

2018 PRiMO CONFERENCE

TECHNOLOGY AND DISASTER RISK REDUCTION

.....

AUGUST 06 – 09, 2018 📍 HONOLULU, HAWAII



WWW.PRIMOHUI.ORG



What Is the Pacific Risk Management 'Ohana (PRiMO)?

The Pacific Islands face many natural and man-made challenges. Only by bringing people and organizations together, and channeling their efforts toward common goals, can communities become more resilient. PRiMO, the Pacific Risk Management 'Ohana, is the platform for this effort. PRiMO's efforts make the Pacific Islands more resilient to the impacts of natural hazards.

About the Conference

The PRiMO Annual Conference is a leading venue for emergency, disaster risk reduction, and hazard mitigation professionals to share ideas, strategize, and develop solutions that address the varied challenges facing Pacific Island communities working toward disaster resilience goals. The theme of PRiMO 2018, "Technology and Disaster Risk Reduction," will highlight the vast possibilities for technology to fulfill PRiMO's vision for a resilient Pacific Region.

The conference program is strategically designed to facilitate partnerships that transcend geographic boundaries and disciplines, providing unique opportunities for collaboration among attendees. Participants from diverse backgrounds are expected to attend, including representatives from state and federal agencies, non-profits, conservation groups, and the business, health, and industry sectors. Conference programming is divided into three tracks: the Power of Partnership, Reducing the Social, Economic, and Cultural Risks of Disaster, and Information Technology for Building Resilience. In addition to sessions in the three tracks, this year's program features a new interactive session highlighting the evolving roles of government and community in disaster recovery.



TABLE OF CONTENTS

A Note from Our Chair	04
Pacific Risk Management 'Ohana Leadership	05
Navigators' Council	05
Senior Advisors	05
Hui Steerspersons	05
Graphical Schedule	06
Meet Our Keynote Speakers	15
Detailed Conference Agenda	20
Monday, August 06	20
Tuesday, August 07	23
Wednesday, August 08	29
Thursday, August 09	36
Map of Hawai'i Convention Center	38
Mahalo Nui Loa to Our Sponsors and Supporters	39



A NOTE FROM THE CHAIR

Aloha!

On behalf of our Navigators Council, I would like to welcome you to the 2018 PRiMO Conference. Mahalo for your participation in this important event and your continued commitment to the resilience and safety of our many communities. This is our 16th conference, and in keeping with our mission, you will find that this year's sessions cover a wide range of subjects related to disaster risk reduction, response and recovery, and reflect different perspectives and concerns. As indicated by our theme — *Technology and Disaster Risk Reduction: The Good, the Bad, and the Ugly* — we've asked presenters to consider the roles, uses and consequences — both intended and unintended — of technology in their respective fields. Technology has become embedded in virtually every aspect of our lives, including during times of crisis and recovery. We thought it appropriate to highlight this important topic. Our Tuesday morning opening keynote speaker, Dr. Jaehyun Shim, Director General of the Korea National Disaster Management Institute, will offer the perspectives of one of our world's most connected and digitally advanced societies. His observations as to the rapid pace of technological change and what our future holds for the interface between people and technology during times of disaster will help us to better build resilient communities.

Since last year's conference, we've seen one of the most destructive Atlantic hurricane seasons on record, with unprecedented devastation of island communities in the Caribbean. In November, wildfires in Northern California damaged natural and built environments, including entire neighborhoods. In Hawai'i, we began the new year with a false alert of a missile attack. In April, unprecedented rainfall caused flooding and much damage on Kaua'i and O'ahu. The Kīlauea volcano has also continued erupting and destroying homes, agricultural businesses, and livelihoods. Is this the "new normal"? At Wednesday's plenary session a panel of experts will consider this question in light of the growth and proliferation of new communication tools and channels.

This past January and again in June, I visited Puerto Rico with colleagues and students to learn how Hawai'i and other island communities might best increase recovery capabilities and resilience. There is still much work that needs to be done and we need to increase our efforts to prepare for, respond to, and mitigate disasters. We need to not just understand the science of climate change, sea level rise, storms, and geological events, but also work to prepare our communities. At Thursday morning's plenary we will welcome officials from Hawai'i, Kaua'i, Maui, and Honolulu to reflect on the lessons and implications of Hurricane Maria as well as this year's floods and volcanic eruption.

As in past conferences, over the next several days there will be much for us to reflect on, contribute to, and take home with us, as we work to improve our resilience in theory and practice. I invite you to meet and engage with friends and colleagues who share our commitment to working together; exchanging information and building lasting relationships is what the PRiMO Conference is all about. In addition to the training opportunities we provide, the working group meetings for our huis — Communications, Health Security, Indigenous Knowledge and the Environment, Information Access and Geospatial Technology, Risk Assessment and Planning, and Training and Education — are important to the development of products and services. We will also be recognizing and honoring many of those who have contributed to increasing the safety and security of our communities. I wish you a pleasant and productive time together as we work to build resilience for our families, organizations and communities.

Aloha and Mahalo,

Karl Kim, Ph.D | Chair, PRiMO



PACIFIC RISK MANAGEMENT 'OHANA LEADERSHIP

PRiMO Executive Director: Adam Stein, NOAA Office for Coastal Management

Navigators' Council

PRiMO Chair: Karl Kim, National Disaster Preparedness Training Center

PRiMO Vice-Chair: Kristina Kekuewa, NOAA Office for Coastal Management — Pacific Islands

PRiMO Secretary: Jeff Payne, NOAA Office for Coastal Management

Michael Bruno, University of Hawai'i at Mānoa

Chris Chiesa, Pacific Disaster Center

Jim Lyon, LYON Associates

John Marra, NOAA National Climatic Data Center

Jim Newberry, Island Insurance Companies

Colby Stanton, Federal Emergency Management Agency

Raymond Tanabe, NOAA National Weather Service

Bill Thomas, NOAA Office for Coastal Management — Pacific Islands

Sally Ziolkowski, Federal Emergency Management Agency, Flood Insurance Mitigation Division

Senior Advisors

Cheryl Anderson, University of Hawai'i at Mānoa, Social Science Research Institute

Eddie Bernard, Retired from NOAA

Stanley Boc, U.S. Army Corps of Engineers

Victoria Keener, East-West Center, Pacific Regional Integrated Sciences and Assessments

John McCarroll, Environmental Protection Agency

Penehuro (Pene) Lefale, Joint Center for Disaster Research, Massey University, Wellington, New Zealand

Eileen Shea, Partnership for Pacific Resilience

Michael Shulters, Retired from the U.S. Geological Survey

Ed Young, Retired from NOAA National Weather Service

Hui Steerspersons

Communications

Jimmy Lagunero, University of Hawai'i at Mānoa

H. Ginger Porter, University of Hawai'i at Mānoa

Health Security

Indigenous Knowledge and Environment

Jean Tanimoto, NOAA Office for Coastal Management — Pacific Islands

Ramsay Taum, Life Enhancement Institute of the Pacific

Information Access and Geospatial Technology

Eric Yamashita, National Disaster Preparedness Training Center

Risk Assessment and Planning

Kitty Courtney, TetraTech

Training and Education

Russell Uyeno, National Disaster Preparedness Training Center



MONDAY, AUGUST 06

	317B	318	319	321
8:00 AM – 12:00 PM			Training: Basic Social Media Applications for Disaster Management	Workshop: Resilient Coastal Disaster Reconstruction Workshop, Hawai'i Sea Grant (By Invitation Only)
12:00 PM – 1:00 PM	Break			
1:30 PM – 3:00 PM	Workshop: Disaster Resilience Workshop for Small Businesses (1:00 pm – 4:00 pm)	Hui Meeting: Communications	Hui Meeting: Information Access and Geospatial Technology	
3:00 PM – 3:30 PM	Break			
3:30 PM – 5:00 PM		Hui Meeting: Risk Assessment and Planning	Hui Meeting: Training and Education	Hui Meeting: Indigenous Knowledge and the Environment



