to convert disaster science into effective public policy, and critical ideas generated in the workshop and the work ahead.

As was discussed in detail in all presentations at the workshop, disaster research is inherently interdisciplinary in nature, beginning first with a social science focus and expanding to include engineering and the physical sciences. With disaster science and emergency management continuing to evolve, the humanities seem to be emerging next within the field with the study of science, technology, and society as "the next frontier" in disaster research.

EVENTS INCLUDED

tours of the Disaster Research Center including the E.L. Quarantelli Resource Collection, breakout sessions, plenaries, and discussion on emerging research and policy needs, followed by the DRC BBQ Celebration at the Marriott on Saturday May 3rd.

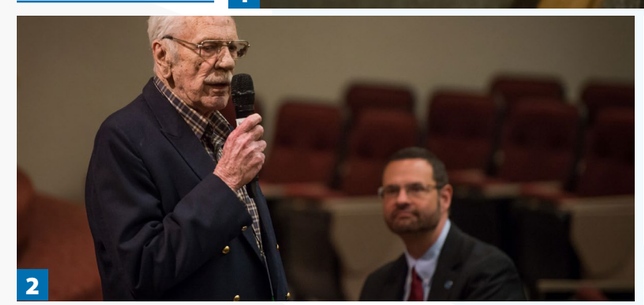
1
Panelists discussing the history of disaster research are (from left) Thomas Drabek, professor emeritus at the University of Denver and the first graduate student hired by the DRC in 1963; Havidán Rodríguez of the University of Texas-Pan American; Dennis Wenger of the NSF; and Tricia Wachtendorf,

2
Russell Dynes, Disaster Research Center founding co-director and a pioneer in the field, speaks at the May 1 workshop. At right is James Kendra, current DRC director.

3
Workshop participants Sudha Arlikatti, Scott Knowles, and Scott Miles taking time to catch up with each other in between working sessions.

4
DRC Director James Kendra receives the Governor's Proclamation from State Senator Bethany Hall-Long with Maria Aristigueta, Director of the School of Public Policy & Administration at the University of Delaware.

1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THE DRC EXPERIENCE

The Disaster Research Center is committed to...

1

DRC graduate research assistant Lauren Clay pictured at the Oklahoma City bombing memorial while on a field deployment to Moore, OK and Oklahoma City, OK to research the impact of recent tornados.

Advancing the state of the art in disaster research and its scientifically guided practice

2

Ph.D. students and DRC graduate research assistants James Goetschius, Lauren Clay and Rochelle Brittingham at graduation in 2014.

Educating the next generation of disaster science scholars & informed practitioners in the fields of disaster mitigation, preparedness, response & recovery

3

Newark Community Day 2014.

Creating, gathering and disseminating disaster knowledge in a dynamic and responsive way

In doing so, we create the "DRC experience" – one in which students advance as scientists and project managers and prepare for responsible positions in academia and in the policy and practice sectors.

As part of this experience, graduate students are collaborators and contributors on research projects, papers and presentations. They travel throughout the US and internationally to present their research at conferences and workshops. They gain tremendous field experience through quick response and field research deployments. Often, their work on field deployments sets the stage for future dissertation projects that make valuable contributions to science and practice.

Students have access to a continuously growing resource collection, providing them with vital, unique, and current research resources. They utilize this world-renowned collection to complete course assignments, expand their understanding of emergency management and disaster related concepts and theories, and develop personal areas of interest.

Students are mentored one-on-one by faculty

and build networks of supportive, professional relationships within the field because of their experiences at DRC. They graduate from UD and leave DRC with comprehensive knowledge of the field and invaluable connections formed around the world. Our students have gone on to take academic positions at universities around the world; start their own consulting businesses; joined the private sector with PriceWaterhouseCoopers and Innovative Emergency Management; and join agencies such as the State Oceanic Administration of China, the American Red Cross, the United Nations, the Center for Disease Control and Prevention, the Federal Emergency Management Agency, the U.S. Army Health Facility Planning Agency, and county and state level emergency management agencies.

Ph.D. student and DRC graduate research assistant Ziqiang Han at graduation in 2014.

DRC FACULTY & STAFF

Core Faculty

James Kendra, Director
School of Public Policy and Administration

Benigno Aguirre
Department of Sociology & Criminal Justice

Earl "Rusty" Lee
Department of Civil & Environmental Engineering

Joanne Nigg
Department of Sociology & Criminal Justice

Russell Dynes
Professor Emeritus & Founder of DRC

Tricia Wachtendorf, Associate Director
Department of Sociology & Criminal Justice

Rachel Davidson
Department of Civil & Environmental Engineering

Sue McNeil
Department of Civil & Environmental Engineering

Joseph Trainor
School of Public Policy and Administration

Enrico L. Quarantelli
Professor Emeritus & Founder of DRC

Affiliate Faculty

Deborah Alvarez
Department of English, University of Delaware

Eric Stern
CRISMART

Scott Knowles
Department of History, Drexel University

Andrea Sarzynski
School of Public Policy & Administration, University of Delaware

