



# HARMONY

Novel tools for test evaluation and disease prevalence estimation

<https://harmony-net.eu/>



## COST ACTION CA18208

### Training workshop

#### “Bayesian Latent Class Models to evaluate diagnostic tests in the absence of a gold standard”

**Location: Lecture room Y17-M-05, Winterthurerstr. 190 8057 Zurich, Switzerland**

**Dates: 14-16 July 2021**

How to Register: <https://forms.gle/3mqFYLLUBCedAVp3A>

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

This 3-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)



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### 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 188 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. For those 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, the expense is reimbursed through the daily allowance rate and cannot be claimed separately. More information on transport expenses (car travel, airplane/train/bus/ferry travel) can be found in Sections 5, 6 of the [COST Vademecum](#).

For further details of the program are to be found here [www.vetepi.uzh.ch](http://www.vetepi.uzh.ch), please contact Sonja Hartnack ([sonja.hartnack@access.uzh.ch](mailto:sonja.hartnack@access.uzh.ch)). For information about financial support, please contact Eleftherios Meletis ([emeletis@outlook.com](mailto:emeletis@outlook.com)).



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## COST ACTION CA18208

Date	Start	End	Speaker(s)	Title
Wednesday 14 July 2021			Lecture Room Y17-M-05	
	9:00	10:15	Sonja Hartnack & Valerie Hungerbühler	Welcome & Introduction
	10:15	11:15	Sonja Hartnack	Brief historical sketch of BLCMs
	11:15	11:45	Coffee break	
	11:45	12:20	Sonja Hartnack & Valerie Hungerbühler	Hands-on Hui-Walter models I
	12:20	12:55	Sonja Hartnack	Hands-on Hui-Walter models II
	12:55	14:00	Lunch Break	
	14:00	14:30	Sonja Hartnack	Conditional dependencies
	14:30	15:00	Sonja Hartnack & Valerie Hungerbühler	Hands-on exercises
	15:00	15:30	Sonja Hartnack & Valerie Hungerbühler	Hands-on exercises
	15:30	16:00	Coffee break	
	16:00	16:30	Sonja Hartnack & HARMONY consortium	Question rounds to core group experts
	16:30	17:00	Sonja Hartnack	MCMC modeling



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## COST ACTION CA18208

Date	Start	End	Speaker(s)	Title
Thursday 15 July 2021			Lecture Room Y17-M-05	
	9:00	10:15	Sonja Hartnack	Diagnostics (DIC, pscr, autocorrelation)
	10:15	11:15	Sonja Hartnack & Valerie Hungerbühler	Exercises
	11:15	11:45	Coffee break	
	11:45	12:20	Sonja Hartnack	Covariates
	12:20	12:55	Sonja Hartnack & Valerie Hungerbühler	Hands- on BLCMs with covariates I
	12:55	14:00	Lunch Break	
	14:00	14:30	Sonja Hartnack	Hands-on BLCMs with covariates II
	14:30	15:00	Sonja Hartnack & Valerie Hungerbühler	Hands-on BLCMs with covariates III
	15:00	15:30	Sonja Hartnack & HARMONY consortium	Question rounds to core group experts
	15:30	16:00	Coffee break	
	16:00	16:30	Sonja Hartnack	General aspects of diagnostic test evaluation
	16:30	17:00	Sonja Hartnack & Valerie Hungerbühler	Group work and paper discussion



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## COST ACTION CA18208

Date	Start	End	Speaker(s)	Title
Friday 16 July 2021			Lecture Room Y17-M-05	
	9:00	10:15	Sonja Hartnack	STARD guidelines
	10:15	11:15	Sonja Hartnack & Valerie Hungerbühler	Group work evaluation of a paper with STARD guidelines
	11:15	11:45	Coffee break	
	11:45	12:20	Sonja Hartnack	Sensitivity analysis
	12:20	12:55	Sonja Hartnack & Valerie Hungerbühler	Hands-on sensitivity analysis I
	12:55	14:00	Lunch Break	
	14:00	14:30	Sonja Hartnack & Valerie Hungerbühler	Hands-on sensitivity analysis II
	14:30	15:00	Sonja Hartnack	Final remarks & closure



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