



5th International Workshop
on *Aedes albopictus*

the Asian tiger mosquito

May 11-13, 2022
Montpellier, France

From basic research to public health

Venue: Montpellier CORUM– France

Date: 3 days, **Wednesday 11 to Friday 13 May 2022**

Participants: About 100 international scientists and decision makers

In-person only meeting in Montpellier (no remote participation)

Language: English (French possible on day 3)

Five keynote speakers, 42 speakers from 17 countries, in 8 sessions from basic research to public health issues. Posters during the 3 days.

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Website: <https://rivoc.edu.umontpellier.fr/international-workshop/>

PROVISIONAL AGENDA, SUBJECT TO CHANGE

Wednesday, May 11, 2022

9h00: Welcome address (20mn)

Didier Fontenille, IRD, Montpellier University: *Aedes albopictus*: How far will it harm humans? (5mn)

Montpellier Metropolis

Occitanie Province

Montpellier University

9h30 – 10h00: First keynote address by **Jeffrey Powell** (Yale University - USA): “What *Aedes aegypti* can tell us about *Aedes albopictus*?”

Session 1: new advances in phylogeny, evolution, genetics and genomics of *Aedes albopictus* (5 X 20mn).

10h00 – 10h40

1. Maria Sharakhova, United States: Chromosomal rearrangements in aedini mosquitoes, including *Aedes albopictus*
2. Sébastien Boyer, Cambodia: A new Asian tiger mosquito species in Cambodia

10h40 - 11h10: Break

11h30- 12h15

3. Andrea Gloria-Soria, USA “Population genetics of an invasive mosquito vector; *Aedes albopictus* in the Northeastern USA”
4. Philippos Papathanos, Israel: CRISPR Developing genetic engineering tools for the tiger mosquito
5. Adalgisa Caccone, USA: A SNP chip for *Aedes albopictus*

12h30 - 13h45: Lunch at the Corum

13h45 – 14h15: 2nd Key note address by **Ronald Van Rij** - Radboud University Medical Center – Netherlands: “Small RNAs at the nexus of gene regulation, development and antiviral defense in *Aedes*.”

Session 2: Virus-vector interactions (6x 20mn)

14h15- 16h15

1. Núria Busquets, Spain: Alteration in the *Aedes albopictus* transcriptome reveals diverse mechanisms of the mosquito immune system implicated Chikungunya exposure
2. Gasmi Laila, Italy: Antiviral potential of *Aedes albopictus* non-retroviral endogenous viral elements
3. Maria Vittoria Mancini, Italy: Wolbachia strain wAu efficiently blocks arbovirus transmission in *Aedes albopictus*
4. Pascal Miesen, Netherlands: Arbovirus - mosquito interactions: Zooming in on RNA
5. Trindade Marques Joao, Brazil: Comparative analysis of the global virome of *Aedes albopictus* and *Aedes aegypti* mosquitoes
6. Anna Malacrida, Italy: Vector competence of *Aedes albopictus* populations for chikungunya virus is shaped by their demographic history.

16h15 – 16h40: Break

Session 3: Development, Physiology, ecology, Behaviour of *Aedes albopictus* (5 x 20 mn)

16h45- 18h30

1. Isabelle Kramer, Germany: The ecophysiological plasticity of invasive *Aedes* mosquito species - a comparative study of global, South Asian and European populations
2. Judicaël Obame-Nkoghe, Gabon: Invasion of *Ae. albopictus* in forests of Central Africa: zoom on the situation observed in the National Parc of La Lopé (Gabon)
3. Ruth Müller, Belgium: Vector biology of *Aedes albopictus* and eco-bio-social drivers In the Himalaya-Hindukush region
4. Claire Valiente Moro, France: Mosquito sex and active mycobiota contribute to fructose metabolism in the Asian tiger mosquito *Aedes albopictus*
5. Federico Forneris, Italy: A salivary factor binds a labrum cuticular protein and controls biting in mosquitoes

18h30: APERITIF or DINNER (tbd)

Thursday, May 12, 2022

8h45 – 9h15: 3rd Key note address by **Omar Akbari** - University of California San Diego - USA: “Using Precision guided sterile insect technique (SIT) to suppress mosquito populations”