TUESDAY, AUGUST 07

	316			
8:00 AM – 9:00 AM	Registration and Continental Breakfast			
9:00 AM – 10:00 AM	Opening Ceremonies <i>Welcome:</i> Dr. Karl Kim, Chair of PRIMO <i>Keynote Speaker:</i> Dr. Jaehyun Shim, President of the Korea National Disaster Management Institute			
10:00 AM	Group Photo — Steps Fronting Room 316			
10:00 AM – 10:30 AM	Break			
	317B	318	319	321
10:30 AM – 12:00 PM CONCURRENT SESSIONS		Innovative Technologies Improving Disaster Preparedness and Response	Recent Experiences in Disaster Recovery: Perspectives from Caribbean and Pacific Islands	Going to the Last Mile: Innovative DRR Techniques used by Members of the United Nations Economic and Social Commission for Asia and the Pacific/World Meteorological Organization (UNESCAP/WMO) Typhoon Committee
12:00 PM – 1:30 PM	Lunch on Your Own			

KEY

The Power of Partnership

Reducing the Social, Economic, and Cultural Risks of Disaster

Information Technology for Building Resilience



TUESDAY, AUGUST 07

	317B	318	319	321
1:30 PM – 3:00 PM CONCURRENT SESSIONS		Flood Intelligence: New Technologies to Improve Disaster Response	Disaster Resilience: Applications in Design, Adaptation, Technology, and Social Capital	Presentation Session A: 1) Hurricane Matthew Disaster Recovery and Resilience Initiative: Blending Research, Education, and Engagement 2) Reconnaissance of Damage from Hurricane Harvey in Texas and Hurricane Maria in Puerto Rico — Lessons Learned for Hawai'i and the Pacific Islands Regarding Home Building, Retrofits, Evacuation, and Insurance 3) Assessing the Vulnerability of Tourism-Related Livelihoods to Tropical Cyclones in Small Island Developing States: A Comparison of Tobago and Jamaica 4) Resilience Planning Practicum: Incorporating Lessons from Hurricane Maria into O'ahu's Resilience Strategy
3:00 PM – 3:30 PM	Break			

KEY

The Power of Partnership

Reducing the Social, Economic,
and Cultural Risks of DisasterInformation Technology
for Building Resilience



	317B	318	319	321
3:30 PM – 5:00 PM	Using Geospatial Technology through NOAA's Coastal Geospatial Services Contract to Reduce Risk in the Pacific — Project Examples, Lessons Learned, and How to Use the Contract	Risk Frisk: How Do You Approach your Risk Assessment	Social Media and Disaster Communication: The Right Message or Fake News	<p>Indonesia Resilience Forum</p> <p>1) Collaboration in Building Disaster (Flood) Resilience: Role of Disaster Preparedness Groups (DPG) in Semarang City, Indonesia</p> <p>2) Building Community Resilience through Disaster Preparedness in South Manokwari Regency, West Papua Province</p> <p>3) The Development of Tamberau as a Conservation District in West Papua; Local Initiative of Climate Change Mitigation and Adaptation</p> <p>4) The Resilience Imperative: An Entry Point to Reducing Vulnerability by Building Partnerships through Training</p>
	316			
5:00 PM – 7:00 PM	Exhibitors' Showcase & Networking Reception and Poster Session			

KEY

The Power of Partnership

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Information Technology for Building Resilience



WEDNESDAY, AUGUST 08

	316			
8:00 AM – 9:00 AM	Registration and Continental Breakfast			
9:00 AM – 10:00 AM	<p>Opening Remarks</p> <p><i>Plenary Panel:</i> Adapting to the New Normal in the Information Age</p> <p><i>Moderator:</i> Kristina Kekuewa, Vice-Chair of PRIMO</p> <p><i>Panelists:</i> Chad Blair, Honolulu Civil Beat; Burt Lum, Hawai'i Open Data; Leigh Anne Eaton, National Weather Service Honolulu Forecast Office; Colby Stanton, Federal Emergency Management Agency Pacific Area Office</p>			
10:00 AM – 10:30 AM	Break			
	317B	318	319	321
10:30 AM – 12:00 PM CONCURRENT SESSIONS		<p>Presentation Session B:</p> <p>1) One and Done (Power and Water Systems Mitigation)</p> <p>2) MadiDrops: An Appropriate Technology for a Broad Spectrum of Water-Related Crises in the Pacific Islands</p> <p>3) Using Geospatial Technology to Assist FEMA with Responding to the 2017 Hurricanes</p> <p>4) The State of Beaches of Puerto Rico after Hurricane Maria</p>	Assessing and Enhancing the Resilience of Transportation Networks and Systems	Commercial UAV Technologies: The Advantages, Opportunities, and Challenges

KEY

The Power of Partnership

Reducing the Social, Economic, and Cultural Risks of Disaster

Information Technology for Building Resilience



	316			
12:00 PM – 1:30 PM	Awards Luncheon			
	317B	318	319	321
1:30 PM – 3:00 PM CONCURRENT SESSIONS	Lessons Learned in Integrating Virtual Reality in Training and Capacity Building Programs (VR Demo)	Presentation Session C: 1) Open Mapping as Post-Disaster “Information Aid” After Disasters: A Look at Puerto Rico After Hurricane Maria 2) Enhancing Coastal Community Resilience with Real-Time Notifications and Long-Term Projections of Hazardous Wave-Driven Flooding and Erosion Events in West Maui 3) Shoreline Monitoring Using Compture Vision Technology 4) Landslide Susceptibility Assessment Considering Rainfall and Earthquakes	Presentation Session D: 1) The Evaluation of Disaster Recovery Based on the Resilience Concept 2) An Evaluation of Coastal Communities’ Resilience Strategies, Best Practices for Hawai’i 3) Addressing the NOAA Water Initiative with a Cross Disciplinary Approach — Lessons on Partner, Tribal, and Stakeholder Outreach to Solve a Complex Issue 4) Using Coastal Flood Exposure Mapper Tool to Understand Coastal Flooding in Your Neighborhood	Increasing Public Understanding of Science to Enhance Disaster Risk Reduction by the National Disaster Management and Research Institute (NDMI) in the Republic of Korea (South Korea)

KEY

The Power of Partnership

Reducing the Social, Economic,
and Cultural Risks of Disaster

Information Technology
for Building Resilience



WEDNESDAY, AUGUST 08

3:00 PM – 3:30 PM	Break			
	317B	318	319	321
3:30 PM – 5:00 PM CONCURRENT SESSIONS	Lessons Learned in Integrating Virtual Reality in Training and Capacity Building Programs (VR Demo)	Coconut-Wireless Mobilization During Cyclone Gita: Pacific-Indigenous Disaster Preparedness, Risk Resilience, and Management	Solutions to Global Challenges: Building a Resilient and Self-Reliant Community	The Hawai'i Sea Level Rise Vulnerability and Adaptation Report

KEY

The Power of Partnership

Reducing the Social, Economic,
and Cultural Risks of DisasterInformation Technology
for Building Resilience



THURSDAY, AUGUST 09

	316
8:00 AM – 8:30 AM	Registration and Continental Breakfast
8:30 AM	Welcome <i>Welcome:</i> Jennifer Sabas, Chair, Partnership for Pacific Resilience <i>Emcee:</i> Colin Yost, Secretary, Partnership for Pacific Resilience
8:35 AM – 9:05 AM	What Happened on Kaua'i and in Puna — Science Behind the Disasters
9:05 AM – 10:00 AM	Kaua'i and Puna Updates
10:00 AM – 11:00 AM	Evolving Role of Government and Community in Disaster Response, Recovery and Resiliency
11:00 AM – 11:15 AM	Break
11:15 AM – 12:00 PM	Recovery & Resiliency Breakout Sessions
12:00 PM – 12:15 PM	Report Out on Breakout Session/Closing
12:15 PM	PRiMO Closing Ceremonies



MEET OUR KEYNOTE SPEAKERS

Tuesday, August 07, 2018



KEYNOTE SPEAKER

Dr. Jaehyun Shim

President of National Disaster
Management Research Institute

Dr. Jaehyun Shim is the President of the National Disaster Management Institute, the “advanced disaster safety think tank” of South Korea. In this role, he oversees a state-of-the-art research facility and leads the implementation of technologies in Korea and across Asia that include satellites, sensors, simulators, unmanned aerial vehicles, and communications and decision-support systems.

