

STATISTICAL AND MACHINE LEARNING TECHNIQUES IN
HUMAN MICROBIOME STUDIES

STSM

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What is a STSM?

Short Term Scientific Missions (STSMs) are **exchange visits** aimed at

- supporting individual mobility,
- strengthening existing networks and
- fostering collaboration between researchers.

A STSM should specifically **contribute to the scientific objectives of the COST Action**, whilst at the same time allowing those partaking in the missions

- to learn new techniques,
- gain access to specific data, instruments and / or methods not available in their own institutions / organisations.

Eligibility Rules: Who can apply?

STSM applicants must be engaged in an official research programme as a

- PhD Student or
- postdoctoral fellow or
- employed by, or affiliated to, an Institution or legal entity that has within its remit a clear association with performing research.

STSMs are particularly **(but not exclusively)** intended for

- **Early Career Investigators** (ECIs), i.e. a researcher whose career span less than 8 years between the date of the PhD/doctorate (or similar experience) and the date of involvement in ML₄Microbiome. Periods of career leave have to be added to this time span.

Eligibility Rules

- **adherence to the ML₄Microbiome scientific objectives**
- STSMs must contribute to the scientific objectives of one or more ML₄Microbiome Working Groups (WG), i.e.
 - WG₁ State-of-the-art evaluation and update,
 - WG₂ Establishing benchmark datasets and ML DREAM Challenge,
 - WG₃ Optimisation and standardisation.
- WG₄ aims excluded, participants welcomed.

Eligibility Rules: Home vs Host institution

- **NCC Near Neighbour Countries:** Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Jordan, Kosovo, Lebanon, Libya, Morocco, the Palestinian Authority, Russia, Syria, Tunisia, and Ukraine
- **IPC International Partner Countries:** Argentina, Australia, Bangladesh, Brazil, Canada, Chile, China, Colombia, Costa Rica, Hong Kong, India, Indonesia, Iraq, Japan, Republic of Korea, Mauritius, Mexico, Namibia, New Zealand, Pakistan, Peru, Saudi Arabia, Singapore, South Africa, Sudan, Thailand, United Arab Emirates, United States of America, Uruguay
- **European RTD Organisation** One of 8 European intergovernmental scientific research organizations (e.g. EMBL - European Molecular Biology Laboratory, full list in Vademecum)

Home Institution	Host Institution
From a Participating COST Country	To another Participating COST Country
	To an approved NNC institution
	To an approved IPC institution
	To an approved EC / EU Agency / an approved European RTD Organisation or an approved International Organisation
From an approved NNC institution	To a Participating COST Country
From an approved European RTD Organisation	To a Participating COST Country

STSM financial contribution

An STSM grant is a **fixed financial contribution** that 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 (**travel, accommodation and meal expenses should be covered**).

- The COST Association and the Grant Holder of the Action are not to be considered as being an STSM Grantee's employer.
- STSM Grantees must make their own arrangements for all provisions related to visas, personal security, health, taxation, social security and pension matters.
- The STSM Committee can approve differentiated country rates to cover accommodation and meal expenses based on the perceived cost of living in the host country.

STSM financial contribution

STSMs and financial contribution follow the following criteria:

- They must have a minimum duration of **5 days**.
- STSM need to be carried out in their entirety **within a single Grant Period (completed by 15th APRIL 2020)** and **always within the Action's lifetime**
- Max contribution per day: 160 € (accommodation, meal)
- Max contribution for travel expenses: 300 €
- Max total contribution: 3500 €

STSM financial contribution

- ITC (Inclusiveness target countries) candidates can request a pre-payment of 50% of their STSM Grant when they complete the first day of their STSM.
- the representative of the Host Institution must confirm by e-mail to the Grant Holder that the STSM applicant has officially started the mission on day 1.
- Grant Holder can arrange the payment of 50% of the STSM grant.
- The remaining 50% of the Grant is payable once the administrative requirements have been satisfied after the STSM.

APPLICATION PROCESS

STEPS

- Eligible STSM applicants can submit their STSM applications online at: www.cost.eu/STSM.
- The Action's STSM Committee performs the evaluation of each received STSM application.

The **selection of successful STSM applicants must consider**

- the scientific scope of the proposed mission and
- how the mission can support the Action in achieving its scientific objectives.
- promoting gender balance, enabling Early Career Investigators (ECI) and broadening geographical inclusiveness.

PLEASE NOTE:

- STSMs MUST BE APPROVED BY THE STSM COMMITTEE BEFORE THE BEGINNING OF THE TRAVEL
- ONCE THE STSM HAS BEEN COMPLETED, THE GRANTEE MUST SUBMIT A SCIENTIFIC REPORT TO THE STSM COMMITTEE AND TO THE HOST INSTITUTION
- **Payment** of the Grant will be carried out **AFTER** the mission will have been completed **AND IS SUBJECT TO** the **scientific report** being approved by the STSM Committee and a senior researcher affiliated to the Host institution.

