

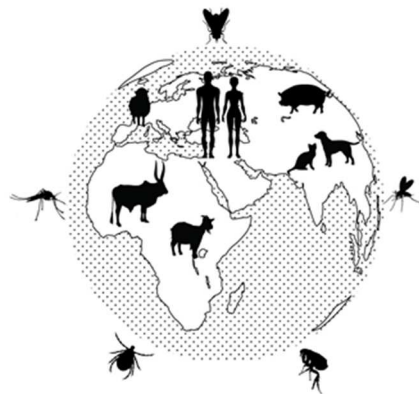
Entomology Summer Course

*'Hands on' Course on Arthropods
of Medical and Veterinary Significance:
A global perspective, from theory to practice*

06 - 10 July, 2020

National Veterinary School of Toulouse, France

Continuing education in Medical and Veterinary Entomology



SPONSORSHIP



The Parasitology and Entomology team at the National Veterinary School of Toulouse, France, organizes an entomology course which will be held from the 06th to 10th of July 2020. The course will highlight topics such as arthropod-borne diseases, resistance in arthropod populations, control tools, principles of laboratory rearing and morphological identification of arthropods of medical and veterinary importance.

The course will encompass several arthropod groups, namely sand flies, mosquitoes, midges (*Culicoides* spp.), Tabanidae, Muscidae, fleas, bedbugs, sarcoptic mites and ticks. Lectures will generally take place in the morning, while the afternoon will be dedicated to laboratory and field work.

Preliminary program at a glance

Monday 6 th of July	Tuesday 7 th of July	Wednesday 8 th of July	Thursday 9 th of July	Friday 10 th of July
MORNING (08h30 am – 12h30 pm)				
Introduction to medical and veterinary entomology <i>Prof Richard Wall,</i> <i>University of Bristol, United Kingdom</i>	Mosquitoes and mosquito-borne diseases: a One Health perspective <i>Prof Tanja McKey,</i> <i>Arkansas State University, USA</i>	<i>Glossina</i> spp.: bio-ecology and African Trypanosomiasis <i>Prof Steve Torr,</i> <i>Tropical Liverpool School, United Kingdom</i>	Fleas and flea-borne pathogens <i>Dr Emilie Bousisra,</i> <i>ENVT, France</i>	Ticks: Biology and Phylogeny <i>Prof Lorenza Beati</i> <i>Georgia Southern University, USA</i>
<i>Phlebotomus</i> spp.: biology, ecology and pathogenic roles: human and animal leishmaniasis <i>Prof Jérôme Depaquit,</i> <i>Université de Reims, France</i>	Mosquito control and public health <i>Dr Fabrice Chandre,</i> <i>IRD, France</i>	<i>Stomoxys calcitrans</i> : bio-ecology and pathogenic roles <i>Dr Emmanuel Liénard,</i> <i>ENVT, France</i>	Sarcoptidae mites: bio-ecology and pathogenic role in human and animals <i>Prof Jacques Guillot,</i> <i>ENVA, France</i>	Zoonotic tick-borne diseases: Lyme Disease and Bartonellosis <i>Prof Richard Birtles</i> <i>Salford University, Manchester, UK</i>
<i>Culicoides</i> spp.: bio-ecology and culicoides-borne pathogens <i>Dr Claire Garros,</i> <i>CIRAD, Montpellier, France</i>	Mechanisms of insecticide resistance <i>Dr Sylvie Cornelle,</i> <i>IRD, Montpellier, France</i>	Principles of alternative control tools against stable flies and tabanids <i>Prof Philippe Jacquet,</i> <i>ENVT, France</i>	Bedbugs: bio-ecology, pathogenic role and principle of laboratory rearing <i>Jean-Michel Bérenger,</i> <i>LDI, France</i>	Ticks and tick-borne diseases in livestock: a One Health perspective <i>Dr Vincenzo Lorusso,</i> <i>Vetequinol, France</i> <i>University of Salford, UK</i>
AFTERNOON (2 – 6 pm)				
Sandflies : principles of morphological identification and dissection <i>Prof Jérôme Depaquit</i> Principles of <i>Culicoides</i> trapping <i>Dr Claire Garros</i>	Mosquitoes: principles of morphological identification Initiation to « MoskeyTool » <i>Nil Rahola,</i> <i>IRD,</i> <i>France</i>	Field work in the vicinity of Toulouse: principles of stable fly and tabanid trapping	The R&D adventure: behind (and beyond) insecticides and acaricides <i>Dr Vincenzo Lorusso,</i> <i>Vetequinol, France</i> <i>University of Salford, UK</i> <hr/> Assessment of the efficacy of an ectoparasiticide against sandflies in laboratory conditions <i>Dr Emilie Bousisra/ Dr Emmanuel Liénard/ Prof Michel Franc</i>	Principles of tick Taxonomy <i>Prof Lorenza Beati</i> <i>Dr Vincenzo Lorusso</i>