For over 25 years, Dr. Shim has held senior governmental positions leading disaster prevention efforts and the integration of technology for disaster risk reduction, publishing 51 papers, 11 conference papers, and 45 research reports. Dr. Shim represents South Korea on the United Nations’ Typhoon Committee, a body composed of 14 countries and run under the auspices of the Economic and Social Commission for Asia and the Pacific, and the World Meteorological Organization.

As an appointed cabinet member, Dr. Shim also has a front seat to the emerging negotiations between North and South Korea, the U.S., and regional countries. In recognition of his accomplishments, Dr. Shim has received some of the highest accolades in South Korea, including the Order of Service Merit (Red Stripes) in 2016, the Presidential Citation in 2009, and the Prime Minister’s Commendation in 2003. Dr. Shim is a hydrologist with a PhD in Civil Engineering from Yonsei University and a PhD in Public Administration from Myongji University.



MEET OUR KEYNOTE SPEAKERS

Wednesday, August 08, 2018

PLENARY PANEL

Adapting to the New Normal in the Information Age

We have experienced several extreme events in the Pacific Islands region in 2017 and 2018, including record-breaking rains on the North Shore of Kaua'i, volcanic eruptions in Hawai'i, and Cyclone Gita ravaging the South Pacific. The Pacific Islands have not been the only U.S. Flag islands affected, since both the U.S. Virgin Islands and Puerto Rico were devastated during the 2017 hurricane season in the Atlantic. Frequent impacts of severe events were once something we spoke of as occurring in the future — but this may be the new normal.

At the same time as this increasing frequency of extreme events is occurring, we are witnessing rapid technological development. Smartphone and Internet usage is increasing rapidly, and we can better manage large amounts of data and deliver information quickly. But how can we best leverage these technologies to adapt to this new normal? How can connectivity and access to information assuage the trauma of a disaster or be used to disseminate critical warnings and help communities organize?

We have seen how, after a disaster, social media immediately turns into a fast-paced hub for people to hear the latest news, ease the worries of their loved ones, gather donations and support, and organize recovery efforts. However, along with the power of new technologies come unintended and often unexpected consequences. For example, the ease of sharing information has enabled distribution of experiences and first-hand accounts, risking the spread of misinformation.

Information technology can save lives, and many think it is critical to adapting to the "new normal," but how can we navigate the potential pitfalls of rapidly changing technologies and trends. This panel will delve into these questions and others to explore the role that information and communication technologies play in disaster risk reduction, with a focus on the Pacific region and island communities.



MODERATOR

Kristina Kekuewa

Kristina Kekuewa has spent her career supporting communities in Hawai'i and the Pacific Region through her work on Capitol Hill as a legislative assistant to U.S. Senator Daniel K. Inouye, at the University of Hawai'i in the role of federal liaison and in her current position as the Regional Director for Pacific Islands at NOAA's Office for Coastal Management. Born and raised in Hawai'i, Kekuewa is passionate about working in collaboration to leverage resources and capabilities for the Pacific.



PANELISTS



Chad Blair

Chad Blair has been a writer, editor and teacher in Honolulu for more than 25 years. His job as reporter and editor is to cover Hawai'i, especially how political decisions impact people and communities.

Chad has worked as a journalist for Pacific Business News, Hawai'i Public Radio and Honolulu Weekly. He has taught at the University of Hawai'i at Mānoa, Honolulu Community College, Hawai'i Pacific University and Chaminade University of Honolulu.



Leigh Ann Eaton

Leigh Anne Eaton, a Master's degree graduate from the University of Hawai'i at Mānoa, currently works as a General Forecaster for the National Weather Service's Honolulu Forecast Office (HFO). There, she is part of a team that is responsible for producing the state's weather forecasts, as well as issuing all of the hazardous weather watches, advisories, and warnings. She is also the social media program lead for HFO, producing and assisting team members in the creation of useful content for the office's social media pages.



Burt Lum

Burt Lum is a communicator, innovator, community builder, open data advocate, and sci/tech geek. He is the Executive Director of Hawai'i Open Data, co-hosts Bytemarks Cafe on Hawai'i Public Radio and the Geek Beat on Hawai'i News Now. You can find him on Twitter at @bytemarks.



Colby Stanton

Colby E. Stanton serves as the Director of Readiness for the Pacific Area Office (PAO) of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) in Region IX. She joined the region in March of 2010. From the PAO, located in Hawai'i, Ms. Stanton supports the coordination and implementation of FEMA's mitigation, preparedness, and mission support programs related to natural and man-made disasters in the Pacific.



MEET OUR KEYNOTE SPEAKERS

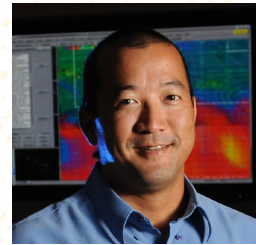
Thursday, August 09, 2018

What Happened on Kaua'i and in Puna — Science Behind the Disasters



Bruce Houghton

Professor, University of Hawai'i at Mānoa
School of Ocean and Earth Science and Technology



Raymond Tanabe

Director, Pacific Region
NOAA — National Weather Service

Kaua'i and Puna Updates



**Moderator
David Kennard**

State Hazard Mitigation Officer,
Hawai'i Emergency Management Agency



**The Honorable
Bernard Carvalho, Jr.**

Mayor, County of Kaua'i



**The Honorable
Harry Kim**

Mayor, County of Hawai'i



Jay Ignacio

President, Hawai'i Electric Light



Ed Sniffen

Deputy Director, Department of
Transportation Highways Division



Lyle Tabata

Director, Department of
Public Works, County of Kaua'i



Evolving Role of Government and Community in Disaster Response, Recovery & Resiliency



**Moderator
Adam Stein**

Executive Director, PRiMO



C. "Kimo" Alameda

Executive, Hawai'i County
Office of Aging



Coralie Chun Matayoshi

Chief Executive Officer,
American Red Cross of Hawai'i



Brandee Menino

Chief Executive Officer,
HOPE Services Hawai'i



Braden "Mongo" Sakai

154th Wing Commander (Ret.); Mililani
Community Disaster Planning Team



Darcie Yukimura

Director of Community Philanthropy,
Hawai'i Community Foundation — Kaua'i

Recovery & Resiliency Breakout Sessions



**Lead
Josh Stanbro**

Chief Resilience Officer,
City & County of Honolulu



MONDAY, AUGUST 06

8:00 AM – 12:00 PM

PER-304 Basic Social Media Applications for Disaster Management (Demo) | ROOM 319

Host: National Disaster Preparedness Training Center

Social media has been shown to help people communicate and collaborate about events as the events unfold. Social media can provide rapid and immediate real-time information about events that help provide greater situational awareness leading to better decision making. In this four-hour course, participants will be provided with hands-on experience necessary to use existing social media platforms safely and effectively. The skills that are built in this course help participants to create better social media disaster plans that can be easily executed and integrated into existing disaster communications plans.

Resilient Coastal Disaster Reconstruction Planning Workshop | ROOM 321

Host: University of Hawai'i Sea Grant

With funding from the NOAA Coastal Resilience Grants Program, Hawai'i Sea Grant is leading a project in partnership with the State of Hawai'i focused on developing guidelines to support resilience focused disaster rebuilding planning and practices in Hawai'i. This effort builds on previous work by Maui County, Hawai'i Sea Grant, and others. Outcomes from the project have the potential to inform pre-disaster planning beyond Hawai'i.

This event will be invite-only and is limited to 20–25 participants to maximize the effectiveness of the facilitated disaster scenario exercises. Invitees will include subject matter experts on disaster recovery planning, representatives from Hawai'i State and county planning, public works, resilience, local NFIP program, and emergency management offices, as well as project partners.

