



2021 FEMA Region 8 Higher Education Forum

After Action Report

July 28–30, 2021



FEMA

This report was prepared through a collaborative effort between the FEMA's National Training and Education Division (NTED) Higher Education Program, FEMA Region 8, the Colorado School of Mines, and Catalyst Health Tech Integrator (HTI).

Cover photo by Minh Phan, FEMA Region 8, 2021.

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Engagement Overview

<i>Item</i>	<i>Description</i>
Meeting Name	FEMA Region 8 Higher Education Forum
Meeting Dates	July 28-30, 2021
Scope	The FEMA Region 8 Higher Education Forum consisted of presentations by senior FEMA officials, a presentation of original research underwritten by FEMA, introductions to programs across Region 8, large group working sessions on development of a research agenda, and a presentation of lean innovation best practices. The first two days of the forum were held at Catalyst Health Tech Integrator (HTI), a startup incubator for the University of Colorado and the Colorado School of Mines. The final day was held at the Colorado School of Mines.
Meeting Themes	Partnership between academics and practitioners; climate change adaptation; collaboration amongst institutions of higher education and with FEMA.
Purpose	The purpose of this event was to bring together emergency management practitioners, teachers, and students to share and develop best practices for future collaboration.
Meeting Objectives	<p>Primary Objectives:</p> <ol style="list-style-type: none"> 1. Developing a framework for an institutionalized, multi-year partnership between academic institutions and emergency management practitioners across Region 8. 2. Developing initial Region 8 Research Agenda with 5-7 topics for investigation by Region 8 academic and practitioner partners. 3. Understanding the support needed/wanted by institutions of higher education across Region 8 (e.g., internships, research opportunities, funding). 4. Sharing best practices for the development and implementation of lean innovation curriculum to develop solutions for emergency management issues. <p>Secondary Objectives:</p> <ol style="list-style-type: none"> 1. Increased research into pressing topics and stronger working relationships between FEMA Headquarters, Region 8, and academics in Region 8. 2. Increased awareness of opportunities for mutually beneficial and synergistic relationships between FEMA Headquarters, Region 8, and institutions of higher education across the northern Great Plains and the Mountain West.

Item	Description
	<p>3. Facilitation of network development amongst academics across Region 8 to create organic partnerships for future collaboration and research.</p> <p>4. Shared awareness of current and future challenges facing emergency management across Region 8 as well as opportunities to jointly address these challenges.</p> <p>5. Invitations to Regions 1 and 7 to the event to allow them to observe and gain lessons for their own future higher education events.</p>
Sponsor	FEMA Region 8
Participating Organizations	A wide variety of organizations participated in this engagement event, including representatives from FEMA Headquarters, the Emergency Management Institute, FEMA Region 8, and academics from across Region 8. Represented were institutes of higher education including military academies, community colleges, private non-profit institutions, private for-profit institutions, and state flagship schools.
Point of Contact	<p>FEMA Region 8 Daniel R. Green Resilience Analyst, National Preparedness daniel.green3@fema.dhs.gov</p> <p>Colorado School of Mines Dr. Sid Saleh Associate Director, McNeil Center for Entrepreneurship & Innovation shsaleh@mines.edu</p>

Executive Summary

The Region 8 Higher Education Forum was hosted from July 28–30, 2021 in the Denver metropolitan area. The Forum was designed to bring together emergency management practitioners and researchers across the northern Great Plains and the Mountain West region. The first two days were hosted at Catalyst HTI, a health startup incubator in Denver that also has offices held by the University of Colorado and the Colorado School of Mines. The final day was held at the Colorado School of Mines, where professors were introduced to lean innovation curriculum and best practices.

Planning for the engagement event in terms of schedule, objectives, and logistics was coordinated in a collaborative effort between FEMA and representatives from the Colorado School of Mines and the Naval Postgraduate School’s Center for Homeland Defense and Security (CHDS):

- Daniel Green, Resilience Analyst – FEMA Region 8

- Lisa Lofton, Senior Advisor – FEMA NTED
- Kelly Fitzgerald, Higher Education Program Manager – FEMA NTED
- Dr. Sid Saleh, Colorado School of Mines – McNeil Center for Entrepreneurship & Innovation
- Steve Recca, Naval Postgraduate School – University & Agency Partnership Program (UAPP)

A three-day program was developed under the themes of “Together”. See Appendix C for the full program.

