



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
COMMISSION OCÉANOGRAPHIQUE INTERGOUVERNEMENTALE  
COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL  
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ  
اللجنة الدولية الحكومية لعلوم المحيطات  
政府间海洋学委员会

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**IOC Circular Letter No. 2525**  
(English only)

IOC/WWW/TA/BA/LK  
2 June 2014

**To :** ICG/PTWS Tsunami National Contacts (TNC)  
and Tsunami Warning Focal Points (TWFP) ICG/PTWS Officers

**Cc :** Official National Coordinating Body for liaison with the IOC Member States  
(for information)  
Permanent Delegates/Observer Missions to UNESCO of IOC Member States  
Permanent Delegates/Observer Missions to UNESCO of Brunei Darussalam, Cambodia,  
Federated States of Micronesia, Nauru, Marshall Islands and Tokelau  
Permanent Observers ICG/PTWS  
IOC Officers  
Director, ITIC  
Director, PTWC

**Subject:** International Tsunami Information Center (ITIC) Training Programme – Hawaii  
(ITP-HAWAII) Hawaii, United States of America, 18-29 August 2014

By means of this letter, the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS) Member States, and countries in other regions with tsunami warning and mitigation interests, are invited to participate in the 2014 ITIC Training Programme – Hawaii (ITP-Hawaii) on tsunami warning systems and the PTWC New Enhanced Products to be conducted by the International Tsunami Information Center (ITIC) from 18 to 29 August 2014. ITIC is a UNESCO/IOC – National Oceanic and Atmospheric Administration (U.S.) partnership, with support from Chile.

Over the last 10+ years, with improvements in data quality, quantity, and real-time availability, Pacific Tsunami Warning Center's response time has dropped significantly from an hour to 5-10 minutes for tsunami events. At the same time, with each great earthquake and tsunami since 26 December 2004 helping to increase scientific understanding, better techniques have been developed to quickly characterize the earthquake and numerically model the tsunami. At its 25<sup>th</sup> session, the Intergovernmental Coordination Group for the Pacific Tsunami Warning System (ICG/PTWS-XXV, 2013) approved the start of the PTWC Enhanced Products on 1<sup>st</sup> October 2014. These products, the first large-scale modifications in decades, fundamentally change the way in which countries assess their national tsunami threats. The PTWC will cease providing Warnings and Watches, and instead issue advisory tsunami wave forecasts.

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TOGO

Public text products will continue to be issued, but the additional graphical and statistical products will only be sent to the designated PTWS Tsunami Warning Focal Points (TWFP).

Enhanced products are also planned for the Caribbean within the next two years. The proposal was approved for introduction by the ICG for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions at its 7<sup>th</sup> Session (ICG/CARIBE-EWS-VII, April 2012).

Accordingly, the 2014 ITP-Hawaii will focus on Standard Operating Procedures (SOP) for tsunami warning and tsunami emergency response, and on training on the use and interpretation of the ICG/PTWS PTWC New Enhanced Products. The 2014 ITP-Hawaii programme description and provisional agenda are attached.

On Day 1 of the training, each country is expected to give a 15-minute presentation on their new SOPs that will be used when the PTWC Enhanced Products commence on 1st October 2014, or on their plans for improving their SOPs. More information and documents will be made available through the website <http://www.ioc-tsunami.org/ITP-Hawaii-14>.

ITP-Hawaii is open to all countries, and participants from the ICG/PTWS and other ICGs are welcome and encouraged to attend on their own funding. The training will be held in English.

Some limited funding may be available for supporting attendance at the training, but full or partial self-funding by countries is welcome with no limitation. The selection criteria of the candidates who receive funding are: a) members of the country's National Tsunami Warning Centre (NTWC), Seismological agency or National Disaster Management Organization; and b) responsible for tsunami warning and emergency response operations, and/or for their country's tsunami Standard Operating Procedures (SOPs).

The IOC invites you to nominate candidates to the ITP-Hawaii 2014. Please forward the attached form duly filled, along with a CV, and endorsed by your Country TNC or TWFP, by email directly to the Director of ITIC, Dr Laura Kong ([laura.kong@noaa.gov](mailto:laura.kong@noaa.gov), Phone: +1-808-725-6050, Fax: +1-808-725-6055), with copy to Bernardo Aliaga ([b.aliaga@unesco.org](mailto:b.aliaga@unesco.org)), ICG/PTWS Technical Secretary. An application form is attached for this purpose. The deadline for applications is **no later than 25 June 2014**. Please indicate if your organization will have any funding to cover your participation. Successful candidates will be notified by 4 July 2014.

