UH Mānoa
Building Coordinators
Brown Bag Lunch
“Hurricane Preparedness”

May 27, 2015
TIME to Impact

Days to weeks
TIME to Impact

5-7 days or less
TIME to Impact

From Chile: 14-15 hours
From Japan: 8-9 hours
From Alaska: 5-6 hours
From Kona: 26 minutes
TIME to Impact: No warning
Virginia Tech, VA
April 16, 2007
07:15 - 10:53

Seung-Hi Cho
2 Pistols
32 killed
17 injured

TIME to Impact:
No warning

April 16, 2007
The sequence of events
Schedule

- 12:00: Arrival, Introductions, Orientation
- 12:10: NWS Presentation - Chris Brenchley
- 12:30: Are You Ready? - Jimmy Lagunero
- 13:00: End
Quick Announcements

- Admin Notes: Restrooms
- Ann Sakuma
- Roy Takekawa
- others
Introductions

- Name: ________________________________
- Current Position:___________________
- Department / Building:______________
- How long affiliated with UH?_________
National Weather Service

Chris Brenchley
2015 Hurricane Season Briefing

National Weather Service
Central Pacific Hurricane Center
Honolulu, HI
Outline

• Recent Tropical Cyclone Impacts
• Tropical Cyclone Climatology
• NWS Watches/Warnings
• General preparedness
Iselle Damage
Iselle Damage
Roof on Kauai during Iniki (1992)
2014 Hurricane Season review

Image: Tom Evans

North Central Pacific, 2014
Tropical Cyclone Tracks
Five Tracks
- Tropical Depression < 34kt
- Tropical Storm 34 - 63kt
- Hurricane > 63kt

Image: Tom Evans
Tropical Weather Climatology

- Central Pacific Average per Year
  - 4-5 Tropical Cyclones

- 1981 through 2014:
  - 152 Tropical Cyclones (5 in 2014)

- Four direct hits since 1950
  - Total damage more than 3.25 billion dollars, damage from Iselle alone was 80 million dollars.

www.weather.gov/cphc
$4^{th}$ landfall since 1950- Hurricane Iselle
Tropical Weather Climatology

• 75% of tropical cyclones that occur in the Central Pacific Basin formed in the Eastern Pacific
Central Pacific Tropical Cyclones by Month
1971 - 2014
TC Climate Factors

• El Nino conditions typically mean a more active hurricane season in the Central Pacific. *(6-7 per year since 1970)*

• La Nina conditions typically mean a less active hurricane season in the Central Pacific. *(3 per year since 1970)*

This Year? El Nino conditions likely through Summer-Fall

OUTLOOK: Above normal tropical cyclone numbers in the Central and East Pacific
Tropical Weather Outlook

Outlook valid for the 48 hours after issuance

Issued at least every 6 hours during season

Text and Graphical product

www.weather.gov/cphc
Watch/Warning Definitions

- **Tropical Storm Watch:** Tropical storm conditions (winds 39-73 mph) are *possible* within 48 hours.
- **Tropical Storm Warning:** Tropical storm conditions are *expected* within 36 hours.
- **Hurricane Watch:** Hurricane conditions (winds 74+ mph) are *possible* within 48 hours.
- **Hurricane Warning:** Hurricane conditions are *expected* within 36 hours.

www.weather.gov/cphc
Warning/“Cone” graphic

- Static image of latest forecast
- Watches/warnings highlighted
- Time/Date & Current Information
- Legend information

www.weather.gov/cphc
How do we get the cone?

Based on our forecast errors over past 5 years.

The cone is formed by smoothly connecting imaginary circles around each forecast point.

For each circle, there is a 67% chance (2 out of 3) the center of the TC will be within that circle at that time range.

33% chance (1 out of 3) the center will be OUTSIDE that circle at that time range.
Wind Speed Probabilities

- Updated at least every 6 hours
- Graphics available for 34kt, 50kt, and 64kt winds
- Cumulative probabilities over a 5 day period
- Gives a better projection of potential storm track

Tropical Storm Force Wind Speed Probabilities
For the 120 hours (5 days) from 5 AM PDT Tue Aug 16 to 5 AM PDT Sun Aug 21

Probability of tropical storm force surface winds (1-minute average >= 39 mph) from all tropical cyclones

