



Institute of Tropical Medicine "Pedro Kourí"

16th International Course on Dengue, Zika
& other Emergent Arboviruses

12 – 23 August 2019,
Havana, Cuba

PROGRAMME

Instituto de Medicina Tropical, “Pedro Kouri”, IPK, La Habana

Sociedad Cubana de Microbiología y Parasitología (SCMP)

Ministerio de Salud Pública de la República de Cuba (MINSAP)

Organización Panamericana de la Salud (OPS)/Organización Mundial de la Salud (OMS)

Academia de Ciencias de Cuba, ACC

**Institute of Tropical Medicine,
Belgium**

American Society of Microbiology, ASM

Labiofam

**American Society of Tropical Medicine
and Hygiene, ASTMH**

MedicubaEuropa

**Asociación Latinoamericana de
Inmunología, ALAI**

**Neglected Tropical Disease
Program, NTDP, WHO**

Atlantic Philanthropies

**Organización Internacional de
Energía Atómica (OIEA)**

**Centro de Ingeniería Genética y
Biotecnología, CIGB**

**Special Programme for Research
and Training in Tropical Diseases,
TDR**

**European Society of Clinical Microbiology
and Infectious Diseases, ESCMID**

ZIKAlliance

Fundación Mundo Sano

ZikaPLAN

MONDAY 12		TUESDAY 13		WEDNESDAY 14		THURSDAY 15		FRIDAY 16	
8:30	Acreditation	8:30 Theater	Round table: The clinic of dengue, zika & chikungunya. D. González, Cuba, K. Luz, Brazil, F. Simon, France	8:30 Theater	Conference: How do flaviviruses find their own RNA genome for viral replication? K. Choi, USA	8:30 Theater	Conference: Multi-sectorial approach into the prevention and control of VBDs in the Caribbean. F. Fouque, TDR	8:30 Theater	Conference: Main advances and challenges of social communication for the prevention and control of arboviral diseases. L Lloyd, USA, Y Hernandez, Cuba
9:45 Theater	Welcome words	9:30 Theater	Round table: Dengue, chikungunya & zika. Lessons. O. Castro, Cuba, C. Pardo-Villamizar, USA, A. Rivas, Brazil	9:00 Theater	Conference: Advances in our understanding of antibody responses to dengue and Zika virus infections. A. da Silva, USA	9:00 Theater	Conference: Modelling dengue dynamics and its prevention. M Aguiar, Portugal	9:00 Theater	Discussion
				9:30 Theater	Discussion	9:30 Theater	Discussion		
10:00 Theater	Conference: Cuban Health System. Ministry of Health.	10:30 Theater	Discussion	9:45 Theater	Symposium: Aspects of dengue & Zika pathogenesis	9:45 Theater	Symposium: Vectors of emergent arboviruses & their control	9:10 Theater	Symposium: Innovative strategies for arbovirus control
10:30 Theater	Conference: Current epidemiological situation of dengue & other emerging arboviruses: Zika, chikungunya, yellow fever in the Americas. J. Moya, PAHO					9:45 Salón 7	Symposium: OMICs approaches to host-flavivirus interaction	9:10 Room 7	Symposium: OMICs approaches to host-flavivirus interaction (cont.)
						9:45 Room 6	Symposium: National and International initiatives for facing arbovirolosis		
11:00	COFFEE	10:45	COFFEE	10:30	COFFEE	10:30	COFFEE	10:30	COFFEE
11:30 Theater	Conference: Global dengue situation. R. Velayudhan, WHO	11:00 Theater	Conference: Clinical differential diagnostic of arboviral diseases. Kleber Luz, Brazil	10:45 Theater	Symposium: Aspects of dengue & Zika pathogenesis (cont.)	10:45 Theater	Symposium: Vectors of emergent arboviruses & their control (cont.)	10:45 Theater	Symposium: Innovative strategies for arbovirus control (cont.)
12:00 Theater	Conference: Emerging arboviruses as potential emergencies of the Global Public Health. S. Aldighieri, PAHO	11:20 Theater	Round table: Consequences of zika & chikungunya infections. X. Lamballerie, Francia, C. Pardo-Villamizar, USA, F. Simon, France			10:45 Room 7	Symposium: OMICs approaches to host-flavivirus interaction (cont.)		
12:30	Discussion	12:30	Discussion			10:45 Room 6	Symposium: National and International initiatives for facing arbovirolosis (cont.)	10:45 Room 7	Symposium: OMICs approaches to host-flavivirus interaction (cont.)
12:45	LUNCH	12:45	LUNCH	12:45	LUNCH	12:45	LUNCH	12:50	LUNCH
14:00 Theater	Conference: Laboratory diagnosis of flaviviruses. María G. Guzmán, Cuba	14:00 Theater	Conference: Physiopathology of dengue. E. Martínez, Cuba	14:00 Theater	Symposium: Advances in vaccines for dengue, zika & chikungunya	14:00 Theater	Symposium: Vectors of emergent arboviruses & their control (cont.)	14:00 Theater	Conference: Dengue superspreading and its impact in surveillance and control strategies. G. Vázquez Prokopev, USA
14:30 Theater	Conference: Bio-ecology of the vector of dengue, Zika & CHIK. M. C. Marquetti, Cuba	14:30 Theater	Conference: Evolution of Emergence and Expansion of zika virus – Comparisons to other Arboviruses. N. Vasilakis, USA			14:00 Room 6	Symposium: Advances and challenges of the diagnosis of emergent arboviruses	14:30 Theater	Panel: Social determinants of diseases transmitted by <i>Aedes aegypti</i> .
15:00 Theater	Conference: Global vector control response, the implementation phase. R. Velayudhan, WHO	15:00 Theater	Conference: Yellow Fever in the Americas. Current situation and challenges. S. Aldighieri, PAHO			15:30 Theater	Discussion	15:45 Theater	Discussion
15:30	Discussion								
15:45	COFFEE	15:45	COFFEE	15:05	COFFEE	15:35	COFFEE	16:00	COFFEE
16:00 Theater	Conference: Emergent arboviruses. J Méndez, PAHO	16:00 Theater	Conference: Arboviruses in Africa. A. Sall, Senegal	15:20 Theater	Symposium: Advances in vaccines for dengue, zika & chikungunya (cont.)	15:50 Theater	Symposium: Vectors of emergent arboviruses & their control (cont.)	16:15 Theater	Conference: Zoonosis, Travelling in time. D. Enria, Argentina
16:30 Theater	Conference: Mechanisms of urban arbovirus emergence. S. Weaver, USA	16:30 Theater	Conference: Role of the laboratory surveillance, RELDA. PAHO. J. Méndez, PAHO			15:50 Room 6	Symposium: Advances and challenges of the diagnosis of emergent arboviruses (cont.)	16:50 Theater	Closing Theoretical Course. María G. Guzmán, Cuba
17:00 Theater	Conference: Informatic platform in health as a tool for dengue, zika and chikungunya surveillance. L. Gutiérrez, PAHO	17:00 Theater	Conference: Action plan of entomology & vector control, 2018-2023: Advances & challenges in its implementation.. H. Bezerra, PAHO						
17:30	Discussion	17:30 Theater	Conference: Entomo-virological surveillance. Laboratory Network. L Franco, PAHO						
19:00	WELCOME COCTEL	18:00	Discusión						