Yours sincerely,

*[signed]*

Dr Wendy Watson-Wright  
Executive Secretary of IOC

Attachments:

ITP-Hawaii 2014 Programme Description and Provisional Agenda  
ITP-Hawaii 2014 Application Form

**UNESCO/IOC – NOAA International Tsunami Information Center**  
**ITIC TRAINING PROGRAMME (ITP) – HAWAII**  
**18-29 August 2014**

The 2014 ITIC Training Programme (ITP-Hawaii) will be held 18 to 29 August 2014 in Honolulu, Hawaii, USA. The Programme, under the direction of the International Tsunami Information Center (ITIC), provides participants with an overview of the history and operation of the Pacific Tsunami Warning and Mitigation System. Specific focus is given to the important role of national tsunami warning centres in monitoring and evaluating the tsunamigenic potential of earthquakes, and in issuing timely tsunami warning messages to government emergency officials who can then act to save lives and reduce damage to coastal communities. The Programme provides training and familiarization with the Pacific Tsunami Warning and Mitigation System and other regional systems, National Warning Systems, and Emergency Response concepts of operations and standard operation procedures. The ITP-Hawaii uses 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.

Participants will engage in a series of informational presentations and discussions at ITIC and the Pacific Tsunami Warning Center, and visits to Emergency Operations Centers. A 1-day off-island field trip to visit the Hawaii County Civil Defense Agency, the Pacific Tsunami Museum, tsunami memorials, and the USGS Hawaiian Volcano Observatory, is included. A Provisional Agenda is attached.

The 2014 ITP-Hawaii will focus on Standard Operating Procedures (SOP) for tsunami warning and tsunami emergency response. Specific attention, and one-on-one country time, will also be given to preparing Pacific countries for the changeover to the PTWC New Enhanced Forecast Products on 1 October 2014. Participants will be asked to share their country SOPs using guidance and template examples provided during the Training, and will be introduced to the different tsunami warning decision support tools and software available for use in their centers. On the last day, participants will participate in tsunami exercise role-playing as tsunami warning centres or emergency response agencies responding to a local or regional tsunami using the PTWC New Enhanced Products.

On Day 1 of the Programme, participants should be prepared to make a 15-minute presentation on their country's tsunami warning system that includes the new SOPs that they will use when the PTWC Enhanced Products start, or on their plans for improving their SOPs.

Within one month after returning to their countries, ITP participants are asked to submit a Written Trip Report in English describing the activities they participated in, what they learned, and how they will use their training to improve tsunami warnings and/or awareness in their countries. Trip Report summaries will be published in the ITIC's *Tsunami Newsletter*.

