



UNESCO/IOC – NOAA ITIC Training Program in Hawaii (ITP-Hawaii)
TSUNAMI EARLY WARNING SYSTEMS
AND THE PACIFIC TSUNAMI WARNING CENTER (PTWC) ENHANCED PRODUCTS
TSUNAMI EVACUATION PLANNING AND UNESCO IOC TSUNAMI READY PROGRAMME
7-18 August 2023, Honolulu, Hawaii USA

ITP-Hawaii 2023

Course Overview

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Oceanographer

UNESCO/IOC – NOAA International Tsunami Information Center



END-TO-END TSUNAMI WARNING

Tsunami Warning chain for M9.5 Chile

Pacific Tsunami Warning & Mitigation System

Tsunami Warning!



English: <https://vimeo.com/124650777>
 Spanish: <https://vimeo.com/125109150>
 French: <https://vimeo.com/125109148>



Pacific Tsunami Warning & Mitigation System

Tsunami Warning!

When a major undersea earthquake occurs near the coast, a destructive tsunami can result that will hit near by coasts in minutes and also travel across entire oceans causing damage 1000's of kilometers away and up to 24 hours later. To alert far-away coasts, internationally coordinated tsunami early warning systems, such as the Pacific Tsunami Warning and Mitigation System (PTWS), have been established to quickly provide tsunami threat information to coastlines.

2015 marks the 50th year of the PTWS. The System was established in 1965 in response to the 1960 M9.5 earthquake off South-central Chile that generated a tsunami which crossed the Pacific killing hundreds in Hawaii, Japan, and the Philippines. The PTWS has been built up over the decades, through international cooperation and the contributions of countries and organizations under the UNESCO IOC framework.

To sustain awareness on the dangers of tsunamis, and to educate the public on how the PTWS works to disseminate alerts on approaching tsunamis, the IOC, in cooperation with Chile, has produced a 6-minute outreach video. The aim of the video is to strengthen public and stakeholder agency knowledge of and confidence in tsunami alerts that save lives and reduce property damage.

This video chronicles the tsunami warning chain for a M9.5 earthquake off Northern Chile as Pacific Tsunami Warning Center (PTWC) staff quickly analyze seismic and sea level data, forecast tsunami wave heights, and disseminate their threat assessments to country National Tsunami Warning Centers around the Pacific. Woven into this fast-paced video are vignettes highlighting tsunami warning and emergency response actions by centers and communities starting immediately after the earthquake in Chile and Peru, and after receiving the PTWC alerts in Samoa and Hawaii, and in Australia, Japan, Indonesia, and the Philippines.

www.tsunamivideo.info

Produced by International Tsunami Information Center (ITIC) in collaboration with the US NOAA Tsunami Program, Servicio Hidrográfico y Oceanográfico de la Armada de Chile (SHOA), and Intergovernmental Oceanographic Commission (IOC) of UNESCO. E-mail: itic@noaa.gov Web: <http://www.tsunamivideo.info>

Goals and Objectives

- ✓ Improve Standard Operating Procedures for tsunami warning and emergency response (consistent and rapid tsunami warning and response – Hawaii: working example).
- ✓ Increase capacity of operational staff to efficiently and effectively respond.
- ✓ Build community preparedness, especially for local tsunamis, through the UNESCO IOC Tsunami Ready programme.

Goals and Objectives

- The ITP-Hawaii will use Hawaii as a working example of an end-to-end tsunami warning and mitigation system demonstrating close stakeholder coordination and partnership for operational warnings and in preparedness activities.
- Training activities will include warning and response decision-making, use of decision-support tools, and evacuation planning.

Agenda - Course Materials

- This training follows the tsunami warning chain:
 - Week one focusing on tsunami warning activities.
 - Week two focusing on tsunami emergency response.