Staff

Victoria Becker
Business Administrator

Gail Kracyla
Administrative Assistant

Pat Young
Resource Collection Coordinator

Sarah DeYoung
Post-Doctoral Researcher

Caroline Palmer
Administrative Staff

Disaster Research Center Field Work, Cincinatti 1963

DRC'S GLOBAL REACH

PRESENTATIONS

Anchorage, AK

PRESENTATION

Boulder, CO

FIELD RESEARCH

Dallas, TX
Fort Worth, TX
Midlothan, TX
New York City, NY

PRESENTATIONS

Bay City, MI
Boulder, CO
Bridgeville, DE
Broomfield, CO
Charlottesville, VA
Carlisle, PA
College Station, TX
Emmitsburg, MD
Edinburg, TX
Lexington, KY
Millersville, PA
Kulpsville, PA
Newark, DE
Orlando, FL
San Francisco, CA
San Antonio, TX
Washington, DC
Colorado Springs, CO
St. Paul, MN

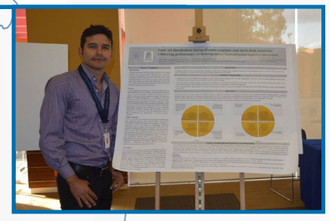
PRESENTATIONS

Mexico City, Mexico

FIELD RESEARCH

Moore, OK

PRESENTATIONS



Bogota, Colombia

PRESENTATIONS

Stockholm, Sweden

PRESENTATIONS

Geneva, Switzerland

PRESENTATIONS

Chengdu, China

PRESENTATIONS

Istanbul, Turkey

PRESENTATIONS

Singapore

FIELD RESEARCH

Iwate, Japan
Hirosaki, Japan

PRESENTATIONS

Tokyo, Japan
Yokohama, Japan

PRESENTATIONS

Seoul, South Korea

PRESENTATIONS

Taiwan

FIELD RESEARCH

Christchurch, New Zealand

PRESENTATIONS

Wellington, New Zealand

DRC has a global reach. Our students come from the United States, Colombia, Bangladesh, China, Taiwan, Saudi Arabia, and Portugal. Researchers conducted field studies in 3 countries and gave presentations in 12 countries. Our visiting scholars came from the US, China, Indonesia, and Italy.

DRC faculty and students were busy conducting focus groups in New York as part of the CoPE-WELL project (Composite of Post-Event Well Being), a model of resilience and recovery being developed and tested by Johns Hopkins University and DRC

Lessons from Superstorm Sandy

In October 2012, Superstorm Sandy wreaked havoc on the East Coast of the United States, leaving a path of destruction in its wake. Unfortunately, recovery from Superstorm Sandy was slow with millions of residents affected, but the evidence of its destruction was enough to convince many organizations of the need to incorporate community-level, interdisciplinary research into their long-range planning process. By 2014, the Disaster Research Center had several such projects underway, extensively assessing the impact of Superstorm Sandy across multiple disciplines.

In one such study, DRC partnered with New York City Department of Health and Mental Hygiene and Johns Hopkins Bloomberg School of Public Health, to study community resiliency in New York City after Superstorm Sandy. Specifically, their multidisciplinary research identified factors that influence community resistance, resilience, and recovery; developed a predictive model of resilience; and, identified possible interventions in order to promote disaster resilience and recovery strategies in New York City. Four graduate research assistants worked to implement focus groups and other data-gathering tasks, while over 50 undergraduate students conducted a robust telephone survey of 2,087 residents in New York City. Research compiled throughout the course of the project generated important findings on such community characteristics as social capital and preparedness.

The New Jersey Pier | Photo by US Air Force

Advancing the State of the Art in Disaster Research and its Scientifically Guided Practice

DRC has a well-established research tradition, built on a strong foundation in the social sciences, rich cross-disciplinary research, a capacity for quick response field research, and a culture of collaboration among faculty, staff, and graduate and undergraduate students. Building on this rich history, DRC continuously enhances its research activities as an innovative center for interdisciplinary thinking by leveraging the interests and capacities of many disciplines on campus and by partnering with other universities.

DRC PUBLICATIONS

DRC researchers publish in a variety of peer-reviewed journals, representing the diversity of DRC's expertise. In 2014, publications were featured in such outlets as the *Peace and Stability Operations Journal*, the *Journal of Homeland Security and Emergency Management*, *Risk Analysis*, *Natural Hazards Review*, and *Geohazards International*.