16th International Course on Dengue, Zika & other Emergent Arboviruses.

PROGRAMME

THEORETICAL COURSE/ CONFERENCES/ SYMPOSIA/ ROUND TABLES			
Monday 12 August 2019			
Hour	Topic	Place	Speaker(s)
8:30	Registration	Lobby	
9:45	Opening session	Theater	
10:00	Conference: The Cuban Health System		Ministry of Health
10:30	Conference: Current epidemiological situation of dengue & other emerging arboviruses: Zika, chikungunya, yellow fever in the Americas		José Moya, PAHO
11:00	COFFEE		
11:30	Conference: Global dengue situation		Raman Velayudhan, WHO
12:00	Conference: Emerging arboviruses as potential emergencies of the Global Public Health		Sylvain Aldighieri, PAHO
12:30	Discussion		
12:45	LUNCH		
14:00	Conference: Laboratory diagnosis of flaviviruses.	Theater	María G. Guzmán, IPK, Cuba
14:30	Conference: Bio-ecology of the vector of dengue, Zika & CHIK		María del C. Marquetti, IPK, Cuba
15:00	Conference: Global vector control response, the implementation phase		Raman Velayudhan, WHO
15:30	Discussion		
15:45	COFFEE		
16:00	Conference: Emergent arboviruses	Theater	Jairo Méndez, PAHO
16:30	Conference: Mechanisms of urban arbovirus emergence		Scott Weaver, UTMB, USA
17:00	Conference: Informatic platform in health as a tool for dengue, zika and chikungunya surveillance		Luis Gutiérrez, PAHO
17:30	Discussion		
19:00	WELCOME COCKTAIL		
Tuesday 13 August 2019			
8:30	Round table: The clinic of dengue, zika & chikungunya.	Theater	<u>Daniel González</u> , IPK, Cuba, Kleber Luz, Universidad Federal RGN, Brazil, Fabrice Simon, Hospital Militar, Marseille, France
9:30	Round table: Dengue, chikungunya & zika. Lessons		<u>Oswaldo Castro</u> , IPK, Cuba, Carlos Pardo-Villamizar, Johns Hopkins Univ., USA,

