

# ZIKA VIRUS AND OTHER MOSQUITO-BORNE VIRUSES

SCIENCE FOR PREPAREDNESS AND  
RESPONSE IN THE MEDITERRANEAN REGION

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# ZIKA VIRUS AND OTHER MOSQUITO-BORNE VIRUSES

SCIENCE FOR PREPAREDNESS AND  
RESPONSE IN THE MEDITERRANEAN REGION

May 23<sup>th</sup> and 24<sup>th</sup>, 2017

## WELCOME

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Dear Invited Speakers and Participants,

The current global Zika epidemic reminds us of the real risk of importing exotic pathogens to the Mediterranean region in a rapidly changing, interconnected world. Such connectivity also increases the chances of importing disease vectors, particularly mosquitoes. This new situation has created scenarios in which the established imported vectors potentially facilitate the transmission of pathogens that were previously endemic only in tropical and subtropical regions. One example is the invasive *Aedes albopictus* mosquito that has established itself in the Mediterranean Basin and has caused local outbreaks of dengue and chikungunya.

Until recently, mosquito-borne viruses had not been considered as high-priority in the health agendas of Mediterranean countries. Their introduction into the region remains uncertain and is extremely difficult, to predict. What can be predicted is that an introduction, even in the shape of small, local outbreaks might have a large impact that goes beyond health. The explosive outbreaks of mosquito-borne viruses such as chikungunya and zika that have occurred in other regions of the world over the last years underscore the need for a strong preparedness and response capacity by public health authorities at the national and regional level.

Public health preparedness and response to the global threat of mosquito-borne diseases involves interdisciplinary approaches. It needs translational research as a key component for improving public health decisions and outcomes, sharing knowledge, improving technological effectiveness and addressing the challenge of inequitable health care. It also requires the development of a multi-country collaborative health research framework.

This B-Debate, organized by Biocat and la Caixa Foundation, together with the Barcelona Institute for Global Health (ISGlobal) and the support of Fundació Ramón Areces, brings together top researchers in mosquito-borne diseases and national and regional public health stakeholders in the Mediterranean seeking to identify research platforms and projects which can support current Public Health capacities to prepare for and respond to mosquito-borne diseases, discuss gaps and challenges which can open new research opportunities, as well as set up channels for effective collaboration and communication in order to deal with this new global health threat.

Yours sincerely,

Pablo M De Salazar and BDebate

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# PROGRAM

Tuesday, May 23th, 2017

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**8:45 Registration**

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**9:00 Welcome**

**Ignasi López**, La Caixa Foundation

**Albert Barberà**, Biocat

**Antoni Plasència**, Barcelona Institute for Global Health (ISGlobal)

**Raimundo Pérez**, Fundación Ramón Areces

**Mireia Jané**, Agència de Salut Pública de Catalunya (ASPCAT)

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**9:30 SESSION 1: INTRODUCTION**

**Objectives of the B-Debate**

**Pablo Martínez de Salazar**, ISGlobal, Barcelona, Spain

**Importance of mosquito-borne viral disease in Global Health**

**Colleen Acosta**, World Health Organization, Geneva, Switzerland

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**10:00 SESSION 2: SCIENCE FOR PREPAREDNESS AND RESPONSE. SURVEILLANCE AND DISEASE PREVENTION**

Chair: **Antoni Trilla**, ISGlobal, Barcelona, Spain

**Surveillance of mosquito-borne viruses in the Mediterranean**

**Laurence Marrama**, European Centre for Disease Prevention and Control, Stockholm, Sweden

**The experience of integrated surveillance. Challenges and opportunities**

**Maria Grazia Dente**, National Institute of Health (ISS), Roma, Italy

**Vector control: can we advance, are we advancing?**

**Paul Reiter**, Institut Pasteur, Paris, France

**Key aspects of preparedness and response. The role of research**

**Xavier de Lamballerie**, Aix-Marseille University - IRD - INSERM, Marseille, France

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**11:30 Coffee break**

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**12:00 SESSION 3: CLINICAL DIAGNOSIS, MANAGEMENT AND VACCINES**

Chair: **Mikel Martínez**, ISGlobal, Barcelona, Spain

**Laboratory capacities in the Mediterranean: from EpiSouth to MediLab Secure**

**Kathleen Victoir**, Institut Pasteur, Paris, France

**The COMPARE project: impact in public health management**

**Marlon Koopmans**, Erasmus Medical Centre, Rotterdam, The Netherlands

**Clinical research supporting Public Health decisions**

**Antoni Soriano**, Vall d'Hebron Research Institute, Barcelona, Spain

**Update on Zikavax vaccine project**

**Odile Leroy**, European Vaccine Initiative, Heidelberg, Germany

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**13:30 Lunch & Networking**

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**14:30 SESSION 4: ENTOMOLOGY AND ENVIRONMENTAL DRIVERS OF ARBOVIRAL INFECTIONS**

Chairs: **Núria Busquets**, UAB, Barcelona, Spain  
**Rachel Lowe**, ISGlobal, Barcelona, Spain

**Entomological surveillance and control in the Mediterranean: capacities and needs**

**Francis Schaffner**, Francis Schaffner Consultancy, Riehen, Switzerland

**Capacity building for the entomological surveillance - what are the actions carried out by the Medical & Veterinary Entomology group in MediLabSecure network?**

**Vincent Robert**, French National Institute of Research for Sustainable Development (IRD), Montpellier, France

**Update in mosquito control research**

**Carla Sousa**, Institute of Hygiene and Tropical Medicine, Lisbon, Portugal

**The INFRAVEC-2 Horizon 2020 project: Research infrastructures for the control of vector-borne diseases**

**Frederic Simard**, Research Institute Development (IRD), Montpellier, France

**Emergence of new infectious diseases in a changing climate: How models can help better understand and prevent new epidemic outbreaks**

**Xavier Rodó**, ISGlobal, Barcelona, Spain

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**16:15 Coffee break**

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**16:45 MOSQUITO-BORNE VIRUSES IN THE MEDITERRANEAN REGION: COUNTRIES' EXPERIENCE**

Chair: **Núria Torner**, ASPCAT, Barcelona, Spain

**The experience of Catalonia, Spain**

**Mirela Jané**, ASPCAT, Barcelona, Spain

**Greece**

**Anna Papa**, Aristotle University of Thessaloniki, Thessaloniki, Greece

**Algeria**

**Karima Meziani**, Institut National de Santé Publique, El Biar, Algeria

**Italy**

**Federico Gobbi**, Sacro Cuore Hospital, Negrar, Italy

**France**

**Frederic Jourdain**, Institute of Research for Development, Marseille, France

**Portugal**

**Ana Clara Silva**, Institute of Administration of Health and Social Affairs, Funchal, Portugal

**Lebanon**

**Nabil Haddad**, Lebanese University, Fanar, Lebanon

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**18:45 Report presentation: Socioeconomic Impact Zika Virus Latin America**

**Montserrat Capdevila**, La Caixa Foundation, Barcelona, Spain

**Leire Pajín** and **Gonzalo Fanjul**, ISGlobal, Barcelona, Spain

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**19:30 Evening Cocktail**  
**-21:00**

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# Wednesday, May 24th, 2017

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**9:00 Summary of Day 1**

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**9:15 SESSION 5: SOCIAL SCIENCES & HEALTH ECONOMICS**

Chair: **Elisa Sicuri**, ISGlobal, Barcelona, Spain

**Current issues in the economics of vaccination against dengue**

**Yesim Tozan**, NYU College of Global Public Health, New York, USA

**Perceptions of and reactions to Zika messages in Brazil**

**John Kinsman**, Umeå University, Umeå, Sweden

**Bioethical considerations on Brazilian journalistic coverage during the Zika epidemic**

**Mônica Manir**, Umea University, Sao Paolo, Brazil

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**10:15 Coffee break**

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**10:45 SESSION 6: NETWORKS AND REGIONAL COLLABORATIONS**

Chairs: **Núria Casamitjana**, ISGlobal, Barcelona, Spain

**John Palmer**, UPF, Barcelona, Spain

**MediLabSecure: Implementing a network of laboratories for a One Health approach of vector-borne viruses in the Mediterranean and Black Sea regions**

**Kathleen Victoir**, Institut Pasteur, Paris, France

**The (Global) Mosquito Alert Initiative: are we ready?**

**Frederic Bartumeus**, CSIC, Barcelona, Spain

**Multiplying capacities in vector surveillance and control**

**Marcelo Abril**, Mundo Sano, Buenos Aires, Argentina

**Training networks: the experience of MediPIET**

**Adela Páez**, ECDC, Stockholm, Sweden

**GloPID-R a platform for a global quick response against pandemic threatness**

**Tomás López-Peña**, Global Research Collaboration for Infectious Disease Preparedness, Madrid, Spain

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**12:15 Lunch & Networking**

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**13:15 Workgroups: Developing a strategic research and translation plan for supporting Public Health preparedness and response against mosquito borne viruses in the Mediterranean Region**

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**15:15 Presentation of workgroups and open-discussion**

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**16:45 Conclusions and final remarks**

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**17:00 End of the meeting**

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# SCIENTIFIC COMMITTEE



**Pablo Martínez de Salazar**, Coordinator of arbovirus research and the response to the Zika virus at **Barcelona Institute for Global Health (ISGlobal)**, Barcelona, Spain.

Pablo Martínez studied medicine at the Universidad Autónoma de Madrid. He went on to earn his PhD with a thesis on the treatment of malaria with artemisinin-based combination therapy in a paediatric population at the University of Tübingen and the Albert Schweitzer Hospital in Gabon, and completed his specialist training in clinical microbiology and parasitology at the Vall d'Hebron Hospital in Barcelona. His experience as a clinician and researcher has been in different areas of tropical medicine—including malaria, filariasis, and helminthiasis—and in various countries, such as Gabon (Albert Schweitzer Hospital in Lambarené), Indonesia (Universitas Indonesia), Germany (Institut für Tropenmedizin, Eberhard Karls Universität, Tübingen) and Holland (Leiden University Medical Centre in Leiden). He has also collaborated as an investigator with the Faculty of Infectious and Tropical diseases of the London School of Hygiene and Tropical Medicine on a research project relating to Chagas disease. During the period 2014-2015—at the time of the Chikungunya virus epidemic and the start of the Zika virus epidemic—he was head of the Department of Virology and Vaccine-Preventable Diseases at the laboratory of the Caribbean Public Health Agency (CARPHA) and later Acting Director of the Laboratory Services and Networks at the same agency.