Session 4: surveillance (distribution, resistance) of *Aedes albopictus* (4 X 20mn)

9h15- 10h45

1. Annelise Tran, France: “ARBOCARTO: an operational spatial modeling tool to predict *Aedes albopictus* dynamics and the impact of vector control interventions”
2. Roger Eritja Spain: Citizen-based surveillance of invasive mosquitoes within multi-sourced modelling
3. Francis Schaffner Switzerland: Continental-scale surveillance of *Aedes albopictus*: standardisation for moving from distribution to abundance
4. Jean-Philippe David, France: TigeRisk: Evaluating the risk of insecticide resistance in the tiger mosquito: A predictive approach combining field surveillance, experimental selection and molecular markers

10h45 – 11h15: Break

Session 5 (part 1): *Ae. albopictus* control tool development and field evaluation (8 X 20mn)

11h15- 13h00

1. Alto Barry, USA: Lethal and nonlethal effects of insecticides in *Aedes albopictus*
2. Maurizio Calvitti, Italia: SIT and IIT to tackle *Aedes* invasive mosquitoes: conjugating efficiency and economic sustainability
3. Jérémy Bouyer, France / Austria: New developments in the use of the Sterile Insect Technique against *Aedes albopictus* in Europe”
4. Louis Clement Gouagna, France: Pilot control trial by releases of sterile males against *Aedes albopictus* in Reunion Island
5. Grégory L'Ambert, France: Autodissemination method against *Aedes albopictus* in a field experiment”

13h00 - 14h15: Lunch at the Corum

14h15 – 14h45: 4th Key note address by **Charles Wondji** - Liverpool School of Tropical Medicine – Center for research in Infectious Diseases - Cameroun: “*Aedes albopictus* insecticide Resistance”

session 5 (part 2): *Ae. albopictus* control tool development and field evaluation

14h45 – 15h45

6. Carine Ngoagouni, Central African Republic: Insecticide resistance in *Aedes albopictus* in Central Africa and the Prospects for control management
7. Carla Sousa, Portugal: Insecticide resistance and population genetic analysis of *Aedes albopictus* populations in mainland Portugal
8. Barnabas Zogo, Sumitomo Chemical, UK: A review of pyriproxyfen-based larvicides against *Ae. albopictus* and an introduction to a new long lasting formulation of pyriproxyfen for use in containers and storage vessels

15h45 – 16h15: Break

Session 6: Public Health perspectives (4 X 20mn)

16h15 – 17h45

1. Guillaume Lacour, France: The quest for relevant indicators, evidence of effectiveness and improvement of Vector Control in France from 2010 to 2021.
2. Franck Remoue France: Innovative biomarker of human exposure to *Aedes* bites: from concept to applications to the assessment of the risk of arbovirus transmission and vector control efficacy
3. Knols Bart, Maldives: Mass trapping and larval source management for the elimination of *Aedes albopictus* from small tropical islands
4. Marie claire Paty, France: Lessons learned and future challenges for surveillance and prevention of *Aedes albopictus*, the French experience.

17h45- 18h00: Conclusions of the basic research sessions

Friday, May 13, 2022

8h45 – 9h15: 5th Key note address by Alessandra Della Torre, Sapienza University - Italy: “AIM Cost results, lessons and messages”

Session 7: Public health concerns, management of control, market point of view (5X 20mn)

09h15 – 10h45

1. Florence Fouque, TDR/WHO, Switzerland: WHO Global Response against Arboviral Diseases and Vector Control: Special case of the vector species *Aedes albopictus*”
2. Vincent Corbel, France: INOVEC: a Research & Innovation Partnership for enhancing the surveillance and control of mosquito vectors of emerging arboviruses
3. Clelia Oliva, XperTIS, France: Bringing SIT to market in France: towards a more efficient control of the tiger mosquito”

10h45 – 11h15: Break

11h15 – 12h45

4. Yvon Perrin, FRANCE: Vectrap: Applicability of mass trapping strategy against *Aedes albopictus* and *Aedes aegypti*
5. Aspirot Nayla, CERA company, FRANCE: UE registration challenges