**ITP-Hawaii 2014**  
**18-29 August 2014, Honolulu, Hawaii, USA**

**PROVISIONAL AGENDA**

Session	Topic
<b>1</b>	<b>MONDAY, 18 AUGUST, DAY 1</b>
	<b>Welcome, Overview, Country Presentations, Science</b>
1.1	Programme Logistics
1.2	Course Overview, Manual, and Materials, including Awareness Materials
1.3	Country Presentations (15-20 min each)
1.4	Earthquake and Tsunami Science - generation, propagation, impact
1.5	Global and Pacific Tsunami Hazard
1.6	Tsunami Risk Assessment - Methods and Role of Tsunami Deposits
1.7	Tsunami Risk Assessment: Modeling and Mapping of Tsunami Inundation
<b>2</b>	<b>TUESDAY, 19 AUGUST, DAY 2</b>
	<b>IOC Tsunami Systems, End-to-End Warning, Decision Support Tools, TWC Operations</b>
2.1	UNESCO IOC Global Tsunami System: Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS)
2.2	End-to-end Tsunami Warning – Stakeholder and their needs, Roles and Responsibilities, Standard Operating Procedures, and their linkages
2.3	Hawaii example: Hawaii Tsunami Warning and Mitigation System
2.4	Tsunami Warning Decision Support Tools – Overview: Message Alerts, Real-Time Earthquake Display (CISN); Sea level monitoring (Tide Tool, IOC Sea Level Monitoring web site); Tsunami Databases (WDC/NGDC web tools, TsuDig), Tsunami Travel Time (TTT) calculation
2.5	TWC Concept of Operation and Standard Operating Procedures (SOP) for Distant, Regional, and Local Tsunamis: Monitoring, Detection and Evaluation, Communications, Message Dissemination
2.6	What will Tsunami Warning Centers (TWCs) provide to Tsunami Emergency Response (TER) agencies? Operations Challenges and Limitations, and Lessons Learned from Past Tsunamis - Tsunami Warning
<b>3</b>	<b>WEDNESDAY, 20 AUGUST, DAY 3: SESSION 3</b>
	<b>Visit PTWC, Tsunami Emergency Response</b>
3.1	Visit Pacific Tsunami Warning Center: PTWC SOPs and Decision Support Tools for Earthquake and Sea Level Monitoring
	1. Seismic Monitoring (Networks and latency, Source location, Magnitude estimation, W-phase CMT)
	2. Sea level Monitoring (Coastal and DART stations, runup gauges), Monitoring (Tide Tool)
	3. Tsunami Forecasting (RIFT, SIFT, ATFM)
3.2	Tsunami Emergency Response, including Stakeholder Coordination and Roles of Agencies – Overview
3.3	Communication technologies for the transmission of tsunami warnings to local governments and communities – robustness, reliability, redundancy criteria for emergency communications
3.4	Warning Dissemination and Public Alerts: Information Flow and Role of Media
3.5	Conducting public coastal evacuations - "Downstream" Communications Process
3.6	TER and Information Flow SOPs and Checklists: Templates and examples of SOP best practices.
3.7	What do TERs want from TWCs? Challenges and Limitations in Alerting, Evacuation, and Safe-to-Return (All-Clear), and Lessons Learned from Recent Tsunamis
<b>4</b>	<b>THURSDAY, 21 AUGUST, DAY 4: SESSION 4</b>
	<b>Visit Hawaii State Civil Defense, Tsunami Mitigation and Preparedness</b>
4.1	Visit Hawaii State Civil Defense (SCD) Emergency Operations Center: Hawaii State Emergency Agency Responses to PTWC Tsunami Products
4.2	Building Preparedness: Tsunami Exercises and Drills, IOC Tsunami Exercise Guideline

Session	Topic
4.3	Tsunami Education and Awareness - International Perspectives
4.4	Tsunami Mitigation: Designing buildings for tsunami loading - FEMA P646, ASCE 7 and International Building Code updates
4.5	Tourism and Marine Sector Readiness
4.6	Community Readiness: TsunamiReady Program
5	<b>FRIDAY, 22 AUGUST, DAY 5: SESSION 5 – VISIT BIG ISLAND</b>
	<b>Visit Hilo, Hawaii (Big Island)</b>
5.1	Pacific Tsunami Museum
5.2	County of Hawaii: Tsunami Emergency Responses to PTWC Tsunami Messages Tsunami memorials.
5.3	US Geological Survey Hawaiian Volcano Observatory: Seismic and Volcano monitoring of Kilauea Volcano; Seismic Vault visit; Jaggar Museum
	<b>SATURDAY-SUNDAY, 23-24 AUGUST - FREE DAYS</b>
6	<b>MONDAY, 25 AUGUST, DAY 6: SESSION 6</b>
	<b>Advanced TWC Topics, PTWC New Enhanced Forecast Products</b>
6.1	Responding Rapidly and Effectively: Tsunami Warning and Emergency Response Requirements and Timeline-driven SOPs
6.2	Pacific Tsunami Warning Center (PTWC) New Enhanced Products SOPs - Why, What, Criteria, Staging of Products
6.3	TWC Operations: Real-time Earthquake Detection and Fast Source Characterization - Sparse networks, Magnitudes, W-Phase Centroid Moment Tensors – Techniques, Use, and Limitations
6.4	TWC Operations: Travel Time and Wave Forecasting – Techniques, Use and Limitations, Sensitivity Studies (Location, Depth, Magnitude)
6.5	PTWC TWC Operational Forecasting – Limitations and Uncertainties
6.6	PTWC Enhanced 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
7-8	<b>TUESDAY, 26 AUGUST, DAY 7: SESSION 7</b>
	<b>NTWC SOPs for PTWC Enhanced Products, Guidance, Scenarios</b>
7.1	National Tsunami Warning Center SOP for PTWC Enhanced Products - Guidance and Examples: Flow Charts, Criteria Tables, Warning/Watch/Information Message Templates
7.2	PTWC Enhanced Products Guidance for National Warnings and Evacuation – Land and Marine Threats and Public Safety
7.3	Timeline-driven SOPs – Intl TWCs, NTWC, NDMO/DMO actions
7.4	Understanding PTWC Enhanced Products – Distant, Regional, and Local Tsunami Hazard Scenarios
8.1	Improving Country SOPs for PTWC New Enhanced Products – 1-on-1 sessions
8	<b>WEDNESDAY, 27 AUGUST, DAY 8: SESSION 8</b>
	<b>Country SOPs for PTWC New Products</b>
8.1	Improving Country SOPs for PTWC New Enhanced Products – 1-on-1 sessions
8-9	<b>THURSDAY, 28 AUGUST DAY 9: SESSION 9</b>
8.1	Improving Country SOPs for PTWC New Enhanced Products – 1-on-1 sessions
9.1	ITP-Hawaii 2014 Tsunami Exercise – Overview, Preparation of SOPs, Checklists, Templates
9-10	<b>FRIDAY, 29 AUGUST DAY 10: SESSION 10</b>
	<b>ITP-Hawaii 2014 Tsunami Exercise, Wrap-up, Closing</b>
9.2	Conduct ITP-Hawaii 2014 Tsunami Exercise
9.3	Post-Exercise Evaluation
10.1	ITP-Hawaii 2014 Logistics wrap-up; Travel Vouchers, Course Materials
10.2	Summary Discussion (Way Forward, Next Steps, Gaps, Needs)
10.3	Presentation of Certificates and Closing
	<b>Friday - Saturday, 29 - 30 AUGUST</b>
	<b>Hotel Checkout - Depart for home country</b>