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**Antoni Plasència**, General Director of **Barcelona Institute for Global Health (ISGlobal)**, Barcelona, Spain.

Antoni Plasència Taradach is the Director General of Barcelona Institute of Global Health (ISGlobal). He graduated in Medicine from the University of Barcelona, and he holds a PHD from the Autonomous University of Barcelona. He is a specialist in Public Health and Preventive Medicine with a Master in Public Health from Yale University, USA. He is Medical consultant in International Health at the Hospital Clinic of Barcelona and Visiting Professor at the University of Barcelona. He was previously the Technical Director of the Center for International Health Research (CRESIB) - Hospital Clinic - University of Barcelona, as well as associate Professor of Epidemiology and Public Health at the Autonomous University of Barcelona, and has been an Associate in the Health Policy and Management department at Bloomberg School of Public Health, Johns Hopkins University. He also was Director General of Public Health of the Generalitat of Catalonia, where he was instrumental in the development of the Catalan Public Health Law, in the design of the Public Health Agency of Catalonia, as well as in the creation of the Public Health Agency of Barcelona. His professional activity is mainly dedicated to epidemiology and public health, combining practice, research, teaching and management activities, with a broad biological, social and environmental perspective on Global Health and its determinants. His main areas of expertise include health systems, policy-making, strategic planning and translation, program implementation and evaluation activities, the surveillance of public health, the reduction of health inequalities, infectious diseases, maternal and child health, injuries and environmental health. He is co-director of the Master in Global Health at the University of Barcelona and he has been professor and director of the Organization of Public Health course at the Pompeu Fabra University & Autonomous University of Barcelona.

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**Mireia Jané**, Deputy Director of Public Health Surveillance and Emergency Response Department, **Public Health Agency of Catalonia (APSCAT)**, Barcelona, Spain

Dr. Jané is Medical Doctor and Public Health and Preventive Medicine Specialist (Universitat de Barcelona). She holds a PhD in Medicine by the Universitat Autònoma de Barcelona, a Master of Science by the University of London and a Diploma in Public Health by the London School of Hygiene and Tropical Medicine. At present she is Deputy Director of Public Health Surveillance and Emergency Response Department at the Catalan Public Health Agency. Its main working areas are related to communicable diseases monitoring and rapid response to public health alerts. She is also a member of the Catalan Vaccination Assessing Committee. Previously, she was the Head of the Mother and Child Health Unit at the Catalan Public Health Agency, leading, as an epidemiologist, the maternal public health field for more than 10 years. Earlier, she was awarded a Research Fellowship by the Fitzwilliam College of the University of Cambridge and also worked at the Municipal Institute of Public Health in Barcelona. Dr Jané has been member of PhD thesis committees and director of PhDs programme. She collaborates in MSc Diploma Public Health courses. She has published in impact factor journals and coordinated public health books and technical reports.

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# DETAILED PROGRAM AND INVITED SPEAKERS

Tuesday, May 23th, 2017

## Session 1: Introduction

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**Pablo Martínez de Salazar**, Coordinator of arbovirus research and the response to the Zika virus at **ISGlobal**, Barcelona, Spain.

(See his CV at the Scientific Committee section)

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**Colleen Acosta**, Epidemiologist, Health Emergency Information & Risk Assessment, **World Health Organization (WHO)**, Geneva, Switzerland.

Information not available

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## Session 2: Science for Preparedness and Response. Surveillance and Disease Prevention

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**Antoni Trilla**, Research Professor at **ISGlobal – UB**, Barcelona, Spain.

Toni Trilla, MD, PhD, MSc. Head of the Preventive Medicine and Epidemiology Department of the Hospital Clinic (Barcelona). Professor of Public Health and Vice-Dean for Academic Affairs and International Programmes of the University of Barcelona Medicine and Health Sciences School. Research Professor at ISGlobal. President of the Government of Catalonia Health Department Scientific Advisory Committee on Emerging Infections. His research is focused on epidemics, vaccines and vaccination.

Chair of the **SESSION 2**

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**Laurence Marrama**, Expert in Emerging and Vector-borne diseases at **European Centre for Disease prevention and Control (ECDC)**, Stockholm, Sweden.

Dr Laurence Marrama Rakotoarivony has been an expert working on Emerging and Vector-borne Diseases in the European Centre for Disease prevention and Control since 2010. She received a Doctorate in Veterinary Medicine, Masters in Statistics, Epidemiology and Immunology, a Ph. D. in life science, as well as a postgraduate diploma in Medical and Veterinary Entomology and an assistant professor degree (HDR). She has been working on vector-borne diseases since 1994. She has studied the transmission and epidemiology of malaria, yellow fever, Rift Valley fever, dengue, in the field, in different regions of the world, Madagascar, Senegal and Guadeloupe. Her major scientific interest is the study and analysis of populations' distribution and risk factors of vector-borne diseases, using data-mining, spatial methods and modelling.

## Surveillance of mosquito-borne viruses in the Mediterranean

In the last decade, the concern about mosquito-borne diseases has notably increased in the European region and in the Mediterranean Basin with the report of outbreaks or cases of several mosquito-borne diseases that used to be considered as tropical diseases: chikungunya fever and dengue, the re-emergence of malaria in Greece, and the detection of West Nile fever infections in more and more countries over time. Furthermore, the recent threat posed by the worldwide extension of Zika virus transmission in the European region even adds additional challenges to national public health authorities. In order to assess the situation of these diseases and to facilitate the surveillance and response activities of the countries, the European Centre for Disease Prevention and Control (ECDC) is developing tools to openly provide timely information, reference documents to support the implementation and standardisation of the surveillance of vectors, and projects that aim to address public health issues using scientific methods and expertise. The West Nile atlas is a tool launched by the ECDC in 2011. It collects and publicly disseminates the distribution of West Nile fever cases in Europe and the Mediterranean Basin on a weekly basis during the period of mosquito high activity. It has been developed to serve as a model for other mosquito-borne diseases. To be used as reference documents, several guidelines on mosquito surveillance and preparedness have been produced and an analysis of vector control methods will be published before the 2017 transmission season. Finally, due to the numerous factors involved in mosquito-borne transmission, ongoing modelling projects will provide tools to support the decision making process for mosquito-borne diseases surveillance and control. All these activities have stressed the importance of a large inter-sectorial collaboration, going beyond the usual sectors with stakeholders working with the environment, the public and the tourism sector. It highlighted also the need to have an open and clear collaboration between public health actors and the scientific community, and the essential role of an open and wide communication.



**Maria Grazia Dente**, Senior Research at **Istituto Superiore di Sanità**, Rome, Italy.

Maria Grazia Dente, public health expert and experienced project manager, has specific expertise in the fields of international cooperation, preparedness and surveillance of infectious diseases and control of cross-border health threats, migrant health. She has relevant experience in working with large scientific networks including the multi-institutions and multi-financed project EpiSouth and EpiSouth Plus (27 EU and non-EU country partners) for which she has been the Coordinator since its institution in 2006.

EpiSouth is a Mediterranean Network of public Health Institutions/MoH and Laboratories aimed at controlling cross-border health threats in the Mediterranean Basin. In addition, Dr Dente has specific technical knowledge on migrant health due to her participation in several international Projects such as the EC PROMOVAX (Promote vaccination among migrant population), ECDC EURO MoMiH (Monitoring Migrant Health) and a specific know-how on the health policy implications of research outputs.

### The experience of integrated surveillance. Challenges and opportunities

MediLabSecure network[1], established in 2014 following the EpiSouth Projects[2], comprises 55 laboratories and 19 public health institutions in 19 non-EU countries in the Mediterranean and Black Sea regions (Albania, Algeria, Armenia, Bosnia and Herzegovina, Egypt, Georgia, Jordan, Kosovo, Lebanon, Libya, Moldova, Montenegro, Morocco, Palestine, Former Yugoslav Republic of Macedonia, Serbia, Tunisia, Turkey, Ukraine). This One Health project develops through the transdisciplinary interaction of four sectors: human health, animal health, medical entomology and public health, to enhance preparedness and response to emerging arboviroses and to improve integration of surveillance. Considering that criteria to define integrated surveillance and to compare different systems still need to be identified and tested, MediLabSecure addressed this need. We proposed a conceptual framework, based on existing operational protocol and procedures[3], with specific criteria to assess existing levels of integration between human/animal/entomological/environmental surveillance for a specific pathogen. We used this framework to analyse the data and information collected with:

- A Survey with Medilabsecure members
- A Scoping Review
- A Situation analysis in the Mediterranean and Black Sea Regions (MeSA Study)

**Paul Reiter**, Chercheur Invité and consultant, **Institut Pasteur**, Paris, France.

Paul Reiter spent his entire career on research in the biology and behaviour of mosquitoes, the epidemiology of the diseases they transmit and attempts to curb transmission by vector control. After 22 years with the US Centers for Disease Control (CDC) he returned to Europe to take up a position as Professor at the Institut Pasteur, Paris. He now lives close to Geneva and operates as a free-lance consultant.

### Vector control: can we advance, are we advancing?

The ever-increasing incidence of urban mosquito-borne viruses is stark evidence of the inefficacy of our attempts to limit transmission by control of the vectors. Against this disappointing scenario a number of new and exciting approaches are under active investigation. Future programs that involve these approaches will probably be more effective if combined with some of the presently-used strategies.



**Xavier de Lamballerie**, Pr at Aix-Marseille University - IRD – INSERM, Marseille, France.

1986 to 1993 - Engineer in Chemistry, Toulouse, France)

1988 to 1992 - Intern and Resident), speciality Medical Biology, School of Medicine, Marseille, France.

1992 to 1995 - Assistant Professor, Laboratory of Virology, Timone Hospital, Marseille, France.

1993 - Fundamental Virology Course of the Pasteur Institute (Paris, France).

1996 to 1997 - Visitor Scientist in the Institute of Virology and Environmental Microbiology (Pr. EA Gould, Oxford, UK)

1995-2005 - Associate Professor), Laboratory of Virology, La Timone Hospital, Marseille, France & Laboratory of Emerging Viruses, Faculty of Medicine, Marseille, France.

Since 2005 - Professor of Microbiology, La Timone Hospital, Marseille, France & Laboratory of Emerging Viruses, Faculty of Medicine, Marseille, France.