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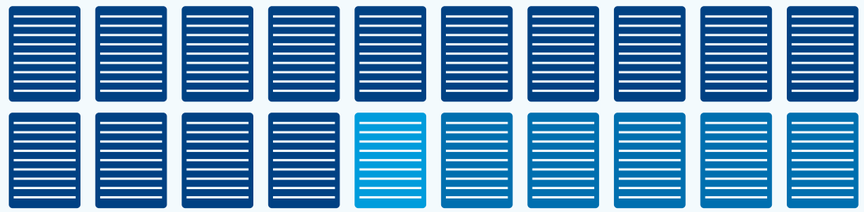
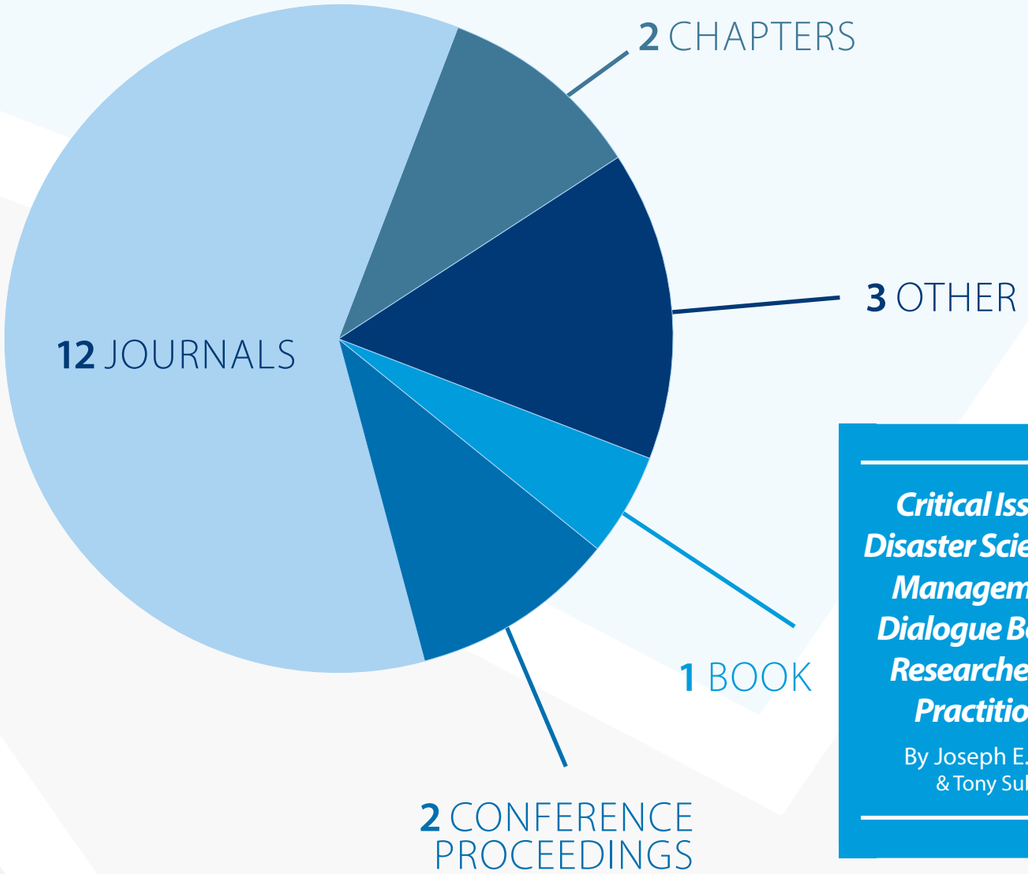


TOTAL PUBLICATIONS

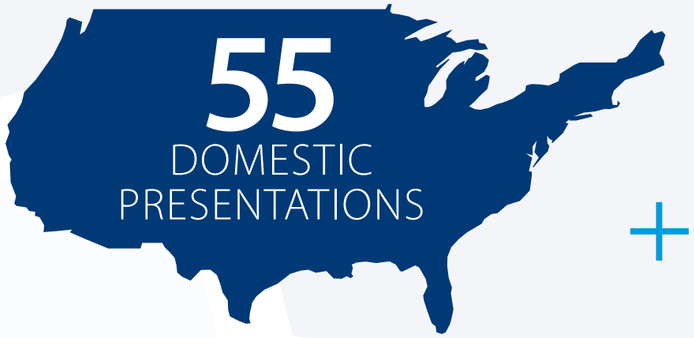
14 FACULTY **1 GRAD** **5 FACULTY/GRAD CO-AUTHORED**



Critical Issues in Disaster Science and Management: A Dialogue Between Researchers and Practitioners

