



FACULTY POSITION CALL DEEP TECHNOLOGIES IN BIOENGINEERING

The School of Engineering at the Pontificia Universidad Católica de Chile, one of the leading engineering academic institutions in Latin America and ranked among the top four emerging leaders for engineering education worldwide, invites outstanding candidates for a full-time faculty position in **Deep Technologies in Bioengineering**.

The position is presented by the Department of Chemical and Bioprocess Engineering (DIQB) of the School of Engineering of the Pontificia Universidad Católica de Chile, in conjunction with the Institute for Biological and Medical Engineering (IIBM) of the Schools of Engineering, Medicine and Biological Sciences, the Institute for Mathematical and Computational Engineering, and the Millenium Institute for Immunology and Immunotherapy. The position will have primary affiliation at the DIQB and the secondary affiliation will be defined by the Schools according to the research area of the selected candidate.

The objective of this call is to promote applied research focused on **bioengineering of biotherapeutic molecules**, including areas such as a) the discovery and development of biotherapeutic molecules such as drugs and vaccines, b) their modeling and rational design using machine learning or c) the productive optimization of biotherapeutical bioprocesses.



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- Research areas of interest may include for example but not limited to
- Mammalian cell engineering for production of biomolecules or vaccines
 - Cell-free systems for production of therapeutics
 - Technologies for delivering of nucleic acids and viral particles
 - Structural biology and engineering of therapeutic proteins
 - Computational design of biotherapeutic molecules
 - Analysis of genomic and multiomic big data focused on the discovery of new therapeutics
 - Development of methods and techniques of statistical learning or data science applied to biotherapeutics
 - Simulation and control of bioprocesses assisted by machine learning
 - Artificial intelligence applied to design of biological systems in biomedicine
 - Optimization of production processes or separation of biotherapeutics or vaccines
 - Design of plants and bioprocesses of biotherapeutic compounds
 - Simulation and modeling of production processes of biotherapeutic compounds
 - Design and execution of pre-clinical studies to evaluate safety and efficacy of drugs and vaccines
 - Implementation of methodologies according to good manufacturing practices



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Duties

The position will require undergraduate and graduate teaching. It is expected to contribute with courses to the Major in Biological Engineering and the Diploma of Civil Engineering in Biotechnology, depending on its area of specialization. They might include courses such as Design in Biological Engineering, Design of Biological Processes, Industrial Biotechnology, Fundamentals in Biotechnology, Experimental Design and Multivariate Analysis, among others. This position might create new interdisciplinary postgraduate courses contributing to the postgraduate programs of each academic unit. The position might also create and participate in certificates and diplomas in the field of biotherapeutics engineering, bioinformatics and computational biology, or the industrial development of biological products. This position will finally participate in several masters and doctoral programs.

Requirements

The applicant should have an outstanding publication track record in the area, with the potential to obtain external research funds and develop high-quality teaching. Applicants should be proactive in pursuing independent research lines, able to work collaboratively and show evidence of interdisciplinary collaboration. Applicants must possess a Ph.D. in Biomedicine, Chemical Engineering, Pharmaceutical Chemistry, Bioengineering, Biotechnology, Bioinformatics, Systems Biology or related areas. Undergraduate studies in biological engineering, biotechnology, biochemistry, bioinformatics or pharmaceutical chemistry are also expected.

The position will be part of an interdisciplinary environment, where he/she will be able to interact with academics in diverse research areas from chemical engineering, industrial, environmental and food biotechnology, to biomedical engineering, protein engineering, bioinformatics and computational biology, microbiology and immunology, among several others. Depending on its background, the position might participate at the vaccine development laboratory at the PUC Innovation Center.

Candidates do not need to be fluent in Spanish at the time of application, but should be prepared to learn the language well enough to teach in this language in the short term (two years maximum). English is a requirement.

Applicants must demonstrate a strong commitment to all aspects of academic life and the public good of the institution. They must be highly motivated to continuously improve their teaching skills, have a genuine interest in getting involved with our graduate programs (specially the doctoral program), and be able to develop and maintain an active research agenda leading to high-quality publications, securing research grants, generating and participating in interdisciplinary projects, leading scientific and industry-liaison initiatives, strengthening and creating national and international academic networks, etc. The candidate will also be expected to create new undergraduate and graduate courses and teach traditional courses in related areas.

If selected for the position, foreigners that apply from abroad must obtain the appropriate visa in their country of residence, to join the University faculty.



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Application Instructions

Applicants should submit the following documents to vacantes-academicas@ing.puc.cl (in the email subject line, please indicate: **Faculty position in Deep Technologies in Bioengineering**; see [note A](#)) by **February 28th, 2023** (late applications will be considered until the position is filled).

A research statement (in English) indicating the immediate and long-term goals of the applicant's research plan and detailing potential collaboration networks with other researchers and plans for interactions with scientists in Chile and other countries.

A teaching statement of purpose (in English) indicating why the applicant should be considered for the position and the plans for teaching. The applicant should be as specific as possible by providing examples of the plan to transfer knowledge to undergraduate and graduate students.

An updated curriculum vitae (in English, see [note B](#)).

If available, copies of five recent Web of Science publications that are relevant to the context of the application (see [note C](#)).

At least, three letters of recommendation, which must be e-mailed directly by the signatories to vacantes-academicas@ing.puc.cl.

Further information

Further information may be obtained by emailing the Director at DIQB, Dr. Ricardo Pérez (perez@ing.puc.cl), or the Director of the Major in Biological Engineering program, Dr. Daniel Garrido (dgarridoc@ing.puc.cl).