

Full programme

Sunday 2nd October

16.00-19.00 Participant registration

Monday 3rd October

08.00-09.00 Participant registration

09.00-10.00 Opening of the conference, welcome address, presidential address, SOVE report, announcements

10.00-10.30 Coffee break

10.30-11.00 **Keynote lecture:** "Sourcing the crowd for mosquitoes: the use of citizen science for mosquito surveillance". (Sander Koenraadt)

11.00-13.00 **SESSION 1 "Invasive species: ecology and their potential role as vectors"**

Chairmen: Isabel Carvalho and Hugo Osorio

1.1 First report of *Aedes (Stegomyia) albopictus* (Diptera: Culicidae) and its establishment in Oran, West of Algeria by *K.E. Benallal, A. Allal-Ikhlef, K. Benhammouda, K. Senouci, F. Schaffner and Z. Harrat.*

1.2 *Culicoides imicola*: phylogeography, population genetics and invasive status in the Mediterranean basin by *S. Jacquet, K. Huber, C. Chevillon, J. Bouyer and C. Garros.*

1.3 Surveillance of invasive mosquitoes at points of entry in Switzerland by *P. Muller, L. Vavassori, L. Engeler, T. Suter, E. Flacio, V. Guidi and M. Tonolla.*

1.4 *Aedes koreicus*: a new European invader and its potential for chikungunya virus by *S. Ciocchetta, N. Prow, J. Darbro, L. Hugo, F. Frentiu, F. Montarsi, G. Capelli, J. Aaskov and G. Devine.*

1.5 Exotic mosquitoes in the Netherlands: control and the impact on society by *C.J. Stroo, M. Ter Denge and A. Ibanez Justicia.*

1.6 Accidental introductions of yellow fever mosquitoes (*Aedes aegypti*) to the Netherlands with human trade and transport by *A. Ibanez-Justicia, W. Den Hartog, A. Gloria-Soria, J.R. Powell, M. Dik, F. Jacobs and C.J. Stroo.*

1.7 Expansion of the Asian tiger mosquito *Aedes albopictus* in Bulgaria between 2012 and 2015 by *O. Mikov, I. Katerinova and T. Agoushev.*

1.8 Update on the invasive mosquito species in Europe, is successful elimination an option? by *V. Versteirt, W. Tack, F. Schaffner, H. Kampen, D. Petric, V. Robert and G. Hendrickx.*

1.9 Predicting the spatial-temporal risk of Asian tiger mosquito (*Aedes albopictus*) introduction into Germany by *R. Luhken, A. Jost, I. Schleip, U. Obermayr, A. Rose, N. Becker and E. Tannich.*

1.10 Exotic invasive mosquitoes: introduction pathways into Switzerland by *E. Flacio, L. Engeler, T. Suter, P. Muller and M. Tonolla.*

13.00-14.30 Lunch

14.30-15.30 **SESSION 2 "Citizen science and social approaches on vector control"**

Chairmen: Doreen Walther and Aleksandra Cupina

2.1 Mobocon: program for strengthening sustainable mosquito-borne disease control in Dutch Caribbean by *M. Braks, K. Hulshof, T. Leslie, M. Henry and Y. Gerstenbluth.*

2.2 *Anopheles plumbeus* (Stephens, 1828) in Germany: occurrence and public awareness of a nuisance and potential vector species by *E.C. Heym, H. Kampen and D. Walther.*

2.3 Citizen science against globalized mosquito-borne diseases by *J.R.B. Palmer, A. Oltra, F. Collantes, J. Delgado, J. Lucientes, S. Delacour, M. Bengoa, R. Eritja, M.A. Community and F. Bartumeus*

2.4 Door to door project, a network against tiger mosquitoes by *G.H. Karabas, C. Matrangolo, A. Maffi, C. Venturelli and F.N. Bienvenue*

15.30-16.00 Coffee break

16.00-18.00 SESSION 3 “Epidemiology of vector-borne diseases and their vectors”

Chairmen: Isabel Fonseca and Marija Zgomba

3.1 First dengue serosurvey in Madeira Island: the real burden of the 2012 outbreak by *A. Jesus, G. Seixas, T. Nazareth, A.C. Silva, R. Paul and C.A. Sousa*.