By Joseph E. Trainor & Tony Subbio

DRC PRESENTATIONS



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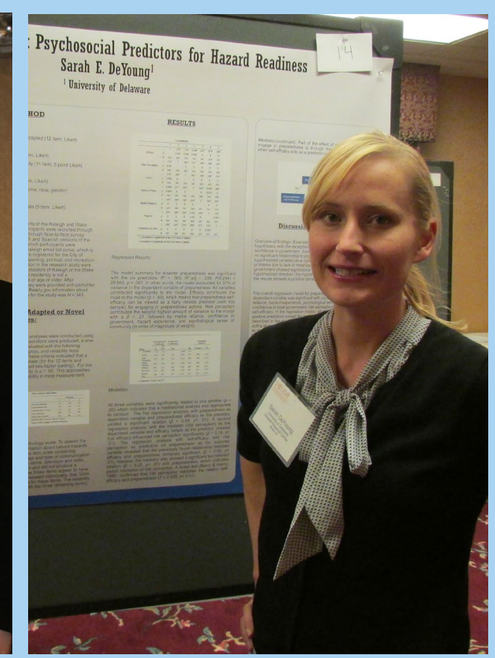
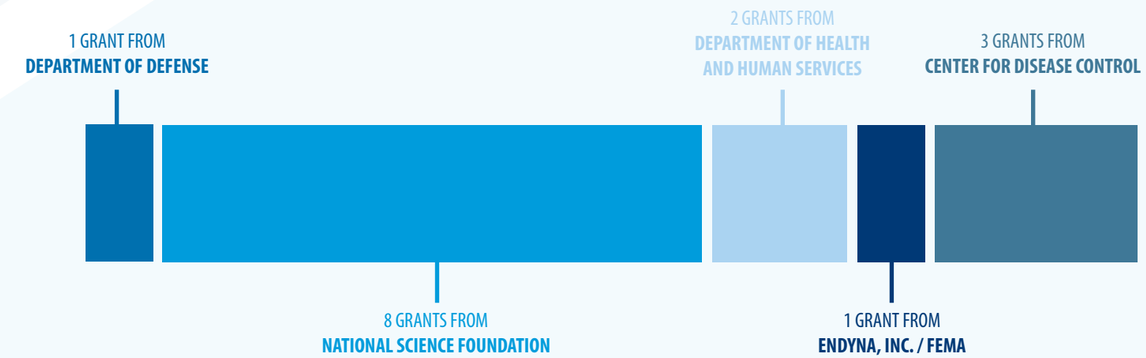
78 TOTAL PRESENTATIONS

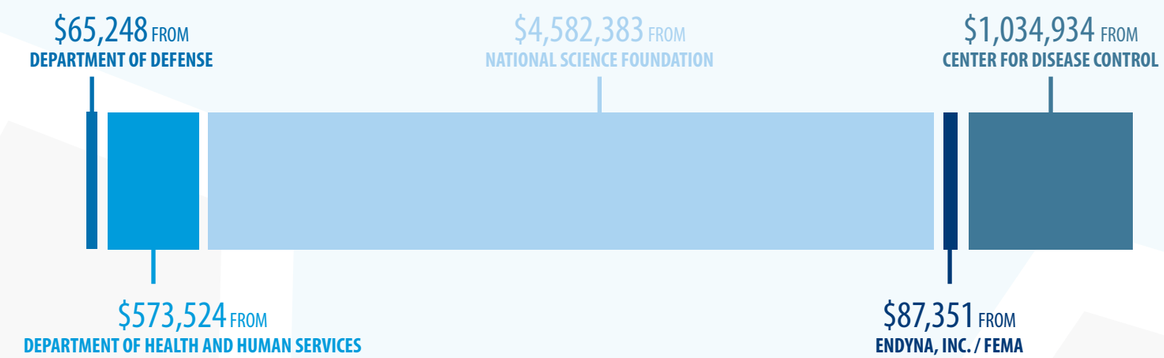
31 FACULTY/STAFF **30 GRAD** **17 FACULTY/GRAD CO-PRESENTED**