Indicates TROPICAL STORM FERNANDA center location at 5 AM PDT Tue Aug 16 2011 (Forecast/Advisory #4)

www.weather.gov/cphc
Tropical Cyclone Preparedness

Before Tropical Cyclone Season

• Read and understand tropical cyclone safety information
• Sign up for INWS / Alerts to get warnings to your phone.
• Create an Individual/Family/Business emergency plan
• Build a disaster kit – FEMA – http://ready.gov

www.weather.gov/cphc
Tropical Cyclone Preparedness

When a Tropical Storm/Hurricane Watch is Issued

- Fuel and service family vehicles
- Prepare to cover all windows and door openings with boards, shutters or other shields
- Check food and water supplies. Have at least 7 – 10 days worth
- Have at least a 10 day supply of medications
- Stock up on extra batteries for radios, flashlights, etc.
- Store and secure outdoor lawn furniture and lightweight objects

www.weather.gov/cphc
Tropical Cyclone Preparedness

When a Tropical Storm/Hurricane Warning is Issued

• Follow instructions issued by civil defense. Leave immediately if ordered to do so.
• Complete preparation activities, such as boarding up windows and securing loose objects.
• Evacuate areas that might be affected by storm surge flooding. If evacuating, leave early.
• Notify neighbors and family members outside of the warned area of your evacuation plans.

www.weather.gov/cphc
Questions & Contact Info

Any Questions??

www.weather.gov/cphc
Are You Ready?

“Emergency Preparedness and what you can do to be ready”.

Jimmy L. Lagunero
University of Hawaiʻi at Mānoa
Department of Public Safety
Natural Disaster threats to Hawai‘i

Hawai‘i State Civil Defense, has determined that the following natural disasters are the most likely events to occur again in Hawai‘i.

- Hurricane
- Flooding
- Tsunami
### Saffir/Simpson Hurricane Scale

<table>
<thead>
<tr>
<th>Category</th>
<th>Surge</th>
<th>Winds and Effects</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1</strong></td>
<td>4-5 feet</td>
<td>74-95 mph (64-82kt)</td>
<td>No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery and trees. Also, some coastal flooding and minor pier damage.</td>
</tr>
<tr>
<td><strong>Category 2</strong></td>
<td>6-8 feet</td>
<td>96-110 mph (83-95kt)</td>
<td>Some roofing material, door and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.</td>
</tr>
<tr>
<td><strong>Category 3</strong></td>
<td>9-12 feet</td>
<td>111-130 mph (96-113kt)</td>
<td>Some structural damage to small residences and utility buildings, with a minor amount of structural failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland.</td>
</tr>
<tr>
<td><strong>Category 4</strong></td>
<td>13-18 feet</td>
<td>131-155 mph (114-135kt)</td>
<td>More extensive structural failures with some complete roof failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.</td>
</tr>
<tr>
<td><strong>Category 5</strong></td>
<td>19 feet+</td>
<td>156 mph+ (135+ kt)</td>
<td>Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.</td>
</tr>
</tbody>
</table>
FLOODING

- **Flood Advisory:** Exercise caution due to hazardous driving conditions. Be alert for ponding & debris on roadway; slippery roads & poor visibility.

- **Flood Watch:** Flooding is possible. Be alert!

- **Flash Flood Warning:** Flooding is imminent or already occurring. Get to high ground if you are in a flood prone area.
UH is not immune

- UH Mānoa Oct. 30, 2004
- $100 Million dollars in damages
TSUNAMI

- **Tsunami Watch:** Issued by Pacific Tsunami Warning Center (PTWC) after distant earthquakes with potential to create a tsunami in Hawaii. Tsunami waves are possible.

- **Tsunami Warning:** Issued whenever tsunami waves have been confirmed by PTWC and/or a damaging wave is detected.

- **Urgent Local Tsunami Warning:** Issued when a local earthquake has occurred and damaging waves are probable. Wave travel time may be as short as 10-20 minutes.
Shelters and Supplies

- Do you know where your shelter is?
- Do you know what to bring to a shelter?
- If you have to evacuate to a shelter there is nothing there!
- You need to bring your own resources, bedding, food, water.
Hurricane Shelters

- When a hurricane warning is issued, civil defense information will be released through local radio and television stations and all other available means, concerning which shelters will be opened and when.

- Shelter personnel will be on site to direct you to the specific shelter buildings. If you are advised to evacuate, try to keep your family members together and don’t forget your survival kit, including important papers.
Hurricane Shelters

- It is essential that you take your survival kit with you because food, cots, blankets, and other comfort items will probably not be available.

- Prepare a plan for your pets in case you must evacuate. Public pet shelters are not yet available. Contact your veterinarian or the Hawaiian Humane Society for more information on pet arrangements. Only service animals are presently allowed in public shelters.
Hurricane Iselle & Julio

NOTE: All times ET

Source: NOAA
Graphic: Greg Good

© 2014 MCT
Alert, Assess, and Act

- **Alert**: Incident Occurs, and reported
- **Assess**: Incident Assessed, “Is this a threat?”
- **Act**: What can I do to minimize it’s impact?