			André Rivas, Facultad Medicina, Campinas, Brazil
10:30	Discussion		
10:45	COFFEE		
11:00	Conference: Clinical differential diagnostic of arboviral diseases	Theater	Kleber Luz, Universidad Federal RGN, Brazil
11:20	Round table: Consequences of zika & chikungunya infections. The role of arbovirus in central nervous system infections, comparison Bolivia and Laos. The lessons learned after the Zika outbreak and neurological problems Chikungunya: case management of the persisting symptoms		Xavier Lamballerie, University Aix-Marseille, France Carlos Pardo-Villamizar, Johns Hopkins University, USA Fabrice Simon, Hospital Militar, Marseille, France.
12:30	Discussion		
12:45	LUNCH		
14:00	Conference: Physiopathology of dengue	Theater	Eric Martínez, IPK, Cuba
14:30	Conference: Evolution of Emergence and Expansion of zika virus – Comparisons to other Arboviruses		Nikos Vasilakis, UTMB, USA
15:00	Conference: Yellow Fever in the Americas. Current situation and challenges		Sylvain Aldighieri, PAHO
15:30	Discussion		
15:45	COFFEE		
16:00	Conference: Arboviruses in Africa	Theater	Amadou Sall, Institute Pasteur, Senegal
16:30	Conference: Role of the laboratory surveillance, RELDA. PAHO		Jairo Méndez, PAHO
17:00	Conference: Action plan of entomology & vector control, 2018-2023: Advances & challenges in its implementation.		Haroldo Bezerra, PAHO
17:30	Conference: Entomo-virological surveillance. Laboratory Network		Leticia Franco, PAHO
18:00	Discussion		
Wednesday 14 August 2019			
8:30	Conference: How do flaviviruses find their own RNA genome for viral replication?	Theater	Kay Choi, UTMB, USA
9:00	Conference: Advances in our understanding of antibody responses to dengue and Zika virus infections		Aravinda da Silva, UNC, USA
9:30	Discussion		
9:45	Symposium: Aspects of dengue &	Theater	Chairs: Ana B. Pérez,

	Zika pathogenesis		IPK, Cuba and Xavier Lamballerie, University Aix-Marseille, France
9:50	RNA-protein interactions determine flavivirus pathogenicity and epidemic potential		Mariano García-Blanco, UTMB, USA
10:20	Contribution of <i>in vivo</i> and <i>ex vivo</i> studies to dengue pathogenesis elucidation. Cuban experience.		Ana B. Pérez, IPK, Cuba.
10:40	COFFEE		
11:00	Immune regulations in antiviral responses and congenital Zika disease	Theater	Jiaren Sun, UTMB, USA
11:20	Zika virus pathogenesis and immunotherapy		Tian Wang, UTMB, USA
11:40	Zika virus and human neural stem cells		Ping Wu, UTMB, USA
12:00	Persistence of Zika virus in human fetal astrocytes is FGF2 dependent.		Daniel Limonta, University of Alberta, Canada
12:20	Discussion		
12:45	LUNCH		
14:00	Symposium: Advances in vaccines for dengue, zika & chikungunya	Theater	Chairs: María G. Guzmán, IPK, Cuba and Scott Weaver, UTMB, USA
14:00	Strategies and challenges for a dengue vaccine		María G. Guzmán, IPK, Cuba
14:10	NS3 as a dengue vaccine candidate		Rosa Ramírez, IPK, Cuba
14:30	The Cuban dengue vaccine candidate based on recombinant proteins.		Iris Valdés, CIGB, Cuba
14:50	Discussion		
15:05	COFFEE		
15:20	Advances in the study of dengue vaccine. Takeda		Felipe Lorenzato, Takeda
15:45	Lessons learned from dengue vaccine clinical trials about mechanistic correlates of protective immunity: the path forward.		Aravinda da Silva, UNC, USA
16:10	Novel vaccine designs for chikungunya.		Scott Weaver, UTMB, USA
16:35	Effective dengue vaccine: A pipe dream?		Lázaro Gil, CIGB, Cuba
17:00	Vaccine for zika		Scott Weaver, UTMB, USA
17:25	Discussion		
Thursday 15 August 2019			
8:30	Conference: Multi-sectorial approach into the prevention and control of VBDs in the Caribbean	Theater	Florence Fouque, TDR
9:00	Conference: Modelling dengue dynamics and its prevention.		Maira Aguiar, Universidad Trento, Italy
9:30	Discussion		

9:45	Symposium: Vectors of emergent arboviruses & their control	Theater	Chairs: María del Carmen Marquetti, IPK, Cuba and Haroldo Bezerra, PAHO
9:50	Introduction		
9:55	Knowing <i>Aedes</i> mosquitoes - arbovirus vectors		Genilton José Vieira, Fiocruz, Brazil
10:10	Potential of Zika to establish and enzootic transmission cycle in the Americas		Nikos Vasilakis, UTMB, USA
10:30	COFFEE		
10:45	Vector competence of Cuban populations of <i>Aedes aegypti</i> DENV, ZIKV and CHIKV.	Theater	Gladys Gutiérrez, IPK, Cuba
11:05	Vector control strategy in Cuba.		Carilda Peña, Minsap, Cuba
11:25	Discussion		
11:40	Current situation of the arboviruses transmitted by <i>Aedes</i> in Brazil, difficulties and new methodologies in the integrated management of vectors under test.		Fabio Castello Branco, FIOCRUZ, Brazil
12:00	Current problems in vector control in the American continent and its repercussion in the Cuban context.		María del Carmen Marquetti, IPK, Cuba.
12:20	Dengue vector control: what works?		Olaf Horstick, University of Heidelberg, Germany
12:40	Discussion		
12:55	LUNCH		
14:00	<i>Aedes aegypti</i> control. Challenges	Theater	Juan Bisset, IPK, Cuba
14:20	Costs of the <i>Aedes aegypti</i> Control Program in Cuba		Alberto Baly, IPK, Cuba
14:40	Advances in the use of Wolbachia.		Jorge Osorio, University of Wisconsin, USA
15:00	Project Wolbachia – Singapore		Chon Chee Seng, NEA, Singapore
15:20	Discussion		
15:35	COFFEE		
15:50	Sterile insect technology. Regional projects in Latin America evaluating the TIE for <i>Aedes aegypti</i>	Theater	Maylen Gómez, MOSCAMED, Brasil and Misladys Rodríguez, IPK, Cuba
16:10	Insecticidal activity of essential oils of Cuban plants on mosquito vectors.		Maureen Leyva, IPK, Cuba
16:20	<i>Aedes</i> surveillance and dengue risk stratification in Singapore		Chon Chee Seng, NEA, Singapore
16:40	Health institutions actions in arboviruses control		Manuel Romero, IPK, Cuba
17:00	Housing and vector-borne diseases.		Olaf Horstick, University of Heidelberg, Germany
17:20	Discussion		
Thursday 15 August 2019			