ACTIVE RESEARCH GRANTS



15 TOTAL ACTIVE GRANTS AWARDED TO DRC IN 2014



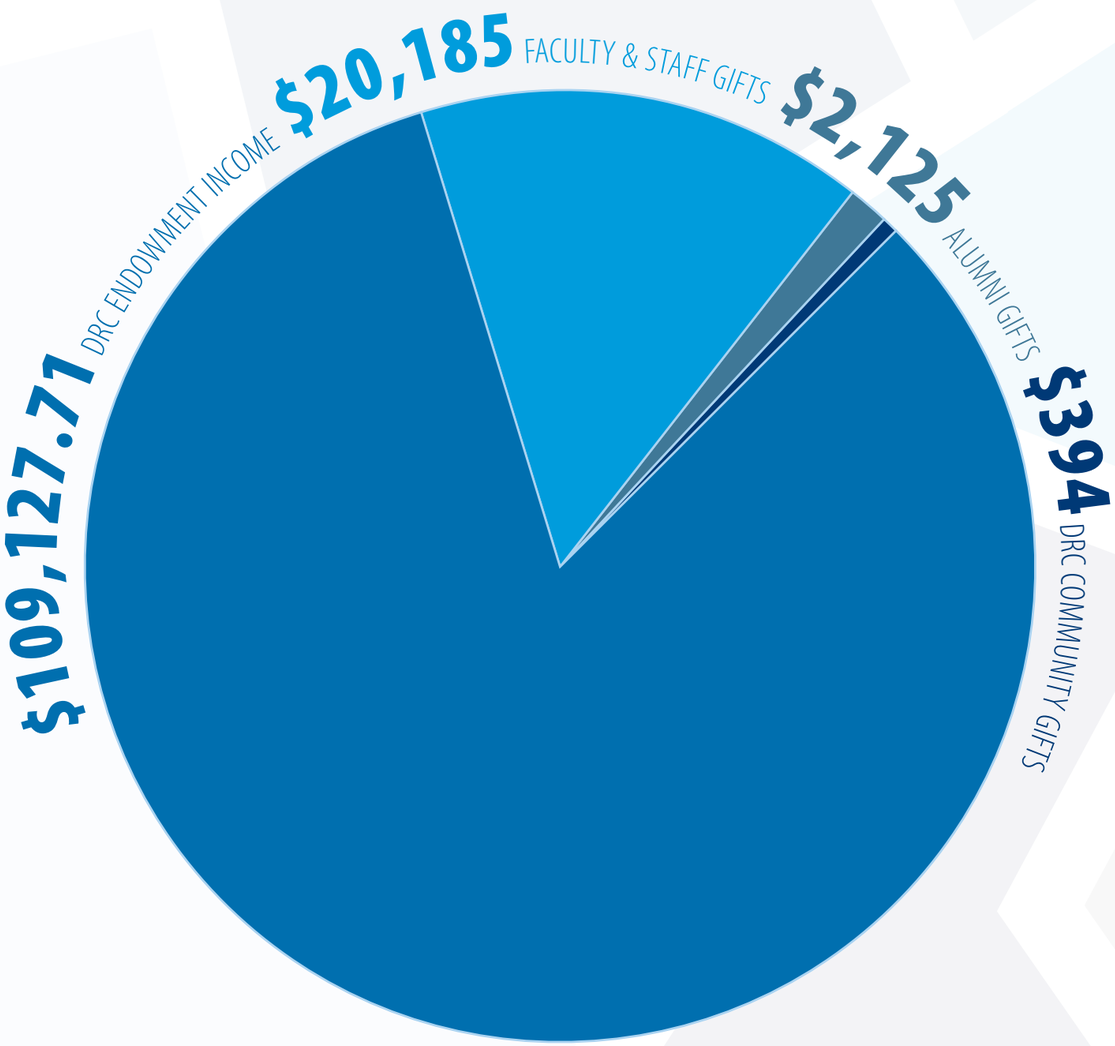
$6,391,367

TOTAL VALUE OF ACTIVE GRANTS AT DRC IN 2014

DRC engages with institutional partners to conduct cutting-edge, multidisciplinary research. Our contribution resulted in $14.5 million in active grants, $6.3 million of which supported activities at the Center.

GIFTS AND ENDOWMENT SUPPORT

As a result of generosity to the mission of the DRC, our endowment grew to $2.5 million in 2014.



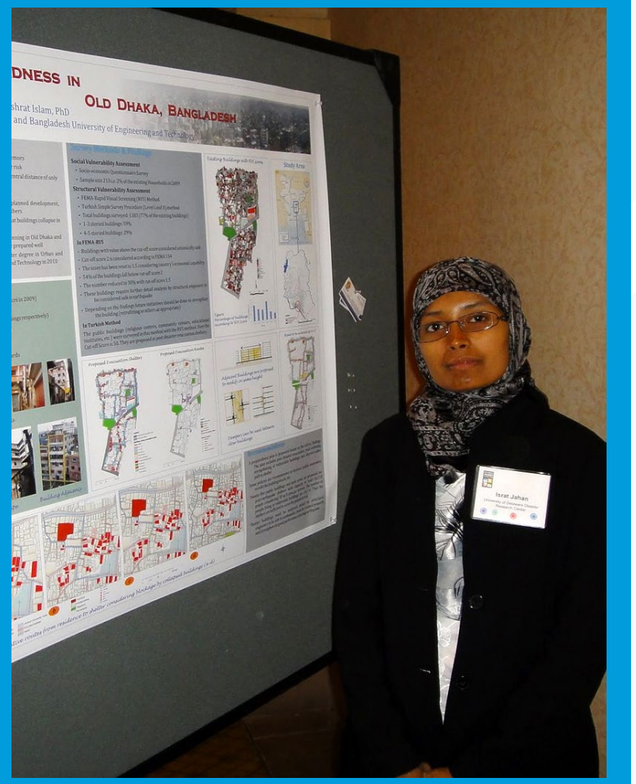
TOTAL: **$131,831.69**

Supporting Student Professional Growth

DRC believes that students are essential to the Center's mission and, as such, provides opportunities for student professional growth. In 2014, sociology Ph.D. students Mary Nelan and Samantha Penta worked on a large scale external grant as graduate research assistants. As members of the multidisciplinary team, Nelan and Penta worked closely with DRC faculty Tricia Wachtendorf to research donation collection and humanitarian logistics in disaster response. Not only did the students receive intensive training in data collection and analysis, but co-authored a book chapter, "When Push Comes to Shove: The Framing of Need in Disaster Relief Efforts" in *Learning from Calamities - Interpretative Patterns and Practices of Communication on Disasters and Catastrophes*. Because of their work on the project, both Nelan and Pentra presented their research with Professor Wachtendorf at the XVIII International Sociological Association World Congress of Sociology in Yokohama, Japan.

DRC faculty Joseph Trainor, Tricia Wachtendorf and James Kendra with graduate research assistants Mary Nelan, Alex Greer and Samantha Penta in Yokohama, Japan.

DRC supports the broader mission of UD's expertise in disaster education. Israt Jahan, an MS student in the DISA program, was awarded funding in an open call by DRC for students to present at the 39th Annual Natural Hazards Workshop in Broomfield, CO. Jahan presented her research on earthquake preparedness in Old Dhaka, Bangladesh and was one of eight students given this opportunity to engage with many of the leading scholars and practitioners in the hazards field.