Since 2008 - Head of the research unit Emergence des Pathologies Virales (Aix-Marseille University – IRD French Institute of Research for Development – EHESP French School of Public Health – Inserm French National Institute for Health and Medical Research), with a permanent implantation in Laos. The unit has been renewed in 2012.

Since 2015 - The unit includes the National Reference Centre for Arboviruses run by the French Army Institute for Biomedical Research (IRBA) and is associated with the French Blood Bank (EFS).

### **Key aspects of preparedness and response. The role of research**

Abstract not available

## **Session 3: Clinical Diagnosis, Management and Vaccines**



**Mikel Martínez**, Associated Researcher, ISGlobal, Barcelona, Spain.

Chair of the **SESSION 3**



**Kathleen Victoir**, General Secretary of International Projects at **Institut Pasteur**, Paris, France.

Kathleen Victoir, is the General Secretary of Scientific programs at the Department of International Affairs at the Institut Pasteur in Paris. Since 9 years she is involved in the set up and coordination of laboratory and related surveillance networks, research projects and scientific consortia within the Institut Pasteur International Network and in the Mediterranean Region. Within the different projects, Kathleen has been responsible for more than 15 training modules going from IHR to specific diagnostic workshops.

From August 2014 until the end of 2015 she was the co-coordinator of the Institut Pasteur International “Ebola Taskforce” together with Prof. F. Rey. She was also responsible for the training and logistics of the IP ebola detection laboratory in Macenta, Guinea during the most recent ebola outbreak in West Africa. Since 3 years, Kathleen heads the operational project platform at the Department of International Affairs at the Institut Pasteur. Prior joining the Institut Pasteur International Network she worked as a consultant for MSF, a European Network in the field of – omics and technology transfer and the French Agency for Research. Kathleen has a scientific background with PhD in molecular genetics and has an educational degree.

### **Laboratory capacities in the Mediterranean: from EpiSouth to MediLab Secure**

Abstract not available



**Marion Koopmans**, Head of department, **Erasmus MC**, Rotterdam, The Netherlands.

Professor Marion Koopmans, DVM PhD focuses on global population level impact of rapidly spreading zoonotic virus infections, with special emphasis on foodborne transmission. Her research focuses on unravelling the modes of transmission of viruses among animals and between animals and humans, and the use of pathogenic genomic information to unravel these pathways and to signal changes in transmission or disease impact. As initiator of the global Noronet network ([www.noronet.nl](http://www.noronet.nl)), she has developed a global network of scientists sharing information on disease outbreaks into a jointly owned database to study norovirus diversity related to human health impact. Building from the norovirus work and molecular epidemiological expertise, she has expanded her research into emerging viral diseases that are recognized with increasing frequency. As head of the virology reference laboratory of the national public health laboratory, a position she held from 2001 to 2014, she has been responsible for emerging disease preparedness, and coordination of the national laboratory response to such disease outbreaks, including SARS, pandemic influenza H1N1 2009, avian influenza and MERS. Building from those experiences, she developed an academic emerging disease preparedness research agenda at Erasmus MC as head of the Department of Viroscience. She has obtained funding for the research activities, both academic and in a public health setting, from various sources including European FP6, FP7 and H2020 programs, US CDC, WHO, Wellcome trust, NOW and ZONMW, the latter with funding specifically to develop insights into EID detection through the use of novel technologies that also will be central to this grant application. She is scientific coordinator of COMPARE, a large H2020 funded project (20 MEuro), exploring potential uses of next generation sequencing techniques for outbreak detection and tracking ([www.compare-europe.eu](http://www.compare-europe.eu)). She was awarded the Æresdoktor 2017, an honorary doctorate at DTU.

### **The COMPARE project: impact in public health management**

Globally, infectious diseases are the cause of about 22% of all human deaths. In addition to the direct severe consequences for human health, infectious diseases also cause an increased financial burden on health systems and may imply restrictions on travel, trade, etc. The longer it takes before the causative agents are detected, the greater the consequences for the individual patient, and – in the case of transmissible pathogens – entire populations. Thus, rapid diagnosis, identification, and detailed characterization of infectious pathogens are essential for guiding medical treatment, predicting outcomes, identifying transmission events, and controlling outbreaks. Because many infectious diseases are international or even global, rapid global surveillance systems for exchange and comparison of information on the worldwide spread of zoonotic and human pathogens are highly needed. With the rapid development of next generation sequencing, our capacity to use genomic data for these purposes is rapidly increasing, but with it the need for infrastructure and bio-informatic tools to analyse the complex data generated. COMPARE ([www.compare-europe.eu](http://www.compare-europe.eu)), is a H2020 funded project that aims to capitalize on these developments, with a strong emphasis on food-borne - and emerging diseases. Based on the infrastructure of the European Nucleotide Archive, COMPARE develops owner-controlled datahubs for upload, storage, analysis, and visualization of NGS data, for clinical-, public health- and research applications in the veterinary, medical and environmental domains.



**Antoni Soriano-Arandes**, Principal Investigator, Paediatric Infectious Diseases and Immunodeficiencies Unit, Unit of International Health Drassanes-Vall d'Hebron, **Vall d'Hebron Research Institute, ZIKAction consortium**, Barcelona, Spain.

ASA is currently working as a consultant on pediatric tropical infectious diseases and tuberculosis at the Pediatric Infectious Diseases and Immunodeficiencies Unit of the University Hospital Vall d'Hebron (Barcelona, Spain). He obtained his PhD degree for the University of Barcelona last January 2017 with the thesis about mother-to-child HIV transmission and the influence of the migrant factor in the HIV epidemiology in Catalonia over a period of 15 years (2000-2014). He participates as a professor of the PROSICS course on Tropical Diseases coordinated by the Vall d'Hebron Research Institute. He's the coordinator for the Spanish ZIKV network database (ZIKARed) to register all the ZIKV-infected pregnant women and children born to ZIKV-infected mothers in the main referral hospitals in Spain. In 2016, he was awarded by the SEPAR society with 18,000€ as PI for a clinical study about VFRs children and TB infection. Moreover, he's the PI and workpackage leader on pediatric clinical studies for a EU-Horizon2020-funded ZIKV project (Zikaction), and member of different scientific societies and networks including ptbnet, PENTA, COHERE, pTBRed, SEPAR, TropNet, ERS, The Union, ESPID, and NENEXP. He has authored nearly 40 papers in high-ranking journals with 187 total citations, H-Index of 6, and a RG-score 28.87 since 2012. External funding since 2016 amounts to 325,246 €.

### **Clinical research supporting Public Health decisions**

Arboviral outbreaks have increased in frequency and geographical scope in recent decades, now covering nearly all tropical and subtropical countries. Some of these arboviral infections can be prevented by vaccination (with a dengue vaccine recently approved) and are recommended to travelers going to endemic areas. However, the emergence of Zika virus

(ZIKV), which is now recognized as an enduring public health concern by the World Health Organization (WHO), requires a new approach not only because ZIKV is sexually and vertically transmitted as well as vector-borne, but also because of its causal relationship with microcephaly and other neuro-developmental abnormalities in fetus and infants of infected mothers. Key issues include the absence of specific antivirals or a vaccine and diagnostic challenges, as well as many gaps in our understanding of the risk to maternal and child health that ZIKV poses. In particular, there is currently limited information on the rates of and risk factors for vertical transmission, or on the natural history of vertical ZIKV infection, including the frequency of severe disease manifestations, risk factors, and long-term outcomes.

The ZIKAction Consortium was funded by the European Commission's Horizon 2020 Framework Programme to set up a multidisciplinary multinational ready-to-act network capable of addressing any maternal and paediatric health research need arising from the ongoing ZIKV outbreak and to conduct research studies to address key knowledge gaps relating to ZIKV epidemiology, natural history and pathogenesis, with a particular emphasis on maternal-child health. ZIKAction studies are or will be ongoing in various countries with circulating virus in South America, the Caribbean and West Africa.

Within a prospective birth cohort of infants born to pregnant women identified as having recent ZIKV infection during pregnancy, we will describe the full spectrum of congenital infection, with comparison with a control group of infants. We will assess the association between this infection and long-term child outcomes, and identify factors that may modify these outcomes. Alongside this cohort we also plan a prospective cohort study of children with vector-borne infection, to assess the natural history of ZIKV infection. It is essential to understand the range of possible outcomes and the measurement techniques most adapted to endemic areas for these infections. This information will contribute to informing clinical and public health strategies to prevent and mitigate negative impacts of infection with these viruses during pregnancy and to provide appropriate care and support for infected children.



**Odile Leroy**, Executive Director at **European Vaccine Institute**, Heidelberg, Germany.

Trained as a physician, specialised in epidemiology, clinical pharmacology and vaccinology, Dr Odile Leroy has spent most of her career in vaccine development, as a scientist in Africa for nine years, as corporate clinical director of airborne vaccines for 10 years at Sanofi Pasteur. She joined EMVI in 2002 as a clinical and regulatory director, and from 2005 to 2006 she led as executive director of the EDCTP. Since 2009 she is executive director at EVI. Her main interest is the implementation of best practices in the field of vaccine development against diseases of poverty. In order to maximise concerted European investments, she is coordinating several European vaccine research projects which aim to harmonise and set up rationale decision making criteria. She is also coordinator of the vaccine infrastructure project TRANSVAC. She is member of the Scientific Organising Committee of the Global Immunisation and Vaccine Research Forum co-organised by WHO, NIH, and BMGF.

### **Update on Zikavax vaccine project**

The ZIKAVAX project aims at developing a safe, effective, and affordable preventive vaccine against Zika virus infection. To achieve this goal, ZIKAVAX will use a delivery platform technology based on a measles vector (MV) with demonstrated proof of principle in humans and a preclinical track record of rapid adaptability and effectiveness for a variety of pathogens. In ZIKAVAX, following antigen selection and expression, immunisation studies will be conducted with the Zika vaccine candidate in mice and in a non-human primates challenge model that will be developed by the consortium. The ultimate goal of ZIKAVAX is the demonstration of safety and immunogenicity of a recombinant measles-Zika vaccine candidate (MV-ZIKA) in adult volunteers in a phase Ia clinical trial.

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## Session 4: Entomology and Environmental science

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**Núria Busquets**, Researcher, CReSA (IRTA), Barcelona, Spain.