Example:
- NWS informs us of a potential Hurricane Cyclone that may affect Hawai‘i.
- Key Government/UH leadership assesses the event and makes decisions to close or suspend operations.
- Affected areas evacuated, and residents relocate to safer places.
What is a Comprehensive Emergency Management Program (CEMP)?

Emergency Management is the process of mitigating threats and preparing for, responding to, and recovering from an emergency.

Planning is only one component of a CEMP. All hazards, mitigation, preparedness, training, testing, and coordination are all equally important activities.
Consolidate existing individual plans to be consistent in process and management utilizing best practice models and the all-hazards approach.

Include Building Management Coordinators Guide (under development)
Incident Levels

- Most incidents can be handled internally with little or no outside external support.

- To coordinate the event a field incident command post may be established. (Routine - Type 1)

- Situations which involve greater resources may require a coordinated effort with the support of select key staff/departments, and the use of a departmental operations center. (Emergency - Type 2)

- Disasters which warrant greater resources may require the activation of the campus Emergency Management Team and Emergency Operations Center. (Disaster - Type 3)
3-Level Scale of Emergencies

- Type 3 - Disaster
  - EOC Activation

- Type 2 - Emergency
  - Multiple or Expanded Emergency Response

- Type 1 - Routine
  - Routine Emergency Response

Campus-wide Incident

Level 2: EOC Decision Point

Isolated Incident
## Types of Events & Response

<table>
<thead>
<tr>
<th>Type of Event</th>
<th>Type 1 – Routine</th>
<th>Type 2 – Emergency</th>
<th>Type 3 – Disaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command Post</td>
<td>Incident CP</td>
<td>Department CP</td>
<td>Campus EOC</td>
</tr>
<tr>
<td>Who’s in charge?</td>
<td>Incident Commander, UHM DPS / Facilities / EHSO</td>
<td>Campus Manager coordinating multiple depts. response.</td>
<td>Chancellor or designee (VC) in coordination with Incident Commander</td>
</tr>
<tr>
<td>Example</td>
<td>Minor injury, minor chemical spill, plumbing failure or water leak.</td>
<td>Building fire, major chemical or hazardous material spill, flooding, and extensive utility outage.</td>
<td>Hurricane, Active Shooter, Pandemic.</td>
</tr>
<tr>
<td>Duration</td>
<td>1-2 hrs – isolated to a specific location</td>
<td>&lt;day-several days, may affect a portion of campus</td>
<td>&gt;day, may affect the entire campus.</td>
</tr>
</tbody>
</table>
UH Actions

- Hawai‘i EM Agency convenes key leadership and agency stakeholders.
- Leadership declares Emergency.
- Key agencies begin preparation for impact.
- Decision on closure or suspension of activities.
- “Non-Essential” staff released “Admin Leave”
- Select staff shelter in place
- Landfall
- Post Landfall assessment
- Recovery
Department and Building Actions

- Pre-identify risks and needs (*DPS Assessment)
- When Alerted: Initiate Pre-landfall actions
- Inform and alert Dept. and Building occupants
- Ho’o ma kau kau (To make ready, prepare)
- Checklist for Building closures (refer to handout)
- Communications is via the Chancellors Office
Emergency Preparedness

1. Get a kit of emergency supplies
2. Make a Plan for what you will do in an emergency.
3. Be informed
1. Get a Kit
Preventing For Disaster

Additional Items to Consider Adding to an Emergency Supply Kit:

- Prescription medications and glasses
- Infant formula and diapers
- Pet food and extra water for your pet
- Important family documents such as copies of insurance policies, identification and bank account records in a waterproof, portable container
- Cash or traveler’s checks and change
- Emergency reference material such as a first aid book or information from www.ready.gov
- Sleeping bag or warm blanket for each person. Consider additional bedding if you live in a cold-weather climate.
- Complete change of clothing including a long sleeved shirt, long pants and sturdy shoes. Consider additional clothing if you live in a cold-weather climate.
- Household chlorine bleach and medicine dropper – When diluted nine parts water to one part bleach, bleach can be used as a disinfectant. Or in an emergency, you can use it to treat water by using 16 drops of regular household liquid bleach per gallon of water. Do not use scented, color safe or bleaches with added cleaners.
- Fire Extinguisher
- Matches in a waterproof container
- Feminine supplies and personal hygiene items
- Mess kits, paper cups, plates and plastic utensils, paper towels
- Paper and pencil
- Books, games, puzzles or other activities for children
Recommended Items to Include in a Basic Emergency Supply Kit:

- Water, one gallon of water per person per day for at least three days, for drinking and sanitation
- Food, at least a one-week supply of non-perishable food
- Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both
- Flashlight and extra batteries
- First aid kit
- Whistle to signal for help
- Dust mask, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Can opener for food (if kit contains canned food)
- Local maps

Through its Ready Campaign, the U.S. Department of Homeland Security educates and empowers Americans to take some simple steps to prepare for and respond to potential emergencies, including natural disasters and terrorist attacks. Ready asks individuals to do three key things: get an emergency supply kit, make a family emergency plan, and be informed about the different types of emergencies that could occur and their appropriate responses.

All Americans should have some basic supplies on hand in order to survive for at least three days if an emergency occurs. Following is a listing of some basic items that every emergency supply kit should include. However, it is important that individuals review this list and consider where they live and the unique needs of their family in order to create an emergency supply kit that will meet these needs. Individuals should also consider having at least two emergency supply kits, one full kit at home and smaller portable kits in their workplace, vehicle or other places they spend time.
2. Make a Plan for what you will do in an emergency.

- **Plan in advance** what you will do in an emergency. Be prepared to assess the situation.

- **Develop a Family Emergency Plan.** Your family may not be together when disaster strikes, so plan how you will contact one another and review what you will do in different situations.

- **Watch television and listen to the radio for official instructions** as they become available.
3. Be informed

- Be aware of disaster preparedness resources for information.

- Be aware of, and heed advisories, watches, and warnings. Watch television and listen to the radio for official instructions as they become available.

- Be familiar with existing plans for work or your community.
Available free online.

www.soest.hawaii.edu
INFORMATION
Handbook for
Emergency
Preparedness

Available by request from www.heco.com
Government Agencies

FEMA - Federal Emergency Management Agency
www.fema.gov

Hawaii-EMA /SCD – Hawai‘i Emergency Management Agency, formally known as State Civil Defense
www.scd.state.hi.us

DEM - Honolulu Department of Emergency Management
www.co.honolulu.hi.us/ocda
Hawaiʻi Chapter of the American Red Cross

http://www.hawaiiredcross.org/

Disaster Victims Need your Help, Click here to Help Now.

SAFE & WELL List:
Report your status or search for a loved one

FIND IT FAST
- Access our Online Newsrooms
- Hurricane Ike Shelter Map
- RESPONSE to Caribbean Hurricanes
- Register as SAFE AND WELL
- DOWNLOAD Media and Video Assets
- Access SOCIAL MEDIA sites
- September is National Preparedness Month
- Support via Text Message
- Our Statement of Impartiality
<table>
<thead>
<tr>
<th>Emergency Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurricanes and Severe Storms</td>
</tr>
<tr>
<td>Waterspouts</td>
</tr>
<tr>
<td>Tsunami and Coastal Flooding</td>
</tr>
<tr>
<td>Earthquakes</td>
</tr>
<tr>
<td>Volcanic Activity</td>
</tr>
<tr>
<td>Landslides and Mudslides</td>
</tr>
<tr>
<td>Fire</td>
</tr>
<tr>
<td>Hazardous Materials</td>
</tr>
<tr>
<td>Bomb Threats and Explosions</td>
</tr>
<tr>
<td>War and Terrorist Attack</td>
</tr>
<tr>
<td>Biological Outbreak</td>
</tr>
<tr>
<td>Utility Outages</td>
</tr>
<tr>
<td>Civil Disturbance and Labor Strikes</td>
</tr>
<tr>
<td>Aircraft and Fallen Object Accidents</td>
</tr>
</tbody>
</table>
State of Hawai`i

DISASTER RESPONSE MANUAL
For Managers

www.hawaii.edu/ohr/docs

Disaster Response Manual For Managers

Office of Human Resources
University of Hawai`i

2440 Campus Road • Honolulu, Hawai`i 96822
Phone: (808) 956-8948 • FAX: (808) 956-3952

Links marked with this symbol require Adobe Acrobat Reader which can be downloaded for free by clicking on the "Get Acrobat Reader" button.