(Right) DISA graduate student Israt Jahan presenting her poster "Earthquake Preparedness in Old Dhaka, Bangladesh" at the Natural Hazards Workshop.

Educating the Next Generation of Disaster Science Scholars and Informed Practitioners

DRC faculty members play an important role in graduate and undergraduate education at the University of Delaware. Faculty teach classes as part of their responsibilities in their home departments, serve in the governance of academic programs, coordinate and oversee disaster-related internships, and provide instruction and advisement through six disaster-related degree programs offered at UD.

(Left) Students from Professor Wachtendorf's undergraduate class showcased tehir disaster documentary videos.

DISASTER EDUCATION AT THE UNIVERSITY OF DELAWARE

Undergraduate Program

- BA, Sociology, Emergency & Environmental Management
- MS & PhD, Disaster Science and Management
- MCE & PhD, Civil Infrastructure Systems

Graduate Programs

- MA & PhD, Sociology w/ Specialization in Disasters & Environment
- MPA, Emergency Management
- MA & PhD, Urban Affairs & Public Policy

24 Faculty Courses Taught at UD

14 SPRING COURSES

10 FALL COURSES

INTERNSHIPS COORDINATED

UD students gain a wealth of experience through internships. In 2014, one graduate student in the Emergency and Environmental Management concetration and 3 Disaster Science and Management students enjoyed these opportunities.

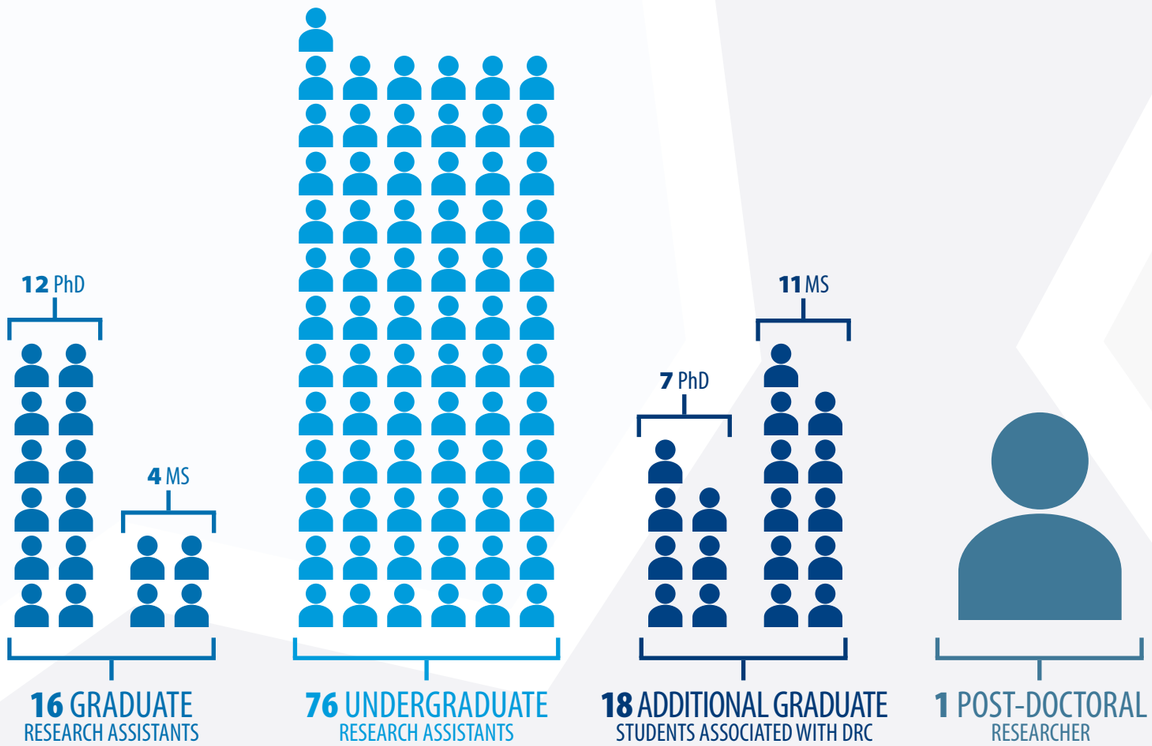
Willow Spring Towing and Recovery
Chantilly, VA

Earth Justice
New York, NY

New York City Office of Emergency Management (OEM) Training and Exercise Intern
New York, NY

University of Delaware's Office of Emergency Management
Newark, DE

DRC SUPPORT FOR UNDERGRAD & GRADUATE STUDENTS



OUT IN THE WORLD

DRC supports students to engage in fieldwork on exciting research projects or to dessiminate their findings to broad audiences.