General information

Course Organizer: Emilie Bouhsira

Dr Emilie Bouhsira (Programme Leader)

DVM, MSc, PhD, Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse

23 chemin des Capelles, 31076 Toulouse, France

Tel: +33 (0) 5 61 19 32 89

E-mail: emilie.bouhsira@envt.fr

Scientific committee: Dr Emilie Bouhsira, Prof Michel Franc, Prof Philippe Jacquet,
Dr Emmanuel Liénard

Prof Michel Franc

DVM, PhD, HDR, Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse

23 chemin des Capelles, 31076 Toulouse, France

Tel : +33 (0) 5 61 19 38 873

E-mail : michel.franc@envt.fr

Dr Emmanuel Liénard

DVM, MSc, PhD, Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse

23 chemin des Capelles, 31076 Toulouse, France

Tel : +33 (0) 5 61 19 39 48

E-mail : emmanuel.lienard@envt.fr

Prof Philippe Jacquet

DVM, PhD, HDR, Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse

23 chemin des Capelles, 31076 Toulouse, France

Tel : +33 (0) 5 61 19 39 67

E-mail : philippe.jacquet@envt.fr

Course venue: National Veterinary School of Toulouse, 23 chemin des Capelles, 31076 Toulouse, France

Fees: 450 euros for students and EVPC residents, 950 euros for other participants.

Fees include teaching and laboratory materials, transportation for field work, coffee and lunch breaks and a public transport pass.

Transport to and from Toulouse, accommodation and breakfast, and some evening meals are not included in the fees.

Application to the course: please send a CV, a motivation letter in which should be mentioned the reasons you apply, the name of two referees and the application form filled in with your details to Emilie Bouhsira: emilie.bouhsira@envt.fr

Please note that all documents must be provided in English, otherwise the application will not be considered.

The selection of candidates will be based on motivation letter, CV and application date (the earlier the better).

Deadline for application: 15th of April 2020

Language: The official language of the course will be English

Number of participants: maximum 15

Target participants: EVPC residents and diplomates, postgraduate (MSc, PhD) students, Post-Doc scientists, research fellows, entomologists, laboratory staff.

Vetoquinol-SFP Young Scientist Award: Supported by the veterinary pharmaceutical multinational firm Vetoquinol (www.vetoquinol.com), in partnership with the French Society of Parasitology (SFP), this grant will cover the accommodation and travel expenses (sponsored by Vetoquinol) and registration fees (courtesy of SFP).

The Young Scientist Award aims to support the work of a young PhD student from a Low and/or Middle Income Country for her/his outstanding contribution to the field of medical and veterinary entomology.

Candidates should fulfil the following criteria:

- be under the age of 35 years;
- be a PhD student at the time of application;
- come from a Low and/or Middle Income Country;
- must have authored at least one publication in international peer-reviewed journals as part of their PhD project and taken part to relevant scientific activities in the field of parasitology.

To apply, please provide a CV, list of publications and oral communications, the name of two referees and a motivation letter. All documents must be provided in English and sent to Emilie Bouhsira: emilie.bouhsira@envt.fr

How to get to Toulouse

By plane: Toulouse-Blagnac international airport features direct flights to 74 destinations mostly in Europe and Northern Africa with a few additional seasonal long-haul connections.

Many domestic flights from main French cities also run daily.

From the airport to Toulouse downtown:

- **Tram**: the tram line T2 connects Toulouse centre with the airport and back, running every 15 minutes. The tram connects with metro Line A at the stop 'Arènes' and metro Line B at the stop 'Palais de Justice'.
- **Bus and coach**: Shuttle buses to Toulouse city centre, run from the airport, outside Hall B, every 20 minutes. Faster than the journey by tram, it takes approximately 20 minutes to reach the city centre by bus, stopping at 'Compans Caffarelli' or 'Jeanne d'Arc' (both on Metro Line B), or 'Jean Jaurès' (Metro Lines A and B) or 'Toulouse-Matabiau' railway station.

- **By train:** Toulouse can be reached by train from other French cities (Toulouse-Matabiau railway station).
- **By car:** Toulouse can be reached by car using existing major highways (National road tax). Within the city, however, the parking is extremely limited and very expensive. The vet school has however a large car park where you can leave your car.

Accommodation

The vet school is located in a residential neighborhood with limited public transportation, especially in the evening.