Agenda - Course Materials



UNESCO / IOC
INTERNATIONAL TSUNAMI INFORMATION CENTER (ITIC)
ITIC TRAINING PROGRAMME HAWAII (ITP-HAWAII)
TSUNAMI EARLY WARNING SYSTEMS
AND THE PACIFIC TSUNAMI WARNING CENTER (PTWC) ENHANCED PRODUCTS,
TSUNAMI EVACUATION PLANNING AND UNESCO IOC TSUNAMI READY PROGRAMME

7-18 August 2023
Honolulu, Hawaii USA

FINAL PROVISIONAL AGENDA (version 5 August 2023)

Session	Start Time	End Time	Topic	Location, Session Chair, Speaker
1 - 3			MONDAY, 7 AUGUST, DAY 1	NOAA IRC
			Opening, Course Overview, Tsunami Early Warning, Country Presentations	Laura Kong, ITIC
	8:00	8:45	PICKUP ALA MOANA HOTEL (AMH, Polynesian Hospitality bus - Art, Desiree to meet group); TRANSIT to NOAA IRC training venue	Art Sonen, Desiree Bayouth Garcia, ITIC
	8:45	9:15	Registration	
1.1	9:15	10:00	Opening Welcome and Self-introductions	ITIC, PTWC, NWS PR, Participants
1.2	10:00	10:15	Programme Logistics – Health and Safety, IRC Building and Foreign Visitor Rules, Local Transportation, Coffee/Tea/Lunch Breaks, Information Technology Support	Kong, Art Sonen, Tammy Fukuji, ITIC
	10:15	10:30	COFFEE / TEA BREAK	
1.3	10:30	10:45	Course Overview, Manual, Materials, including Awareness and TW Tools	Carolina Hincapié-Cárdenas, ITIC
2.1	10:45	11:15	Responding Rapidly and Effectively: Tsunami Warning and Emergency Response Requirements	Kong
2.2	11:15	12:15	Country Presentations (15 min each) - 4 countries	Countries

	12:15	13:30	LUNCH	
			Country Presentations, IOC Tsunami Warning and Mitigation Systems, Earthquake and Tsunami Science, ITIC and PTWC visit	Hincapié-Cárdenas
2.2	13:30	14:00	Country Presentations (15 min each) - 2 countries	Countries
2.3	14:00	14:30	UNESCO IOC Global Tsunami System: Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS); Roles of Tsunami National Contacts, Regional Tsunami Service Providers and Tsunami Information Centers, Tsunami Warning Focal Points, National Tsunami Warning Centers	Charles McCreery, PTWC
3.1	14:30	15:15	What earthquake science you need to know to warn for and respond to tsunami warnings? Earthquake Seismology - what, where, how, when, and damage caused	McCreery
	15:15	15:30	COFFEE / TEA BREAK	
3.2	15:30	16:15	What tsunami science you need to know to warn for and respond to tsunami warnings? Tsunami generation, propagation, and inundation - what, where, how, when, and damage caused	Dailin Wang, PTWC
3.3	16:15	16:45	ITIC and PTWC visit (2 groups) - overview	ITIC, PTWC
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth Garcia
4-5			TUESDAY, 8 AUGUST, DAY 2	NOAA IRC
			Tsunami Hazard Assessment - Hawaii example	Bayouth Garcia
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to NOAA IRC training venue	Bayouth Garcia, Sonen
	8:50	9:00	Day Overview	ITIC
4.1	9:00	9:30	Tsunami Warning and Mitigation Systems – Hawaii example	Kong
4.2	9:30	10:30	Tsunami Hazard Risk Assessment: Modeling and Mapping of Tsunami for Inundation and Land Evacuation - Hawaii example	Prof. Kwok Fai Cheung, Univ of Hawaii at Manoa
	10:30	10:45	COFFEE / TEA BREAK	
4.3	10:45	11:30	Tsunami Hazard Risk Assessment: Modeling and Mapping of Tsunami for Port and Harbor Planning and Response - Hawaii example	Cheung
4.4	11:30	12:00	Mitigation: Ports and Harbors, and Marine Sector Readiness	ITIC
	12:00	13:15	LUNCH	
			Tsunami-resistant Building Design, Tsunami Warning Center and Emergency Response (TWC/TER) and Lessons Learned	Kong