8 FIELD RESEARCH TRIPS + **13** CONFERENCE TRAVELS = **21** STUDENT FUNDED TRIPS

FUNDING FOR THE NEXT GENERATION OF DISASTER RESEARCHERS

$24,000 Post-Doctoral Support	**1** Post-Doctoral Student Researcher
$170,033 Disaster Science & Management Graduate Support	**10** Disaster Science & Management Graduate Students
$44,733 Sociology & Criminal Justice Graduate Support	**3** Sociology & Criminal Justice Graduate Students
$16,850 Civil & Environmental Engineering Graduate Support	**2** Civil & Environmental Engineering Graduate Support
$8,425 Electrical & Computer Engineering Graduate Support	**1** Electrical & Computer Engineering Graduate Students
+ **$52,529** Undergraduate Support	+ **76** Undergraduate Students
$316,570 Assistantship Support	FOR **93** Students

OUTREACH AND DISSEMINATION

Creating, gathering and disseminating disaster knowledge in dynamic and responisve ways.

Serving Our Community

IAEM@UD is the University of Delaware's student chapter of the International Association of Emergency Managers. IAEM@UD student members undertake a number of educational and service-oriented activities in four main categories: contributions to the profession, student education and professional development, contributions to the national organization, and community service. DRC faculty advise and participate in IAEM@UD activities, while DRC staff support the group administratively. DRC support of IAEM@UD enabled the student group to host 10 speakers as participants in their annual Speaker Series, participate in a publishing toolkit workshop, organize a day-long quick response training session for over 30 participants, and engage with our local community about disaster "myths" and how best to prepare for disasters using child-friendly disaster-themed games at Newark Community Day in 2014.

IAEM@UD members in Staten Island

IAEM@UD members working on-site to repair a home damaged by Superstorm Sandy

As part of their community service and engagement effort, nine IAEM@UD student group members traveled to Staten Island in May 2014 to serve families struggling to recover from Superstorm Sandy. IAEM@UD students partnered with All Hands Volunteers to help a family repair their home which was damaged during the storm. Students spent the day sanding and painting newly installed drywall throughout the house, which is no easy task! The service project offered students a hands-on opportunity to help a family who experienced the destructive force of a disaster first-hand.

iAEM@UD

24 GRADUATE STUDENT MEMBERS IN 2014

10 INVITED GUEST SPEAKERS IN 2014

The IAEM@UD speaker series brings in practitioners and researchers from the private, nonprofit, academic, and government sectors to engage with students on issues in emergency management – a chapter initiative that supplements members' coursework and offers opportunities for networking.

Fostering Collaborative Partnerships

When given the opportunity to go on sabbatical, faculty often utilize this time away from campus to pursue innovative research interests that would otherwise not be possible on campus. DRC core faculty Rachel Davidson took advantage of her 2013-2014 sabbatical by spending time as an academic visitor at the Department of Civil and Natural Resources Engineering at the University of Canterbury in Christchurch, New Zealand. With recovery from the 2010 and 2011 Christchurch earthquakes ongoing, Professor Davidson met with local scientists throughout the affected area to discuss the sequence of the damaging earthquakes and the extent of the severe damage in the heart of the city. She also presented to government officials and academics on response and recovery efforts given the high penetration of earthquake insurance and participated in a World Bank/EERI/NZSEE (New Zealand Society of Earthquake Engineers) visit to Christchurch to study efforts to build back better as part of earthquake recovery. Working closely with stakeholders in policy and practice allows DRC researchers to both design better research studies as well as disseminate information quickly to those most likely to implement the findings into practice. Engaging in such research alongside a broad range of collaborators positions the Center to have a holistic impact and further advance the disaster science field in transformative ways.

3 PRACTITIONERS

4 STUDENTS

14 SCHOLARS

11 COUNTRIES OF ORIGIN

21 VISITORS IN 2014

DRC Cross-Cultural Collaboration

One of the elements that makes the DRC a vibrant center of research is our frequent hosting of visiting students, scholars and practitioners, and our partnerships with institutions around the world.

Researchers travel to DRC to interact with faculty researchers and graduate students and to utilize the publicly accessible E. L. Quarantelli Resource Collection. Visiting researchers stay at DRC for varying lengths of time ranging from one day or a semester to as long as a year.

Preserving of Disaster Knowledge

When Dr. Cècile Stehrenberger, assistant professor at the Univewrsity of Zurich, first visited the E.L. Quarantelli Resource Collection at DRC in Fall of 2013, her goal was to examine material in the Fritz collection - a collection of professional papers of Charles Fritz, an early pioneer of the disaster research field. Professor Stehrenberger spent 1 year at DRC researching the history of social science disaster research during the Cold War and worked closely with Resource Collection Coordinator Pat Young.
As a result of her research conducted as a visiting scholar at DRC, Professor Stehrenberger authored several publications, including a chapter, "Katastrophen, Cold War Social Sciences und Fallwissen. Zur Geschichte der sozialwissenschaftlichen Katastrophenforschung," [Disasters, Cold War Social Sciences and Case Studies. On the History of Social Science Disaster Research] in Itinera. Beiheft zur Schweizerischen Zeitschrift für Geschichte

The Enrico L. Quarantelli Resource Collection at DRC

The E. L. Quarantelli Resource Collection contains the world's most complete collection on the social and behavioral science aspects of disasters. Now numbering more than 67,000 items, the Collection is open to any interested researcher.

