



## Postdoctoral fellowship starting December 2025

The **Quantitative Life Sciences (QLS) Section of the Abdus Salam International Centre for Theoretical Physics (ICTP)** seeks applications from outstanding scientists of any nationality with a strong research record for **one postdoctoral position** to start in December 2025.

The position is linked to the **project “Decoding the evolution of anticipation and decision making in uncertain environments”**, *funded by the Human Frontiers Science program*. This international project involves three laboratories with expertise in microbial ecology (Dal Bello, Yale, USA), single-cell analyses (McGlynn, ELSI, Japan), and theoretical biology (Grilli, ICTP, Italy). By combining evolutionary experiments, physiological assays and mathematical modeling, we aim to understand how microbes “learn” and anticipate environmental changes, a crucial ability for their survival.

ICTP is a UNESCO Category 1 Institute supporting science and education in the developing world. It promotes worldwide initiatives for the career development of Women in Science. The QLS section provides a unique international research environment for postdoctoral fellows with about 15 group members, an intense program of workshops and conferences, as well as close collaborations with local and international institutions.

The postdoc will be responsible for the quantitative analysis and theoretical modeling that integrates the experimental data. They will analyze the population-level and single-cell experimental results to quantify adaptation and the relative role of phenotypic heterogeneity in variable environments. This will involve applying and extending existing frameworks of evolutionary dynamics and resource allocation to interpret experimental outcomes in terms of proteome partitioning and pre-allocation strategies. This postdoc's role is central to developing the theoretical understanding of microbial learning and anticipation.

We seek a researcher with a background in Physics, Applied Math or related field and strong motivation toward biological questions. Expertise in Quantitative Microbial Physiology and/or Evolutionary Dynamics is particularly valued.

The appointment will be made for two years, with the possibility of renewal for one additional year. The net monthly salary ranges between 2100–2,700 EUR depending on seniority. Benefits include private health insurance, pension contribution, special allowances for family members (if applicable), and competitive travel funds.

**Applications must be submitted on-line at:** <https://e-applications.ictp.it/applicant/login/4176>

Applications should include a cover letter, an updated and signed Curriculum Vitae, with full list of publications, a statement of research interests, and two (or more) letters of recommendation. Incomplete applications will not be considered.

Expressions of interest are welcome.

Additional information about the group can be found at:

[\*https://jacopogrilli.github.io/\*](https://jacopogrilli.github.io/)

Additional information about the project are available at:

[\*https://www.dalbellolab.com/hfsp-project\*](https://www.dalbellolab.com/hfsp-project)

For additional enquiries and expressions of interest, please contact: [\*qls@ictp.it\*](mailto:qls@ictp.it)

**Application deadline: July 30, 2025.**