1:00 PM – 4:00 PM

Workshop: Disaster Resilience Workshop for Small Businesses | ROOM 317B

Hosts: Michael Iwashita, National Disaster Preparedness Training Center
Rob Porro, National Disaster Preparedness Training Center

Join us for our Small Business Resilience Workshop. Learn key concepts for increasing small business resilience to disasters, including the risks associated with natural hazards and disasters, methods of assessing that risk, financial tools, and the business continuity planning process. Enhance your ability to support your business' overall disaster preparedness through thorough pre-disaster business continuity planning. Modules:

- Introduction to Small Business Resilience
- Risk and Vulnerability Assessment
- Supply Chain Management
- Financial Tools and Business Continuity Planning



1:30 PM – 3:00 PM

Hui Meetings | 1:30 PM – 5:00 PM

These working groups represent the heart of the PRiMO effort, where the various organizations come together to develop and implement action plans that improve resilience in the Pacific region. Hui members are experts in their field, and together the members bridge the information gaps between science and service providers, decision makers, and other stakeholders. All meetings are open to conference attendees and the PRiMO community with and without registration.

Hui Meeting: Information Access and Geospatial Technology | ROOM 319

Steersperson: Eric Yamashita, *National Disaster Preparedness Training Center*

- Enhance PRiMO activities by leveraging investments in data and infrastructure.
- Increase the accessibility and usability of data sets that are of benefit to risk management.
- Identify gaps and existing data needs and overlaps.
- Support regional data management clearinghouses and information networks.
- Conduct data management workshops.

Hui Meeting: Communications | ROOM 318

Steerpersons: Jimmy Lagunero, *University of Hawai'i*

Ginger Porter, *University of Hawai'i*

- Improve the communications infrastructure that supports the two-way delivery of resilience-based information.
- Identify additional communication opportunities.
- Identify and leverage available resources.

3:30 PM – 5:00 PM

Hui Meeting: Risk Assessment and Planning | ROOM 318

Steersperson: Kitty Courtney, *TetraTech*

- Provide accessible information resources to support risk assessment and planning efforts.
- Integrate climate risks into current and future planning efforts.
- Provide a venue for Pacific inhabitants to share information on how communities are confronting climate change and what has and hasn't worked.

Hui Meeting: Training and Education | ROOM 319

Steersperson: Russell Uyeno, *National Disaster Preparedness Training Center*

- Identify training resources — including personnel, distance learning capabilities, and tools.
- Promote appropriate trainings by using local examples and appropriate learning styles and levels by working with the Indigenous Knowledge and the Environment Hui and the other working groups.
- Encourage collaborative training efforts within agencies and across organizations through sharing of regional training opportunities.

Hui Meeting: Indigenous Knowledge and the Environment | ROOM 321

Steerspersons: Jean Tanimoto, *NOAA Office for Coastal Management – Pacific Islands*;

Ramsay Taum, *Life Enhancement Institute of the Pacific*

- Ensure that traditional knowledge and practices, as well as traditional peoples, are considered, addressed, and brought into the work of each of the other hui.
- Demonstrate PRiMO's commitment to incorporating all available knowledge, ways of knowing, and the inclusiveness of indigenous cultures.



TUESDAY, AUGUST 07

8:00 AM – 9:00 AM

Registration and Continental Breakfast

9:00 AM – 10:00 AM

Opening Ceremonies

Welcome: Dr. Karl Kim, *Chair of PRiMO*

Keynote Speaker: Dr. Jaehyun Shim, *President of the Korea National Disaster Management Institute*

10:00AM

Group Photo on Steps Fronting Room 313

10:00AM – 10:30AM

Break

10:30 AM – 12:00 PM

Innovative Technologies Improving Disaster Preparedness and Response | ROOM 318

Michael Chatman, *Pacific Disaster Center, Kihei, USA*

Arben Kane, *Kontur, Kihei, USA*

Jonathan Miller, *Kaazing, San Jose, USA*

Christopher Chiesa, *Pacific Disaster Center, Kihei, USA*

Innovative technologies — including mobile phones/tablets and social media — have transformed our personal lives over the past decade by providing the means to share and receive up-to-date information nearly anywhere. These same technologies allow disaster management professionals and those they serve to do more than share pictures of dinners and sunsets — they allow timely information to be collected, shared, assessed, and acted upon to save lives and property.

For more than 20 years, Pacific Disaster Center has been advancing science and technology applications for hazard monitoring, impact estimation, early warning, and damage assessment. The Center's DisasterAWARE application is widely used in Hawai'i, on the U.S. mainland, throughout the Pacific and around the globe by disaster management professionals and private citizens to track storms, monitor volcanos, be alerted to earthquakes, tsunamis, wildfires and floods and their potential impacts.

Recent DisasterAWARE technological and scientific innovations have included mobile platform support, social media integration, and model-based impact assessment. The panel will explore these and other uses of disaster technology by the public and private sectors as well as the general public.



Recent Experiences in Disaster Recovery: Perspectives from Caribbean and Pacific Islands | ROOM 319

Russell Jackson, *NOAA Coastal Hazards Specialist, Coastal Lead for Natural & Cultural Resource (NCR) Recovery Support Function (RSF), Puerto Rico*

Antares Ramos, *Coastal Management Specialist, Coastal Working Group Coordinator, NCR RSF, Puerto Rico*

Adrienne Loerzel, *NOAA Coastal Management Specialist, Guam*

Hideyo Hattori, *NOAA Coastal Management Specialist, American Samoa*

Robbie Greene, *NOAA Coastal Management Specialist, Commonwealth of the Northern Mariana Islands*

Adam Stein, *NOAA Coastal Hazards Specialist*

Mike Dahilig, *County of Kaua'i, Department of Planning*

Tino Mao, *American Samoa Coastal Management Program*

During 2017, the U.S. experienced a historic year of weather and climate disasters. In total, the U.S. was impacted by 16 separate billion-dollar disaster events tying 2011 for the record number of billion-dollar disasters for an entire calendar year. This included losses from Hurricane's Irma and Maria which impacted both Puerto Rico and the US Virgin Islands. These storms highlighted unique vulnerability of islands and challenges during recovery. In addition to Irma and Maria, recent storms have impacted other US Flag Islands. In the Pacific Region several named typhoons impacted Guam in 2015, Typhoon Soudelor slammed the Mariana Islands the same year. In 2018, Typhoon Gita hit American Samoa in February, and in April, the Island of Kauai received 50 inches of rainfall in one day. In addition to the economic losses, these events impact natural resources which communities rely on for storm protection, livelihoods, and recreation and tourism. Panelists from NOAA's Office for Coastal Management and the County of Kauai with recent experience assisting recovery efforts will share their accounts and perspectives on island recovery efforts and discuss lessons learned and actions to build resilience to future storms.

Going to the Last Mile: Innovative DRR Techniques used by Members of the United Nations Economic and Social Commission for Asia and the Pacific / World Meteorological Organization (UNESCAP/WMO) Typhoon Committee | ROOM 321

Chihun Lee, *National Disaster Management and Research Institute (NDMI), Republic of Korea*

Qunna Yang, *China Meteorological Administration, Guangzhou, China*

Denise Lau, *UNESCAP/WMO Typhoon Committee Secretariat, Coloane, Macao*

Nyuyen Tung Phong, *Vietnam Academy for Water Resources, Ha Nai, Vietnam*

Masaru Arakida, *Asian Disaster Reduction Center, Kobe, Japan*

The session will provide presentations on social and electronic media, communications, and big data used by members to promote disaster risk reduction activities in the region.

The ESCAP/WMO Typhoon Committee is an intergovernmental body established in 1968 under the auspices of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the World Meteorological Organization (WMO) in order to promote and coordinate the planning and implementation of measures required for minimizing the loss of life and material damage caused by typhoons in the Western North Pacific. The Typhoon Committee is currently composed of 14 members: Cambodia; China; Democratic People's Republic of Korea; Hong Kong, China; Japan; Lao People's Democratic Republic; Macao, China; Malaysia; the Philippines; Republic of Korea; Singapore; Thailand; Socialist Republic of Vietnam and the United States of America.