3.2 Increased activity of sindbis virus in the enzootic vectors are potential neutral outbreak indicators by *J.O. Lundstrom, J.C. Hesson, M. Schafer, O. Ostman and M. Pfeffer*.

3.3 Fine scale mapping of malaria infection clusters by using routinely collected health facility data in urban Dar es Salaam, Tanzania by *Y.P. Mlacha, D.J. Terlouw, G.F. Killeen and S. Dongus*.

3.4 Overview on canine vector-borne diseases agents transmitted by ticks in Portugal by *I. Pereira Da Fonseca, C. Marques, A. Duarte, A. Leal, J. Meireles, M.M. Santos-Silva and A.S. Santos*.

3.5 Distribution and seasonality of *Culicoides* species in Portugal (2005-2013) by *D. Ramilo, S. Madeira, R. Ribeiro, T.P. Nunes, G. Alexandre-Pires, T. Nunes, F. Boinas and I. Pereira Da Fonseca*.

3.6 Genetic diversity and population structure of *Aedes aegypti* from a trans-border region in Amazonia by *P. Salgueiro, J. Pinto, A. Martins and I. Dusfour*.

3.7 The *Anopheles gambiae* 2La chromosome inversion is genetically associated with susceptibility to *Plasmodium falciparum* throughout Africa by *M.M. Riehle, T. Bukhari, A. Gneme, M. Guelbeogo, N. Sagnon, B. Coulibaly, A. Pain, E. Bischoff, F. Renaud, A.H. Beavogui, S.F. Traore and K.D. Vernick*.

3.8 Identification and epidemiological implications of *Culicoides* biting midges in Trinidad, West Indies by *T.U. Brown-Joseph, L.E. Harrup, V. Ramkissoon, R. Ramdeen, C.V.F. Carrington, S. Carpenter and C.A.L. Oura*.

3.9 Ecology of tick-borne pathogens: investigation on rodents and ticks in protected areas in Central Italy by *I. Pascucci, M. Di Domenico, G. Angelico, V. Curini, C. Camma and G. Sozio*.

3.10 Dominant role of *Anopheles funestus* Giles, in a residual transmission setting in south-eastern Tanzania by *E.W. Kaindoa, N.S. Matowo, F.C. Meza, H.S. Ngowo and F.O. Okumu*.

18.00-19.00 EMCA general meeting

20.00-21.30 Welcome cocktail

Tuesday, 4th October

08.30-09.00 Keynote lecture: “The potential of social science research in vector control: an example of women-led tsetse control intervention from northwest Uganda. (Vanja Kovacic)

09.00-10.30 SESSION 4 “Ecology and behavior of vectors”

Chairmen: Alexandra Chaskopoulou and Françoise Pfirsch

4.1 Visualization of house-entry behaviour of malaria mosquitoes by *J. Spitzen, T. Koelewijn, W.R. Mukabana and W. Takken*.

4.2 Community analysis on the diversity of mosquito and midge vector species across habitats in Europe by *T.W.R. Mohlmann, L. Bracchetti, C. Damiani, G. Favia, W. Takken, M. Talle, U. Wennergren and C.J.M. Koenraad*.

4.3 Host preference of mosquitoes mediated by skin bacterial volatiles by *N.O. Verhulst, A. Busula and W. Takken*.

4.4 Understanding the role of host emitted semiochemicals on *Culicoides* (Diptera: Ceratopogonidae) behaviour by *M.A. Miranda, C. Barcelo, D. Borrás and A.C. Gerry*.

4.5 Species composition, activity patterns and blood meal analysis of sand fly populations in the metropolitan region of Thessaloniki by *A. Chaskopoulou, I.A. Giantsis, S. Demir and M.C. Bon*.