9:45	Symposium: National and International initiatives for facing arbovirolosis	Room 6	Chairs: José L. Pelegrino, IPK, Cuba and Jairo Méndez, PAHO
9:50	Global initiatives for facing emergent arboviral diseases		José Luis Pelegrino, IPK, Cuba
10:10	Project ZikaPLAN: Evaluation of Zika multiplex diagnostics		Debi Boeras, London School of Hygiene and Tropical Medicine, UK
10:30	COFFEE		
10:45	Project ZIKAlliance	Room 6	Xavier Lamballerie, University Aix-Marseille, France
11:05	ZIKAlliance Project. Cuba		Diana Ferriol, CPGM, and María G. Guzmán, IPK, Cuba
11:25	Health services preparation for facing an arbovirus emergency		Pedro Mas, IPK, Cuba
11:45	Arboviruses, vectors and integrated health surveillance		Nildimar Honorio, FIOCRUZ, Brazil
12:05	Surveillance & follow up of pregnant women (and children) at risk of Zika infection. Cuba		Roberto A. Fumero, Minsap, Cuba
12:25	Facing arbovirolosis in Cuba		Francisco Durán, Minsap, Cuba
12:45	Control of arboviral diseases in Africa. Perspectives of collaboration with Latin American countries		Steve Lindsay, Durham University, England
13:05	Discussion		
Room 7			
9:00	Symposium: OMICs approaches to Host-Flavivirus Interaction (in English, no translation, and open only to 20 Participants)	Room 7	Chairs: Beatriz Sierra, IPK, Cuba and Xaveer Van Ostade, University of Antwerp (UA), Belgium
9:00	Opening		Beatriz Sierra and Xaveer Van Ostade
9:10	Epigenetic plasticity in health and infectious disease		Wim Vander Berghe, UA
10:10	Chikungunya virus-human cell interactome		Koen Bartholomeeusen, ITM, Belgium
11:00	COFFEE		
11:15	Genomic and Transcriptomic approach to natural protection against		Beatriz Sierra, IPK, Cuba

	flaviviruses infection		
12:45	LUNCH		
14:00	Symposium: Advances and challenges of the diagnosis of emergent arboviruses	Room 6	Chairs: Mayling Alvarez, IPK, Cuba and Leticia Franco, PAHO
14:00	Introduction		
14:10	Monitoring and maintaining quality in an arbovirus testing laboratory		Christopher Oxenford, WHO
14:30	New diagnostic tools for arboviruses		Kevin Arien, Institute of Tropical Medicine Antwerp, Belgium
14:50	Altona´s arbovirus diagnostic tools		Karin Rottengatter, Altona
15:10	Discussion		
15:25	COFFEE		
15:40	Flavivirus reverse genetics.	Room 6	Xavier Lamballerie, University Aix-Marseille, France
16:00	Evaluation of 5 commercially available Zika IgM tests.		Didye Ruíz, IPK, Cuba
16:20	Arbovirus laboratory surveillance in Cuba, 2018-2019		Mayling Alvarez, IPK, Cuba
16:40	Preliminary evaluation of commercial sumarapid rapid strip systems for detection of dengue virus ns1 viral protein		Didye Ruíz, IPK-CIE, Cuba
17:00	Experiences in the implementation of the entomovirological surveillance in Mexico		Mauricio Vázquez, INDRE, México
17:20	Discussion		
Friday 16			
8:30	Conference: Main advances and challenges of social communication for the prevention and control of arboviral diseases	Theater	Linda S. Lloyd, USA and Yisel Hernández, IPK, Cuba
9:00	Discussion		
9:10	Symposium: Innovative strategies for arbovirus control	Theater	Chair: María E. Toledo, IPK, Cuba
	Spatial and temporal heterogeneity in arbovirus transmission: operational research in countries taking part in the DENTARGET network		Veerle Vanlerberghe, Institute of Tropical Medicine Antwerp, Belgium
	Methods for risk stratification to support control programs		Gonzalo Vázquez, Emory University, USA and Pablo Manrique Universidad Autónoma de Yucatán (UADY), México
	Results of risk stratification in Mexico		Azael Che, UADY,