Presentations:

1. Introduction to the Typhoon Committee
2. Present and Future of International Cooperation on Disaster Risk Reduction
3. Emergency Management Change in The Era of Big Data: Best Practice from Guangdong, China Emergency Management Mode
4. Utilization of SBT and ICT to strengthen disaster resilience in Asia
5. Flood Early Warning System in River Basins in Vietnam

**1:30 PM – 3:00 PM****Flood Intelligence – New Technologies to Improve Disaster Response | ROOM 318****Sharon Wallace**, *BMT, Brisbane, Australia*

BMT has developed an intuitive online system called *FloodIntel* (www.FloodIntel.com) to collate, interpret and communicate a range of flood information and geospatial data via a single website. The software has been used by local authorities, state emergency response agencies, and private industry for a range of flooding and environmental applications from small local to large riverine catchments in both inland and coastal areas of Australia (Queensland, New South Wales and Tasmania) and Papua New Guinea.

When coupled with next generation, fast hydraulic models, FloodIntel offers an end-to-end solution which uses real-time and/or forecast rainfall, displays maps of the current flood situation, analyzes rainfall and mapping against critical thresholds to understand the impact of the event, and generates automated or semi-automated reports, alerts, text messages, etc. The system is accessible to many users at once, through any standard browser, on a variety of devices, and is fast and highly intuitive, allowing a new user to open the system without any training and quickly find the information they need.

The speakers at this session will engage the audience by providing insight and real feedback from clients and users in terms of implementation to date and how the software and technology could be used in other contexts, including the Pacific and continental U.S.

As flood intelligence and forecasting software tools are not new, a key focus of the discussion will also be around identifying existing approaches and learnings that have been developed across the Pacific region and the U.S. in order to build up a better collective understanding of what the region needs and what can be delivered through *FloodIntel* and similar systems through closer cross national collaboration.

Disaster Resilience: Applications in Design, Adaptation, Technology, and Social Capital | Room 319**Wendy Meguro**, *University of Hawai'i, School of Architecture and Sea Grant, Honolulu, USA***Yi Qiang**, *University of Hawai'i, Dept. of Urban and Regional Planning, Honolulu, USA***Kiyomi Kawamoto**, *Toyo University, Dept. of Networking for Innovation and Design, Tokyo, Japan*

This session describes and discusses three ongoing research projects centered on recovery, adaptation, and resilience. The first two research activities were sponsored by the National Disaster Preparedness Training Center and funded by the University of Hawai'i's Pacific Southwest Region University Transportation Center (UTC). The first project describes research on a "Primer on Coastal Transportation System Resilience and Adaptation to Sea Level Rise on O'ahu: Using Living Shorelines and Green Infrastructure" which discusses the development of a primer on living shorelines and green infrastructure's potential for coastal protection that can be used as a decision support tool for coastal protection, resiliency, and adaptation. The second project presents research on "Physical Exposure and Social Sensitivity: Estimating Sea Level Rise Impacts to Transportation through Vulnerability Assessments and Social Media Analysis," and proposes to combine traditional transportation vulnerability assessments with social media analysis to assess the potential impacts of sea level rise on transportation infrastructure and develop adaptation strategies and solutions. The third project describes research being conducted after the Great East Japan Earthquake to determine the relationships between the types of social capital: bonding, bridging, and linking social capital networks and waste management activities during the recovery phase of the disaster.



Individual Presentations, Session A | ROOM 321

Hurricane Matthew Disaster Recovery and Resilience Initiative: Blending Research, Education, and Engagement

Gavin Smith, *University of North Carolina at Chapel Hill, Chapel Hill, USA*

Reconnaissance of Damage from Hurricane Harvey in Texas and Hurricane Maria in Puerto Rico – Lessons Learned for Hawai'i and the Pacific Islands Regarding Home Building, Retrofits, Evacuation and Insurance

Dennis Hwang, *University of Hawai'i Sea Grant, Honolulu, USA*

National Disaster Preparedness Training Center, *Honolulu, USA*

Assessing the Vulnerability of Tourism-related Livelihoods to Tropical Cyclones in Small Island Developing States: A Comparison of Tobago and Jamaica

Thalia Balkaran, *The University of the West Indies, Mona Campus, Kingston, Jamaica*

Resilience Planning Practicum: Incorporating Lessons from Hurricane Maria into O'ahu's Resilience Strategy

Roberto Porro, *National Disaster Preparedness Training Center, University of Hawai'i*

Scott Allen, *National Disaster Preparedness Training Center, University of Hawai'i*

John Canner, *National Disaster Preparedness Training Center, University of Hawai'i*

Imelda Carlos, *National Disaster Preparedness Training Center, University of Hawai'i*

Cody Winchester, *National Disaster Preparedness Training Center, University of Hawai'i*

Bernardo Gonzalez, *National Disaster Preparedness Training Center, University of Hawai'i*

Shubhanshu Jain, *National Disaster Preparedness Training Center, University of Hawai'i*

Carolyn Weygan-Hildebrand, *National Disaster Preparedness Training Center, University of Hawai'i*

Maritza Barreto, *University of Puerto Rico's Planning Department*

3:30 PM – 5:00 PM

Using Geospatial Technology through NOAA's Coastal Geospatial Services Contract (CGSC) to Reduce Risk in the Pacific – Project Examples, Lessons Learned, and How to Use the Contract | ROOM 317B

Dave Stein, *NOAA Office for Coastal Management*

Steve Raber, *Quantum Spatial*

Renee Walmsley, *TetraTech*

Phil Thiel, *Dewberry*

John Gerhard, *Woolpert*

Megan Blascovich, *Fugro USA*

The CGSC vehicle provides an efficient way for U.S. governmental entities (local, state, or federal) to acquire geospatial services from the private sector. Services provided through this contract include elevation and imagery acquisition, thematic mapping, orthophotography production, survey and control services, GIS services, and geospatial training. The contract, a Federal Acquisition Regulations (FAR) Part 36 architectural and engineering vehicle, includes prime contracts with five industry-leading firms: Dewberry, Fugro Geospatial, Quantum Spatial, Tetra Tech, and Woolpert. The contracts are managed by the NOAA Office for Coastal Management in Charleston, South Carolina. It is focused on issues that are important to the nation's coastal managers including coastal hazards and resiliency, land use planning, coastal conservation, and marine planning. OCM staff are available to help partners develop statements of work, provide quality assurance and quality control, engage with stakeholders, conduct field validation, and assist with the hosting of data and products through the Digital Coast.

This session will cover the following topics:

1. Overview of the contract and step-by-step process for procuring geospatial services; and
2. Short presentations by the prime contractors on their work in the Pacific region and technologies that could help reduce risk and build resilient communities.



Risk Frisk: How Do You Approach Your Risk Assessment? | ROOM 318

Jim Newberry, *Island Insurance Company, Honolulu, USA*

This session will provide risk professionals with practical information regarding the essential considerations needed to develop effective risk assessments based on ISO 31010 guidelines. This presentation will cover: developing risk characteristics; identifying and utilizing the best risk assessment tools; and developing risk assessments that meet international standards organization guidelines.

Learning Outcomes:

1. Session attendees will be able to identify key risk characteristics essential to effectively complete a risk assessment.
2. Attendees will recognize the need to develop meaningful risk assessments based on qualitative and quantitative risk assessment tools.

Social Media and Disaster Communication: The Right Message or Fake News | ROOM 319

Eric Yamashita, *University of Hawai'i, National Disaster Preparedness Training Center, Honolulu, USA*

Pradip Pant, *University of Hawai'i, National Disaster Preparedness Training Center, Honolulu, USA*

Jiwnath Ghimire, *University of Hawai'i, National Disaster Preparedness Training Center, Honolulu, USA*

This session presents the results of two questionnaires on disaster communication, the use of social media as a form of communications, and the concept of trust that were administered by the National Disaster Preparedness Training Center. The discussion will be centered around "the purpose of the surveys," "what were the results of the surveys," and "how can we use this information" to improve the technology and usage of social media to get the right word out.