- Day 1 – Coming Together
- Day 2 – Researching Together
- Day 3 – Innovating Together

The Forum was hosted as a hybrid event with both in-person and virtual participation. The majority of the in-person participants were from the Denver metropolitan area and virtual participants were from many other states. This was anticipated due to the geographic size of Region 8 and COVID-19 health and safety guidance, which limited in-person activities.

The agenda on Day 1 focused on a broad overview of FEMA higher education priorities by Region 8 and NTED. Both Region 8 and NTED introduced programs by way of brief 5-minute presentations, highlighting FEMA-supported research by Dr. David McEntire (Utah Valley University) and Dr. Kate Browne (Colorado State University). The day ended with a presentation from Region 8 Mitigation on projects in historically underserved neighborhoods along the South Platte River in Denver.

This first day focused on demonstrating to academic partners the paradigm shift within FEMA’s Higher Education Program. Greater emphasis is now being placed on partnering with higher education programs across the nation to address tough challenges facing the nation and the field of emergency management.

Day 2 focused on developing a research agenda to guide efforts across Region 8, identifying ways Region 8 could support career development and research by students, and a debrief led by the Region 8 Continuous Improvement Program. While discussion on the research agenda did not yield concrete topics in a clearly defined list, observers identified some general areas of interest. (See Appendix B). The latter sessions in the day allowed the participating academic programs to share their needs and ideal outcomes with FEMA.

Day 3 was held at the Colorado School of Mines and included an academic peer learning session on developing and implementing lean innovation curriculum from Dr. Sid Saleh. Drawing from both Hacking For Defense (H4D) and Hacking For Homeland Security (H4HS) programs, as well as his own experience working in Silicon Valley, Dr. Saleh shared ideas such as “problem statements” and

“entrepreneurial flipped coursework” that allow students to address emergency management problems by using proven startup approaches.

The virtual aspect of the Forum would have been impossible without the support of Kristen Thornton and Sarah Hanson, representing the Center for Homeland Defense and Security (CHDS), an NTED training partner. Their invaluable support allowed for a near-perfect virtual event.

Overall Themes

One of the most important themes identified during Day 2 was the need to expand emergency management studies and operations to be truly interdisciplinary. Following the presentation by Dr. Kate Browne, anthropology was identified as having significant relevance to the field of emergency management. A multidisciplinary approach to improve and expand emergency management was a consistent theme across breakout groups throughout the day.

Another recurring theme throughout Day 2 was the need to better understand Region 8. Demography – including age, race, distribution, employment – was highlighted, as was geography, economics, and climate. Participants recognized the need to better understand how geography, climate, and population intersect, especially in an age defined by the impacts of climate change.

Also, worth noting were discussions of climate change and non-Stafford Act disasters. For example, droughts will continue to impact large swathes of Montana, North Dakota, and South Dakota. This will wreak havoc with a primary agricultural region of the United States and cause prolonged economic damage through incidents that are not eligible for traditional disaster declarations. Likewise, wildfires are forecasted to worsen across the West, impacting air quality, watersheds, and soil quality. Given the vast acreage of public lands in the West, disaster declarations for fires are rare even if the impacts range far beyond the perimeter into private lands and communities.

Most notably, a consistent theme raised by the universities and colleges present was a deep-seated dissatisfaction with the current system for student opportunities with FEMA and in Region 8 specifically. For institutes of higher education in Montana, North Dakota, South Dakota, and Utah, Denver does not offer many viable opportunities for their students, due to travel issues with cost and distance, and higher cost of living. As such, paid internships are the only viable opportunity, but no one expressed confidence in the [Federal Pathways Program](#). Region 8 was urged to develop some sort of internship program to provide a career development pathway for future emergency managers and to strengthen relationships across the Region.