She graduated in Biological Sciences from the Autonomous University of Barcelona in 2001. PhD in molecular biology 2005. She is currently responsible of the research line Arbovirus and arthropod vectors (IRTA- CReSA). She is member of different committees for arbovirus surveillance coordinated by the Department of Health and the Department of Agriculture (DARP) of the Generalitat of Catalonia. Her field of research are exotic viruses, mainly viruses transmitted by mosquitoes in order to expand the knowledge of the host-virus-vector interactions and epidemiology. She has participated as principal investigator or collaborator in 13 research national or international projects. She has published more than 40 articles in scientific journals and participated in over 80 scientific and technical meetings also nationally and internationally.

Chair of the **SESSION 4**

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**Rachel Lowe**, Assistant Professor at **London School of Hygiene & Tropical Medicine and Barcelona Institute for Global Health**, Barcelona, Spain.

I am an Assistant Professor at the London School of Hygiene & Tropical Medicine and the Barcelona Institute for Global Health (ISGLOBAL). My research is funded by a Royal Society Dorothy Hodgkin Fellowship, supported by the Global Challenges Research Fund. I am the Principal Investigator of the project "Modelling the impact of global environmental change on vector-borne disease risk". I graduated from the University of East Anglia in 2004 with a First Class BSc (Hons) in Meteorology and Oceanography with a year in Europe. I spent one year at the University of Granada, Spain, reading Environmental Science. In 2007, I completed an MSc with distinction in Geophysical Hazards at University College London (UCL), where I received a UCL Graduate Masters Award. In 2011, I obtained a PhD in Mathematics at the University of Exeter (PhD Thesis: Spatio-temporal modelling of climate-sensitive disease risk: towards an early warning system for dengue in Brazil). Alongside my PhD, I was a Network Facilitator for the Leverhulme Trust funded project EUROBRISA: a EURO-Brazilian Initiative for improving South American seasonal forecasts. During the project, I collaborated with climate scientists and public health experts in Brazil, which resulted in my continuing participation in the Brazilian Climate and Health Observatory. From 2010-2012, I was a Visiting Scientist at the International Centre for Theoretical Physics, where I worked with the Malawi Ministry of Health to develop predictive models for malaria and a platform to integrate climate information and rural telemedicine. From 2012-2016, I was a Postdoctoral Scientist and Head of Climate Services for Health at the Catalan Institute for Climate Sciences (IC3).

Chair of the **SESSION 4**

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**Francis Schaffner**, PhD, **Francis Schaffner Consultancy**, Riehen, Switzerland.

Francis Schaffner, French, PhD, is a medical and veterinary entomologist, focusing first on mosquitoes, but also on biting midges, sand flies, and biting flies. He devoted the first part of his career to sustainable mosquito control and to mosquito taxonomy in France, first in Alsace, later on the Mediterranean coast. From 2007 to 2013, he was working at the University of Zurich, Switzerland, Institute of Parasitology, developing research and surveillance programmes of insect vectors. He's still associate researcher at that Swiss institute. He also worked from 2009 to 2016 for Avia-GIS, a Belgian company that is developing tools for surveying vectors. Since 2016, Francis is working as freelance consultant, mainly supporting international bodies (ECDC, EFSA, WHO) and national authorities do develop networking (e.g. VBORNET/VectorNet) and risk assessment plans for vector-borne disease. Francis has now more than 30 years of experience in surveillance, control, taxonomy, ecology of insect vectors and epidemiology of human and animal vector-borne diseases. He is a leader in European mosquito taxonomy and throughout his career he devoted much time to training and capacity building. Francis published 97 articles in peer-reviewed journals and 45 other papers, booklets, book chapters or CD-ROM, 91 reports, and presented 200 contributions to international (165) or national (35) meetings.

### **Entomological surveillance and control in the Mediterranean: capacities and needs**

Following the elimination of dengue and malaria from the Mediterranean in the mid-20th century, concern about mosquitoes as vectors of disease pathogens has strongly declined. Only in areas facing severe nuisance due to proliferating mosquitoes, capacity in entomology was maintained. But since the late 1990's, an obvious upsurge of circulation of mosquito-borne pathogens in the Mediterranean has stimulated a number of countries to develop programmes for the surveillance and control of mosquito vectors. The establishment and spread of the invasive mosquitoes *Aedes albopictus* and *Aedes aegypti* has allowed transmission of chikungunya and dengue viruses in the European context, where Zika virus

may be the next emerging pathogen. Whereas native mosquitoes are surveyed and controlled in some local context of severe nuisance, re-emergence of West Nile fever and malaria outbreaks has required implementation of adjusted measures targeting WNV vectors. International bodies (IAEA, ECDC, WHO Europe) and collaborative pan-European networking projects (e.g. MediLabSecure, VectorNet) support large scale capacity building, providing updated guidelines, trainings, and support to risk assessment. These initiatives aim to support Mediterranean countries in their actions to survey invasive and native mosquito species populations and promptly respond to outbreaks of mosquito-borne diseases. Capacities for mosquito surveillance and mosquito control in the Mediterranean are growing, as is the design and implementation of integrated surveillance plans. New tools and methods for surveying mosquitoes are developed but applied research is still required to understand the behaviour of mosquito populations and improve methods for their control.

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**Vincent Robert**, Senior researcher, **French National Institute of Research for Sustainable Development (IRD)**, Montpellier, France.

Dr Vincent Robert works as a researcher in the Institute of Research for Development (IRD), in Montpellier, France, where he is Director of Research of most senior grade. He has a PhD in Medical Biology, and a HDR (accreditation to lead scientific researches in French universities). His speciality is medical entomology and human diseases transmitted by mosquito vectors, with primary interest in malaria and arboviral diseases. He spent 25 years as a resident in various African countries such as Senegal, Burkina, Cameroon and Madagascar in sub-regional health organizations, Institut Pasteur and IRD centres. He belonged to the team that, for the first time, demonstrated the huge entomological impacts of pyrethroid impregnated bednets against anopheline mosquitoes and malaria transmission. He is Director of the Institut Pasteur course 'Insect Vectors and transmission of pathogenic agents'. He is involved in the international networks MediLabSecure and VectorNet, funded by European Union. He published more 200 articles in international peer-reviewed journals and book-chapters, plus two books. Altogether, Dr Robert has worked in more than 20 countries in three continents.

#### **Capacity building for the entomological surveillance – what are the actions carried out by the Medical & Veterinary Entomology group in MediLabSecure network?**

As (re-)emerging arboviruses are threatening global health, the EU-funded MediLabSecure project (2014-2018) aims at enhancing the preparedness and response to viral threats by establishing an integrated network of virology and entomology laboratories in 19 non-EU countries in the Balkans and the Mediterranean Sea areas. There are 55 laboratories selected to actively take part into the MediLabSecure network. Among these, 20 are devoted to Medical and/or Veterinary Entomology. According to an initial needs assessment, the entomology core group has carried out a set of capacity building activities, organized in 6 main axes: 1) Three one-week training modules were tailored (in University Novi Sad, Serbia; Hacettepe University, Ankara, Turkey; Institut Pasteur de Tunis, Tunisia) allowing laboratories to develop capacity building in mosquito vector of arboviruses (sampling, determination and surveillance) and to enhance regional cooperation: about 60 people have been trained. 2) An exhibition "Vectors and Diseases" was devised to provide general information on medical entomology; it was first produced in French (2014) then translated in English (2015), in Serbian (2016) and in Montenegrin (2017); a translation in Armenian and in Arabic is ongoing. 3) A comprehensive checklist of mosquito species has been build per country (inventory of major vectors and potential vectors in the MediLabSecure network countries). 4) An electronic determination key for mosquito species (larvae and females), called "MosKeyTool" suitable for use in the whole Euro-Mediterranean-Middle East areas (i.e. 65 countries in total). This tool is designed to be used off-line by expert as well as non expert entomologists. It provides the current knowledge for mosquito species determination of all the 128 known species in the area. It is available for free since May 2017. 5) An online test called "MospectoQuiz" has been implemented to maintain the mosquito species determination among the routine activities of the Network community. Every 2 months, a set of pictures of an unknown mosquito are submitted for identification. Any person holding the link can participate to this quiz. After two weeks, all participants receive a printable fact sheet with the main features and identification hints. 6) External quality assessments (EQAs) are also organized to assess the efficiency and accuracy of mosquito identification. Entomology lab members receive a set of mosquitoes (10 minute-pined adult mosquitoes and 5 larvae in alcohol) to identify at both genus and species levels. Finally, by enhancing identification and networking, the MediLabSecure entomology group could represent the cornerstone of a corporate preparedness and response to entomological surveillance of vector-borne viral threats in the Mediterranean area.

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**Carla A. Sousa**, Assistant Professor, **Institute of Hygiene and Tropical Medicine**, Lisbon, Portugal.

Carla A. Sousa is Assistant Professor at the Medical Parasitology Unit of the Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa (IHMT/UNL), since 2008. She has a degree in Biology (1990) from the Faculdade de Ciências, Universidade de Lisboa, and a PhD in Medical Parasitology (2008) from IHMT/UNL. Her PhD studies were focused on the vectorial capacity and competence of *Anopheles atroparvus* Van Thiel, 1927, the former malaria vector in Europe. She has developed studies on the bio-ecology, systematics, genetics and control of disease vectors, particularly mosquitoes. Has both teaching and research (laboratorial

and field work) experience in Portugal (in mainland and Madeira archipelago) and in Portuguese speaking countries: Brazil, Macau, Angola, Cabo Verde, São Tomé e Príncipe and Guinea-Bissau. She acted as a consultant for Madeira Health authorities regarding arboviral emergent diseases and as a WHO consultant during Mozambique's Dengue outbreak (2014). She was also the coordinator of the IHMT research team which supported the Angolan Ministry of Health during last year outbreak of yellow-fever and was member of the Platform of Specialists for Vector-borne Diseases, coordinated by the Health General Directorate of the Portuguese Ministry of Health.

Teaching commitments include the coordination of the Master Course in Medical Parasitology and supervision of two Curricular Units. At IHMT, she is member of the Scientific Council, Ethical Board and IHMT's Council.

Carla A. Sousa is author/co-author of 48 peer reviewed research papers and five book chapters (ResearcherID - <http://www.researcherid.com/rid/G-6531-2012>).

