

Staff scientist/Permanent research engineer – Institut Pasteur

Lab automation and synthetic biology

Context

The InBio group¹ is an interdisciplinary team performing both wet and dry systems and synthetic biology, with a strong focus on quantitative aspects. It is affiliated to Inria and Institut Pasteur, and is hosted on the Pasteur campus.

Our main goal is to develop experimental platforms, mathematical methods, software, and quantitative molecular biology approaches to rationalize and automate the process of biological discovery. In the long-term, we wish to develop a complete framework that supports iterative design/build/test/learn (DBTL) approaches.

In the recent past, we have developed an experimental platform that combines optogenetic-enabled bioreactor arrays, a pipetting robot and a cytometer to perform parallel turbidostat experiments with automated cytometry (see ReaSight²). We have also developed software tools to support reactive microscopy experiments (see MicroMator³). We have also developed synthetic biology systems to engineer microbial consortia (see preprint⁴) and to optimize protein secretion in yeast (ongoing).

We offer a permanent position for an experienced research engineer. The successful candidate will help developing lab automation platforms for yeast engineering and will participate in the long-term scientific orientation of the group.

Description of duties

The main tasks of the successful candidate will be to develop further the software and hardware infrastructure to support our long-term DBTL vision, and to provide expertise, assistance and guidance to ongoing projects. More specifically, the work will involve

- developing software infrastructure and automated protocols to support modular cloning and strain engineering (“Build”),
- expanding the capacities of our bioreactor platforms (“Test”),
- drafting and implementing a framework for integrating the “Learn” and “Design” phases with the “Build” and “Test” phases,
- providing expertise for quantitative assays, data analysis, and modeling works,
- having a leading role in the organization and management of the lab, and ensuring the accessibility and reusability of the biological material and the data at all times,
- preparing publications for submission to journals,
- participating in the long-term strategy of the team, in recruitments and in grant applications.

¹ <https://research.pasteur.fr/en/team/inbio/>

² <https://doi.org/10.1101/2020.12.27.424467>

³ <https://doi.org/10.1101/2021.03.12.435206>

⁴ <https://doi.org/10.1101/2021.06.09.447744>

Education/Experience

The candidate is expected to have a PhD or an engineering degree in bioengineering. Candidates with primary expertise in biology or in engineering/computer science will also be considered, provided that they could demonstrate a significant expertise in programming and in molecular biology.

Skills

Rigor, organization, creativity, and long-term thinking are essential qualities. Given the high interdisciplinarity of the lab the will to exchange knowledge (transmit and learn) with other lab members on many different topics is an important asset.

Work environment

Institut Pasteur is a non-profit private foundation dedicated to fundamental, interdisciplinary research and to the translation of knowledge for applications in medicine and public health. Located in central Paris, it offers an outstanding research environment with state-of-the-art research laboratories, 20 technology platforms, and a large bioinformatics and biostatistics support group.

Salary will be based on experience and expertise.

Applications

Selection will be based on the motivation and experience/expertise of the candidate. Institut Pasteur is an equal opportunity employer, and we particularly welcome applications from women.

Applications are accepted immediately. The desired starting date is October 2021, but candidates will be considered until the position is filled.

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