Successes

During the debrief held on Day 2 of the Forum, and in subsequent meetings after the Forum concluded, a number of successes and best practices were identified:

- The utilization of Continuous Improvement Program personnel (Nathaniel Baumgardner, Jorge Lomas) and FEMA Higher Education Program contract support (Rebecca Burns) allowed for

thorough knowledge capture and detailed notes for the entirety of the Forum. Without their hard work and support, this synopsis would not be possible.

- Technical support from CHDS Contractors (Kristen Thornton and Sarah Hanson) allowed for nearly flawless execution of a hybrid event across multiple states and time zones.
- The “speed dating” round that allowed academics to introduce themselves and their programs facilitated collaboration and communication between programs across the wide-reaching area that Region 8 covers.
- Presentations by Dr. David McEntire and Dr. Kate Browne provided evidence that FEMA intends to support academics as they study and investigate pressing matters in emergency management.
- The Forum provided opportunities for institutions of higher education to voice their particular needs – both as institutions and on behalf of their students – to FEMA officials for future consideration.
- The inclusion of Region 1 and Region 7 in advance of their own higher education events allowed them to watch, listen, and learn as they developed their own agendas and programs.
- The discussion on the research topic – though suboptimal – did result in general trends in conversation and debate among participants that led to generating additional research topics and greater understanding of research areas of interest for individual academics in Region 8.
- The dedication of a day to the topic of lean innovation curriculum exposed many institutions to new forms of instruction that generated substantial interest and may offer opportunities for expansion of lean innovation curriculum across the nation.

Areas for Improvement

- Most notably, one of the shortcomings of the Forum was the lack of development of a clearly defined research agenda. This was, in large part, due to a misalignment between the desire for free discussion and the need for a more systematic and structured approach to create a research agenda. This shortcoming informed efforts by observers from Region 1 and Region 7, who were able to adjust their own events to compensate.
- Of particular concern to Region 8 was the lack of participation by tribal colleges. With 29 federally recognized tribes across the six states in Region 8, tribes are an integral aspect of the northern Great Plains and the Mountain West. Invitations were extended to the Salish Kootenai College (a tribal college in Montana) and Ft. Lewis College (a unique state/tribal college in Colorado). Region 8 will work with tribal advisors in External Affairs to encourage participation in the future.

- Numerous Region 8 academics commented on the need for a venue outside Denver. Though the ban on non-essential travel by federal personnel necessitated a venue for the Forum in the Denver area, these concerns are valid and reflect a perennial issue in Region 8. Region 8 covers a large area that presents numerous travel challenges. For example, air travel from Missoula, Fargo, or Sioux Falls to Denver is neither easy nor affordable and the drive from Utah is deceptively long due to the need to cross the Rocky Mountains. This complicates not only Region 8 efforts to engage stakeholders, but also opportunities for students from many Region 8 states to engage with FEMA in a meaningful way.
- An additional area for improvement was the way in which invitations were extended. As Appendix A demonstrates, a significant number of personnel not affiliated with higher education outreach or Region 8 registered to attend. For future events, steps are being taken to ensure that appropriate stakeholders for higher education outreach are invited.

Appendix A: Registrations

Note: During the initial lead-up to this event, the registration link was shared by FEMA Higher Education on their listserv, allowing a wide number of people to register via the Eventbrite site. This included a limited number of international professors, and a large number of FEMA personnel who might not otherwise have come.

Actual participation varied over the days as attendees balanced administrative tasks and other responsibilities with attending the Forum. As such, a headcount is near impossible to determine.

There were 100 total registrations. The table below is sorted based on alphabetical order.

A safe estimate would be a maximum attendance of 45 people per day, both in-person and virtual.