4.6 Prediction of mosquito occurrence patterns in urban area using machine learning Algorithms by *D. Lee and Y.-S. Park*.

4.7 Species composition of potential arbovirus vector mosquitoes in selected areas of South Africa by *T. Johnson, T. Nelufule, A.P.G. Almeida and L. Braack*.

10.30-11.00 Coffee break

11.00-12.30 SESSION 4 “Ecology and behavior of vectors”

Chairmen: Alexandra Chaskopoulou and Francoise Pfirsch

4.8 Does artemisinin based combination therapy influence mosquito fitness and hostseeking behaviour? By *J.G. De Boer, A.O. Busula, J. Ten Berge, T.S. Van Dijk and W. Takken*

4.9 Annual population dynamics of hematophagous dipterans in Israeli dairy farms suggest a potential vector of lumpy skin disease by *Y. Gottlieb, E. Kahana and E. Klement*.

4.10 Trap yield and species composition comparison for arbovirus vector mosquito surveillance in South Africa by *A.P.G. Almeida, T. Nelufule, R. Swanepoel and L. Braack*.

4.11 Study of the bionomics of the *Obsoletus* complex and other livestock associated *Culicoides* at different temperatures in laboratory conditions by *C. Barcelo and M.A. Miranda*.

4.12 Shift in species composition in the *Anopheles gambiae* complex after implementation of longlasting insecticidal nets in Dielmo, Senegal by *S. Sougoufara, M. Harry, S. Doucoure, P.M. Sembene and C. Sokhna*.

4.13 Assessing male *Anopheles gambiae*, *Anopheles coluzzii* and their reciprocal hybrids swarming behaviour in contained semi-field by *C. Nignan, A. Niang, H. Maiga, S.P. Sawadogo, K.R. Dabire and A. Diabate*.

4.14 The effect of interspecific competition between *Culex pipiens* and *Aedes albopictus* in northern Italy by *G. Marini, G. Guzzetta, F. Baldacchino, D. Arnoldi, F. Montarsi, G. Capelli, A. Rizzoli, S. Merler and R. Rosa*.

Pombi, C.A. Sousa, T. Antao, G. Botta, E. Mancini, V. Petrarca, D. Mead, E. Drury, J. Stalker, A. Miles, D.P. Kwiatkowski, M.J. Donnelly, A. Rodrigues, A. Della Torre, D. Weetman and J. Pinto.

12.30-14.00 Lunch

14.00-15.30 poster session

15.30-16.00 Coffee break

16.00-16.30 Keynote lecture: “AMSAR: a capacity building project based on the “train the trainers” concept (Cornelia Silaghi)

16.30-18.30 SESSION 4 “Ecology and behavior of vectors”

Chairmen: Alexandra Chaskopoulou and Francoise Pfirsch

4.15 Diversity and role of flying and aquatic insects in the ecology of *Mycobacterium ulcerans* in Benin, West Africa by *B. Zogo, E. Marion, J. Babonneau, C. Pennetier, M. Akogbeto, L. Marsollier and A. Djenontin*.

4.16 Evidence that agricultural pesticides select for insecticide resistance in the malaria vector *Anopheles gambiae* by *S. Djogbenou, B. Assogba, L. Djossou and M. Makoutode*.

4.17 Blood influence on protein spectra of sand fly females and host blood identification using MALDI-TOF mass spectrometry by *K. Hlavackova, V. Dvorak, P. Halada and P. Volf*.

4.18 Host-feeding patterns of mosquito species in Germany by *J. Borstler, H. Jost, R. Garms, A. Kruger, E. Tannich, N. Becker, J. Schmidt-Chanasit and R. Luhken.*

4.19 The hitch-hiking tiger: first experimental study on the passive transportation of *Aedes albopictus* by cars by *R. Eritja, D. Roiz, J.R.B. Palmer, I. Sanpera-Calbet and F. Bartumeus.*

4.20 Chemosensory responses to the repellent *Nepeta* oil and its major component nepetalactone by the yellow fever mosquito, a vector of zika virus by *J.C. Dickens, J.T. Sparks and J.D. Bohbot.*