			México
10:30	COFFEE		
	Impact evaluation of interventions addressing hotspot transmission areas		Waldemar Baldoquin, IPK, Cuba
	Early warning system: News vs. need		Guillermo Rúa, Universidad de Antioquia, Colombia and Raúl Rojo, Secretaría de Salud, Medellín, Colombia
	ARBOALVO Network: different approaches in risk stratification of urban arboviruses in complex Brazilian endemic cities		Nildimar Honorio, Fiocruz, Brazil
	Discussion		
9:00	Symposium: OMICs approaches to Host-Flavivirus Interaction symposium (in English, no translation, and open only to 20 Participants)	Room 7	Chairs: Beatriz Sierra, IPK, Cuba and Xaveer Van Ostade, UA, Belgium
9:00	An introduction to different proteomics methods and strategies for medical research.		Xaveer Van Ostade, UA, Belgium
10:05	Methods to monitor gene-specific versus genome wide epigenetic biomarkers		Wim Vanden Berghe, UA, Belgium
10:40	Interplay between oxidative stress and epigenetic modifications triggered by Flaviviruses		Lizette Gil, IPK, Cuba
11:15	COFFEE		
11:30	Dengue virus interactome in human plasma: a novel molecular target to develop antiviral drugs against the viral complex		Vivian Huerta, CIGB, Cuba
12:05	Untangling the molecular aspects of viral infection with different proteomics approaches.		Xaveer Van Ostade, UA, Belgium
12:50	LUNCH		
14:00	Conference: Dengue superspreading and its impact in surveillance and control strategies	Theater	Gonzalo Vázquez Prokopev, Emory University, USA
14:30	PANEL. Social determinants of diseases transmitted by <i>Aedes aegypti</i>.		Moderators: Dennis Pérez, IPK, Cuba and Linda S. Lloyd, USA
14:30	Social, political and economic aspects related to diseases transmitted by <i>Aedes aegypti</i> and community participation		Dennis Pérez, IPK, Cuba
14:45	Social inequalities and determination of health processes		María del Carmen Zabala, FLACSO, Cuba

15:00	From social determinants to social determination of health. Guidelines for its study and management in the Cuban context.		Adolfo Álvarez, INHEM, Cuba
15:15	Socioeconomic inequalities in vector-borne diseases in Latin America: Estimating and decomposing the relative concentration index of inequality for dengue, Zika and chikungunya in Colombia and Brazil		Mabel Carabali, McGill University, Canada.
15:45	Discussion		
16:00	COFFEE		
16:15	Conference: Zoonosis, Travelling in time	Theater	Delia Enria, Argentina
16:50	Closing Theoretical Course		María G. Guzmán, IPK, Cuba
Poster presentations on Wednesday and Thursday (14 and 15 August) on the 2d floor of the main building (poster area).			
Videoconference on Clinical Dengue Management to clinicians of the Cuban Health System, Thursday 15, Minsap			
TDR-CARPHA-IPK Workshop on Multi-Sectoral Approaches for Prevention and Control of Vector-Borne Diseases in the Caribbean <i>Current Practices and Future Development</i> Friday, 16th August, 2019 (Room 9)			
DENTARGET Network Meeting, Saturday 17th, Monday 19th and Tuesday 20th August, 2019 (Room 9)			

PRACTICAL SESSION			
GROUP 1. VIROLOGY/ IMMUNOLOGY			
Monday 19 August 2019			
Hour	Topic	Place	Professor
8:30	Lecture: Molecular diagnostic of arboviruses	Virology Lab	Mayling Alvarez, IPK, Cuba
9:00	Practical session: RNA extraction from different clinical samples and different platforms of extraction		Mayra Muné, Emidalys Santana, Dailín Mederos, María Karla Martínez, IPK, Cuba
10:45	Practical session: Real time PCR for dengue in tissues & mosquitoes		Gladys Gutiérrez, Emidalys Santana, Dailín Mederos, María Karla Martínez, IPK, Cuba Mauricio Vázquez, INDRE, México
12:30	LUNCH		
14:00	Practical session: Results analysis of dengue Real time PCR Real time PCR for yellow fever. CDC protocol and Altona kit Result analysis: Yellow fever PCR	Virology Lab	Mayra Muné, Emidalys Santana, Dailín Mederos, María Karla Martínez, IPK, Cuba Karin Rottengatter, Hans Kuhn, Altona Diagnostics, Germany
Tuesday 20 August 2019			
8:30	Practical session: Real time PCR for Mayaro and Chikungunya Results analysis	Virology Lab	Mayra Muné, Emidalys Santana, Dailín Mederos, María Karla Martínez, IPK, Cuba, Mauricio Vázquez, INDRE, México
12:30	LUNCH		
14:00	Lecture: Nucleotidic sequence for the Arbovirus study (NGS)	Room 2	Philippe Selhorst, Belgium
16.15	Lecture & Demonstrative practical session: Minion for the molecular study of Arboviruses	Virology Lab	Philippe Selhorst, IMT, Belgium, Rosa Ramírez, Mayra Muné, Dailín Medero, Aina Méndez, IPK, Cuba
Wednesday 21 August 2019			
8:30	Lecture & Demonstrative practical session: Gene cloning and its application to arbovirus study	Room 2	Rosa Ramírez, Mayra Muné, María Karla Martínez, Aina Méndez, IPK, Cuba
12:30	LUNCH		