12h45 - 14h00: Lunch at the Corum

Session 8: *Aedes albopictus* control in Europe: what is missing? learning from other territories? (5 X 20mn)

14h00 – 16h00

1. Olivier Briet ECDC, Sweden: Cost-effectiveness of *Aedes albopictus* control strategies”
2. Beniamino Caputo, Italy: Controlling arbovirus outbreaks: experiences from Italy and future challenges
3. Eleonora Flacio, Switzerland: *Aedes albopictus* surveillance and control system (2000-2022): strategies and results in Switzerland.
4. Mattia Calzolari, Italy *Aedes albopictus*, Italy, monitoring, data supporting larval control in urban areas
5. Xxx Spanish experience

16h00 – 16h30: Break

16h30 – 17h00: Discussion and conclusion

END OF WORKSHOP

POSTERS (SUBJECT TO CHANGE)

1. Gasperi Giuliano, Italy: olfaction of *Aedes albopictus*
2. Guido Favia, Italy: Bacterial symbiosis in *Aedes albopictus*
3. Balatsos Georgios, Greece: The Sterile Insect Release Technique (SIT) in Greece: results and challenges
4. Igor Sharakhov, USA: Phenotypic and transcriptomic analyses of abnormal male sexual development in *Aedes aegypti* and *Ae. mascarensis* backcross progeny
5. Moonen Jurgen, Netherlands: Role of Toll, Imd, and Jak-STAT pathway in antiviral immunity in *Aedes albopictus*
6. Perdomo Hugo, Italy: Cell Fusing agent virus (CFAV) infection in *Aedes albopictus*
7. Minard Guillaume, France: Human-aided dispersal drives parasitism escape in the most invasive mosquito species.
8. Arnoldi Irene, Italy: X-ray Tomography as a new tool to study the development of *Aedes albopictus* mouthparts
9. Ayala Diego, Madagascar: The Domestication of *Aedes albopictus*: similarities and differences with *Aedes aegypti*- A Review
10. Tantely Luciano, Madagascar: *Aedes albopictus*: a "sleeper" vector of arboviruses in Madagascar
11. Chen Xiao-Guang, China: Interspecific mating bias may drive *Aedes albopictus* displacement of *Aedes aegypti* during its range expansion
12. Guo Yijia, or/ and Zhou Jingni, China: CRISPR/Cas9 mediated F1534S substitution in VGSC confers high level of resistance to deltamethrin in *Aedes albopictus*
13. Wim Van Bortel Belgium: From a long-distance threat to the invasion front: invasive *Aedes* mosquito species in Belgium between 2007 and 2020
14. González María Spain: A novel optical sensor prototype for the remote monitoring of mosquito populations
15. Hélène Barré-Cardi, France: 2006-2019: assessment of more than a decade of colonisation of Corsica by *Aedes albopictus*
16. Antoine Mignotte France: Identification of immuno-epidemiological biomarker of cat exposure to *Aedes* mosquito bites
17. Laura Vavassori Switzerland The progressive expansion of *Aedes albopictus* across the Alps
18. Lutrat Célia, France: Development of Genetic Sexing Strains for genetic control of *Aedes albopictus*"
19. Lees Rosemary, United Kingdom The Automatic Classification of Pyriproxyfen-Affected Mosquito Ovaries
20. Valadas Vera, Portugal: Molecular survey of the F1534C knockdown mutation in *Aedes albopictus* from Europe
21. Soghigian John, Canada: Field evidence of *Aedes albopictus* population regulation by a gregarine parasite
22. Zhou Xiaohong China: Based on Invasion Biology and photoperiodic diapause of *Aedes albopictus* exploring new blocking strategies of dengue diffusion and endemic process
23. Gabrieli Paolo, Italy: IgE response against *Aedes albopictus* salivary protein in allergic patients.
24. Victor Vicente, Dipteratech company, France: Préoccupations des organismes de santé publique, gestion et contrôle, marché de l'innovation
25. Leulmi Hamza, QISTA company, France: Vector risk prevention by monitoring connected mosquito traps
26. Chouin Sébastien, France: "*Aedes albopictus* control : What is the best scale to strengthen field actions and political decisions?"
27. Jeremie Gilles, *Aedes aegypti* World Mosquito Program

