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Inserm
La science pour la santé
From science to health

HR EXCELLENCE IN RESEARCH

# CALL FOR APPLICATION

# INSERM CHAIR Recruitment

## Systems and Computational Biology

The Inserm chair recruitments opened to Inserm are intended for researchers with strong potential to manage and lead research teams and participate in national, European or international projects.

This recruitment, based on research and teaching projects, is aimed at researchers with a doctorate or equivalent and a first post-doctoral experience. The position is offered on a fixed-term contract (CDD) with a view to tenure in the Inserm Research Directors personnel at the end of the contract.

**How apply**: https://pro.inserm.fr

Contact the host lab → Download and fill the scientific files and the application request on EVA → Create an account on Eva3: https://www.eva3.inserm.fr/create → Upload your application when your are ready (Before September 2, 2025)

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| **Supporting institution:** | Inserm : Institut national de la Santé et de la recherche médicale |
| **Name of the head of the institution:** | Pr. Didier Samuel |
| **Academic region:** | ILE-DE-FRANCE |
| **Location/ Site concerned:** | Inserm U1163 – Institut *Imagine* - Paris |
| **Partner institution:** | Université Paris Cité |
| **Research contact:** | Bana JABRI: bana.jabri@inserm.fr<br>Guillaume HUART: guillaume.huart@institutimagine.org<br>teamcallapplication@institutimagine.org |
| **Administrative contact:** | chaires-professeur-junior@inserm.fr |
| **Research fields EURAXESS:** | Computational Biology (Medical sciences) |
| **Keywords:** | Computational biology, bioinformatic, systems biology, causal inference, statistical predictions |

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| **Job title to be filled:** | Chaire - Systems and Computational Biology |
| **Body after tenure:** | Research Director |
| **Anticipated duration of the contract:** | 5 years |
| **Scientific domains/fields:** | Computational approaches to discover, model, and develop therapeutic strategies. This may include the use of bioinformatics, |

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| | systems biology, and computational modeling to understand disease mechanisms, identify drug targets, and design drugs or predict their effects. |
| **Corresponding specialized scientific commissions (CSS):** | CSS2 - Oncology, genetic diseases |
| **Project name:** | Systems and Computational Biology |

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| **Remuneration package** | 3 500€ - 5 000€ according to research experience |
| **Quota** | Full Time |

**Strategy of the host institution:**

The French National Institute for Health and Medical Research (INSERM) is the central organization for research in human health in France. The research conducted by INSERM covers all fields of biomedical research, from basic to highly applied research at the heart of the healthcare system and public health expertise. As a founder of Institut Imagine, Inserm supports the field of genetic diseases.

Institut *Imagine* is a leading European research centre dedicated to better understanding and treating genetic diseases. It hosts 30 research groups conducting both basic and translational research in various fields, including congenital malformations, nervous system and metabolic diseases, cardiology, haematology, immunology and infectiology, nephrology, and diseases of the interfaces. The institute benefits from state-of-the-art core facilities, in-house reference centres for rare diseases, and the immediate proximity of paediatric clinical service.

**Strategy of the host laboratory:**

The advent of the Big Data, computational biology and Artificial Intelligence (AI) era raises big expectations in the field of rare diseases; in this context, the objectives of Imagine are: (1) further our understanding of genetic diseases. (2) Increase molecular diagnosis rates through the identification of the causal genes and variants. (3) Improve prognosis through a better patient stratification, anticipating the clinical evolution of patients and defining windows of therapeutic opportunity. (4) Identify molecular targets and treatments adapted to each specific etiology. More specifically, the institute will nurture its research work in systems and computational biology by fostering (i) development of in silico models (NPL, GNN, LLM, and multimodal AI models), (ii) database interconnection and standardization (e.g. for genomic platform), and (iii) cell imaging tracking techniques to visualize and study developmental processes at diverse scales.

Strategic priorities will be: (i) integration of clinical and omics data through deep learning and gene regulatory networks to identify disease signatures and potential treatment targets (ii) spatial transcriptomics methodologies to study complex tissues and provide information about the functional roles of genes within their anatomical context and to understand the function of genes that may be associated with common pathways in different diseases (iii) development of new AI models, (iv) creation of digital twins based on mechanistic models.

**Summary of the scientific project:**

The successful candidate will develop computational approaches to discover, model, and develop therapeutic strategies. Examples of potential approaches include:
-Network Modeling: Creating computational models to map and analyze interactions within biological networks, thereby identifying key pathways and targets for therapeutic intervention.
-Simulations and Virtual Drug Screenings: Aiding in drug design by modeling and assessing modifications of biological pathways by targeted interventions.
-In-silico Identification of Molecular Targets: Developing novel computational techniques to identify molecular targets critical for developing new therapies for rare diseases, based on genetic data and biological system simulations.
-Computational Drug Repurposing: Developing novel algorithms and databases to identify existing drugs that may be repurposed for rare disease treatments, accelerating the development process by leveraging known drug safety profiles.
-Structural Biology: Implementing computational structural biology methods, such as molecular modeling and simulations, to understand the 3D structures of proteins and their interactions with potential drugs.
-High-throughput In-silico Drug Screening: Conducting extensive in-silico screenings using virtual libraries of compounds to efficiently predict interactions with target proteins and select promising therapeutic candidates.
-Treatment Eligibility: Implementing computational methods and pharmacogenomics strategies to determine which patients with rare diseases are likely to benefit from specific therapies, ensuring personalized and effective treatment.