Indonesia Resilience Forum | ROOM 321

Collaboration in Building Disaster (Flood) Resilience: Role of Disaster Preparedness Groups (DPG) in Semarang City – Indonesia

Wiwandri Handayani, *Department of Urban and Regional Planning, Diponegoro University, Semarang, Indonesia*

Building Community Resilience through Disaster Preparedness in South Manokwari Regency, West Papua Province

Hendri Hendri, *University of Papua, Manokwari, Indonesia*

The Development of Tambrau as Conservation District in West Papua; Local Initiative of Climate Change Mitigation and Adaptation

Gabriel Asem, *Regent of Tambrau, Tambrau, West Papua, Indonesia*

Sepus Marten Fatem, *Tambrau Regent for Natural Resources Management and Community Development, Tambrau, West Papua, Indonesia*

Hendri Hendri, *University of Papua, Manokwari, Indonesia*

The Resilience Imperative: An Entry Point to Reducing Vulnerability by Building Partnerships Through Training

Dolores Foley, *University of Hawai'i at Mānoa, Honolulu, U.S.*

5:00 PM – 7:00 PM

Exhibitors' Showcase & Networking Reception and Poster Sessions | ROOM 316



WEDNESDAY, AUGUST 08

8:00 AM – 9:00 AM

Registration & Continental Breakfast

9:00 AM – 10:00 AM

Plenary Panel: Adapting to the New Normal in the Information Age

10:00 AM – 10:30 AM

Break

10:30 AM – 12:00 PM

Individual Presentations, Session B | ROOM 318

One and Done (Power and Water Systems Mitigation)

Gary Camacho, *Government — Utilities, Saipan, MP, Northern Mariana Islands*

Patrick Guerrero, *Government, Saipan, MP, Northern Mariana Islands.*

MadiDrops: An Appropriate Technology for a Broad Spectrum of Water-Related Crises in the Pacific Islands

James Smith, *University of Virginia, Charlottesville, Virginia, U.S.*

Ethan Allen, *Pacific Resources for Education and Learning, Honolulu, U.S.*

Using Geospatial Technology to Assist FEMA with Responding to the 2017 Hurricanes

Phillip Thiel, *FEMA Contractor, Washington DC, U.S.*

The State of the Beaches in Puerto Rico after Hurricane Maria

Maritza Barreto, *Planning Department, University of Puerto Rico*

Assessing and Enhancing the Resilience of Transportation Networks and Systems | ROOM 319

Brian Wolshon, *Louisiana State University, Baton Rouge, U.S.*

Anurag Pande, *Cal Poly, San Luis Obispo, U.S.*

Scott Parr, *Embry Riddle Aeronautical University, Daytona, U.S.*

This session will focus on the assessment and enhancement of resilience in transportation networks and systems in coastal and island environments. The general concept of the session is to present findings, practices, policies, methods, tools, techniques, technologies, and systems that have been identified in research NCHRP and TCRP research studies. Chief among these is a recent effort to develop a high-level transportation resilience “primer” to be used by top-level transportation agency officials to integrate resilience into agency business practices and create a culture that seeks to enhance resilience through improved adaptation and/or mitigation. Presentations in this session will also include case studies of recent hazards in coastal and island locations, such as Hurricanes Rita and Irma in the Florida, Florida Keys, and Puerto Rico and Harvey in Houston/Galveston. One area of specific focus will be the evacuation of people from these storms.



Commercial UAV Technologies: The Advantages, Opportunities, and Challenges | ROOM 321

Eric Yamashita, *University of Hawai'i, National Disaster Preparedness Training Center, Honolulu, U.S.*

Van Romero, *New Mexico Tech, Socorro, U.S.*

Richard Miller, *New Mexico Tech, Honolulu, U.S.*

Pradip Pant, *University of Hawai'i, National Disaster Preparedness Training Center, Honolulu, U.S.*

Jiwnath Ghimire, *University of Hawai'i, Department of Urban and Regional Planning, Honolulu, U.S.*

Ryan Perroy, *University of Hawai'i at Hilo, Hilo, U.S.*

David Takeyama, *Oceanit, Honolulu, U.S.*

This session will be a panel discussion that introduces UAV technologies, its applications and the technologies that are forming to support the growth in UAV applications. Then, the panelists will describe some of the current applications, advantages, opportunities, and challenges. The discussion will include the level of maturity of common technologies in the use of UAV platforms and systems and the integration of those technologies, the challenges of safety, security and privacy, and how some of these challenges have influenced the counter or anti-drone technologies and influenced the application of policy, laws and ordinances that shape the UAV landscape and applicability at the State and Local level.

Using Machine Learning on Real-Time UAV Data to Conduct Emergency Damage Assessments

David Takeyama, *Oceanit, Honolulu, U.S.*

The value of UAV's as a valuable disaster relief tool has already been clearly established following recent natural disasters. The speed at which drones can be deployed and the ability to go places that are too dangerous for ground based crews make it a valuable tool. However, their limited flight time and time consuming data analysis and post processing are areas that can be improved. Through a Department of Energy (DOE) SBIR (Small Business Innovation Research) program grant, Oceanit was funding to develop a damage assessment platform designed to identify and assess damage to the electrical grid infrastructure immediately following a disaster. Oceanit's MERCI-UI (Utility Inspections) minimizes UAV flight time and post processing by using machine vision and artificial intelligence (AI) to identify and categorize utility infrastructure damage in real or near real time. The field deployable package will provide a system that will operate in no power/no communications environments and will provide near-real time damage reports so that resources can be more efficiently allocated quickly without having to waste valuable time on in air reviews and manual data post-processing.

1:30 PM – 3:00 PM

Lessons Learned in Integrating Virtual Reality in Training and Capacity Building Programs (VR Demo) | ROOM 317B

This session will demonstrate LSU/NCBRT's experience with developing and testing the use and implementation of Virtual Reality for training from a broader perspective beyond the Active Shooter work they have done for law enforcement. They will discuss the benefits and challenges of Virtual Reality as a training tool, and the misconception that this is more a gaming technology. The brief discussion will then lead into a demonstration to allow the participants to use the technology to see firsthand how the technology can be used for training.



Individual Presentations, Session C | ROOM 318

Open Mapping as Post-Disaster “Information Aid” After Disasters: A Look at Puerto Rico After Hurricane Maria

Lily Bui, *Massachusetts Institute of Technology, Cambridge, U.S.*

Enhancing Coastal Community Resilience with Real-Time Notifications, and Long-Term Projections, of Hazardous Wave-driven Flooding and Erosion Events in West Maui

Melissa Iwamoto, *PacIOOS, Honolulu, U.S.*

Shoreline Monitoring using Compture Vision Technology

Michael Foley, *Oceanit Laboratories, Inc., Honolulu, U.S.*

Landslide Susceptibility Assessment Considering Rainfall and Earthquake

Yuntae Kim, *Pukyong National University, Busan, Republic of Korea*

Individual Presentations, Session D | ROOM 319

The Evaluation of Disaster Recovery Based on the Resilience Concept

Kazuo Kikuchi, *Meiji University, Tokyo, Japan*

Takeshi Oshita, *Meiji University, Tokyo, Japan*

Ippei Machida, *Meiji University, Tokyo, Japan*

An Evaluation of Coastal Communities Resilience Strategy, Best Practices for Hawai'i

Shubhanshu Jain, *University of Hawai'i, Honolulu, U.S.*

Aida Arik, *University of Hawai'i, Honolulu, U.S.*

Yusraa Tadj, *University of Hawai'i, Honolulu, U.S.*

Asrizal Luthfi, *University of Hawai'i, Honolulu, U.S.*

Addressing the NOAA Water Initiative with a Cross-Disciplinary Approach – Lessons on Partner, Tribal, and Stakeholder Outreach to Solve a Complex Issue

Sabra Comet, *NOAA/IOOS, Silver Spring, U.S.*

Using Coastal Flood Exposure Mapper Tool to Understand Coastal Flooding in Your Neighborhood

Gretchen Chiques, *NOAA Office for Coastal Management, Honolulu, U.S.*

Increasing Public Understanding of Science to Enhance Disaster Risk Reduction by the National Disaster Management and Research Institute (NDMI) in the Republic of Korea (South Korea) | ROOM 321

Yuntae Kim, *National Disaster Management and Research Institute, Ulsan, Republic of Korea*

Haksoo Kim, *National Disaster Management and Research Institute, Ulsan, Republic of Korea*

Sunjin Hong, *National Disaster Management and Research Institute, Ulsan, Republic of Korea*

Miran Lee, *National Disaster Management and Research Institute, Ulsan, Republic of Korea*

Dowoo Kim, *National Disaster Management and Research Institute, Ulsan, Republic of Korea*

The NDMI is the only comprehensive disaster research institute in Korea establishing a disaster response system based on science technology and social consensus. As “the leading global think tank in safety,” NDMI's missions range from research and development of disaster management technologies to policy advancement and raising public awareness on safety.