Table 1: Registered Attendees

<i>First Name</i>	<i>Last Name</i>	<i>Affiliation</i>	<i>Participation</i>
Roxana	Allen	FEMA HQ	Virtual
Michael	Anderson	United States Air Force Academy	Virtual
Erin	Arneson	Colorado State University	In-Person
Jolie	Breeden	Natural Hazards Center	Virtual
Barbara	Brown	FEMA, Region 2	Virtual
Craig	Brown	FEMA HQ	Virtual
David	Browne	Colorado Technical University	Virtual
Katherine	Browne	Colorado State University	Virtual
Christina	Bunnell	Salem Health	Virtual
Rebecca	Burns	FEMA HiEd	Virtual
Tina	Bynum	Pikes Peak Community College	Virtual
Louis	Caprio	Vincennes University	Virtual
Jim	Cedeno	Winds of Progress	Virtual
Heather	Champeau	Natural Hazards Center, University of Colorado Boulder	Virtual
Divya	Chandrasekhar	University of Utah	Virtual
Monique	Charleston	Appalachian plateau	Virtual
Catherine	Clark	FEMA HQ	Virtual

<i>First Name</i>	<i>Last Name</i>	<i>Affiliation</i>	<i>Participation</i>
Ajenai	Clemmons	University of Denver	Virtual
Terry	Cookro	FEMA HQ	Virtual
John	Cornelison	eoc.online	Virtual
Silvana	Croope	Alabama Transportation Institute	Virtual
Stephen	Cummings	SPiC	Virtual
Bridgette	Davis	FEMA HQ	Virtual
Kimala	Davis	FEMA HQ	Virtual
Stephen	Davis	Whitman College	Virtual
Lee	dePalo	Disaster Tech	Virtual
Gregory	D'Ercole	FEMA Region 1	Virtual
Heidi Johanna	Dilan	Ponce Municipality	Virtual
Sandra	Doan	University of Oklahoma	Virtual
Shirl	Donaldson	The University of Michigan Flint	Virtual
Tracy	Doyle	Synergy Disaster Recovery	Waitlist
Artesia	Dupree	Oakland Housing Authority	Virtual
Heather	Dwyer	Health Natural Healings	Virtual
Jaimie	E Portelle	AC Disaster Consulting	Virtual
Hector	Estrada	FEMA HQ	Virtual
Rhonda	Fischer	Indiana University	Virtual
Kelly	Fitzgerald	FEMA HiEd	Virtual
Kyle	Flesness	FEMA Region 8	In-Person
Teresa	Frank	Louisiana Dept. of Health	Virtual
Angie	Garrett	Intervention 180	Virtual
Michael	Gavin	Texas A&M University	Virtual
Femi	Giwa	Lagos State Ministry of Environment and Water Resources	Virtual
Elizabeth	Glowacki	Yavapai County	Virtual

<i>First Name</i>	<i>Last Name</i>	<i>Affiliation</i>	<i>Participation</i>
Carmen	Goodman	Indiana Department of Homeland Security	Virtual
Kay	Goss	George Mason Univ., UNLV, Metropolitan College	Virtual
Daniel	Green	FEMA Region 8	In-Person
Stacie	Greff	FEMA Region 8	Virtual
Lewis	Griffith	Josef Korbel School - University of Denver	In-Person
Joe	Gross	Synergy Disaster Recovery	Waitlist
Caroline	Hackerott	North Dakota State University	Virtual
Misty	Haley	Shelby County Emergency Management & Homeland Security Office	Virtual
Tom	Haug	Witt O'Brien's	Virtual
John	Hill	University of Denver	In-Person
Peter	Howe	Utah State University	Virtual
Jessica	Jensen	North Dakota State University	Virtual
Barbara	Johnson	FEMA HiEd	Virtual
Earle	Johnson	American Red Cross	Virtual
Ashley	Kimbley	None	Virtual
Debra	Kreisberg	Colorado School of Public Health	Virtual
Nicolas	LaLone	University of Nebraska at Omaha	Virtual
Romeo	Lavarias	City of Miramar, FL Fire-Rescue Dept.	Virtual
Charles	Lawley	FEMA Region 8	In-Person
Chris	Lindquist	Utah Valley University	Virtual
Tammy	Littrell	FEMA Region 8	In-Person
Peter	Loebach	Arapahoe Community College	In-Person
Lisa	Lofton	FEMA NTED	Virtual
J_Eugene	López-Rivera	FEMA HQ	Virtual
Lauren	Loyless	FEMA Region 6	Virtual

