Mosquito-borne pathogens and their vectors
Programme, June 15-18, 2020

Day 1
Monday June 15th, 2020

- **12:30-12:40**
  Course introduction (*Kristoffer Ahlm, Verah Nafula Luande, Olivia Wesula Lwande, Clas Ahlm* and *Magnus Evander* - in lecture hall X)

- **12:40-13:10**
  Mosquito-borne viruses and their diseases (*Magnus Evander* - in lecture hall X)

- **13.15-14:00**
  Mosquito-borne parasites (*Johan Normark*- in lecture hall X)

- **14:00-14:30 Coffee break**

- **14:30-15:00**
  Mosquitoes – ecology and sampling (*Anders Lindström* - in lecture hall X)

- **15:00-15:40**
  Short (2 min) presentations by the course participants of themselves and their research activities – (*All participants*-in lecture hall X)

- **15:40-15:50**
  10 minutes break for changing to field attires

- **15:50-16:10 Transport to the field**

- **16:10-18:00**
  Field activity: Identification of breeding sites for aquatic stages of mosquitoes. Setting traps for collection of adult mosquitoes and their eggs at convenient sites in Umeå. Sampling of mosquito larvae and pupae from the environment (*Anders Lindström, Kristoffer Ahlm, Verah Nafula Luande Olivia Wesula Lwande*)

- **19:30**
  Dinner with facilitators and course participants (*Rex Restaurant, downtown,* Rådhustorget, 903 26 Umeå)

Day 2
Tuesday June 16th, 2020

- **8:30-9:45**
  Collect mosquitoes from previous day's sampling (*Olivia Wesula Lwande, Kristoffer Ahlm, Verah Nafula Luande*)

- 09:45-10:00 Coffee Break

- 10:00-10.30
  Nordic mosquito fauna and morphological identification keys (*Anders Lindström* - in lecture hall X)

- 10:30-11:15
  Morphological identification of mosquito larvae using standardized keys (*Anders Lindström* – Lab Venue to be confirmed)

- 11:30-12:15
  Morphological identification of mosquito adults using standardized keys (*Anders Lindström* – Lab Venue to be confirmed)

- 12:15-13:15 Lunch

- 13:15-14:30
  Molecular identification of mosquitoes (*Tobias Lilja* - in lecture hall X)

- 14:30-15:00 Coffee break

- 15:00-17:00
  Informatic workflow after barcoding and comparison of mosquito sequence data (*Tobias Lilja* - in lecture hall X. Computer needed and internet access)

Day 3
Wednesday June 17th, 2020

- 8:30-9:55
  Vectorial Capacity and R0, its dependence on vector biology and potential impacts from climate change (*Joacim Rocklöv* - in lecture hall X)

- 10:00-10:30 Coffee Break

- 10:30-11:15
  Application of viromics in the discovery of novel RNA viruses in mosquitoes (*Anne-Lie Blomström* - in lecture hall X)

- 11:15-12:15 Lunch

- 12:15-13:45
  Evolution of insect-specific viruses and their influence on vector competence   (*Anne-Lie Blomström* - in lecture hall X)

- 13:45-14:00 Coffee Break

- 14:00-15:30
  Visit to Oliver Billker's mosquito-laboratory (*Ondine Duverger*-*Building 6L*)

- 15:30-17:00

Laboratory demonstration: oral mock infection of mosquitoes and dissection of body parts (*Olivia Lwande* – Oliver Billker's mosquito laboratory situated at building 6L)

Day 4
Thursday June 18th, 2020

- **8:30-09.30**
  Ongoing research activities (*Clas Ahlm, Magnus Evander, Anders Lindström, Anne-Lie Blomström, Johan Normark* - in lecture hall X)

- **09:30-09:45 Coffee break**

- **09:45-10:30**

- **10:30-12:00**
  Oral examination in group discussions based on the course aims Course evaluation and issuing of certificates – (*Clas Ahlm* - in lecture hall X)

Facilitators:
- Olivia Wesula Lwande
- Kristoffer Ahlm
- Verah Nafula Luande

Lecturers:
- **Anders Lindström,** the Swedish National Veterinary Institute (SVA)
- **Anne-Lie Blomström,** Department of Biomedical Sciences and Veterinary Public Health at the Swedish University of Agricultural Sciences (SLU)
- **Joacim Rocklöv,** Epidemiology, Umeå University
- **Tobias Lilja**, the Swedish National Veterinary Institute (SVA)
- **Olivia Wesula Lwande**, Section for Virology, Umeå University
- **Clas Ahlm**, Infection and Immunology, Umeå University
- **Magnus Evander,** Section for Virology, Umeå University
- **Johan Normark,** Department of Clinical Microbiology, Umeå University