14:00	Lecture: Molecular solutions by realtime PCR for arbovirus diagnostic	Room 2	
14:30	Lecture: New kits development for the molecular detection of arboviruses, qRT-PCR		Rebeca García, Co-Diagnostics
15:00	Lecture: Viral isolation of arboviruses		Mayling Alvarez, IPK, Cuba
15:30	Lecture: Challenges of serological flavivirus diagnosis		Didier Ruiz, Susana Vazquez, IPK, Cuba
16:00	Introduction-Discussion on some serological “in house” and commercial kits for Zika IgM-IgG determination		Group
Thursday 22 August 2019			
8:30	Practical session: Use of a rapid strip for the simultaneous detection of NS1 and Acs IgM and IgG to dengue	Virology Lab	Ariel Palenzuela, CIE, Didier Ruiz, IPK, Cuba
12:30	LUNCH		
14:00	Demonstrative practical session: Use of mononuclear human cells for anti-viral immune response studies	Virology Lab	Beatriz Sierra, Ana B. Pérez, Eglys Aguirre, Claudia Bracho, IPK, Cuba
FAREWELL DINNER			
Friday 23 August 2019			
8:30	Increasing capacities for facing current and future emergencies. Group discussion. Final considerations and research priorities	Room 2	María G. Guzmán, Mayling Alvarez, Ana Beatriz Pérez, Beatriz Sierra, Susana Vázquez, Eglys Aguirre, Didye Ruiz, Mayra Muné, Naifi Calzada, Emidalys Santana, Rosa Ramírez, Gladys Gutiérrez, María Karla Martínez, Aina Méndez, IPK, Cuba and Mauricio Vázquez, INDRE, Mexico
12:00	CLOSING SESSION		

PRACTICAL SESSION			
GROUP 2. CLINIC/ PATHOLOGY			
Monday 19 August 2019			
Hour	Topic	Place	Professor
8:30	Dengue clinical syndromes. Use of the WHO/PAHO dengue clinical classification of 2009.	Room 7	Oswaldo Castro, Daniel González, IPK, Cuba
	Warning signs of dengue shock and its application to case management		Daniel González, IPK, Francisco Zamora, Araiza Consuegra, MINSAP, Cuba
12:20	LUNCH		
14:00	Differential dengue diagnostic. Case discussion	Room 7	Francisco Zamora, MINSAP, Eric Martínez, Daniel Gonzalez, Oswaldo Castro IPK, Cuba
Tuesday 20 August 2019			
8:30	Clinical manifestations of chikungunya infection. Complications post-infection	Room 7	Daniel González, Oswaldo Castro, IPK, Cuba
	Zika. Clinical characteristics & complications		Daniel Gonzalez, Eric Martínez, IPK, Olga Olivia Tejeda, MINSAP. Cuba
	Zika during pregnancy & its consequences		
12:30	LUNCH		
14:00	Physician-patient communication: Successful communication is a part of good clinical care	Room 7	Linda S. Lloyd, USA, Marta Castro, Dennis Pérez, IPK, Cuba
	Case discussion		Daniel González, Eric Martínez, IPK, Olga Olivia Tejeda, MINSAP. Cuba
Wednesday 21			
8:30	Co-morbidity and co-infection, two aspects associated with dengue severity.	Room 7	Daniel González, Oswaldo Castro, IPK, Cuba
	Yellow fever. Clinical manifestations and complications		Narciso A. Jiménez, Daniel Gonzalez, IPK, Cuba
	Case discussion		Daniel González, Oswaldo Castro, IPK, Cuba
12:30	LUNCH		
	Anatomo-pathologic findings in dengue	Room 7	Jenny Peraza and Virginia Capó, IPK, Cuba
	Case discussion		Daniel González, Oswaldo Castro, IPK, Cuba
Thursday 22			

8:30	Dengue clinical management in children and adults.	Room 7	José F. Sabatier, Hospital Pediátrico Aballi, Eric Martínez, IPK, Araiza Consuegra, MINSAP Cuba
	Diagnostic and clinical management of the main dengue complications. Case discussion		Osvaldo Castro, Daniel González, IPK, Cuba
12:30	LUNCH		
14:00	Dengue & pregnancy	Room 7	Reinaldo L. Barroso, Hospital Juan B. Zayas, Daniel González, IPK, Cuba
	Case discussion		
FAREWELL DINNER			
Friday 23 August 2019			
8:30	Health system organization and other sectors during emergencies. Final considerations.	Room 7	Osvaldo Castro, Eric Martínez, Daniel Gonzalez IPK, Sonia González, MINSAP, Cuba
12:00	CLOSING SESSION		