### Update in mosquito control research

Insecticides have been the back-bone of vector control programs since the discovery of DDT in 1939. However, the raise and dispersion of insecticide resistance mechanisms in several mosquito populations have contributed for the inefficiency of insecticide-based control measures. When considering the main species competent to transmit Zika and other emergent arboviruses as dengue, yellow-fever and chikungunya virus, insecticide resistance issues are clearly of more concern in *Aedes aegypti* (Linnaeus, 1762) than in *Aedes albopictus* (Skuse, 1894). A paradigmatic example is the case of Madeira's *Aedes aegypti* population which is resistant to several classes of insecticides and display three different types of resistance mechanisms. Different approaches are being undertaken to find solutions for this generalized problem. Current research efforts are mainly focused on the:

1. Characterization of insecticide resistance mechanisms in order to find efficient tools to circumvent them. Based on different NGS techniques, new genes have been described as being presumptively associated with insecticide resistance. Screening of natural populations that exhibit marked insecticide resistance is being undertaken as part of a confirmation procedure.
2. Design of different approaches in the implementation of well-known control strategies in order to increase their efficacy. New formulations insecticides and biocides, creative strategies for their use, or different deliverable methods have been tested for well-known insecticide compounds.
3. Search for new insecticide compounds, especially of biological origin. Essential oils of plants with pharmacological proprieties are being tested regarding their biocide proprieties, namely against mosquitoes' immature forms.
4. Development and implementation of control strategies based on the use of genetically modified mosquitoes. Several field studies have already been carried-out in different locations of the globe with interesting results. An overview of these different control strategies will be undertaken with reference to on-going studies within the framework of several projects.



**Frederic Simard**, Research Unit Director at IRD/MIVEGEC, Montpellier, France.

Frederic Simard is an expert in vector biology and control working at the French "Institut de Recherche pour le Développement" (IRD) in Montpellier, France. He has spent 15 years in tropical Africa exploring the population biology, ecology and genetics of major mosquito disease vectors including *Anopheles* and *Aedes* mosquitoes. Bridging field and lab studies, medical entomology and evolution, he has been interested in exploring issues related to local adaptation, speciation and pathogen transmission. He has published over 160 papers in peer-reviewed journals in diverse areas of molecular biology and evolution, genetics and genomics, vector control and tropical medicine. Back in Montpellier in 2011, he was appointed Director of the MIVEGEC research unit (Infectious Diseases and Vectors: Ecology, Genetics, Evolution and Control) by IRD, CNRS and Montpellier University in 2015, for 6 years. He is co-PI and WP Leader in the EU/H2020 INFRAVEC-2 project.

### The INFRAVEC-2 Horizon 2020 project: Research infrastructures for the control of vector-borne diseases

Infracvec2 is an international and interdisciplinary project funded by the European Commission Horizon 2020 Research Infrastructure Program (INFRAIA). The objective of the Infracvec2 project is to integrate key specialized research facilities necessary for research excellence in insect vector biology, and to open the infrastructure for access by European vector researchers and enterprises. Infracvec2 targets insect vectors of human and animal disease, including mosquitoes, sandflies and other flies. The 24 consortium partners hold the major European biosecure insectaries for experimental infection and containment of insect vectors under Containment Level 2 and 3 (CL2/CL3) conditions, other key insect vector facilities, and include front-line field sites in Africa, the Pacific, and the Americas. Infracvec2 will improve the exploitation of European vector infrastructures for research and public health, and will develop other innovative methodologies and technologies. Beginning in August 2017, resources available to European vector researchers will include insect vectors infected with CL2/CL3 pathogens (arboviruses, *Plasmodium falciparum*), new vector colonies and pathogen strains, a custom mosquito genome-editing service, vector genomic and bioinformatic services, insecticide compound screening, training courses on secure insectary methods and insect genomic analysis, and researcher physical access to secure insectaries with unique capabilities, such as behavioral and insecticide research on infected vectors.



Researchers will shop an online catalog of vector research resources and facility access. Products will be purchased by uploading a brief scientific justification for the material or access. Orders are evaluated and prioritized for delivery by an expert committee. Materials are provided at no cost to the eligible user. Thus, Infravec2 represents a source of EU research support to European vector researchers, managed by the Infravec2 consortium. The goal is to accelerate European innovation in basic and translational insect vector biology, and to consolidate a high quality European insect vector infrastructure with long-term perspectives.

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**Xavier Rodó**, ICREA Research Professor at ISGlobal, Barcelona, Spain.

Xavier Rodó (Terrassa, 1965), ICREA Research Professor, was founding director of the Catalan Institute of Climate Sciences (IC3) in Barcelona and former head of the Climate Research Laboratory at the PCB (University of Barcelona, UB). He currently leads the CLIMA Program in ISGlobal. His background is in numerical ecology, climate dynamics and the understanding/detection/simulation of climate impacts, as well as topics central to climate dynamics, such as the origin and teleconnections of the El Niño-Southern Oscillation (ENSO) phenomenon, and the predictability and role of climate variability in greenhouse gases. He also participated in atmospheric chemistry studies and was responsible for setting the first network of climate change stations in Spain ([www.climadat.es](http://www.climadat.es)).

### **Emergence of new infectious diseases in a changing climate: How models can help better understand and prevent new epidemic outbreaks**

Climate change endangers human health, affecting all sectors of society, both domestically and globally and it is currently becoming a central issue in public health and global political agendas. Disease risk may increase as a result of climate change due to related expansions in vector ranges, shortening of pathogen incubation periods, change in biting rates, alteration of the entire epidemiological cycles and disruption and relocation of large human populations and social conflicts. Research should therefore contribute to enhance the existing knowledge and this way help increase our capacity to control the pathogen/vector/human system, as well as to properly characterize its interaction with the ecological setting under which the overall infection cycle takes place. Emergence of neglected vector-borne diseases in new regions is a subject of recent concern both in their native settings and for its potential propagation to other naïve environments. For chikungunya, dengue and zika this threat is real and both the lack of a previous exposure, massive human movements and the presence of competent vectors raise the level of the threat. Implications of a proper surveillance system and an early-warning system for disease forecasting will be discussed. Emphasis is to be made on the quantification of asymptomatic individuals and of  $R_0$ , as well as the influence of of climate and of different connection networks in their spatial and temporal propagation.

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## **Mosquito- borne viruses in the Mediterranean region: Countries' experience**

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**Núria Torner**, Public Health, Public Health Agency of Catalonia (APSCAT) / CIBER Epidemiology and Public Health (CIBERESP), Barcelona, Spain.

Pharmaceutical degree and PhD by the University of Barcelona. General Pathologist by the Ministry of Education and Science. Spain. Associate professor at the Department of Preventive Medicine and Public Health. University of Barcelona. Public Health Technician at the subdirectorate of Surveillance and Response to Public Health Emergencies. Public Health Agency of Catalonia. Researcher Member of the CIBERESP (Centers of Biomedical Research in Network in Epidemiology and Public Health) of Instituto Carlos III. Participation as researcher in more than 20 research projects on transmissible diseases; more than a hundred scientific publications in national and international journals with impact factor and numerous congresses and scientific meetings. Autonomic representative for the Spanish Working group for the eradication of the poliomyelitis; Measles, Rubella and congenital Rubella syndrome Elimination and mumps control plan; Influenza Surveillance System in Spain: PIDIRAC Daily Information of the Acute Respiratory infections in Catalonia. Member of the Working group for the surveillance and control of the arbovirosis transmitted by mosquitoes and other arthropodborne viruses. Member of Advisory Scientific Council for Pandemic Influenza, technical Committee of the Alert programme on West Nile Virus, interinstitutional Committee for the Prevention and Control of the Tiger Mosquito, and of the Working group for Climatic Change mitigation programme in Catalonia.

Chair of the **SESSION**

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**Mireia Jané**, Deputy Director of Public Health Surveillance and Emergency Response Department, **Public Health Agency of Catalonia (APSCAT)**, Barcelona, Spain.

(See her CV at the Scientific Committee section)

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**Anna Papa**, Professor of Microbiology, **Aristotle University of Thessaloniki**, Thessaloniki, Greece.

Prof. Anna Papa, MD, Ph.D. is leading the Department of Microbiology in the Medical School of Aristotle University of Thessaloniki, Greece. She is the Head of the National Reference Centre for Arboviruses and Hemorrhagic Fever viruses and the current President of the Hellenic Society of Virology. She has published 210 scientific articles, most of them on emerging infectious diseases. Her research focuses on the diagnostics, discovery of novel viral strains, immune response and molecular epidemiology of arboviruses, mainly West Nile virus, Crimean-Congo hemorrhagic fever virus and phleboviruses. She collaborates with several scientific groups in Europe and US, and is partner of several EU projects.

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**Karima Meziani**, Médecin de santé publique, **Institut National de Santé Publique**, El Biar, Algeria.

Karima Meziani, born in 05/02/1967 in Algiers, general practitioner, graduated in 1996 by the Faculty of Medicine in Algiers. Co-manager in a private pharmacy from 1996 to 1997. Recruit at the Pavilion of medical and surgical emergencies at the emergency hospital "Salim Zemirli" from 1997 to August 2009. From September 2009 to the present, I work within the National Institute of Public Health, in the area of communicable disease surveillance (department of health information). Load from the record of the surveillance of acute flaccid paralysis and vectorial diseases (West Nile Virus). Participate in a "National survey on micronutrient deficiency malnutrition in women 15 to 49 years and in the child from 0 to 14 years" insp / 2015. Member of the committee of experts on the control of abovirosis. National Focal Point in 2012 for the EpiSouth Plus network and 2014 for the MediPiET and MedLabSecure project.

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**Federico Gobbi**, Assistant, **Centre for Tropical Diseases, Ospedale Sacro Cuore Don Calabria**, Negrar VR, Italy.

Dates (from – to) 02/01/2008 up to now

Name and address of employer: Ospedale Sacrocuore Don Calabria, Negrar, Verone, Italy

Type of business or sector: Centre for Tropical Diseases

Occupation or position held: Consultant

Main activities and responsibilities: In-patient and out-patient management, co-operation, teaching, research.

Dates (from – to) 1992-1998 Graduated in Medicine, University of Turin, Italy

2002 DTM&H University of Barcelona, Spain

2000-2003 Specialized in Infectious Diseases, University of Turin, Italy

2008-2011 PhD University of Brescia, Italy "Appropriate methodologies and techniques in International Development Cooperation"

Experiences in developing countries: Burundi, Kenya, Burkina Faso, Democratic Republic of Congo.

Author of >60 articles on Peer review.

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**Frédéric Jourdain**, Public Health Engineer, **CNEV/IRD**, Montpellier, France.