<i>First Name</i>	<i>Last Name</i>	<i>Affiliation</i>	<i>Participation</i>
Nicole	Marks	Nassau County Office of Emergency Management	Virtual
Candace	May	South Dakota State University	Virtual
David	Maya	DM Planning and Architecture Consultants	Virtual
James	McDonald	Self Employed	Virtual
David	McEntire	Utah Valley University	Virtual
Franky	Mercado	Gobierno	Virtual
Lloyd	Mitchell	University of North Carolina, Elizabeth City	Virtual
Ashley	Morris	Baltimore County OEM	Virtual
Katie	Murphy	Natural Hazards Center	Virtual
Obinna	Njoku	Nigerian Army Medical Corps	Virtual
Michelle	Norphlet	FEMA NTED	Virtual
Daniel	Nyquist	FEMA Region 8	In-Person
Audra	Ouellette	EPA	Virtual
Joel	Palmer	FEMA Region 8	Virtual
Lori	Peek	Natural Hazards Center and Sociology, University of Colorado Boulder	Virtual
Sofia	Pendleton	FEMA HQ	Virtual
Minh	Phan	FEMA Region 8	Waitlist
David	Plance	US Dept of Transportation	Virtual
Spencer	Pollock	Wyoming Office of Homeland Security	Virtual
Des	Raj	Higher Education Commission Haryana India	Virtual
Mallory	Ray	Volunteer State Community College	Virtual
Steve	Recca	Naval Postgraduate School/CHDS	In-Person
Jennifer	Reich	University of Colorado Denver	Virtual
Thomas P	Ryan	Tatanka Counseling Services North Dakota	Virtual

<i>First Name</i>	<i>Last Name</i>	<i>Affiliation</i>	<i>Participation</i>
Sid	Saleh	Colorado School of Mines	In-Person
Richard	Schaffer	FEMA HQ	In-Person
Reynaud	Serrette	Santa Clara University	Virtual
David	Shanks	Georgia Emergency Management and Homeland Security Agency	Virtual
Christopher	Sheach	Arkansas Tech University	Virtual
Matt	Short	TX DSHS	Virtual
Karen	Silveira	OPM/FEMA	Virtual
David	Silversmith	FEMA HQ	Virtual
Arthur	Simental	Colorado Technical University	Virtual
Jeffrey	Sloan	FEMA HQ	Virtual
Amanda	Smith	FEMA NTED	Virtual
Helen	Steinberg	HEMA	Virtual
MacGregor	Stephenson	Texas Division of Emergency Management	Virtual
Jeff	Stern	Emergency Management Institute	In-Person
Courtney	Tan	Embry-Riddle Aeronautical University	Virtual
Tara	Thorbin	Banner Health/LSA/SQL	Virtual
Jennifer	Tobin	Natural Hazards Center, University of Colorado Boulder	Virtual
Dustin	Walsh	Managed Business Solutions	Virtual
Wendy	Walsh	FEMA HQ	Virtual
Tomicka	Williams	Purdue University Global	Virtual
Sabrina	Willis	FEMA HQ	Virtual
Mariama	Yakubu	University of New Haven	Virtual
Kyle	You	University of Colorado Denver	In-Person

Appendix B: List of Proposed Research Areas

Discussion on the second day of the Forum was vociferous and energetic. Participants in the second day represented a variety of studies and backgrounds, giving both depth and width to the conversation on formulating a research agenda to steer efforts in Region 8.

Facilitated by Steve Recca of the Naval Postgraduate School's Center for Homeland Defense and Security, debate on topics continued for the majority of the second day. Discussion was conducted in a hybrid environment, with in-person participation at Catalyst HTI being a clear minority compared to a large number of virtual participants who joined from across the nation.

To spark conversation, Division Directors in Region 8 were polled for topics they were interested in seeing researched. Many of these coalesced around questions relating to equity, climate change, and the desire to further professionalize emergency management. Administrator Criswell's priorities were shared, as well.

