

CA18208 – “HARMONY” “Novel tools for test evaluation and disease prevalence estimation”

Growing ideas
through networks



Short Term Scientific Missions (STSMs)
1 May 2020 – 31 October 2021

For further details please contact Marcel Leppée – STSM Coordinator (marcel.leppee@gmail.com), Eleftherios Meletis – Grant Holder Manager (emeletis@outlook.com), Polychronis Kostoulas – Action Chair (pkost@vet.uth.gr).

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A. HARMONY – CA18208

Epidemiological studies assessing disease prevalence are critically important to both the identification and control of pathogens in humans and animals (including zoonosis and food borne outbreaks).

However, countries typically collect data in a way that is best suited for their specific needs, and non-standardized sampling strategies and diagnostic methods produce prevalence estimates that cannot be directly compared. Hence, the need for harmonization, which has been often highlighted in reports of relevant EU institutions, like the ECDC and EFSA.

Despite the availability of appropriate statistical methods – Bayesian Latent Class Models (BLCMs) – that adjust for the imperfect accuracy of the diagnostic process and produce comparable prevalence estimates, the number of research studies and scientific reports that use them is small compared to the number of instances that use of such methods would have been optimal.

Areas of Expertise Relevant for the Action		Keywords
Health Sciences	Epidemiology	⇒ Bayesian Analysis
Clinical medicine	Applied mathematics, statistics, non-computational modeling	⇒ Diagnostic Accuracy
Veterinary science	Databases, data mining, data curation, computational modelling	⇒ True prevalence
Basic medicine	Applied mathematics, statistics, non-computational modeling	⇒ Latent Class Models
		⇒ Disease freedom

B. Short Term Scientific Mission (STSM)

1. What is a STSM?

STSMs are institutional visits aimed at supporting individual mobility and fostering collaborations by allowing scientists to visit an institution and contribute to the scientific objectives of the COST Action.

Promotion of the BLCMs methods is the main objective of HARMONY. The STSMs are especially focused to researches and early career investigations, who will learn to implement BLCMs and at the same time contribute to the scientific objectives of HARMONY.

According to the Action's Management Committee, the expected outcome of each STSM should be a minimum of a poster/conference presentation and/or paper, report, manuscript. Therefore, STSMs applicants are encouraged to get in touch with the STSM host for all preparations needed beforehand.

2. Who can apply for a STSM (Eligibility rules)?

STSM applicants shall be engaged in an official research programme as a PhD Student or postdoctoral fellow or can be employed by, or affiliated to, an institution, organisation or legal entity which has within its remit a clear association with performing research.

The institutions / organisation or legal entity where applicants pursue their main strand of research are considered as Home Institutions. The Host Institution is the institution / organisation that will host the successful applicant.

For further information, please refer to Chapter 8 (STSMs) of [COST Vademecum](#).

3. STSM - Financial Support

A STSM Grant is a fixed financial contribution which takes into consideration the budget request of the applicant and the outcome of the evaluation of the STSM application.

STSM Grants do not necessarily cover all expenses related to undertaking a given mission.

A STSM Grant is a contribution to the overall travel, accommodation and meal expenses of the Grantee.

The calculation of the financial contribution for each STSM shall respect the following criteria:

- Up to a maximum of EUR 3500 in total can be afforded to each successful applicant.
- Up to a maximum of EUR 160 per day can be afforded for accommodation and meal expenses.

Specific provisions have been introduced to enable researchers from Inclusiveness Target Countries (ITCs)* participating in the COST Action to request a pre-payment of 50% of their STSM Grant when they complete the first day of their STSM.

*The following countries are entitled COST Inclusiveness Target Countries (ITCs):

Albania, Bosnia and Herzegovina, Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Luxembourg, Malta, Moldova, Montenegro, Poland, Portugal, Romania, Slovenia, Slovakia, Republic of North Macedonia, Republic of Serbia and Turkey.

C. Topics for STSMs

The proposed topics and timeframe (DD/MM/YYYY) are indicative. Specific projects will be coordinated / assessed for feasibility between the STSM applicant and host.