PRACTICAL SESSION			
GROUP 3. ENTOMOLOGY & VECTOR CONTROL			
Monday 19 August 2019			
Hour	Topic	Place	Professor
8:30	Lecture: Communication in programs for arbovirus prevention and vector control. Antecedents and perspectives.	Room 6	Yisel Hernández, IPK, Cuba
	Lecture: Insecticides resistance surveillance in <i>Aedes aegypti</i> .		Magdalena Rodríguez, IPK, Cuba
	Lecture: Mechanisms of resistance and lab based diagnostics		Lee Han-Jung, TAMU, USA
	Practical session: Insecticide impregnated bottles	Lab.	Magdalena Rodríguez, Juan Bisset, Luis Augusto Piedra and Armando Esquivel, IPK, Cuba
12:30	LUNCH		
14:00	Practical session: Taxonomic identification of arbovirus mosquito vectors.	Lab.	Yanet Martínez and Eric Camacho, IPK, Cuba
Tuesday 20 August 2019			
8:30	<i>Aedes aegypti</i> Control Program in Cuba. Field activity.	Room 6	Gilberto Zamora, Minsap, Domingo Montada, Maureen Leyva, IPK, Cuba
12:30	LUNCH		
14:00-14:20	Theoretical & Practical session: Application of the Detinova technique	Lab.	Yanisley Martínez and Omar Fuentes, IPK, Cuba
Wednesday 21 August 2019			
8:30	The use of MALDI-TOF in Medical Entomology	Room 6	Anubis Vega-Rúa, Institut Pasteur, Guadeloupe
	Vertical transmission of arboviruses in mosquitoes		Saravanan Thangamani, SUNY, USA
	Use of LAMP technique for dengue viruses detection in <i>Aedes aegypti</i>		Luis A Piedra, IPK, Cuba
	Insect-specific viruses		Christopher Roundy, UTMB, USA
	<i>Aedes</i> sp. habitat in a Havana municipality		Natividad Hernández and Jorge Anaya, IPK, Cuba
12:30	LUNCH		

14:00	Demonstrative practical session: <i>Aedes aegypti</i> vector competence	Lab.	Anubis Vega-Rúa, Institut Pasteur, Guadeloupe, Gladys Gutiérrez-Bugallo and Ilario Fuentes, IPK, Cuba
Thursday 22 August 2019			
8:30	Principles of arthropod biocontainment and basic practices for working with mosquitoes in containment laboratories	Room 6	Saravanan Thangamani, SUNY, USA
	Technical criteria for insect growth regulators field evaluation in <i>Aedes aegypti</i> immatures stages.		Ramiro Paucar, Pharmex, Peru
	Effectiveness of chemical insecticides formulations in <i>Aedes aegypti</i> control		Domingo Montada, IPK, Cuba
	Use of parasitic nematodes for culicids control		Zulema Menéndez and Israel García, IPK, Cuba
	Sterile insect technique for <i>Aedes aegypti</i> control		Rene Gato and Claudia Lorenzo, IPK, Cuba
	Novel Surveillance and Control Approaches to Combat Mosquitoes in Harris County and the City of Houston, Texas		Mustapha Debboun, Harris County, Public Health, USA
12:30	LUNCH		
14:00	Practical session: Biolarvicides quality control	Lab.	Ayleen González and Aryamis Companioni, IPK, Cuba
FAREWELL DINNER			
Friday 23			
8:30	Results analysis of biolarvicides quality control	Room 6	Ayleen González and Aryamis Companioni, IPK, Cuba
10:30	Interchange of participant experiences		All participants
12:00	CLOSING SESSION		

PRACTICAL COURSE GROUP 4. EPIDEMIOLOGY			
Monday 19 August 2019			
Hour	Topic	Place	Professor
8:30	Early Warning System for dengue outbreak (EWARS/SART):Results of implementation process: * TDR/OMS: EWARS: operational guide. * Singapore: Real-Time dengue forecast models: An EW system for outbreak alerts and policy decision support	Library	Waldemar Baldoquín, IPK, Cuba Alex Cook, National University of Singapore Héctor Cruz, University Marta Abreu, Cuba
12:30	LUNCH		
14:00	Proposal for EWARS implementation in Cuba Practical activity: Models and analysis using R. Real-Time Dengue Forecast Models	Room 8	María E. Toledo, IPK, Cuba Alex Cook, National University of Singapore Libia García, University Marta Abreu, Cuba
Tuesday 20 August 2019			
8:30	Modelling dengue outbreaks and other vector-borne transmitted diseases Risk stratification for the transmission of dengue and other arboviruses : entomology, epidemiology, demographic, environment	Library	Carlos Sebrango, University Sancti Spiritus, Cuba Waldemar Baldoquín Rodríguez, IPK, Cuba
12:30	LUNCH		
14:00	Models implementation and analysis in R. Practical activity: Risk stratification for the transmission of dengue and other arboviruses. GEODA and R.	Library	Carlos Sebrango, University Sancti Spiritus, Cuba Waldemar Baldoquín, Angel German and Dayana Rodríguez, IPK, Cuba
Wednesday 21 August 2019			
8:30	Models: climate and health Time series regression	Room 8	Paulo Ortiz, INSMET, Cuba
12:30	LUNCH		
14:00	Practical activity: Models implementation and analysis in R.	Room 8	Paulo Ortiz, INSMET, Cuba
Thursday 22 August 2019			

