HARMONY

Novel tools for test evaluation and disease prevalence estimation

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EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

COST ACTION CA18208

Training School

"Introduction to Bayesian Latent Class models for health scientists"

Location: Hospital General Universitario, Avda Tres Cruces 2, 46014, Valencia, Spain

Dates: 23-25 November 2022

This 3-day event is a training school, part of the HARMONY COST Action 18208 training activities with introductory didactic teaching and hands-on practical sessions and discussion, focusing on Bayesian Statistics for the medical research community. The training will explain what the Bayes Theorem is and when we can use this approach, as well as applications and advantages of Bayesian methods. We will briefly present analyses/models for diagnostic test evaluation - true prevalence estimation and meta-analysis techniques with Bayesian Latent Class models.

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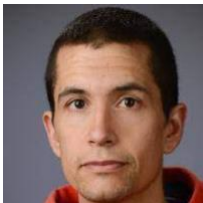EUROPEAN COOPERATION
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English is the working language of this training. Participants will be guided to use the statistical language R and JAGS so it's highly recommended to bring their laptops. Pre-course preparation will also be provided to participants who want to follow the hands-on training sessions.

Primary learning objectives of the school are that participants understand (i) Bayes Theorem – Bayesian Latent Class models, (ii) settings/cases where these methods can be applied and (iii) how to interpret the results.

Trainers

Prof. Julio Alvarez, *Spain*

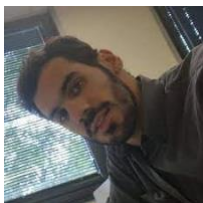**Prof. Jose De Andres,** *Spain*

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HARMONY consortium

Prof. David Conesa, *Spain*

Prof. Polychronis Kostoulas, *Greece*

Mr. Eleftherios Meletis, *Greece*

Prof. Carolina Romero García, *Spain*

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

Click here to register   **Last day to register:** 23 October 2022

*Financial support

*The reimbursement of incurred accommodation, meals, and local travel expenses in the country is paid as one item known as daily allowance [**Spain 192 EUR/day**]. During the training school all participants have to sign the attendance list for each day to be considered eligible for reimbursement. 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.*

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Date	Start	End	Session Type	Title
				To be announced
	08:30	08:45		Welcome and Introductions
	08:45	09:45	Didactic Teaching	What is Bayesian Statistics? Bayes theorem
	09:45	10:15	Didactic Teaching	Frequentist vs Bayesian Analysis
Wed 23 Nov 2022	10:15	10:45		Coffee break
	10:45	11:30	Didactic Teaching	Real examples of when to use Bayesian analysis I
	11:30	12:00	Practical Session	The Hui-Walter (HW) model
	12:00	12:30		Coffee break
	12:30	13:15	Didactic Teaching	The HW model (cont)
	13:15	14:00	Practical Session	Multi-test multi-population HW models
	14:00	15:00		Lunch break
	08:30	09:15	Didactic Teaching	Pros and cons of using Bayesian statistics
	09:15	10:00	Practical Session	How we can write a clinical protocol using Bayesian statistics?
Thurs 24 Nov 2022	10:00	10:30		Coffee break
	10:30	12:15	Discussion	Real examples of when to use Bayesian analysis II
	12:15	12:45		Coffee break
	12:45	14:00	Didactic Teaching	Bayesian latent class models for continuous tests
	14:00	15:00		Lunch break
	08:30	09:00	Didactic Teaching	I have this idea, how can I analyze it using Bayesian statistics?
	09:00	09:30	Discussion	Real examples of when to use Bayesian analysis III
Fri 25 Nov 2022	09:30	10:00	Didactic Teaching	Challenges encountered by clinicians using Bayesian statistics
	10:00	10:30		Coffee break
	10:30	11:30	Didactic Teaching	Meta-analysis with BLCMs (Hands-on training)
	11:30	12:00		Event Closure – Lunch box