The debate did not result in a consensus regarding the final outcome of a research agenda, but through careful notetaking provided by Region 8 Continuous Improvement Program specialists (Nate Baumgardner, Jorge Lomas) and the FEMA Higher Education Program (Rebecca Burns), debate seemed to crystalize around four major topics:

1. Equity Concerns in Emergency Management

One topic that appeared independently in all discussion rooms was that equity cannot merely be conceived of an aspect impacting response and recovery from incidents. Rather, it is an underlying cultural phenomenon that actively steers the considerations and actions of individuals in different ways in response to the same incidents. As such, it must be understood as not merely a disparity that should be addressed by federal resources but also a means by which people experience their day-to-day lives.

2. Climate Change and Non-Stafford Act Incidents

Of note was the discussion around issues such as water management in river basins and drought impacting the agricultural heartland of the United States. This was likely informed by contemporaneous news releases highlighting the dire state of the Colorado River Basin prior to the Forum and prolonged periods of sustained drought that have wreaked havoc on farms in Montana, North Dakota, and South Dakota. None of these are Stafford Act-eligible incidents but stand to negatively impact Region 8 residents and economies in a multitude of ways.

3. Region 8 Hazards

Region 8 hazards exemplify the changing West and the issues faced not just by the Denver office but by Regions 9 and 10 as well. Prolonged forest fires, unpredictable weather, extreme cycles of drought and flood were identified as key topics worth further investigation due to the prolonged impacts they have on the governments and people of the American West.

4. Intersectionality and Emergency Management

It should be noted that there was considerable overlap between these areas, as equity was identified as a key concern underlying each research consideration. In addition, climate change was identified as exacerbating all concerns, both in terms of the severity of incidents and continued impacts to socioeconomic trends that could substantially impact equity concerns.

Region 8 plans to convene a much smaller working group consisting of members from key universities across the six states to finalize a research agenda in CY 2022. Until that time, Region 8 plans to use the FEMA Strategic Plan, Regional Administrator priorities, and these broad categories to inform selection of research efforts to support.

Appendix C: Agenda

July 28, 2021 (Catalyst HTI)

8:00 AM | Opening Remarks
Region 8 Administrator

8:30 AM | FEMA HiEd 2.0 - The Path Forward
Lisa Lofton - FEMA Higher Education Program
Daniel Green - FEMA Region 8

9:30 AM | BREAK

10:00 AM | Region 8 Who's Who
Introductory Presentations by Programs, Partners

11:30 AM | LUNCH (ON YOUR OWN)

12:30 PM | The 2020 Magna Earthquake and COVID Outbreak: What to Learn from Salt Lake City
Dr. David McEntire - Utah Valley University

1:30 PM | Vaccine Hesitancy, Partnerships, and Field Operations: Working Together in Real Time
Dr. Kate Browne - Colorado State University
Daniel Green - Region 8

3:00 PM | BREAK

3:30 PM | Optional-Platte River Mitigation Walking Tour
Region 8 Mitigation

July 29, 2021 (Catalyst HTI)

8:00 AM | Opening Remarks
Daniel Green - FEMA Region 8

8:30 AM | Regional Research Agenda Working Meeting
Steve Recca - Naval Postgraduate School
Catered lunch will be provided; breakout groups and bio-breaks will occur throughout

1:00 PM | BREAK

1:30 PM | Student Research Projects: Pulse Check
Daniel Nyquist - FEMA Region 8

3:30 PM | BREAK

4:00 PM | Parking Lot
Collecting/Addressing Unresolved Questions

4:30 PM | Closing Remarks
Daniel Green - Region 8

July 30, 2021 (Colorado School of Mines)

8:30 AM | Opening Remarks
Daniel Green - Region 8

9:00 AM | Lean Innovation: Successes and Expansion Across Region 8
Dr. Sid Saleh - Colorado School of Mines

11:30 AM | LUNCH (ON YOUR OWN)

12:30 PM | Optional - Colorado School of Mines Tour
Dr. Sid Saleh - Colorado School of Mines

3:30 PM | End of Research and Innovation Forum 2021