**Summary of the teaching project:**

The person recruited will be expected to participate in the highly attractive multi-disciplinary training dynamic implemented by Université Paris-Cité. The candidate's project will include a training component linked to his or her research project, which he or she will develop in collaboration with a component or member school of Université Paris-Cité. The person recruited will also be required to supervise students (at bachelor's or master's level) and participate in the supervision of doctoral students

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| **National Research Agency package:** | 200k€ |
| **Other package:** | |
| Co-funding* (Institut *Imagine* – dedicated grant) | 1300 k€ |

*source et montant

**Scientific dissemination/ Open Science:**

The research activities carried out as part of the Chair should lead to publications in top-level international journals. The junior chairholder will also be expected to help organise special sessions at the community's major international conferences to raise the profile of the research areas

initiated. Where appropriate, the patentability of discoveries will be assessed with the help of the IHU's Innovation and Valorisation department in collaboration with Université Paris Cité. The Chairholder is therefore expected to:
- publish articles in A-ranked indexed journals
- present its results at national or international scientific events
- to coordinate and/or lead the submission of research projects in response to various calls for funding that will enable additional funding to be obtained, in particular to ensure the substantial strengthening of human resources and the capacity for scientific innovation made possible through doctoral research (including via CIFRE grants) and post-doctoral research.
- Finally, the candidate must have defended an HDR in order to be eligible to supervise doctoral students

**Open Science:**
As permitted by the French Digital Republic Act, publications will be made available via open archives such as those of Université Paris-Cité and HAL.
The project is also expected to enable the publication and exploitation of public datasets. IHU Imagine's Innovation and Valorisation department will assist with the drafting and implementation of data management plans and will advise on any Open Science issues during the course of the project. In particular, the FAIRisation and referencing (DOI) of these datasets can be supported by the Institute's Data Science platform.

**Science and society:**
The Chairholder is expected to be involved in communicating with the general public at conferences organised by the IHU Imagine or the Université Paris-Cité, and in articles, podcasts and videos that will be disseminated via social networks (LinkedIn, Twitter). More specifically, communications for the general public will be organised at events regularly promoted by IHU Imagine (FAIR, Fête de la Science, etc.) or at events dedicated to a scientific or medical discipline. The chairholder will also be invited to communicate with patient associations and the Institute's sponsors. In addition to being disseminated to the general public, the results of the work are intended to provide input for the designers and implementers of public health policies, with a view to improving care for the general public

**Indicators:**

The main monitoring indicators relate to expectations in terms of scientific dissemination, obtaining additional funding, participation in national and international networks and collaborations with the socio-economic world:

Teaching
- number of teaching hours

Research
- Publications (individual and joint with UMR1163 researchers)
- number of oral communications
- Organisation of national and international conferences/workshops
- New funding (ANR / European / international)
- New collaborations (national and international)

Knowledge transfer
- number of patents
- Number of industrial collaborations
- popularization of science
- presentation to the general public

**Selection of candidates:**

It is expected the recruited researcher to become rapidly a group leader in the GAD team. So the candidate should demonstrate ability to supervise Ph.D students, post-doctoral fellow and technical support staff. She/he should have the capacity to obtain competitive funding to manage her/his group.

Successful candidates are chosen by a selection commission composed of six to ten members, the majority of whom are specialists in the fields of research concerned.

The commission carries out an initial examination of the applications, focused in particular on candidate experience and skills relative to the research and teaching project presented above. A shortlist of candidates is then selected for interview.
Only candidates selected by the selection committee on the basis of their applications will be invited to interview.

The interviews are followed by a deliberation during which selection commission will discuss the quality, originality and, where appropriate, the interdisciplinarity of the research and teaching projects presented by the candidates, their motivation and their scientific and teaching supervision capacity.

The candidates selected at the end of the selection process will be offered a researcher contract, following approval from the President and CEO of Inserm.

## Required profile:

Education Level: **Phd**

Researcher Profile: R3/R4

*R3 Established researcher A stage in a researcher's career describing those who have developed a level of independence and can described as an established researcher*
*R4 Leading Research A stage in a researcher's career where they can be termed a 'leading researcher'. This would include the team leader of a research group or head of an industry R&D laboratory.*

Your application will be evaluated according to the following criteria:

- Relevance and originality of the project related to the research field
- International exposure in research projects
- Your ability to raise funds
- Participation in editorial and reviewing activities
- Your teaching experience
- Your ability to lead a team…

## Application instruction:

Applications can be submitted online at EVA.
Deadline application: **September 2, 2025**

*Please complete the scientific file in English.*

***It is imperative to contact the laboratory corresponding to the Chair you have applied for in order to build the project with them.***

Position also open to 'Bénéficiaires de l'Obligation d'Emploi' (disabled persons), as defined in article 27 of law no. 84-16 of January 11, 1984 on statutory provisions for the civil service.