We recommend the **Residhome Occitania**, particularly for its location in-between the city center [public transportation (tram (Lines T1 and T2) and metro (Line A)) are at 5 minutes-walking distance] and the vet school (direct access with bus n°46). It is also directly reachable from the airport using the tramway.

The hotel is equipped with a swimming pool, which could be a great way to relax after a whole day of science! The weather in Toulouse is indeed usually very warm at the end of August.

Location : 93, avenue de Lombez - 31300 Toulouse

Tel. : +33 (0)5 61 44 08 34

E-mail : toulouse.occitania@residhome.com

<https://www.residhome.com/residence-hoteliere-aparthotel-toulouse-185.html>

Studio: approximately 61 euros/night (room with double-bed or two single beds and equipped kitchen)

One-bed room apartment: approximately 73 euros/night (in addition to the studio equipment, a leaving room with convertible sofa)

Other options, closer to the vet school but further away from the city center:

<https://www.campanile.com/fr/hotels/campanile-toulouse-ouest-purpan>

<https://www.appartcity.com/fr/destinations/midi-pyrenees/toulouse/toulouse-purpan-aeroport.html>

<https://www.hotel-bb.com/fr/hotels/toulouse-purpan.html>

<https://www.accorhotels.com/fr/hotel-0445-novotel-toulouse-purpan-aeroport/index.shtml>

<https://www.residhome.com/residence-hoteliere-aparthotel-toulouse-199.html>

And also: <https://www.airbnb.fr>

To help your search, the neighborhood of the vet school is called "Lardenne".

List of lecturers

Richard Wall, B.Sc., M.B.A., Ph.D.

University of Bristol, United Kingdom

Jérôme Depaquit, Pharm. D., Ph.D.

University of Champagne-Ardenne, France

Claire Garros, M.Sc., Ph.D.

Centre of agricultural research for development (CIRAD), Montpellier, France

Tanja Mac Key, B.Sc., M.Sc., Ph.D.

Arkansas State University, USA

Fabrice Chandre, DVM, HDR, Ph.D.

Institute of Research for Development (IRD), Montpellier, France

Sylvie Cornélie, M.Sc., Ph.D.

Institute of Research for Development (IRD), Montpellier, France

Nil Rahola

Institute of Research for Development (IRD), Montpellier, France

Steve Torr, B.Sc., M.Sc., Ph.D.

Liverpool School of Tropical Medicine, Liverpool, United Kingdom

Emmanuel Liénard, DMV, M.Sc., Ph.D., Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse (ENVT), Toulouse, France

Philippe Jacquiet, DVM, HDR, Ph.D., Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse (ENVT), Toulouse, France

Emilie Bouhsira, DMV, M.Sc., Ph.D., Dip. EVPC

EBVS® European Veterinary Specialist in Parasitology

National Veterinary School of Toulouse (ENVT), Toulouse, France

Jacques Guillot, DVM, HDR, Ph.D., Dip. EVPC
EBVS® European Veterinary Specialist in Parasitology
National Veterinary School of Maisons-Alfort (ENVA), Maisons-Alfort, France

Jean-Michel Bérenger, M.Sc.
Laboratory of Insect and Diagnostic (LDI)
Research Unity on Tropical Infectious Emerging Diseases (URMITE), Marseille, France

Michel Franc, DVM, HDR, Ph.D., Dip. EVPC
EBVS® European Veterinary Specialist in Parasitology
National Veterinary School of Toulouse (ENVT), Toulouse, France

Vincenzo Lorusso, DVM, Ph.D., Dip. EVPC, Dip. ACVM
EBVS® and ACVM® European and American Specialist in Veterinary Parasitology
Vetoquinol, Paris, France
University of Salford, Manchester, United Kingdom
African Institute of One Health Research and Diagnostics, Nigeria

Lorenza Beati, M.D., Ph.D.
Georgia Southern University,
The US National Tick Collection, USA

Richard Birtles, B.Sc, Ph.D.
University of Salford, Manchester, United Kingdom

Preparatory work and final examination

The attendees will receive a selection of papers covering the topics that will be developed during the course at least one month prior to the beginning of the summer school. The final examination will be made of 10 multiple choice questions or short answering questions.

A course feedback questionnaire will be given at the beginning of the course to each participant and will be collected at the end of the course.