This session will focus on some of the programs, tools, and innovative technologies being used and developed by NDMI to increase disaster risk reductions in the Asia-Pacific region.

Presentations:

1. Urban Flooding Monitoring System
2. Experimental research for urban flood damage mitigation and disaster experience
3. Program in flooded areas
4. Tsunami hazard mapping through characteristic analysis of inundation
5. Risk Scanning from Text Big Data
6. Disaster Profiling for Case-based Cause Analysis



3:30 PM – 5:00 PM

Lessons Learned in Integrating Virtual Reality in Training and Capacity Building Programs (VR Demo) | ROOM 317B

This session will demonstrate LSU/NCBRT's experience with developing and testing the use and implementation of Virtual Reality for training from a broader perspective beyond the Active Shooter work they have done for law enforcement. They will discuss the benefits and challenges of Virtual Reality as a training tool, and the misconception that this is more a gaming technology. The brief discussion will then lead into a demonstration to allow the participants to use the technology to see firsthand how the technology can be used for training.

Coconut Wireless Mobilisation During Cyclone Gita: Pacific Indigenous Disaster Preparedness, Risk Resilience and Management | Room 318

Siautu Alefaio, NIUPaCH, Massey University, Auckland, New Zealand

Jane Rovins, NIUPaCH, Massey University, Wellington, New Zealand

Emeline Afeaki-Mafile'o, NIUPaCH, Massey University, Nukualofa, Tonga

On Monday 13th of February 2018 Tonga prepared for Cyclone Gita at the time estimated to be category 5. It is fortunate despite the damage to the nation there were no lives lost.

This special session panel discussion focuses on Pacific-indigenous mobilisation of community through coconut wireless. How social media and crowd sourcing response and recovery has increased mobilisation of coconut wireless during disasters will also be discussed. Affirming Works (AW) who has been providing services in New Zealand to our Pacific communities for more than 15 years has been hosting NIUPaCH (New IndigenoUs-innovation of Pacific Humanitarians) in the Kingdom of Tonga the last three years. NIUPaCH is a research collective within Oceania focusing on Pacific-indigenous Disaster risk management, resilience and Humanitarian response. It provides a virtual patch (space/place) for innovative interdisciplinary practice, research and educational programming to connect with Pacific regional communities of Oceania, to improve the effectiveness and accountability of disaster preparedness, humanitarian response, and post-emergency reconstruction. NIUPaCH operates the Joint Centre for Disaster Research (JCDR) in the Pacific and is based in the School of Psychology at Massey University, Aoteroa New Zealand. Complex humanitarian emergencies and natural disasters are becoming more severe and frequent, but peoples in the Pacific have continued to work towards resilience in the face of these challenging times. Pacific communities rally organically in response to crises of humanity, these organic community responses led by Pacific diaspora will also be the focus of the panel discussion.



Solutions to Global Challenges: Building a Resilient and Self-Reliant Community | ROOM 319

Pacific Micro Solutions to Global Challenges

Building a Resilient and Self-Reliant Community: UH PBCP/Hau'ula Community Collaboration Model

Introductions: Papalii Dr. Failautusi 'Tusi' Avegalio, *University of Hawai'i*

Panel Moderator: Professor Dr. Dolores Foley, *University of Hawai'i Department of Urban & Regional Planning (Retired)*

Hau'ula Community Disaster Preparedness and Food Security Leaders

Dotty Kelly-Paddock, *Hau'ula Community Association President*

Kahu Sadrin 'Sage' Chee, *Executive Pastor/Director of the Uhane Hemolele Pi'ikea of Hau'ula*

Angela Henderson

Island Resilience Through Community/Village Based Disaster Preparedness

Kalani Souza & Craig Elevitch

Integrative Systems for Food Security and Waste Management

Su'a Alexander Jennings, *Inventor, Proprietor Breadfruit Dehydrator*

Michael Lurvey, *Inventor, Proprietor TCOM Waste Management System*

Cheyenne Lurvey, *Assistant and Attendant for Micheal Lurvey Recovering from Surgery*

International Applications; Waste Lands, Refugee Camps, Post Disaster Human Conditions, Remote U.S. Island Territories and Building on the Strengths of Culture.

Leroy Harris, *Lt. Commander USN (Retired), CEO HITmethods Specializing in Global Health and Disaster Management*

Khaled Dudin, *82nd Airborne Combat Medic Veteran, Environmental/Global Enterprises*

Galumalemana Fuapopo Avegalio, *Chief EMS, American Samoa, Village Based Preparedness*

In a natural or man-made disaster, impacts to remote islands, coastal and rural communities will be isolated due to road damage and accessibility caused by either earthquake, tidal surge, lava flows, hurricane force winds, inundated river banks or all of the above. Centralized power, water, transportation and general communications and support breakdowns will initially be widespread as recovery efforts mobilize. Emergency and disaster response can be delayed by days, weeks, months or more, contingent on severity of centralized infrastructure damage and mobilization capacity.

Based on a distributive strategy for the north shore of O'ahu, the Hau'ula coastal community is better prepared than most. Their driving philosophy is that the first responder will not be a professional arriving to render assistance from outside the community; it'll be neighbors assisting each other. The first survival and recovery umbrella will not be the county, the state, the federal government or international disaster aid organizations — the first recovery umbrella is within the community. Hau'ula's community disaster preparedness strategy weaves traditional wisdom and cultural survival practices with modern knowledge, science and technology.

Hau'ula Resilient, Disaster Preparedness, Recovery and Development Model:

Food security, improved public health, power, energy, water, debris clearance, communications and post disaster economic recovery planning have been priority developments for Hau'ula for nearly a decade. Hau'ula Community Association (HCA) has been nationally recognized as one of the nation's top community resilience certified communities under the leadership of HCA president Dotty Kelly. The HCA disaster preparedness initiative has completed key components of the resilient community disaster preparedness plan originally conducted and led by Professor Dolores Foley (retired) Director of the School of Urban and Regional Planning, UH Mānoa campus. Kahu Sadrin 'Sage' Chee, Executive Pastor/Director of the Uhane Hemolele Pi'ikea of Hau'ula, works in close partnership with HCA and in its second phase of its sustainable community, emergency preparedness and sustainable agricultural initiative on 88 acres in Hau'ula for a breadfruit agroforestry and multi-crop development with planned on-site processing and waste disposal technologies.

The coastal community of Hau'ula will be the pilot site for the thermal conversion of organic material (TCOM) system and the breadfruit dehydrator by developer/inventor's Michael Lurvey of Kapolei and representative Su'a Jennings of



American Samoa. Both technologies are designed into retrofitted freight containers deployable to remote islands, coastal communities and rural areas by air, land and sea depending on disaster circumstance. Operational methods of the technologies are designed for easy use and maintenance by local villages and rural communities with limited technical knowledge or education. Parts are also designed to be locally manufactured and easily accessible. TCOM system can process carbon-based (tires, plastics, etc.) waste and all green waste and convert it (particularly following post-disaster trash heaps) into commercially viable by-products with no negative or harmful emissions.

The breadfruit dehydrator system produces gluten free, low glycemic index breadfruit flour (prevents diabetes and obesity) with adjustable temperatures for fruits, vegetables, fish and meats. Both technologies become post-disaster basis for economic recovery at multiple levels, from ground to table and trash to cash.

The Hau'ula model is to be shared by replication to other island and continental communities that could benefit from its disaster preparedness plan and distributive micro solutions. The freight container technologies are ideally suited for remote islands where accessibility is only by ship, isolated coastal and inland communities (including refugee camps) and remote rural villages where the centralized power systems and grids do not reach or are debilitated by disasters. Presentation will also include examples and strategies to engage the technologies in Africa, the Middle East, Caribbean and the Pacific Islands.