As an Environmental Health engineer, I worked for 8 years at the General Directorate of Health, French ministry of Health. From 2007 to 2011, I worked on vector monitoring and control issues in metropolitan France and overseas territories. My activities were mainly dedicated to planning and risk management of vector borne diseases. In this framework I was in charge of implementation and updating the different preparedness and response plan to arbovirus circulation (West Nile, dengue and

chikungunya virus mainly). Since 2011, I am working at the French National Centre for expertise on vectors (CNEV) which is a multidisciplinary structure aimed to mobilize quickly and efficiently, the French expertise in the fields of medical and veterinary entomology, vector control with a view to decision support of MoH. My role within the CNEV is to contribute to human health and animal health expertise through risk assessment and risk management support.

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**Ana Clara Silva**, Institute of Administration of Health and Social Affairs, Funchal, Portugal.

Information not available

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**Nabil Haddad**, Associate Professor, Faculty of Public Health-Lebanese University, Beirut, Lebanon.

Dr Nabil Haddad is an Associate Professor at the Faculty of Public Health of the Lebanese University near Beirut. He has a PhD in Parasitology and a postgraduate diploma in Medical Entomology from Pasteur Institute-Paris. Besides teaching, Dr. Haddad is a researcher at the Laboratory of Immunology and Vector Borne Diseases at the Lebanese University. His research is focused on the study of insect vectors and the epidemiology of vector-borne diseases in Lebanon and Syria. His investigations cover mainly Leishmaniasis, Sand Fly fever and mosquito-borne arboviral diseases such as West Nile fever. Presently he is involved in the risk assessment of introduction of arboviruses, such as dengue and Zika, to Lebanon related to the important spread of the tiger mosquito vector. Dr. Haddad is a medical entomology expert for the WHO-EMRO region. He is a focal point for the “Global Outbreak Alert and Response Network” of the WHO. He is also a member of Euro-Mediterranean Networks MediLabSecure and VectorNet.

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With the collaboration of:



**Abdallah Samy**, Lecturer at Entomology Department and Research and Training Center on Vectors of Diseases, Ain Shams University, Cairo, Egypt.

Dr. Samy is interested in research on infectious disease dynamics. He is interested in research on ecology and epidemiology of infectious diseases of global health impacts. This includes all issues of infectious diseases and zoonosis. His lab tracks disease spread, predict its distribution, and anticipate the possible risk before the emergence of outbreaks. In May 2016, Dr. Samy completed his doctoral degree and awarded honors in Ecology and Evolutionary Biology at the University of Kansas with competitively obtained funding from the Fulbright Program. His doctoral dissertation focused on several aspects of disease ecology and evolution, including studies of Rift Valley Fever in Africa and the Arabian Peninsula, bluetongue virus, leishmaniasis, and mycetoma. This work was a result of collaboration with a diverse suite of scientists from around the world. His doctoral research at Kansas University (KU) was recognized by the American Society of Tropical Medicine and Hygiene (ASTMH) with its Young Investigator Award of 2014. He has been awarded the University of Khartoum Alumni Award (2015), and the Sudanese American Medical Association Award (SAMA) (2015).

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**Dušan Petrić**, Head Laboratory for Medical and Veterinary Entomology at Faculty of Agriculture, University of Novi Sad, Novi Sad, Serbia.

Dr. Dušan Petrić is a professor at laboratory for Medical and veterinary Entomology at the Faculty of Agriculture, University of Novi Sad, Serbia. He has done research on mosquitoes, black flies, sand flies and biting midges since 1981. Since 1987, He has been very active in European Chapter of SOVE and organized the 4th European SOVE Meeting in Novi Sad, Serbia in 1989. He was associate research fellow at the Institute of Zoology, University of Heidelberg, and KABS/GFS, Ludwigshafen on Rhine, Germany in 1990–2000. He was a Visiting Professor at the University of Manchester, School of Biological Sciences, Department of Environmental Biology, U.K. in 1991–1992. Prof. Petric has published numerous high quality articles in peer reviewed journals. co-authored 2 books (Kluwer Academic, Springer), 1 book chapter (Nova Science Publishers). He has coordinated 2 national and 4 international projects and has presented 5 invited lectures worldwide, participating in VBORNET (European Centre for Disease Prevention and Control - ECDC), consortium member of VECTORNET (ECDC, European Food Safety Authority) project. He is the Associate Editor of Medical and Veterinary Entomology, has been reviewing articles for 7 SCI journals and organized 2 international conferences. Contribution to the know-how in vector research and control are the following: a) temperature regulated membrane feeding device (1994 – further developed by Hemotek); b) model on temperature impact on mosquito host seeking behaviour (1995); c) standardization of mosquito surveillance techniques in Europe (from 1999); d) the novel edge treatment approach to biological control of black fly larvae in large lowland river system (2009).

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**Mohammed Youbi**, Head of communicable Diseases Division at **Ministry of Health - Division of Communicable Diseases**, Morocco.

Chief Doctor of the Division of Communicable Diseases in the Directorate of Epidemiology and Disease Control (DELM) – Rabat

Work experience / career paths

Responsible for the Epidemiology and Health Watch unit at the National Institute of Hygiene (INH) from September 2012 to February 2015;

Deputy Director of INH from September 2008 to September 2010;

Head of Epidemiological Surveillance at DELM from December 2005 to September 2008;

Physician in the Epidemiological Surveillance Service (DELM) from February 2004 to November 2005;

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## Wednesday, May 24<sup>th</sup>, 2017

### Session 5: Social Sciences & Health Economics

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**Elisa Sicuri**, Assistant Research Professor at **ISGlobal**, Barcelona, Spain.

Elisa is Assistant Research Professor at ISGlobal Barcelona, Associate Professor at the University of Barcelona and Research Fellow at the Imperial College London. She is health economist and her work focuses on the the economics of infectious diseases in low- and middle-income countries.

Chair of the **SESSION 5**

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**Yesim Tozan**, Clinical Associate Professor at **NYU College of Global Public Health**, New York, USA.

Dr. Yesim Tozan is a Clinical Associate Professor at New York University's College of Global Public Health. Situated at the intersection of public health and social science, Dr. Tozan's research focuses on priority-setting in global health. Dr. Tozan uses decision science and systems science methodologies to generate the evidence base necessary to guide public health decision-making, particularly in resource-limited settings. She leads studies to collect economic data alongside population-based epidemiological studies and clinical trials, and has performed fieldwork in a range of countries in East and West Africa and Southeast Asia. A major area in her work is evaluating the impact, costs and cost-effectiveness of current and future public health interventions, especially those aimed at the prediction, prevention and control of vector borne diseases such as malaria and dengue fever. Another area is the analysis of the economic impact of ill health, primarily due to infectious but with an expanding focus on non-communicable diseases and mental health. In June 2016, Dr. Tozan completed a work package on "Health Economics and Evidence Informed Policy-Making" in a five-year research project on dengue prevention and surveillance with field sites in Sri Lanka and Thailand, funded by the European Commission (<http://www.denguetools.net/>). Previously, she served as a Senior Task Force Associate for the UN Millennium Project's Task Force on HIV/AIDS, Malaria, Tuberculosis and Access to Essential Medicines.

#### **Current Issues in the economics of vaccination against dengue**

Dengue is a major public health concern in tropical and subtropical areas of the world. The prospects for dengue prevention have recently improved with the results of efficacy trials of a tetravalent dengue vaccine. Although partially effective, once licensed, its introduction can be a public health priority in heavily affected countries because of the perceived public health importance of dengue. This review explores the most immediate economic considerations of introducing a new dengue vaccine and evaluates the published economic analyses of dengue vaccination. Findings indicate that the current economic evidence base is of limited utility to support country-level decisions on dengue vaccine introduction. There are a handful of published cost-effectiveness studies and no country-specific costing studies to project the full resource requirements of dengue vaccine introduction. Country-level analytical expertise in economic analyses, another gap identified, needs to be strengthened to facilitate evidence-based decision- making on dengue vaccine introduction in endemic countries.

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**John Kinsman**, Associate Professor at **Epidemiology and Global Health Unit, Umeå University, Umeå, Sweden.**

Associate Professor in Global Health. Also serves as Section Editor for Global Health Action, and as Vice Chair of the INDEPTH Network's Social Science Research Working Group. Has worked on each of the last three WHO-declared Public Health Emergencies of International Concern: Polio (preparedness in the EU, and enhancing vaccine uptake in Somalia); Ebola (message development in Sierra Leone); and Zika (message development in Brazil). Lead social scientist on the ABACUS study on antibiotic access and use, with the INDEPTH Network, in three African and three Asian countries. Extensive previous research experience on behavioural HIV prevention, ART adherence, AIDS policy, and HIV testing and counselling in Uganda and several other African countries.

### **Perceptions of and reactions to Zika messages in Brazil**

Risk communication messages during a public health emergency aim to empower populations to protect themselves from infection. However, Zika preventive messages are difficult to follow consistently and effectively. Avoiding pregnancy is also not an option for many women: up to 40% of pregnancies in Brazil may be unwanted. This qualitative study aims to develop an understanding of the perceptions of and reactions to Zika messages in two socio-economically and epidemiologically distinct regions of Brazil – Jundiaí in Sao Paulo state, and Salvador in Bahia state – and, specifically, to contribute to the development of Zika messages that are properly understood; that adequately address population concerns about the disease; and that can be acted upon with confidence by people, and in particular by women of reproductive age. Focus group discussions with women, and qualitative interviews with male partners, health workers, and religious/community leaders have been conducted in the two study areas; and a database of visual Zika messages has also been developed. Preliminary findings from the study will be presented, with a highlight on those that may be of relevance for preparedness and response to Zika and other arbovirus outbreaks in the Mediterranean region.

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**Mônica Manir**, Journalist at **Umea University, Sao Paolo, Brazil.**

Mônica Manir holds a degree in Journalism from the School of Communications and Arts of the University of São Paulo (USP). She has a Master's degree in Bioethics at Centro Universitário São Camilo and currently holds a PhD in Bioethics at the same institution. She was a reporter and editor of the weekly supplement Aliás of the newspaper "O Estado de S. Paulo" and currently writes articles for BBC and the magazine Piauí. She is also a member of ZikaPLAN in a qualitative study which aims to develop an understanding of the ways Brazilians perceive and react to messages about Zika that had been provided by the authorities. She has experience in the area of Communication, with emphasis on Health, Education, Science and Behavior.