Agenda - Course Materials

	15:55	16:00	Switch - PTWC and Rm 1377	
	16:00	16:45	Switch: Group 1 to Rm 1377 Group 2 to PTWC	
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth Garcia
7-8			THURSDAY, 10 AUGUST, DAY 4	NOAA IRC
			TWC Topics - Sea Level and Tsunami Monitoring, Country Presentations	Kong
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to NOAA IRC	Bayouth Garcia
	8:50	9:00	Day Overview	ITIC
7.5	9:00	9:55	2 Groups (switch after 55 minutes): Group 1: Rm 1377 a. TWC Operations: Sea Level Monitoring - Methods, Instruments, Limitations, Challenges b. UH Sea Level Center Group 2: Rm 1564 Sea Level Station Instrumentation - 'show-and-tell'	Stanley Goosby, PTWC Matthew Widlansky, Univ of Hawaii Sea Level Center (UHSLC) Jerard 'Ziggy' Jardin, UHSLC
	9:55	10:05	Switch - Rm 1377 and Room 1564	
	10:05	11:00	Switch: Group 1 to Rm 1564 Group 2 to Rm 1377	
	11:00	11:15	COFFEE / TEA BREAK	
2.2	11:15	12:30	Country Presentations (15 min each) - 5 countries	Countries
	12:30	13:45	LUNCH	
			PTWC Enhanced Products, Travel time and Wave Amplitude Forecasting, NTWC and TER Guidance	Hincapié-Cárdenas
8.1	13:45	14:30	Pacific Tsunami Warning Center Enhanced Products - Why, What, Criteria, Staging of Products; Explanation of Each Product: Public Text, Graphical Deep-Ocean Tsunami Amplitude, Coastal Tsunami Amplitude, Coastal Tsunami Amplitude Polygons, Tsunami Amplitude Statistics, Coastal Tsunami Amplitude KMZ file (video and discussion)	McCreery
8.2	14:30	15:00	PTWC Operations: Travel Time Forecasting – Methods, Limitations, Uncertainty, Sensitivity Studies (Location, Depth, Magnitude)	Wang

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8.3	15:00	16:00	PTWC Operations: Wave Amplitude Forecasting – Methods (ATFM, SIFT, RIFT), Limitations, Uncertainty, Sensitivity Studies (Location, Depth, Magnitude)	Wang
	16:00	16:15	COFFEE / TEA BREAK	
8.4	16:15	16:45	NTWC and TER Guidance on how to use PTWC Enhanced Products for National Warnings and Evacuation - Land and Marine Threats and Public Safety: Flow Charts, Criteria Tables, Timeline-driven SOPs, Message Templates (IOC MG 76)	Kong
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth Garcia
9-10			FRIDAY, 11 AUGUST, DAY 5	HI-EMA, NOAA IRC
			Hawaii State Emergency Management Agency visit	Hincapié-Cárdenas
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to Hawaii State Emergency Management Agency (HI-EMA) Emergency Operations Center, Diamond Head Crater	Bayouth Garcia, Sonen
9.1	9:00	11:00	Visit Hawaii State Emergency Management Agency (HI-EMA): Response to PTWC Tsunami Products, Hawaii Emergency Alert System (EAS) and Siren System, Preparedness and Mitigation	Col. James Barros, Adam Weintraub, Jill Matsumoto, Matthew Wall, Ryan Hirae, HI-EMA
	11:00	11:15	TRANSIT to Kahala Mall, Whole Foods Market	
	11:15	12:30	LUNCH, Kahala Mall (on your own). https://www.kahalamallcenter.com/directory/whole-foods-market/	
	12:30	13:00	TRANSIT to IRC	
			Country Presentations, Week 2 Planning, TWC Free Choice (SOPs, Tsunami Warning Decision Support Tools, PTWC software demo)	Bayouth Garcia
2.2	13:00	13:30	Country Presentations (15 min each) - 2 countries	Countries
10.1	13:30	13:45	Week 2 activities – Using QGIS to create Evacuation Map	Hincapié-Cárdenas, Bayouth Garcia, Sonen, Hui
10.2	13:45	16:30	3 Groups, 3 Sessions, Switch after 50 minutes	
	13:45	14:00	Instructions and switch to rooms	