4.21 Monitoring and control of a large population of *Aedes albopictus* in an urban area of Southwest Germany by *A. Jost, I. Ferstl, B. Pluskota, S. Schon, E. Tannich, C. Kuhn, A. Mosca, M. Giovannozzi and N. Becker.*

4.22 High-resolution density map of the tick-borne encephalitis and Lyme borreliosis vector *Ixodes ricinus* for Germany by *K. Brugger and F. Rubel.*

4.23 Impacts of introgressive hybridisation in the population structure and bionomics of *Anopheles gambiae* in Guinea Bissau by *J.L. Vicente, C.S. Clarkson, B. Caputo, B. Gomes, M.*

18.30-20.00 E-SOVE board meeting

Wednesday 5th October

Full day excursion

Thursday 6th October

08.30-09.00 Keynote lecture: "Bug battles: extending war's metaphors in Sardinia after World War II (Marcus Hall)

09.00-10.30 SESSION 5 "Emerging vector-borne diseases and risk assessment"

Chairmen: Veerle Versteirt and Maria Goffredo

5.1 Risk of vector-borne diseases for the EU: entomological aspects by *M. Braks, M. Goffredo, M. De Swart, G. Mancini, S. D'Hollander and V. Versteirt.*

5.2 A qualitative risk analysis of the distribution of African horse sickness in Nambia by *D. Liebenberg, S.J. Piketh and H. Van Hamburg.*

5.3 Towards a better understanding and performance improvement of species distribution models via a virtual vector by *W. Tack, V. Versteirt, E. Ducheyne and G. Hendrickx.*

5.4 Vector competence of *Culex pipiens* from Lebanon for West Nile fever virus and Rift Valley fever virus by *R. Zakhia, N. Haddad, H. Bouharoun-Tayoun, L. Mousson and A.B. Failloux.*

5.5 Geographical distribution of mosquito (Diptera: Culicidae) in Morocco: first step to assess the transmission risk of arboviruses by *A. Bennouna, G. Chlyeh, H. Elrhaffouli, F. Schaffner, W. Mahir, T. Balenghien and O. Fassi Fihri.*

5.6 Surveillance of mosquito-borne viruses with honey-baited FTA cards by *N. Wipf, V. Guidi, O. Engler, E. Flacio, M. Tonolla, D. D. R. Guedes and P. Muller.*

5.7 VectorNet outcomes: mosquito vectors distribution maps and first round of field studies (2015) by *F. Schaffner, D. Petric, V. Robert and H. Kampen, & Vectornet Expert Contributors.*

5.8 Implementation of entomological surveillance around imported cases of arbovirus diseases in the Balearic Islands (Spain) by *M.A. Miranda, D. Borrás, R. Garcia, M. Ruiz, C. Paredes-Esquível, C. Barcelo, M. Guma and M. Ramos.*

10.30-11.00 Coffee break

11.00-12.30 SESSION 5 "Emerging vector-borne diseases and risk assessment"

Chairmen: Veerle Versteirt and Maria Goffredo

5.9 A nationwide surveillance on tick and tick-borne pathogens, 2011-2015, Portugal by *R. De Sousa, A.S. Santos, M.M. Santos-Silva, T. Luz, P. Parreira, S. Bessa, M.S. Nuncio, I. Lopes*

De Carvalho and REVIVE Workgroup.

5.10 Monitoring of WNV, its vectors and reservoirs in Danube Delta Biosphere Reserve – Romania, one of the most important European gates for emerging diseases by *M. Marinov, F.L. Prioteasa, E. Falcuta, V. Alexe, A. Dorosencu, J.B. Kiss, P. Tamiris, E. Veronesi and C. Silaghi.*

5.11 EU-ECDC/EFSA VectorNet project: distribution of sand fly species (Diptera: Psychodidae), community analysis and pathogen detection in Balkans by *V. Dvorak, O.E. Kasap, G. Oguz, N. Ayhan, S. Vaselek, J. Omeragic, J. Pajovic, F. Martinkovic, O. Mikov, J. Stefanovska, D. Petric, D. Baymak, Y. Ozbel, J. Depaquit, V. Iovic, P. Volf and B. Alten.*