**UNESCO/IOC – NOAA International Tsunami Information Center**  
**ITIC TRAINING PROGRAMME (ITP) – HAWAII**  
**18-29 August 2014**  
**APPLICATION FORM**

**Please type or write in BLOCK letters in English**

**Please return by Wednesday 25 June 2014 to**

**E-MAIL:**        [b.aliaga@unesco.org](mailto:b.aliaga@unesco.org), [laura.kong@noaa.gov](mailto:laura.kong@noaa.gov)

**FAX (ITIC):** +1 808 725 6055

**1. PERSONAL INFORMATION**

NAME	
TITLE	<input type="checkbox"/> DR. <input type="checkbox"/> PROF. <input type="checkbox"/> MR. <input type="checkbox"/> MS. <input type="checkbox"/> others _____
SEX	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
NATIONALITY	
HOME ADDRESS	
TELEPHONE NUMBER	
FAX NUMBER	
EMAIL ADDRESS	

**2. PROFESSIONAL BACKGROUND**

OFFICE/ ORGANIZATION	
POSITION	
ADDRESS	
TELEPHONE NUMBER	
FAX NUMBER	
EMAIL ADDRESS	

**3. EDUCATIONAL BACKGROUND**

LEVEL	SCHOOL	DEGREE	YEAR GRADUATED
COLLEGE			
MASTER			
DOCTORAL			
POST DOCTORAL			

#### 4. TSUNAMI-RELATED TRAININGS ATTENDED

TITLE OR SUBJECT	CONDUCTED BY	DATES

#### 5. OTHER RELATED TSUNAMI-RELATED JOB EXPERIENCE

OFFICE / ORGANIZATION JOB DESCRIPTION	POSITION	DATES

#### 6. TRAVEL INFORMATION

NAME ON PASSPORT	
PASSPORT COUNTRY	
PASSPORT NUMBER	
BIRTHDAY (DD-MM-YYYY)	
DATE OF ISSUE	
PLACE OF ISSUE	
EXPIRY DATE	
COUNTRY OF BIRTH	
COUNTRY OF CITIZENSHIP	
NAME OF NEAREST INTERNATIONAL AIRPORT	

#### 7. OTHER

ENGLISH LANGUAGE PROFICIENCY	<input type="checkbox"/> Excellent <input type="checkbox"/> Fair <input type="checkbox"/> Good <input type="checkbox"/> Poor
DO YOU REQUIRE TRAVEL FUNDING	<input type="checkbox"/> Yes, Full Funding <input type="checkbox"/> Yes, Partial Funding, Amount USD _____. <input type="checkbox"/> No, Self-funded

**STATEMENT OF INTEREST:**

**Why are you interested in attending this Training?**

**After the Training, where and how will the experience gained in the Training will be used?**

**Please also submit separately your Curriculum Vitae (CV).**

\_\_\_\_\_  
**PRINTED NAME OR SIGNATURE**

**DATE:** \_\_\_\_\_

**ENDORSED BY TSUNAMI WARNING FOCAL POINT OR TUNAMI NATIONAL CONTACT:**

\_\_\_\_\_  
**Printed Name**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Organization**

\_\_\_\_\_  
**DATE**