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Agenda - Course Materials

	14:00	14:50	Group 1: Rm 1377 Review & improve your Review & improve your Country TWC SOP / Checklists. 1-to-1 or small group discussion and question-and-answer on your SOPs. Reference for Day 9 Exercise Hawaii Wave 2023 Group 2: ITIC Library and Conference Room Install and use Tsunami Warning Decision-Support Tools (CISN, Tide Tool, TTT), Tsunami Coastal Assessment Tool (TsuCAT) Group 3: PTWC Demonstration. PTWC Operational Tools (SIFT, RIFT, Wphs CMT)	PTWC, ITIC ITIC, PTWC Weiss
	14:50	15:05	COFFEE/TEA BREAK. Switch - Rm 1377, ITIC, PTWC	
	15:05	15:55	Switch: Group 1 to ITIC Library and Conference Group 2 to PTWC Group 3 to Rm 1377	
	15:55	16:00	Switch - Rm 1377, ITIC, PTWC	
	16:00	16:50	Switch: Group 1 to PTWC Group 2 to Rm 1377 Group 3 to ITIC Library and Conference	
	16:50	16:55	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth Garcia
SATURDAY-SUNDAY, 12-13 AUGUST – FREE DAYS				
MONDAY, 14 AUGUST, DAY 6				
			City and County of Honolulu, Dept of Emergency Management visit	Hincapié-Cárdenas
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to Honolulu Department of Emergency Management, Honolulu Municipal Building	Hincapié-Cárdenas, Bayouth Garcia, Hui, Kong
11.1	9:00	11:00	Visit Honolulu Department of Emergency Management (DEM): County Response to PTWC Tsunami Products, Tsunami Evacuation (vertical), Alert Dissemination / Siren System, Signage, Preparedness and Mitigation, including Tourist and Special needs population readiness	Hirokazu Toiya, Jennifer Walter, Renise Haili Bayne, Honolulu DEM
	11:00	11:30	TRANSIT to Moanalua Shopping Center	
	11:30	12:45	LUNCH, Moanalua Shopping Center (on your own). https://www.moanaluasshoppingcenter.com/stores-restaurants	
	12:45	13:00	TRANSIT to IRC	

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			Country Presentations, NTWC Competencies, Tsunami Emergency Response (TER) SOPs, Communications	Kong
			<i>TW Tools, TsuCAT, QGIS troubleshooting as needed during Week 2</i>	
2.2	13:00	13:30	Country Presentations (15 min each) - 2 countries	Countries
12.1	13:30	13:45	NTWC Competencies (draft approved at ICG/PTWS-XXVIII, 2019)	Kong
12.2	13:45	14:30	SOPs and Checklists: TER operations - Example Warning Plans for Coordination of Information Flow and Evacuation (IOC MG 76). Private Sector SOPs. Developing timeline-driven SOPs (Who does What, and When (Roles and Responsibilities)?)	Hincapié-Cárdenas
			HOMEWORK - Review & improve country TWC TER SOP / Checklists (especially for local/regional threat) and Media SOP. Reference for Day 9 EHW-23 exercise	
12.3	14:30	15:15	Emergency communications - Robustness, reliability, redundancy. Technologies for the downstream transmission of warnings to communities. Case Study: Palu, Indonesia tsunami, 2018	Kong, Kodijat
	15:15	15:30	COFFEE / TEA BREAK	
			Local Source SOP, UNESCO IOC Tsunami Ready, QGIS	Kong
12.4	15:30	15:45	Local-Source Tsunami Response Best Practice (approved at ICG/PTWS-XXVIII, 2019)	Kong
13.1	15:45	16:30	Implementing Tsunami Ready programs to recognize community readiness - UNESCO IOC Tsunami Ready Recognition Programme - Guidelines, Recognition Process (IOC MG 74)	Kodijat
10.1	16:30	16:45	HOMEWORK - QGIS installation and familiarization - instructions	Hincapié-Cárdenas, Bayouth Garcia
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth Garcia
TUESDAY, 15 AUGUST, DAY 7				
Event flow, Evacuation Planning				
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to NOAA IRC	Bayouth Garcia
	8:50	9:00	Day Overview	ITIC
2.2	9:00	9:45	Country Presentations (15 min each) - 3 countries	Countries

