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

COST ACTION CA18208

Navigating through Bayesian approaches in disease measurement

Location: Joist Innovation park, Larissa, Greece

Dates: Wednesday 25 – Friday 27 October 2023

The event is a training school, part of the HARMONY COST Action 18208 training activities, with introductory didactic teaching and hands-on practical sessions on Bayesian methods for true prevalence estimation & diagnostic test evaluation.

The following core topics will be covered:

1. Bayesian Markov Chain Monte Carlo
2. Apparent & true prevalence estimation
3. Test evaluation without cut-offs
4. Test evaluation with Hui-Walter models

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INNOVATION PARK JOIST

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Pre-course preparation work will also be provided as a prerequisite for attending the course and to provide a more thorough description of the topics that will be covered.
Prior experience of Bayesian statistics or latent class methods is not expected, but basic statistical knowledge and R programming skills are expected. Participants will have to bring their own-laptops.

The primary learning objective of the school is that participants understand how to implement these methods on their own data, both in terms of the practice of Markov chain Monte Carlo (MCMC) and how to interpret the results.

Trainers

Mr. Eleftherios Meletis, *Greece*

Prof. Polychronis Kostoulas, *Greece*

Dr. Konstantinos Pateras, *Greece*

Trainees

The training school is organized under funding from COST Association and financial support is provided according to COST rules*.

Selected participants will receive an official invitation from e-COST.

Where to Register: https://forms.gle/BQXDizoCL3XtzirJ9

Deadline to Register: Friday 13 October 2023

For further details of the program and information about financial support please contact Eleftherios Meletis (emeletis@outlook.com).

*Financial support

The reimbursement of incurred accommodation, meals, and local travel expenses in the meeting country is paid as one item known as daily allowance **[Greece 193 EUR/day]**. Long-distance travel expenses are fully reimbursed based on submitted documents (invoices, itinerary, receipts). **The reimbursement claim should not exceed 1100 EUR, in an effort to save Action resources**. More information on transport expenses (car travel, airplane/train/bus/ferry travel) can be found in Annex 1 – Section 3.1. COST Annotated rules document.

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Date	Start	End	Session Type	Title
			Room Name - TBA	
Wed 25 October	13:00	14:00		Welcome Coffee and Lunch
	14:00	14:30	Didactic Teaching	A simple introduction to Bayesian analysis and Bayesian Markov Chain Monte Carlo (MCMC) – summary of pre-course work
	14:30	15:15	Practical session and Discussion	
	15:15	15:30		Coffee break
	15:30	16:00	Didactic Teaching	Bayesian estimation for proportions in JAGS – apparent & true prevalence estimation
	16:00	16:30	Practical session and Discussion	
Thursday 26 October	09:00	09:30	Didactic Teaching	How the priors affect the posteriors? Examples with apparent & true prevalence estimation
	09:30	10:15	Practical session and Discussion	
	10:15	10:45		Coffee break
	10:45	11:15	Didactic Teaching	Sensitivity and Specificity estimation without a gold standard (The Hui-Walter paradigm)
	11:15	12:30	Practical session and Discussion	
	12:30	13:00		Coffee break
	13:00	13:30	Didactic Teaching	Meta-analysis of diagnostic test accuracy studies with Bayesian Latent Class models
	13:30	14:00	Discussion	
	14:00	15:00		Lunch break
Fri 27 October	09:00	09:30	Didactic Teaching	Diagnostic test evaluation without cut-offs: Case study of test measured on a continuous scale
	09:30	10:30	Practical session and Discussion	
	10:30	11:00		Coffee break
	11:00	11:30	Didactic Teaching	Real examples of when to use Bayesian analysis
	11:30	12:00	Discussion	
	12:00	13:00		Event Closure - Lunch box

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