### **Bioethical considerations on Brazilian journalistic coverage during the Zika epidemic**

Analysis of how four major Brazilian newspapers dealt with bioethical issues that emerged during the Zika epidemic, such as the postponement of pregnancy, the complicated access of pregnant women to prenatal examinations, and the precariousness of families to care for children born with the genetic syndrome of Zika. Important point to consider: the main source of information of the newspapers was the governmental authorities.

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## Session 6: Networks and regional collaborations

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**Núria Casamitjana**, Director of Education & Training at **Barcelona Institute for Global Health - University of Barcelona**, Barcelona, Spain.

Dr Núria Casamitjana Badia is Director of Training and Education at Barcelona Institute for Global Health (ISGlobal) and Professor at the University of Barcelona. She holds a B.A. in Pharmacy and a Doctorate from the University of Barcelona, and a Master's degree in Occupational Health from the University of Barcelona - University Pompeu Fabra. She has over 30 years of experience as professor and researcher in the Faculty of Pharmacy, University of Barcelona (UB) She was responsible, together with Dr Pedro Alonso, for the creation of the Barcelona Centre for International Health Research (CRESIB) in 2006 and ISGlobal in 2010. Dr Casamitjana has held key senior management positions at the UB, including University vice-chancellor between 2002 and 2005. Currently, Dr Casamitjana is co-Director of the ISGlobal-University of Barcelona Master of Global Health and Coordinator of the International Health track Master of Clinical Research. She also coordinates Trans Global Health Erasmus Mundus Joint PhD Program and the track on International Health of the Medicine PhD program. She has also coordinated other specialized courses in global health, including the leadership courses on Science of Eradication: Malaria together with Harvard T.H. Chan School of Public Health and Swiss TPH; and on Safe Mothers and Newborns together with the Maternal Task Force at the University of Harvard and the University Aga Khan. She is President of tropEd, International Network for Education and Training in International Health, and member of the executive board of the World Federation of Academic Institutions for Global Health. She is also involved in the network Consortium of Universities for Global Health and Coordinator of the European initiative EIT-Health Education pillar at the University of Barcelona. Since 2015 she is Board and Executive Committee member of the Partnership for Maternal, Neonatal and Child Health representing the Academic, Research and Training institutions.

Chair of the **SESSION 6**

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**John Palmer**, Marie Curie Research Fellow, **Universitat Pompeu Fabra**, Barcelona, Spain.

I am a Marie Curie Research Fellow and tenure-track faculty member in the Interdisciplinary Research Group on Immigration and the Sociodemography Research Group at Pompeu Fabra University. I work on questions arising in demography, law, and public policy related to human mobility and migration, social segregation, and disease ecology. I also teach public international law for the Public Diplomacy Council of Catalonia and I am a member of the Movement Ecology Lab and Mosquito Alert team at the Center for Advanced Studies of Blanes.

Chair of the **SESSION 6**

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**Kathleen Victoir**, General Secretary of International Projects at **Institut Pasteur**, Paris, France.

(See her CV at the Session 3)

### **MediLabSecure: Implementing a network of laboratories for a One Health approach of vector-borne viruses in the Mediterranean and Black Sea regions**

Countries of the Mediterranean and Black Sea regions share common public health issues and threats. More particularly, vector-borne diseases represent a particular challenge to public health authorities both in the European Union and in neighbouring countries. The MediLabSecure project aims at consolidating a multidisciplinary network of laboratories dealing with emerging, mainly vector-borne, viruses that are pathogens for humans and/or animals. The MediLabSecure network encompasses 19 non-EU neighbouring countries around the Mediterranean and Black Sea Regions and aims at addressing public health-related needs. It intends to tackle the threat of emerging viral diseases by intersectional collaboration of laboratories (human, animal virology and medical entomology) with public health reinforcement for a more sustainable "One Health" implementation. As such, this network represents a matrix for awareness, risk assessment, monitoring and control of corresponding diseases. On the long run, MediLabSecure aims, through capacity building and interactive meetings at achieving a platform for a better implementation of i) standardized diagnosis and ii) research on multidisciplinary topics such as transmission, importance of vector spread and diversity etc. As such Fifty-nine laboratories were selected to join the project. Regional meetings, and a series of workshops have been organized, enabling laboratories to implement harmonized and up-to-date techniques to perform (1) laboratory diagnosis of vector-borne viral diseases such

as West Nile, Dengue, Rift Valley Fever, Chikungunya and related biosafety (2) training on mosquito species determination. Since the beginning of 2014, the MediLabSecure core team, based in 4 research institutions in 3 European countries, has been jointly working to select, include and connect laboratories of animal virology, human virology, medical entomology and public health. <http://www.medilabsecure.com>. The project goes from 2014 up to the middle of 2018 and is supported by the European Union (DEVCO: IFS/ 21010/23/\_194).

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**Frederic Bartumeus**, Research Professor, **ICREA (CEAB-CSIC, CREAM)**, Barcelona, Spain.

Frederic Bartumeus is an ICREA Research Professor in Computational and Theoretical Ecology at the Centre for Advanced Studies of Blanes (CEAB-CSIC) since November 2013. He also holds the same status at CREAM since 2016. He holds a MSc in Plankton Ecology (1997), and a PhD in Biological Sciences (2005) from the University of Barcelona, Spain, where he applied random walk and generalized diffusion theory to develop animal search theory. He joined the Department of Ecology and Evolutionary Biology at Princeton University, USA (2006-2009), where he went in depth on the stochastic modeling of animal movement and dispersal. Back to Spain, he completed his postdoctoral research at the Institut Català del Clima (IC3). With a Ramón y Cajal position (2010) he founded his own lab, the Movement Ecology Laboratory, focused on animal movement (including humans) and search strategies, disease vectors, and computational ecology.

### **The (Global) Mosquito Alert Initiative: are we ready?**

Mosquito Alert is a scalable citizen science system that provides accurate early warning information about the invasion process of the Asian tiger mosquito (*Aedes albopictus*) in Spain, well beyond that available from traditional methods, and vital information for public health action in the territory. The Mosquito Alert initiative illustrates how powerful new technologies (such as smartphones) and public participation in science can be, once issues of data quality and reliability are resolved. Nonetheless, the system requires the build up of an adequate network of actors interested in its territorial implementation. The network includes citizen, managers (both entomologists and epidemiologists) public health administrators, modelers, educators, and journalists. These multi-actor networks are crucial to generate a tight loop between management, research and society, without which the scalability and massive potential of new technologies is lost. Citizen science is positioned to revolutionize the research, surveillance and management of mosquito-borne diseases, yes, but with an adequate fitness for use and networks of actors. This is the real limiting factor. Are modern societies mature enough for innovative public health initiatives?

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**Marcelo Abril**, Executive Manager, **Mundo Sano**, Buenos Aires, Argentina.

Education: B.S. in Biology, 1988 Universidad Centro de Altos Estudios en Ciencias Exactas (Argentina)

Current position: Executive Director, Mundo Sano, Mar. 17 – Present

Director of Programs and Projects, Mundo Sano, Oct.2002 – Mar.2017

Publications (recent years): Spatial pattern evolution of *Aedes aegypti* breeding sites in an Argentinian city without a dengue vector control programme. *Geospatial Health* 11(3):471, 2016

Temporal dynamics and spatial patterns of *Aedes aegypti* breeding sites, in the context of a dengue control program in Tartagal (Salta Province, Argentina). *PLoS Negl Trop Dis*, 10(5):e0004621, 2016.

New scheme of intermittent benzimidazole administration in patients chronically infected with *Trypanosoma cruzi*: a pilot short-term follow-up study with adult patients. *Antimicro Agent Chemother*, 60(2):833-7, 2015.

Scientific Meetings (2016)

2nd Colombian Meeting on Leishmaniasis and Chagas Disease. Bogotá, Colombia, Apr. 2017

XIII Taller sobre la enfermedad de Chagas. Advances in treatment and attention of Chagas disease. ISGLOBAL, Barcelona, Spain, Mar. 2017

ASTMH 65th Annual Meeting. Atlanta, GA (USA), Nov. 2016

### **Multiplying capacities in vector surveillance and control**

Abstract not available

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**Adela Paez**, MediPIET Scientific Coordinator based at ECDC, **MediPIET at ECDC**, Stockholm, Sweden.

Adela Paez Jimenez, joined the Mediterranean Program for Intervention Epidemiology (MediPIET) as Scientific Coordinator in July 2014 and is currently based at ECDC in Stockholm, Sweden. Holder of a Doctorate in Clinical Epidemiology by the Public Health School of Paris VI, France and the Institut Pasteur-France, she has over thirteen years of experience as epidemiologist in Europe (Institut de Veille Sanitaire- Paris, France; Institut für Medizinische Mikrobiologie, Immunologie und Parasitologie- Bonn, Germany; Instituto de Salud Carlos III- Madrid, Spain), Middle-East (Ain Shams University-Faculty of Community Medicine), West and Central Africa (UNAIDS Regional Support Team- Dakar, Senegal) and Latin America and the Caribbean (PAHO/AMRO; Washington DC, USA).

### **Training networks: the experience of MediPIET**

The MediPIET project – “Further Development and consolidation of the Mediterranean Programme for Intervention Epidemiology Training” - is funded by the European Union under the Instrument for Peace and Stability (IFS/2013/329-859), as part of the CBRN Centres of Excellence Initiative. The project is led by the consortium FIIAP-ISCIH, with the scientific leadership of ECDC. The main objective of the MediPIET is to enhance health security in the Mediterranean and Black Sea regions by supporting capacity building for prevention and control of natural or man-made health threats posed by communicable diseases, through an effective capacity building of the Public Health services in the region. The specific objectives are: (1) Training national trainers and supervisors in intervention epidemiology and nurture a regional network of trainers and supervisors; (2) Training a regional cadre of epidemiologists belonging to national public health institutions in charge of essential public health functions for prevention and control of communicable diseases; (3) Setting up and maintaining a regional network of public health professionals to share practices and experiences; (4) Fostering county commitment/ownership and (5) Establishing the basis of a long-term regional training programme aimed at creating public health workforce with needed skills in intervention field epidemiology. MediPIET network covers the following 18 partner countries: Albania, Algeria, Armenia, Bosnia and Herzegovina, Egypt, Georgia, Jordan, Kosovo[1], Lebanon, Libya, Moldova, Montenegro, Morocco, Palestine[2], Serbia, The former Yugoslav Republic of Macedonia, Tunisia, and Ukraine. Israel and Turkey participate as observers. The project is implemented through a 2-year competency based fellowship programme (Field Epidemiology Training Programme) and through individual participation in modules. MediPIET organises nine training modules covering specific public health core competencies.