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Agenda - Course Materials

13.2	9:45	10:15	Improving Response and Managing (reliable and unreliable) Information Flow during an Event: Media and Social Media - Good Practices	Kodijat
13.3	10:15	11:15	Learning Activity: Improving Response – Tsunami Warning and Emergency Response - What happens during an event?	ITIC, IOTIC, PTWC
	11:15	11:30	COFFEE / TEA BREAK	
13.4	11:30	12:00	Building Awareness and Community Preparedness - Tsunami Evacuation Planning - considerations and requirements. Preparing for Community Tsunami Evacuations: from inundation to evacuation maps, response plans and exercises (IOC MG 82)	Kong
	12:00	13:15	LUNCH (<i>TWTools, TsuCAT, QGIS troubleshooting as needed</i>)	
			Hazard Assessment, Evacuation Maps, Country Presentations	Bayouth García
14.1	13:15	13:45	TR ASSESS-1: Tsunami Hazard Risk Assessment - Data Requirements, Methods, Techniques. Case Study - Using ComMIT / MOST tsunami model for hazard assessment	Marie Eblé, ITIC
14.2	13:45	14:15	Hazard Assessment - IOC Regional Efforts on Tsunami Seismic Sources - Caribbean, Central America, South China Sea, Southwest Pacific meeting outcomes, and upcoming plans for Colombia and Ecuador and other locations	Kong
14.3	14:15	14:45	TR PREP-1: Making Community-based Evacuation Maps, Routes, and Signage - guidance	Kodijat
14.4	14:45	15:30	Create Community Evacuation Map - Caribbean and Pacific examples, 'paper and pencil'	Hincapié-Cárdenas, Bayouth García
	15:30	15:45	COFFEE / TEA BREAK	
2.2	15:45	16:45	Country Presentations (15 min each) - 4 countries	Countries
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth García
14			WEDNESDAY, 16 AUGUST DAY 8	NOAA IRC
			Evacuation Maps	Hincapié-Cárdenas
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to NOAA IRC	Bayouth García
	8:50	9:00	Day Overview	ITIC
14.5	9:00	9:30	Evacuation maps when inundation modeling is not possible or practical – Case Study - Caribbean example	Bayouth García

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14.6	9:30	9:40	Create Community Evacuation Map, including routes, signage – Caribbean and Pacific examples QGIS Instructions	Hincapié-Cárdenas, Bayouth García
	9:40	10:30	Create Community Evacuation Map, including routes, signage - Caribbean and Pacific examples - QGIS	Participants
	10:30	10:45	COFFEE / TEA BREAK	
	10:45	11:30	Create Community Evacuation Map, including routes, signage - Caribbean and Pacific examples - QGIS (continued)	Participants
			HOMEWORK - Finish Evacuation Map	
			Response Plans, Awareness, Exercises	Bayouth García
14.7	11:30	12:15	TR RESP-1 and PREP-5: Making Community Response Plans and Conducting Drills - guidance, how-to, and templates	Kong
			HOMEWORK - Finish reviewing country TER SOP / Checklists for exercise. Finish community response plan.	
	12:15	13:30	LUNCH (<i>TWTools, TsuCAT, QGIS troubleshooting as needed</i>)	
14.8	13:30	14:15	TR PREP-3 and PREP-4: Building Awareness and Community Preparedness - strategies and examples, World Tsunami Awareness Day, Caribbean PAE Strategy and Philippines Development Process, ITIC available materials, Hawaii examples	Kodijat, Hincapié-Cárdenas
14.9	14:15	15:15	TR PREP-3: Creating Public Awareness Material, including evacuation (poster, presentation, video, etc)	"Country" Teams
	15:15	15:30	COFFEE / TEA BREAK	
14.10	15:30	16:15	Team Sharing: Creating Public Awareness poster	Hincapié-Cárdenas, Bayouth García, "Country" Teams, "Judges"
14.11	16:15	16:45	TR PREP5: Building Awareness and Community Preparedness - Tsunami Exercises and Drills, IOC Community Tsunami Exercise Guideline (IOC MG 86), examples	Kodijat
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth García
14-15			THURSDAY, 17 AUGUST, DAY 9	NOAA IRC, Various rooms for EHW-23
			Tsunami Ready board game, Exercise Hawaii Wave 2023 (EHW-23)	McCreery