1. *University of Thessaly, Greece*

Host Name	Polychronis Kostoulas (Action Chair)
Contact details	pkost@vet.uth.gr
University Address	Trikalon 224, Karditsa, 43100, Greece
University Website	www.uth.gr



Number of available STSM Grants: 2

Potential STSM Topics

- ⇒ Sensitivity (Se) & Specificity (Sp) estimation, with BLCMs
- ⇒ True prevalence estimation, with BLCMs

Indicative Timeframe

- 12/10/2020 – 10/11/2020
- 18/01/2021 – 28/03/2021

2. *University of Copenhagen, Denmark*

Host Name	Matthew Denwood (Vice Chair)
Contact details	md@sund.ku.dk
University Address	Grønnegårdsvej 8, 1870 Frederiksberg C, Denmark
University Website	https://ivh.ku.dk/english/



Number of available STSM Grants: 3

Potential STSM Topics

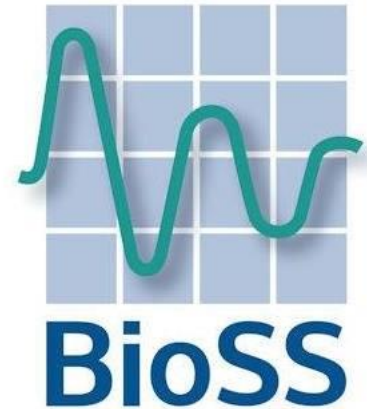
- ⇒ Se & Sp estimation with two or more diagnostic tests in one or more populations
- ⇒ True prevalence estimation
- ⇒ Complex models including imperfect tests (e.g. state space models)
- ⇒ Improving efficiency by extending JAGS/Stan using custom C++ code

Indicative Timeframe

- 28/09/2020 – 16/10/2020
- 16/11/2020 – 11/12/2020
- 01/02/2021 – 19/03/2021

3. *BioMathematics and Statistics Scotland, United Kingdom*

Host Name	Giles Thomas Innocent
Contact details	giles.innocent@bioss.ac.uk
University Address	JCMB, The King's Buildings, Peter Guthrie Tait Road, Edinburgh, EH9 3FD, Scotland, UK
University Website	www.bioss.ac.uk



Number of available STSM Grants: 1

Potential STSM Topic

⇒ Incorporating autocorrelation in time series BLCMs

Indicative Timeframe:

- 01/01/2021 (start date)

4. *Norwegian Veterinary Institute, Norway*

Host Name
Contact details
University Address
University Website

Saraya Tavnornpanich
saraya.tavnornpanich@vetinst.no
Ullevålsveien 68, 0454 Oslo Pb 750
Sentrum, N-0106 Oslo
www.vetinst.no



Number of available STSM Grants: 1

Potential STSM Topic

⇒ Introduction to Bayesian Latent Class Analysis with Applications for Diagnosis of Aquatic Animal Diseases

Indicative Timeframe:

- 1/10/2020 (start date)

5. *Swedish National Veterinary Institute, Sweden*

Host Name	Arianna Comin
Contact details	arianna.comin@sva.se
University Address	Ulls väg 2D, Uppsala, Sweden
University Website	www.sva.se



Number of available STSM Grants: 1

Potential STSM Topic

⇒ Diagnostic test evaluation using Bayesian Latent Class Analysis

Indicative Timeframe:

- 01/11/2020 – 30/04/2021

6. Vetsuisse Faculty, University of Zurich, Switzerland

Host Name	Sonja Hartnack
Contact details	sonja.hartnack@access.uzh.ch
University Address	Winterthurerstrasse 270, 8057, Zurich
University Website	www.vet.uzh.ch



Number of available STSM Grants: 1

Potential STSM Topic

⇒ Diagnostic test evaluation & true prevalence estimation with covariates, using BLCMs

Indicative Timeframe:

- 11/01/2021 to 11/02/2021

7. *Regional Health Authority of Umbria, Italy*

Host Name
Contact details
University Address
University Website

Paolo Eusebi
paoloeusebi@gmail.com
Via M. Angeloni 61, 06124 Perugia
www.regione.umbria.it



Number of available STSM Grants: 1

Pontetial STSM Topic

⇒ Meta-analysis of diagnostic tests with imperfect reference standards

Indicative Timeframe:

- 5/10/2020 to 18/10/2020