1,011 NEW ACQUISITIONS

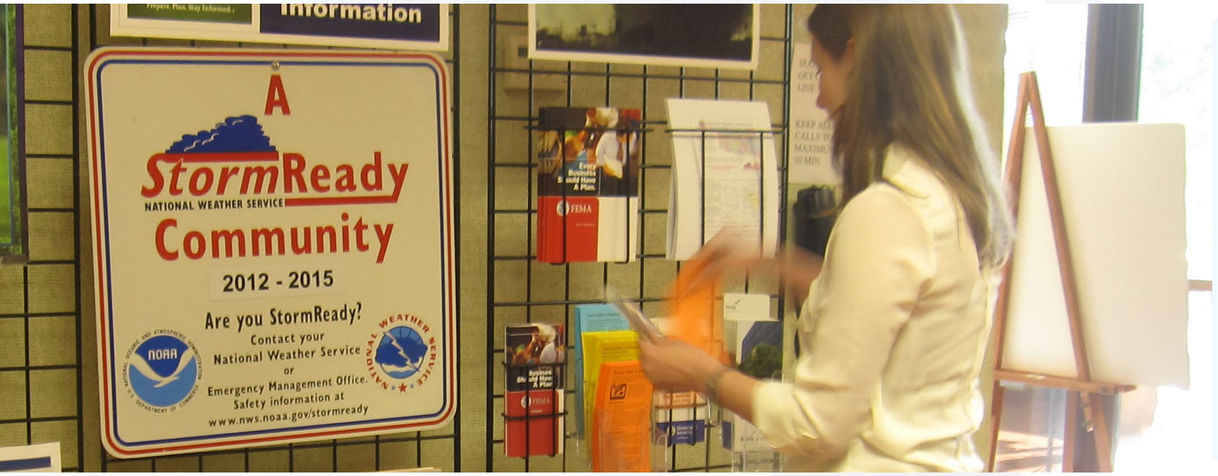
34 STUDENT USES

158 BOOKS (LIBRARY OF CONGRESS SURPLUS BOOK PROGRAM)

OVER **67,000** ITEMS

SERVICE TO THE PROFESSION

DRC Faculty engage in professional service to their respective disciplines and its organizations by consulting with public and community organizations, serving on boards and committees, and responding to media inquiries.



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FACULTY & GRADUATE STUDENT STAKEHOLDER PRESENTATIONS

Sampling of Organizations:

- *Delmarva GIS*
- *US Department of Homeland Security Maritime Operational Threat Response*
- *OECD/Swiss Federal Chancellory*
- *Nippon Volunteer Network of Japan*
- *Singapore Prime Minister's Office and the S. Rajaratnam School of International Relations*
- *S. Korean Foreign Ministry and S. Korean Ministry of Public Administration & Security*
- *Swedish Contingencies Agency*
- *National Science and Technology Center for Disaster Reduction of Taiwan*

SELECTED SERVICE TO THE PROFESSION

Sampling of Services:

- *Member, International Advisory Board for National Research Center for the Integrated Management of Natural Disasters in Chile*
- *Program Committee Chair, Third International Conference on Urban Disaster Reduction*
- *Member, Learning from Earthquakes Advisory Board for Earthquake Engineering Research Institute*
- *Member, American Society of Civil Engineers; Member, Earthquake Engineering Research Institute*
- *Guest Associate Editor, Natural Hazards Review*
- *Contributing Author, Canadian Assessment of Natural Hazards Project*
- *Manuscript Review, International Journal of Mass*

DRC STUDENTS

UNDERGRADUATE RESEARCH ASSISTANTS

Aguilar-Quiroz, Michelle
Andes, Blake
Argibay, Sofia
Arndt, Lindsay
Artese, Peter
Aronowitz, Dana
Barner, Clare
Bisram, Ahisha
Bisram, Marisa
Boone, Jennifer
Bowen, Megan
Buckalew, Jacob
Burke, Kelsey
Butler, Merideth
Butler, Shawn
Castillo, Yadira
Celli, Samantha
Cherico, Amy
Chintala, Asha
Cory, Matthew
Daddono, Molly
Deely, Brigid
DeLaurentis, Brittany
Delgado-Martin, Yisue
D'Esposito, Briana
DiPaolo, Laura
Feng, Yue
Flynne, Courtney
Gamble, Catherine
Hamill, Stefanie
Hill, Valerie
Hossain, Abdel
Jacik, Brianna
Keane, Joseph
Kebbe, William
Lane, Colleen
Leitner, James
Leung, Sydney
Lightman, Lindsay
Lin, Yuanyuan (Shirley)
Lumpkin, Faith
Martinez, Josue
Mazzarella, Taylor
McLaughlin, Declan
Medina, Catalina
Mininger, Kelsey
Mosia, Fallon
Munzipapa, Ali
Nadel, Victoria
O'Brien, Karly
Oppenheimer, Dominique
Oria, Yma
Owsiany, Brian
Personette, Marissa
Powell, Samantha
Ranges, Kristen
Reece, Michelle
Reyes, Alyssa
Riggins, Byron
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