8:30	Health economics. Cost-effectiveness and economics evaluation in control programs	Library	Alberto Baly, Alicia Reyes, IPK, Cuba
12:30	LUNCH		
14:00	Practical activity: Introduction to the estimation of costs and evaluation of interventions	Room 8	Alberto Baly, Alicia Reyes, Dayana Rodríguez, IPK, Cuba
FAREWELL DINNER			
Friday 23			
8:30	Integral approach in the modeling of dengue and other Arbovirosis / diseases transmitted by vectors. The environment and other social variables of behavior and mobility.	Library	Ana M. Ibarra y Adolfo Alvarez, INHEM, Cuba
12:00	CLOSING SESSION		

PRACTICAL SESSION			
GROUP 5. SOCIAL DETERMINANTS & COMMUNITY PARTICIPATION			
Monday 19 August 2019			
Hour	Topic	Place	Professor
8:30	Social determinants and community-based integrated vector management	Room 5	Linda S. Lloyd, USA
12:30	LUNCH		
14:00	Informatics tools for assessing social determination of health and public health functions in the framework of integrated vector management.	Room 5	Adolfo Alvarez, INHEM, Mayra García, Dianelys Pérez, Policlínico 19 de abril, Cuba
Tuesday 20 August 2019			
8:30	Quantitative Analysis of inequalities on Arboviruses: Estimation of health inequality indexes.	Room 8	Mabel Carabali, McGill University, Canada.
12:30	LUNCH		
14:00	Quantitative Analysis of inequalities on Arboviruses: Estimation of health inequality indexes.	Room 5	Mabel Carabali, McGill University, Canada
Wednesday 21 August 2019			
8:30	Quality of life loss and out-of-pocket expenses associated with arboviral diseases	Room 5	Alberto Baly and Alicia Reyes, IPK, Cuba
12:30	LUNCH		
14:00	Equity perspective and community participation	Room 5	María del Carmen Zabala, FLACSO, Cuba
Thursday 22 August 2019			
8:30	Participatory and social communication tools for targeting the social determinants of arboviral diseases.	Room 5	Dennis Pérez, Yisel Hernández, Marta Castro, IPK, Cuba
12:30	LUNCH		
14:00	Participatory and social communication tools for targeting the social determinants of arboviral diseases.	Room 5	Dennis Pérez, Yisel Hernández, Marta Castro, IPK, Cuba
FAREWELL DINNER			
Friday 23 August 2019			
8:30	Participatory and social communication tools for targeting the social determinants of arboviral diseases.	Room 5	Dennis Pérez, Yisel Hernández, Marta Castro, IPK, Cuba
12:00	CLOSING SESSION		

Ad-hoc course on SIT organized by IAEA & IPK, 19-23 August, 2019

	Monday 19	Tuesday 20	Wednesday 21	Thursday 22	Friday 23
8:30	<p>Mosquito Monitoring and Surveillance Placing Ovitrap Placing BGS (GAT) Surveillance of Breeding Sites Guidelines Dengue Mosquito Identification (M-F/COLOUR/L4/P/A) Pilot Target Area identification and characterization Fabrizio Ballestrino, OIEA, Italia, Maylen Gómez, Brazil, René Gato, IPK, Cuba</p>	<p>Collect eggs from field Maturation, Storage and Brushing Eggs (estimate numbers) Hatching Eggs (boiled water, hatching solution) Hatching Rate (eggs observation, bleaching eggs) Aliquot Larvae (Larval counter L1/video Brazil) Larval Diet preparation (diets available, BLP, TM, BY, BSF, RAT pellet food, FISH food) Dispensing Food Larva-Pupa collection Stage and Sex separation (Fay Morlan Hocks) Aliquot pupae (volumetric estimation) Sampling Pupae for Sex ratio (sexing pupae under stereo microscope)</p>	<p>X-ray and gamma irradiators (VISIT IRRADIATOR) Transportation and packaging toward irradiation place Adult and Pupae irradiation Dosimetry Dose mapping</p>	<p>Prepare adult cage (LAB and MR CAGE), emergence, resting space, swarming and Mating arena Feeding procedures (prepare sugar and blood) Oviposition and eggs collection devices IAEA MR cages and operation ADULT Sex ratio cage (QC) ADULT Insemination rate (QC) ADULT cage density (QC) ADULT cage productivity ADULT longevity under stress ADULT Mating competitiveness in lab (and Semi-field test) ADULT Male Sterility estimation in lab (Fried Index)</p>	<p>Preparing pupae for emergence and release: Packaging adults for aerial release (chilling compaction) Prepare cages for ground release of Adult (no chilling) Aerial release with Drone (chilling) The IAEA release mechanism demonstration</p>
12.30	Lunch				
14:00	<p>Ensayos de Marcaje, liberación, recaptura (densidad de población, dispersión, supervivencia) Fabrizio Ballestrino, OIEA, Italia</p>	<p>IAEA MR tray, rack and operations</p>	<p>Dose response curve</p>	<p>MRR trials (Field competitiveness trial) Marking with Rhodamine B feeding (fluorescence) Marking with Fluorescent Powder (Chilling cabinet or insufflation)</p>	<p>Free discussion</p>

Collaborators

ALIAM, labs solutions

ALTONA DIAGNOSTICS (GmbH)

BAYER

BIO LAB INTERNACIONAL

CHEMICOM

FITOGRANOS (Ltda)

MIKROGEN

TAKEDA