HOW TO APPLY? (1)

- A. Register to <https://e-services.cost.eu>
- B. Go to <https://e-services.cost.eu/STSM> and provide:
 - Support letter from a senior researcher affiliated to the Home Institution
 - Letter of invitation from a senior researcher affiliated to the Host institution
 - STSM application form
 - Motivation letter including a work plan detailing the proposed activities (motivation letter template attached)
 - Applicant's full C.V. (including a list of academic publications – if applicable)
- NOTE: it is very important to specify in the workplan and in the motivation letter **why and how your mission will contribute to the ML₄Microbiome objectives, and, in details, which WGs will benefit from your mission**

HOW TO APPLY? (2)

C Send an email to STSM committee providing (same as above):

- Support letter from a senior researcher affiliated to the Home Institution
- Letter of invitation from a senior researcher affiliated to the Host institution
- STSM application form
- Motivation letter including a work plan detailing the proposed activities
- Applicant's full C.V. (including a list of academic publications – if applicable)

D Applicants need to receive before STSM initiation:

- MC pre-approval (email from delegated ML4 Microbiome person). Please allow at least two weeks from the application submission to the pre-approval
- The formal Grant Notification letter

HOW TO APPLY? (3)

E The following information is needed **after** the STSM has been completed:

- **Scientific Report (max five-pages)** detailing the activities undertaken: **it is necessary to give full information about why and how your mission has contributed to the ML₄Microbiome objectives, and, in particular, which WGs has benefited from your mission, and how**
- **An official letter from a senior researcher affiliated to the Host institution formally accepting the scientific report**

F Following the completion of tasks at point E above and the approval of the scientific report by the STSM Committee, applicants will receive:

- **MC post-approval (email from delegated ML₄Microbiome person) – before STSM payment**
- **STSM payment**

Applicants of successful STSMs are kindly requested, in case of publication of the results partly coming from the mission work, to **acknowledge ML₄Microbiome in the following way: “supported by a STSM Grant from EU COST Action 18131 - Statistical and machine learning techniques in human microbiome studies (ML₄Microbiome).”**

SELECTION and EVALUATION criteria

- Relevance of STSM with action objectives
- Relevance of host institute's expertise with STSM objectives
- Results of direct interest for/exploitable by the Action
- Applicant is ECI or PhD candidate
- No previous STSM by same applicant
- No other STSMs from same home institution / country
- Gender balance
- Geographical dispersion

THE FIRST CALL

RELEVANT DATES

- FIRST CALL for STSM APPLICATIONS
- In the first grant period (1.05. 2019 -30.04.2020.) the STSM application will be collected in an open call until the allocated funds are used.
- The number of planned STSM is 6-7, budget allowing.
- STSM application will be evaluated by the STSM committee.
- All STSM have to be completed by 15.04. 2020. in order to finish the reimbursement process within the same grant period.

CALL TOPIC

- **The focus of both calls is on ML4Microbiome WG1 and WG2 objectives:**
- WG1 should provide the initial review of published work on the application of ML methodology on microbiome data.
- WG2 should select and describe benchmark datasets for all microbiome data types to be used for optimisation and standardisation of ML procedures and preparation for DREAM challenge

EXPECTED OUTPUTS

- Each applicant has to submit a STSM report elaborating on the accomplishments during STSM and the STSM plan fulfilment.
- A scientific written report for the COST and distribution between the MC has to be delivered **not later than 30 days after the conclusion of the STSM.**

EXPECTED OUTPUTS

- We would encourage applicants and host to produce
 - joint publications based on STSMs,
 - to sustain collaboration,
 - submit joint project proposals, or
 - pursue similar research and networking goals.
- **The applicants will be invited to the (bi)annual action WG Meetings to present their findings to the Action members.** We expect to have one STSM workshop in the end of the 2nd GP, and one along the Final Action conference.

EXPECTED OUTPUTS

- It is expected that applicants and host will exchange experiences, skills and techniques related to the STSM topic and their research areas. It will be especially beneficial in the case when an applicant and a host have different backgrounds.

USEFUL LINKS

- the COST website at www.cost.eu
- the COST Vademecum at <https://www.cost.eu/wp-content/uploads/2019/05/Vademecum-May-2019.pdf>
- the ML₄Microbiome project description at <https://www.cost.eu/actions/CA18131/#tabs|Name:overview>
- the ML₄Microbiome Memorandum of Understanding at https://e-services.cost.eu/files/domain_files/CA/Action_CA18131/mou/CA18131-e.pdf
- contact turukalo@uns.ac.rs
- contact your local Management Committee member: <https://www.cost.eu/actions/CA18131/#tabs|Name:management-committee>