HARMONY
Novel tools for test evaluation and disease prevalence estimation
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EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

COST ACTION CA18208

Training workshop

"Bayesian Latent Class Models to evaluate diagnostic tests

in the absence of a gold standard"

Location: Winterthurerstr 190, University of Zurich, Zurich, 8057, Switzerland

Dates: 14-15 July 2022

How to Register: https://forms.gle/3sT4Xq8djQi1AUhR7
Last day to register: Sunday 15 May 2022

The first eligible 15 participants will receive an official invitation from e-COST.

This 2-day training will focus on the application of Bayesian Latent Class analysis Models (BLCMs) for field evaluation of diagnostic tests. Participants will learn about the theory of Bayes' theorem, probability distributions, prior distributions and introduction to simulation and Markov-chain Monte Carlo methods for simulating priors and posteriors, and how they can be applied for estimation of diagnostic test sensitivity and specificity when tests are imperfect, and a reference test is not available. The training is interactive through discussion and practical examples among participants and with instructors. English will be the working language of this training. Participants should have basic knowledge and experience in writing computing programs in the statistical language R. Participants will need to bring their laptops.

By attending this training, participants will:
- Perceive the logic of latent class models and their applicability in diagnostic accuracy studies in veterinary medicine
- Get acquainted with BLCMs basic principles & challenges
- Perform hands-on training on Se/Sp estimation with BLCMs
- Understand the importance of standards for reporting of diagnostic accuracy studies that use BLCMs (STARD-BLCMs)

Financial support

All physically attending participants are eligible for the reimbursement of incurred accommodation, meals, and local travel expenses in the country where the meeting takes place is paid as one item known as daily allowance. During the training school all participants have to sign the attendance list both days to be considered eligible for reimbursement. The daily allowance considers the participant's travel start and end dates and hours. The daily allowance rate is determined based on the country where the event takes place **[Switzerland 209 EUR/day]**. No invoices for accommodation, meals, and local transport in the country where the meeting takes place are required. In the cases when the travel dates to and from the event cannot be determined, the participant shall provide any documentation attesting their travel dates so that the daily allowance can be correctly reimbursed. Participants whose primary affiliation is in the country where the meeting takes place, if they travel less than 100 km (one way) in the country where the meeting takes place, are invited to claim only the part of the daily allowance intended to cover the short-distance transport expenses. More information on transport expenses (car travel, airplane/train/bus/ferry travel) can be found in Appendix 1 – Section 3.1. COST Annotated rules document.

Further details of the program are to be found here www.vetepi.uzh.ch, or by contacting Sonja Hartnack (sonja.hartnack@access.uzh.ch). For information about financial support please contact Eleftherios Meletis (emeletis@outlook.com).
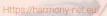
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Date	Start	End	Speaker(s)	Title
				Room Y10-G-03
	9:00	09:15	Sonja Hartnack & Eleftherios Meletis	Welcome & Introduction
	09:15	10:15	Sonja Hartnack	Brief historical sketch of BLCMs
	10:15	10:45		Coffee break
	10:45	11:30	Sonja Hartnack & Eleftherios Meletis	Hui-Walter models
	11:30	12:55	Sonja Hartnack & Eleftherios Meletis	Hands-on Hui-Walter models
	12:55	14:00		Lunch Break
Thursday 14 July 2022	14:00	14:30	Sonja Hartnack & Eleftherios Meletis	MCMC modeling
	14:30	15:00	Sonja Hartnack & Eleftherios Meletis	Hands-on exercises
	15:00	15:30	Sonja Hartnack & Eleftherios Meletis	Hands-on exercises
	15:30	16:00		Coffee break
	16:00	16:30	Sonja Hartnack	Adjusting for conditional dependencies between tests
	16:30	17:00	Sonja Hartnack & Eleftherios Meletis	Hands-on exercises

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Date	Start	End	Speaker(s)	Title
			Room Y10-G-03	
	9:00	09:30	Sonja Hartnack	STARD guidelines
	09:30	10:15	Sonja Hartnack & Eleftherios Meletis	Group work evaluation of a paper with STARD guidelines
	10:15	10:45	Coffee break	
	10:45	11:30	Eleftherios Meletis	BLCMs for continuous tests
Friday 15 July 2022	11:30	12:55	Eleftherios Meletis & Sonja Hartnack	Hands-on BLCMs for continuous tests
	12:55	14:00	Lunch Break	
	14:00	14:30	Sonja Hartnack	BLCMs with covariates
	14:30	15:30	Sonja Hartnack & Eleftherios Meletis	Hands-on BLCMs with covariates
	15:30	16:00	Sonja Hartnack & Eleftherios Meletis	Final remarks & closure