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**Tomás López-Peña**, Head of Area for Global Health Research and Development, **National Health Research Institute Carlos III**, Madrid, Spain.

Family doctor with master's degree in epidemiology, public health and international relations. Deep experience in international cooperation for health development and global health. Over the last ten years very much focus on global health research response for diseases associated to poverty and neglected populations. Spain representative in different intergovernmental organizations on the field of global and international health.

### **GloPID-R a platform for a global quick response against pandemic threatness**

Human health worldwide is increasingly threatened by potential epidemics caused by existing, new and emerging infectious diseases, including those which are resistant to antimicrobial agents. An infectious epidemic can strike anywhere, and at any time globally. In order to save lives, the research response needs to be quick, flexible, comprehensive and global and therefore is beyond the capacity of any single country or even the European Union. The Heads of International (biomedical) Research Funding Organisations (HIRO) agree to create an initiative to facilitate international collaboration between funders in the field of new and reemerging epidemics. In 2013 the European Commission and international funders launch the ‘Global Research Collaboration for Infectious Disease Preparedness’ (GloPID-R).

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# PRACTICAL INFORMATION

## Venue: CosmoCaixa Barcelona

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**CosmoCaixa Barcelona**  
C/ Isaac Newton, 26  
08022 Barcelona, Spain

**Conferences Meeting**  
Agora Room (-2 floor)

## Contact persons during the event

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### **Pablo Martínez de Salazar**

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[www.bdebate.org](http://www.bdebate.org) | [www.biocat.cat](http://www.biocat.cat)

# SUGGESTED READING

Petersen, L. R., Jamieson, D. J., Powers, A. M., & Honein, M. A. (2016). Zika virus. *New England Journal of Medicine*, 374(16), 1552-1563.

World Health Organization. Zika Research Agenda. October 2016 – Available at: <http://www.who.int/reproductivehealth/zika/zika-virus-research-agenda/en/>

World Health Organization. Zika virus technical report. Interim Risk Assessment for WHO European Region. May 2016 – Available at: <http://www.euro.who.int/en/health-topics/emergencies/zika-virus/technical-reports-and-guidelines-on-zika-virus>

World Health Organization. Zika preparedness plan for the Eastern Mediterranean Region, 2016 – Available at: <http://www.emro.who.int/health-topics/zika/zika-preparedness-plan-for-the-eastern-mediterranean-region.html>

Jupille, H., Seixas, G., Mousson, L., Sousa, C. A., & Failloux, A. B. (2016). Zika virus, a new threat for Europe?. *PLoS Negl Trop Dis*, 10(8), e0004901.

Escadafal, C., Gaayeb, L., Riccardo, F., Pérez-Ramírez, E., Picard, M., Dente, M. G., ... & Victoir, K. (2016). Risk of Zika virus transmission in the Euro-Mediterranean area and the added value of building preparedness to arboviral threats from a One Health perspective. *BMC Public Health*, 16(1), 1219.

Failloux, A. B., Bouattour, A., Faraj, C., Gunay, F., Haddad, N., Harrat, Z., ... & Pajovic, I. (2017). Surveillance of Arthropod-Borne Viruses and Their Vectors in the Mediterranean and Black Sea Regions Within the MediLabSecure Network. *Current Tropical Medicine Reports*, 4(1), 27-39.

European Center for Disease Prevention and Control. Rapid risk assessment: Zika virus disease epidemic. Tenth update, 4 April 2017 – Available at: <http://ecdc.europa.eu/en/publications/>

Pang, T., Mak, T. K., & Gubler, D. J. (2017). Prevention and control of dengue—the light at the end of the tunnel. *The Lancet Infectious Diseases*.

# OUTCOMES

## B·Debateca

On the website of B·Debate, you will find all the information related with the celebration of the meeting that includes reports, conclusions, scientific documents, interviews with the experts, speaker's CVs, videos, images, press documentation and other related materials. We invite you to visit the section B·Debateca on [www.bdebate.org](http://www.bdebate.org)

Contents of the meeting **“Zika virus and other mosquito-borne viruses. Science for preparedness and response in the Mediterranean region”**

The screenshot shows the B·Debate website interface. At the top left is the B·DEBATE logo with the text "International Center for Scientific Debate BARCELONA". To the right are logos for "biocat" and "Obra Social 'la Caixa'". A navigation menu includes "INICI", "B-DEBATE", "CONVOCATÒRIA", "DEBATECA" (highlighted with a red circle), "NOTÍCIES", "SINOPSIS", "PREMSA", and "CONTACTE". Below the menu, a breadcrumb trail reads "Inici / Debateca / Programa anual 2017/2018". A dropdown menu for "DEBATECA" is open, listing "PROGRAMA 2017/18", "PROGRAMA 2016/17", "HISTÒRIC DE DEBATS", and "CICLES DE DEBATS". The main content area features two articles. The first article, dated "20/04/2017 a 21/04/2017", is titled "The Genotype Tissue Expression (GTEx) Project Community Meeting. Enhancing the Usage of Human Genomics for the benefit of all" and includes a small image of a human silhouette with a DNA helix. The second article, dated "23/05/2017 a 24/05/2017", is titled "Zika virus and other mosquito-borne viruses. Science for preparedness and response in the Mediterranean region" and includes a small image of a globe with a virus-like pattern. A sidebar on the right titled "DEBATECA" lists links for "Programa 2017/18", "Programa 2016/17", "Històric de debats", and "Cicles de debats".

## FOLLOW US ON SOCIAL MEDIA



#Bdebate #BDZika

@Bdebate

# ORGANIZERS



International Center  
for Scientific Debate  
BARCELONA



**B-Debate** International Center for Scientific Debate Barcelona is a **Biocat** initiative with support from “**la Caixa**” **Foundation**. It drives first-rate international scientific debates, to foster dialogue, collaboration and open exchange of knowledge with prestigious national and international experts, to approach complex challenges of high social interest in life sciences. B-Debate sees debate as a powerful, effective way to generate knowledge and strives to help position Barcelona as a benchmark in generating knowledge and Catalonia as a country of scientific excellence.

B-Debate sees debate as a powerful, effective way to generate new knowledge. The debates are top-notch international scientific meetings featuring a selection of experts of renowned international prestige and scientists that work in Barcelona and Catalonia, moderated by scientific leaders. Since 2009 B-Debate has invited about 1200 recognized speakers and over 7.000 attendees. B-Debate seeks out answers to the challenges and needs of society in the field of life sciences, taking into account the complex, ever-changing conditions of this global world. The debates foster the integration of different disciplines of science and deal with such diverse topics as ageing, new therapeutic approaches to various diseases, innovative technology to improve knowledge of the human genome, food resources, new tools to integrate knowledge management, clinical genomics, neurosciences, climate change, and new energy sources, among others. The knowledge and results obtained through these events is spread throughout both the scientific community and general society through the various **B-Debate** channels and instruments.

More info: [www.bdebate.org](http://www.bdebate.org)

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The **Barcelona Institute for Global Health (ISGlobal)**, the result of an innovative alliance between the “la Caixa” Foundation, academic institutions and government bodies, was set up to contribute to the work undertaken by the international community to address the challenges of health in a globalised world. ISGlobal is a consolidated hub of excellence based on research and health care that has grown from the work first started in the world of clinical care by the Hospital Clínic and the Parc de Salut MAR and in the academic sphere by the University of Barcelona and Pompeu Fabra University. The core mechanism of its work model is the transfer of knowledge generated by scientific research to practice, a task undertaken by the institute’s Education and Policy and Global Development departments ISGlobal belongs to the Catalan Government’s CERCA network.

ISGlobal has a solid research and translation background in imported diseases and vector-borne diseases. Since Zika was declared a public health emergency of international concern in February 2016, the institute has launched a series of actions and projects regarding epidemiological surveillance, case management, follow-up of cohorts of exposed mothers and babies, vector control, and socioeconomic impact of the virus.

More info: [www.isglobal.org](http://www.isglobal.org)

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# COLLABORATORS

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The **Public Health Agency of Catalonia (ASPCAT)** is the organism of the Catalan Department of Health responsible of the improvement of the individual and collective health through the implementation of health policies. These policies are based on health promotion and disease prevention, health protection, epidemiological surveillance and food security.

ASPCAT's activity is defined within the Public Health services portfolio and its goal is to avoid disease or delay it. The Agency was born with the aim to join efforts and offer to the population, in an organised and coordinated way, all the services that ensure public health. To carry out public health services, ASPCAT gets coordinated with institutions and organizations all over Catalonia.

The Public Health Surveillance and Emergencies Response Unit is responsible of the communicable disease surveillance and the promotion of early detection and control of emergent infectious disease.

More info: [salutpublica.gencat.cat](http://salutpublica.gencat.cat)

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## FUNDACIÓN RAMÓN ARECES

Since its creation in 1976, the **Ramón Areces Foundation** has devoted its activities to scientific patronage, by promoting research, contributing to the training of human capital, and disseminating knowledge. It undertakes its activities in the spheres of Life and Matter Sciences, Social Sciences and Humanities. The Foundation's main aims are to contribute to creating a solid scientific and technological structure in Spain in order to improve people's lives, and to seek solutions to the future challenges which modern society faces, most notably in the spheres of economics and education. Likewise, it works to generate new training opportunities for young researchers and to promote the exchange of ideas for the development of Science, Education and Culture. The Foundation is firmly committed to cooperation, in the fulfilment of its aims, with public and private institutions, both national and international.

More info: [www.fundacionareces.es](http://www.fundacionareces.es), [www.fundacionareces.tv](http://www.fundacionareces.tv)

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## CosmoCaixa <sup>Barcelona</sup>

**CosmoCaixa** offers interactive, enjoyable science and an open door for anyone who is eager to learn and understand and who never stops wondering why things are the way they are. **CosmoCaixa Barcelona** boasts the Geological Wall and the Amazon Flooded Forest, which features more than 100 plant and animal species that convince visitors they have been transported from the Mediterranean to the very heart of the tropical jungle. In addition to its permanent facilities and its open areas, CosmoCaixa offers a scientific and educational programme that includes exhibitions, workshops, conferences, courses and debates involving experts from all over the world.

More info: [www.obrasocial.lacaixa.es](http://www.obrasocial.lacaixa.es)

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