The Hawai'i Sea Level Rise Vulnerability and Adaptation Report | ROOM 321

Bradley Romine, *Hawai'i Sea Grant, Honolulu, U.S.*

Sam Lemmo, *Hawai'i DLNR-OCCL, Honolulu, U.S.*

Kitty Courtney, *Tetra Tech, Inc., Honolulu, U.S.*

In 2014, the Hawai'i State government declared that "climate change is the paramount challenge of this century" with the adoption of the Hawai'i Climate Initiative. The first major accomplishment of the Hawai'i Climate Initiative was the completion and acceptance of the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (Report) at the end of 2017. The Report demonstrates the potential for increasing exposure and vulnerability using cutting edge models of increasing coastal flooding, erosion, and wave overwash with sea level rise through collaboration with University of Hawai'i researchers. A detailed vulnerability assessment by the lead report author, Tetra Tech, Inc., looks at the potential economic and societal impacts of sea level rise. Report recommendations were developed with input from state and county agencies and local communities and through the Hawai'i Interagency Climate Mitigation and Adaptation Commission. This session will provide an overview of the science, modeling, and recommendations in the Report. The session will also share ongoing Hawai'i Sea Grant and State of Hawai'i projects funded through the NOAA Regional Coastal Resilience Grants Program expanding on the work of the Report, including the Hawai'i Sea Level Rise Viewer — an online interactive mapping viewer accompanying the Report, and efforts to improve resilience through the community planning process and disaster recovery. This panel session provides an informational briefing on the final Report following similar sessions sharing Report progress at the 2016 and 2017 PRiMO Conferences. The session will include time for question and answer and discussion among the panel and audience.



THURSDAY, AUGUST 09

8:00 AM – 8:30 AM

Registration & Continental Breakfast

8:30 AM

Welcome

Jennifer Sabas, *Chair, Partnership for Pacific Resilience*

Emcee: Colin Yost, *Secretary, Partnership for Pacific Resilience*

8:35 AM – 9:05 AM

What Happened on Kaua'i and in Puna – Science Behind the Disasters

Bruce Houghton, *Professor, School of Ocean and Earth Science and Technology, University of Hawai'i at Mānoa*

Ray Tanabe, *Director, Pacific Region, NOAA — National Weather Service*

9:05 AM – 10:00 AM

Kaua'i & Puna Updates

Moderator: David Kennard, *State Mitigation Officer, Hawai'i Emergency Management Agency*

The Honorable Bernard Carvalho, Jr., *Mayor, County of Kaua'i*

The Honorable Harry Kim, *Mayor, County of Hawai'i*

Jay Ignacio, *President, Hawai'i Electric Light*

Ed Sniffen, *Deputy Director, Department of Transportation, Highways Division*

Lyle Tabata, *Director, Department of Public Works, County of Kaua'i*

10:00 AM – 11:00 AM

Evolving Role of Government and Community in Disaster Response, Recovery & Resiliency

Moderator: Adam Stein, *Executive Director, PRiMO*

C. "Kimo" Alameda, *Executive, Hawai'i County Office of Aging*

Coralie Chun Matayoshi, *CEO, American Red Cross of Hawai'i*

Brandee Menino, *CEO, HOPE Services Hawai'i*

Braden "Mongo" Sakai, *154th Wing Commander (Retired) & Mililani Community Disaster Planning Team*

Darcie Yukimura, *Director of Community Philanthropy, Hawai'i Community Foundation, Kaua'i*



11:00 AM – 11:15 AM

Break

11:15 AM – 12:00 PM

Recovery & Resiliency Breakout Sessions

Lead: Josh Stanbro, *Chief Resilience Officer, City & County of Honolulu*

- Energy
- Food & Water
- Health
- Infrastructure, Housing & Environment
- Tourism & Economy

12:00 PM – 12:15 PM

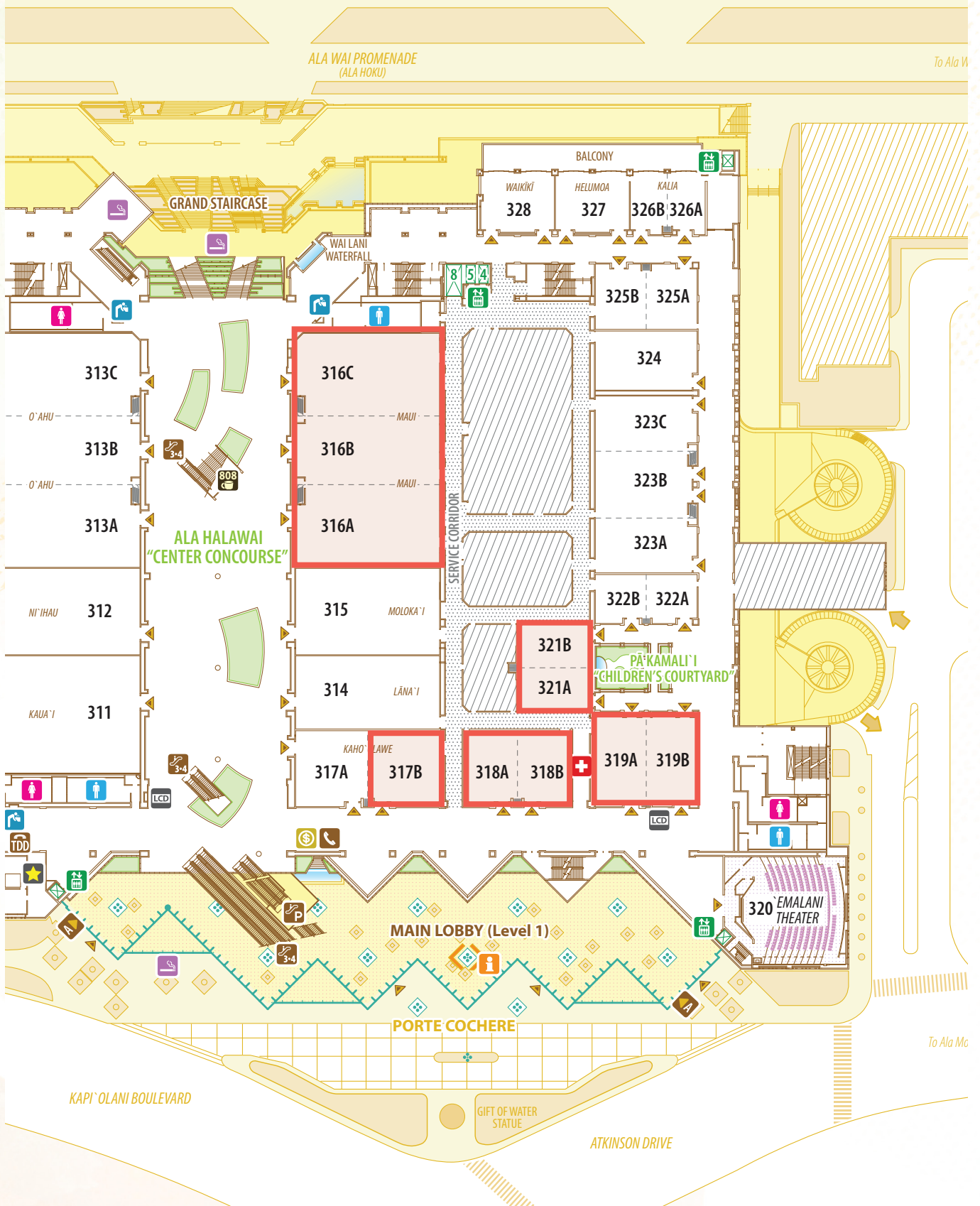
Report Out on Breakout Sessions/Closing

12:15 PM

PRiMO Closing Ceremonies



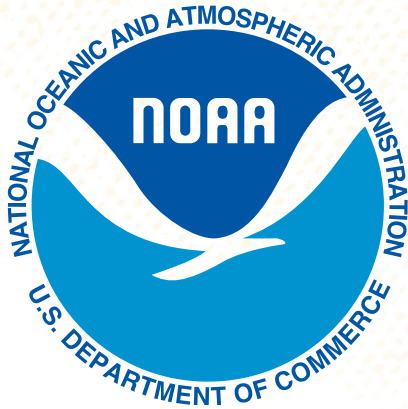
MAP OF HAWAI'I CONVENTION CENTER





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