5.12 Ecological niche and risk assessment of *Leishmania major* cutaneous leishmaniasis transmission in Algeria by *R. Garni, M. Derghal, K. Belmokhtar, K. Benallal and Z. Harrat.*

5.13 Harmvect – a simulation based tool for pathway risk maps of invasive arthropods in Belgium by *F. Jansen, N. Berkvens, H. Casteels, J. Witters, V. Van Damme and D. Berkvens.*

5.14 Multiple mechanisms mediating insecticide resistance in *Aedes aegypti* from Madeira Island-Portugal by *G. Seixas, L. Grigoraki, D. Weetman, J. Vicente, A.C. Silva, J. Pinto, J. Vontas and C.A. Sousa.*

12.30-14.00 Lunch

14.00-16.00 Poster session

15.30-16.00 Coffee break

16.00-18.00 SESSION 6 “Vector-pathogen interaction”

Chairmen: Gregory Lanzaro and Eva Veronesi

6.1 Immune gene evolution, ecological speciation and malaria transmission in African *Anopheles* by *G.C. Lanzaro.*

6.2 West Nile virus inhibits host-seeking response of the mosquito vector *Culex pipiens* biotype *pipiens* by *C.B.F. Vogels, J.J. Fros, G.P. Pijlman, J.J.A. Van Loon, G. Gort and C.J.M. Koenraadt.*

6.3 *Wolbachia pipientis* in natural populations of mosquito vectors of *dirofilaria immitis*: first detection in *Culex theileri* by *V. Mixao, A. Mendes, I. Maurici, M. Calado, M. Novo, S. Belo and A.P.G. Almeida.*

6.4 On the trail of *Borrelia burgdorferi* s.l.: the key role of birds and lizards as reservoirs for the etiologic agent of Lyme borreliosis in Portugal by *A.C. Norte, J.A. Ramos, L.P. Da Silva, P.M. Araujo, P.Q. Tenreiro, A. Alves Da Silva, J. Alves, L. Gern, M.S. Nuncio and I. Lopes De Carvalho.*

6.5 Insecticide resistance in *Aedes aegypti* impacts its competence for chikungunya Virus by *L. Wang, P. Gaborit, M. Vignuzzi, R. Girod, D. Rousset and I. Dusfour* **6.6** *Francisella*-like endosymbiont and *Rickettsia aeschlimannii* co-infection in a *Hyalomma marginatum* tick by *C.L. Carvalho, R. De Sousa, M.M. Santos-Silva, A.S. Santos, M.S. Nuncio and I. Lopes De Carvalho.*

6.6 *Francisella*-like endosymbiont and *Rickettsia aeschlimannii* co-infection in a *Hyalomma marginatum* tick by *C.L. Carvalho, R. De Sousa, M.M. Santos-Silva, A.S. Santos, M.S. Nuncio and I. Lopes De Carvalho.*

6.7 Implicating vectors of Schmallenberg virus in Europe by *N. Pages, M. Goffredo, S. Carpenter, S. Talavera, F. Monaco, J. Barber, V. Federici, M. Verdun, N. Pujol, A. Bensaid and J. Pujols.*

6.8 Preliminary results on the microbiota of *Ixodes ricinus* ticks of North-East of Italy by *S. Ravagnan, E. Mastrorilli, S. Cazzin, A. Salviato, A. Milani, F. Montarsi, C. Losasso, A. Ricci, I. Monne and G. Capelli.*

20.00- onwards Gala dinner

Friday 7th October

09.00-10.30 SESSION 7 “Taxonomy, systematic and phylogeny of vectors”

Claire Garros and Francis Schaffner

7.1 DNA barcoding of farm-associated mosquitoes (Diptera: Culicidae) in southern England: species identification and discovery of cryptic diversity by *L.M. Hernandez-Triana, V.A. Brugman, N.I. Nikolova, L. Thorne, M. Fernandez De Marcos, A.R. Fooks and N. Johnson.*