<table>
<thead>
<tr>
<th>OHR Home Page</th>
<th>New Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Policies &amp; Procedures</td>
<td>MEMO: Safeguarding Confidential Data 04-26-06</td>
</tr>
<tr>
<td>HR Documents</td>
<td>Disaster Response Manual for Managers 04-15-04</td>
</tr>
<tr>
<td>Class/Comp Plans</td>
<td>Memo: Vacancy Announcements for APT Positions 11-19-02</td>
</tr>
<tr>
<td>Collective Bargaining</td>
<td>Memo: Consolidated University Vacancy Announcements 11-19-02</td>
</tr>
<tr>
<td>Drug Free Workplace</td>
<td>Memo: Securing Information Technology Services (ITS) User Names 04-22-02</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>DHRD Memo: Maintenance of Health Fund Information 04-04-02</td>
</tr>
<tr>
<td>HR Forms</td>
<td>Memo: Children at the Workplace 04-04-01</td>
</tr>
<tr>
<td>Salary Schedules</td>
<td></td>
</tr>
</tbody>
</table>
UH Alert Emergency Notification

The UH Alert emergency notification system alerts the university community in the event of a natural, health or civil emergency. The information you provide will only be used in the event of an emergency that impacts the health and safety of the UH community or closures of whole campuses. It will not be shared with others or used for routine UH communications or announcements. Click below to login and:

PROVIDE OR UPDATE YOUR EMERGENCY CONTACT INFORMATION

Information about UH Alert

Automated emergency messaging options include:

- Email
  Emergency alerts are sent to hawaii.edu email addresses for all members of the UH community. Faculty/staff may also provide a non-UH email address.

- SMS/text messages
  Alerts can be sent via text message to student, faculty and staff mobile phones.

- Phone/voice mail
  A prerecorded phone call can be made to faculty/staff offices and/or home phones and/or mobile phones. If the system detects an answering machine or voicemail greeting, it will leave the recorded message after the greeting completes.

https://www.hawaii.edu/alert
On October 30th 2004: Two dozen students escaped from flooded Hamilton Library, and a researcher was rescued as she hung on to a tree. The cost: Almost 100 million dollars in damages, and loss of priceless research and historical artifacts.
At the Woodlawn Drive bridge over Manoa Stream, three cars could be seen, caught by a tree, dangling over the edge of the stream. Another car may have been washed into the stream, witnesses said.

“This is not the proper way to wash your car, nor do maintenance on your computers”.

13. Disaster Recovery and Crisis Management in Real Life
• Planning and Mitigation

• Participate in planning and design of new key infrastructure.
• Utilize lessons learned.
• Revise and update Emergency Plans.
• Create Emergency Preparedness Checklist

www.acuta.org
Begin Development of Checklists and Guides for key staff & depts.

RESPONSE OBJECTIVES FOR UHM EOC

- Support UHM Unified or Incident Command.
- Protect UHM population.
- Life Safety - protection of lives and care of the injured at UHM.
- Maintain security and physical protection of critical assets at UHM.
- Ensure the well-being of visitors and public.
- Provide information to employees and the public regarding potential threats and status of event.
- Continue EOC and ROC operations.
- Protect critical research project operations (electrical power dependent).
- Protect property from further damage.
- Protect research, work-in-progress documentation, and on-site files.
- Restore communication networks and information systems.
- Protect the environment.
• Monitor the threat

--- Provisional Data Subject to Revision ---
• Protect your Resources

• New UH IT Center
• Building features:
• Disaster-hardened, 8,000-square-foot data center for enterprise servers, storage and communications.
• An emergency situation room to support UH disaster response.
Public Safety Assessment

- A UH Mānoa Campus wide initiative to assist each Department/Building to be better prepared.
- Begins with an initial meeting to discuss the process.
- Follows up with an in person interview and assessment with key staff to assess the threats and risks.
- Then a close out meeting to review findings.
- And a follow-up review to review planned or completed changes implemented.
Continuity of Operations Plan

- To be developed
Summary

- DISASTERS
- It’s gonna happen, again.
- There’s things that you **can do** to be ready
- Get a Kit
- Make a Plan
- Be informed
Any Questions?

Jimmy L. Lagunero
Emergency Management Coordinator
Office of Emergency Management
UH Mānoa Dept. of Public Safety
1951 East-West Road
Auxiliary Services Bldg.,
Honolulu, HI 96822

phone: 808-956-0773
fax: 808-956-4450
Email: lagunero@hawaii.edu
Website: http://manoa.hawaii.edu/emergency/management
Photo from report by James Cartwright
“most organizations need to tear up their crisis plans. Simply put, if you are not prepared for a total loss of power and communications, not to mention a scenario that involves body bags and the need to break a few laws, then you are not thinking bad enough.” General Honore, Hurricane Katrina

“Bad things happen when good people do nothing”. Signature block of Jimmy Lagunero, UH EM Coord.