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Agenda - Course Materials

	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to NOAA IRC	Bayouth García
	8:50	9:00	Day Overview	ITIC
14.12	9:00	10:00	Tsunami Ready board game - instruction and playing	Kodijat, Hincapié-Cárdenas, All
15.1	10:00	10:30	Exercise Hawaii Wave 2023 (EHW-23) – Decision-making using PTWC Enhanced Products. EXPLAN: Introduction, Format, Conduct	Exercise Controllers (Kong, Eblé, Kodijat, McCreery)
	10:30	10:45	COFFEE / TEA BREAK	
15.2	10:45	12:00	EHW-23 Tsunami Exercise Preparation – "Country" TWC / TER SOPs, Criteria Tables, Response Plans, Alerting, Media, Evacuation, Cancellation, etc	"Country" Teams
	12:00	13:15	LUNCH	
			EHW-23	McCreery
15.3	13:15	13:45	EHW-23 Tsunami Exercise – Setup and last instruction	Exercise Controllers
15.4	13:45	16:00	EHW-23 Tsunami Exercise – Decision-making using PTWC Enhanced Products	"Country" Teams, Simulators, Exercise Controllers
	16:00	16:15	COFFEE / TEA BREAK	
15.5	16:15	16:45	EHW-23 Post-Exercise Evaluation – Preparation for Press Conference	Exercise Controllers, "Country" Teams
			HOMEWORK - Finish Situation Report and Briefing	
	16:45	16:50	Next Day Announcements	ITIC
	17:00	17:45	RETURN TO HOTEL	Bayouth García
15-19			FRIDAY, 18 AUGUST, DAY 10	NOAA IRC
			EHW-23 Press Conference, Emerging Technologies, Logistics wrap-up	Hincapié-Cárdenas
	8:15	8:45	PICKUP ALA MOANA HOTEL (Polynesian Hospitality bus); TRANSIT to NOAA IRC	Bayouth García
	8:50	9:00	Day Overview	ITIC
15.6	9:00	10:00	EHW-23 Tsunami Exercise Hotwash – Press Conference: "Country" brief followed by "Media" / Audience Question-and-Answer	"Country" Team representatives (TWC and TER), "Media"
	10:00	10:15	COFFEE / TEA BREAK	

16.1	10:15	10:45	Improving Tsunami Warning - Emerging Techniques and Technologies: Earthquake Finite Fault Modeling, PTWC real-time GNSS/GPS detection of co-seismic deformation	Stuart Weinstein, PTWC
16.2	10:45	11:15	Improving Tsunami Warning - Emerging Tools and Technologies: ITU/WMO/IOC SMART Cables for Observing the Ocean	Bruce Howe, ITU/WMO/UNE SCO IOC JTF SMART Cables Chair
16.3	11:15	11:45	UN Decade for Ocean Science for Sustainable Development - Tsunamis	Kong, Kodijat
17.1	11:45	12:00	ITP-Hawaii 2023 Logistics wrap-up	Hincapié-Cárdenas, Sonen, Fuji
	12:00	13:15	LUNCH	
			Summary and Next Steps, Closing	Kong
18.1	13:15	13:45	2023-2024 Calendar: ICG and TOWS WG Action Items and Priorities	Kong, Kodijat
18.2	13:45	14:30	Summary Discussion (Way Forward, Next Steps, Gaps and Needs): UNESCO IOC Tsunami Ready, World Tsunami Awareness Day, UN Decade of Ocean Science for Sustainable Development	ITIC, PTWC, IOTIC, SMART, All
	14:30	14:45	COFFEE / TEA BREAK	
19	14:45	15:30	Presentation of Certificates and Closing Ceremony	ITIC, PTWC, NWS PR
	15:45	16:30	RETURN TO HOTEL	Bayouth García
			Friday - Saturday, 18-19 AUGUST	
			Hotel Checkout - Depart for home country	

Course Materials

- ❑ TWC/TER SOPs: IOC MG 76 (2017)
Plans and Procedures for Tsunami Warning and Emergency Management
- ❑ Evacuation Planning: IOC MG 82 (2019)
Preparing for Community Tsunami Evacuations: from inundation to evacuation maps, response plans and exercises
- ❑ End-to-End Tsunami Early Warning Systems (ITIC, 2005-2022)
- ❑ Awareness materials (general, global / regional hazards)
Subject / topical handouts (3-ring binder)



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Thank You

Carolina Hincapie-Cardenas

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