Detailed program

Monday 06th of July

08h00: Welcome coffee

08h15-12h30: Lectures

08h15-10h00: Introduction to medical and veterinary entomology, Prof Richard Wall

10h00-10h30: Coffee break

10h30-11h30: Bio-ecology and pathogenic role of sandflies, Prof Jérôme Depaquit

11h30-12h30: Bio-ecology and pathogenic role of *Culicoides* spp., Dr Claire Garros

12h30-14h00: Lunch break

14h00-18h00: Practical work

14h00 - 16h00: Principles of morphological identification of sandflies and dissection of female sandflies, Prof Jérôme Depaquit

16h00-16h15: Coffee break

16h15- 18h00: Principles of morphological identification of *Culicoides* spp., and of trapping (How to set up a trap for *Culicoides* in the vet school facilities (large animal hospital)),

Dr Claire Garros

20h00: Diner altogether in Toulouse downtown

Tuesday 07th of July

08h15-12h30: Lectures

08h15-10h00: Mosquito-borne diseases: a one health perspective, Prof Tanja Mac Key

10h00-10h30: Coffee break

10h30-11h30: Mosquito control and public health, Dr Fabrice Chandre

11h30-12h30: Mechanisms of insecticide resistance in mosquitoes, Dr Sylvie Cornélie

12h30-14h00: Lunch break

14h00-17h30: Practical work

14h00-17h00: Principles of morphological identification of mosquitoes, Nil Rahola

Training on the recognition of the main European mosquito species of medical and veterinary significance.

Participants need to bring their laptop with them so as to install the software “MoskeyTool”, and will be taught how to use it.

Principles of mosquito mounting will also be addressed.

19H00: Welcome speech by a council member and visit of the Toulouse Capitol.

20H00: Dinner all together in Toulouse downtown

Wednesday 08th of July

08h15-12h30: Lectures

08h15-10h00: Bio-ecology of *Glossina* spp. and African trypanosomiasis, Prof Steve Torr

10h00-10h30: Coffee break

10h30-11h30: Bio-ecology and pathogenic roles of stable flies, Dr Emmanuel Liénard

11h30-12h30: Principle of alternative control tools against stable flies and tabanids, Prof Philippe Jacquiet

12h30-14h00: Lunch break

14h00-18h30: Field work

14h00: Departure

Field work in a farm in the vicinity of Toulouse to learn the principles of trappings of stable flies and tabanids

18h30/19h00: Back to Toulouse

20h00: Diner altogether in Toulouse downtown

Thursday 09th of July

08h15-11h30: Lectures and practical work

08h15-09h15: Fleas and flea-borne pathogens, Dr Emilie Bouhsira

09h15-10h15: Sarcoptidae: bio-ecology and pathogenic roles in human and animals, Prof Jacques Guillot

10h15-10h30: Coffee break

10h30-11h30: Bio-ecology and pathogenic role of bedbugs, Jean-Michel Bérenger

11h30-12h30: Observation of bedbugs and principle of laboratory rearing-

Demonstration of bedbugs detection by dogs – *Eco-Flair* company

12h30-14h00: Lunch break

14h-15H30: Lecture

15h30-16H30: Practical work

14h00-15H30: The R&D adventure behind (and beyond) insecticides and acaricides,

Dr Vincenzo Lorusso

15h30-16h30:

- **Assessment of the efficacy of an ectoparasiticide against sandflies in laboratory conditions,**
(*practical work*)

- **Visit of insect rearing facilities**

Dr Emilie Bouhsira

Free evening

Friday 10th of July 2020

08h15-12h30: Lectures

08h15-10h00: Ticks: Biology and Phylogeny, Prof Lorenza Beati

10h00-10h30: Coffee break

10h30-11h30: Zoonotic tick-borne diseases: Lyme Disease and Bartonellosis, Prof Richard Birtles

11h30-12h30: Ticks and tick-borne diseases in livestock: a One Health perspective, Dr Vincenzo Lorusso

12h30-13h30: Lunch break

13h30-14h00: Final Course Examination

14h00-17h30: Practical work

14h30-17h30: Principles of tick morphological identification, Prof Lorenza Beati and Dr Vincenzo Lorusso

17h30-18h00: Hands-on course certificate of attendance

20h30: Gala dinner in Toulouse downtown

REGISTRATION FORM

Entomology Summer Course

06-10th of July 2020

Ecole Nationale Vétérinaire de Toulouse

To the course organiser: Dr Emilie Bouhsira

E-mail: emilie.bouhsira@envt.fr

To be sent with the CV and motivation letter in English

Name..... Surname.....

Institution.....

Address.....

City..... Country.....

Phone..... E-mail.....

Date of arrival:....., Date of departure:

Specific dietary
intolerance/allergy/requirement.....

Acceptance of terms and conditions

Please be aware that the course organizers are not responsible for any damage or injury in any way arising through transport, field and laboratory activities during participation of the course. We strongly suggest you to take out personal accident insurance if you do not already have it.

Place and date Signature.....