7.2 Fossil records and evolution of haematophagy in biting midges (Diptera: Ceratopogonidae) by *R. Szadziewski, P. Dominiak, E. Sontag, A. Urbanek and J. Szwedo*

7.3 MALDI-TOF protein profiling for species identification of sand flies – practical lessons from the lab and from the field by *V. Dvorak, K. Hlavackova, P. Halada, B. Alten, V. Ivovic and P. Volf.*

7.4 Genetic diversity of *Ixodes ricinus* and first evidence of *Ixodes inopinatus* ticks in Baltic countries by *A. Paulauskas, E. Galdikaite-Braziene, J. Radzijevskaia and A. Estrada-Peña.*

7.5 Is the West Nile virus mosquito vector *Culex univittatus* present in the Iberian Peninsula? A comparative morphological and molecular analysis by *V. Mixao, D. Bravo-Barriga, R. Parreira, M. Novo, C. Sousa, E. Frontera, L. Braack and A.P.G. Almeida.*

7.6 Mosquito surveillance around Syrian and European borders of Turkey; DNA barcoding and virus screening by *Y. Sarikaya, K. Ergunay, F. Gunay, S. Kar, K. Oter, S. Orsten, O. Kasap, Y. Linton and B. Alten.*

10.30-11.00 Coffee break

11.00-13.00 SESSION 8 “Advance technologies on vector control”

Chairmen: Fabrizio Balestrino and Andrea Crisanti

8.1 Sterilization of *Aedes japonicus japonicus* (*Hulecoeteomyia japonica japonica*) by high-energy photon irradiation: implications for a sterile insect technique approach in Europe by *F. Balestrino, A. Mathis, S. Lang and E. Veronesi.*

8.2 *Aedes aegypti* in California: novel control strategies in response to the recent invasion by *F.S. Mulligan and J. Holeman.*

8.3 The BG-Counter, the first operative automatic mosquito counting device for online mosquito monitoring: field tests and technical outlook by *A. Rose, M. Weber, I. Potamitis, P. Villalonga, C. Pruszyński, M. Doyle, M. Geismar, J. Encarnacao and M. Geier.*

8.4 Expression of anti-*Trypanosoma* sp. proteins in *Sodalis glossinidius* in the model *Glossina morsitans morsitans* (Diptera: Glossinidae) by *S. Tudela Zuquete, S. Van Harten, A.P. Basto, M.O. Afonso and L. Alfaro Cardoso.*

8.5 The *Anopheles gambiae* 1000 Genomes Project: a resource for vector control research by *C.S. Clarkson, A. Miles, N.J. Harding, G. Botta, D.P. Kwiatkowski and A. gambiae 1000 Genomes Project.*

8.6 Suppression of vectors of dengue, chikungunya and zika diseases using supersterile *Aedes* males by *P. Kittayapong, S. Ninphanomchai, S. Khaklang, W. Limohpasmanee, U. Chansang, C.Chansang and P. Mongkalangoon.*

8.7 The use of Sentinel 1 SAR imagery for wide area mosquito control by *S. Mourelatos, S. Gewehr, S. Kalaitzopoulou, C.G. Karydas, M. Iatrou and G. Iatrou.*

8.8 Response of *Aedes albopictus* (Skuse) males to acoustic and visual stimuli by *F. Balestrino, D.P. Iyaloo, K.B. Elahee, A. Bheecarry, F. Campedelli, M. Carrieri and R. Bellini.*

8.9 Development of Etofenprox-treated clothing for the US Military by *U.R. Bernier.*

8.10 The passive gravid *Aedes* trap (BG-GAT): an environmentally-friendly, low-cost and effective tool for *Aedes* (*Stegomyia*) surveillance by *J.K. Mccaw, B.J. Johnson, A.E. Eiras and S.A. Ritchie.*

13.00-13.30 Conclusion remarks