




Institute for Bioengineering of Catalonia


EXCELENCIA
SEVERO
OCHOA


hr
HR EXCELLENCE IN RESEARCH

Your research career starts here

IBEC

INTERNATIONAL **PhD**
Programme



GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA
E INNOVACIÓN

1. PRESENTATION

The Institute for Bioengineering of Catalonia (IBEC) is one of the top research institutions named as a Severo Ochoa Research Centre by Ministry of Science and Innovation, which recognizes excellence at the highest international level in terms of research, training, human resources, outreach and technology transfer.

IBEC was established in 2005 by the Ministries of Innovation, Universities and Enterprises and Health of the Generalitat de Catalunya (Autonomous Government of Catalonia), the University of Barcelona (UB) and the Technical University of Catalonia (UPC). Today, IBEC's relationship with the UB and UPC researchers continues to operate under a framework agreement signed in 2008.

With the aim to train the next generation of experts in bioengineering, **IBEC offers in this call the following fellowships:**

- **3 PhD fellowships** are offered, funded by the Spanish Ministry of Science and Innovation.
- **2 PhD fellowships** funded by IBEC.

2. ECONOMIC CONDITIONS

The IBEC International PhD programme fellowships offer a 4-year predoctoral contract with the following gross annual salary:

- 17.500 € for the first two years.
- 18.500 € for the 3rd year.
- 22.284,15 € for the 4th year.

Moreover, 6.860€ are also offered for mobility and training during the 4-year period.

All PhD students will receive full health and occupational insurance coverage and will be included in the Spanish Social Security System.

Students will have to enrol in a university of their choice (mainly University of Barcelona-UB; Polytechnic University of Catalonia-UPC and University Pompeu Fabra-UPF). **IBEC doesn't grant the doctorate degree, instead, it provides the experimental experience you need to complete your PhD.** The awarding body of your PhD will be the University at which you are enrolled as a doctoral student.

University enrollment fees will be covered by the fellowship.

Students will provide an annual report from the Doctoral School confirming the positive scientific progress related to the PhD thesis carried out during the year.

PhDs coming from the Spanish Ministry of Science and Innovation fellowship, funded through the "Ayudas para contratos predoctorales para la formación de

doctores 2022” of the Spanish Ministry of Science and Innovation, who finish and defend their PhD thesis before the start of the month 43 of the fellowship will be able to sign a 1-year postdoctoral contract (POP) with a gross salary of 21.760€. The aim of this contract is to provide an orientation period to consolidate the knowledge acquired during the PhD thesis and start looking for postdoctoral opportunities, including those through other competitive fellowships.

The expected initial date of the 3 Spanish Ministry of Science and Innovation fellowships is May 2023, when a predoctoral contract will be issued. In order to offer the selected candidates, the possibility to join IBEC and start their training in the lab in advance, the 3 selected candidates will be offered an initial 6 month-contract as Research Assistant with an annual gross salary of **17.500 €**. Depending on the availability of candidates, contracts may start from 1st November 2022.

The 2 fellows funded by IBEC will start the predoctoral contract from 1st November 2022, once they have been admitted on a Doctoral Programme.

2.1. General conditions applying to the three types of fellowships

Gross salaries provide full social security coverage, which includes health and accident insurance, pension and unemployment benefits.

Working conditions at IBEC also include:

- ✓ Yearly 23 working days of paid holidays
- ✓ 9 leave days for personal matters
- ✓ Measures to reconcile work and family life, such as:
 - Maternity leave (16 weeks)
 - Paternity leave
 - Leave for breastfeeding
 - Shorter hours for guardianship or leave to care for children and relatives.
- ✓ Flexible schedule working hours
- ✓ Induction programme to facilitate incorporation at IBEC and additional support is provided for foreigners to obtain Visa-working permit and to install in Barcelona.

IBEC provides Training and PhD discussions specially devoted for PhD and early postdocs such workshops to prepare the thesis and presentation skills. IBEC also provides Seminars with top names in bioengineering and nanomedicine from all over the world in order to offer the opportunity to discuss and network the developments. IBEC also offers different courses to give the opportunity to learn new skills such a leadership communication, time management, and language skills. The institute also holds an annual symposium on a different scientific theme, as well as hosting and organizing several other project-based or general scientific meetings and workshops throughout the year.

As part of the FPI MINECO fellowship, PhD's are encouraged to take up research placements in other centers. Thanks to these stay, young researchers benefit from transnational and multidisciplinary mobility and have the added value of enabling PhD Students to obtain an international PhD, a recognized distinction which significantly improves their chances of a successful career.

All fellows will commit themselves to participate in outreach and education activities for a minimum of 10h per year.

IBEC is committed to awareness of diversity and gender equality in science and society. This follows our mission to carry out interdisciplinary research at the highest international quality level which, by crating knowledge, helps to improve health and quality of live, and generate wealth.

3. ELIGIBILITY

Highly qualified researchers of all nationalities willing to join a stimulating, interdisciplinary research and high-quality scientific environment are welcome to apply.

The following **requirements** are common to the fellowships available:

- Candidates should be ready to enter an official doctoral programme in October 20221 (under Spanish Law). By this time, they must have obtained a university degree and a master's degree; or must hold an official university qualification from a country of the European Higher Education Area with a minimum of 300 ECTS of official university studies, of which at least 60 are at master's level. Candidates who expect to be awarded with such degrees by October 2022 are eligible to apply.
- Candidates are eligible for a period of 2 years following the end of the MSc or 5 years following the end of the BSc at the time of deadline (March 26th, 2021 January 31st 2022).
- Candidates must have an average final mark of BSc of at least 7/10 (Spanish system).
- Candidates must have a strong commitment to scientific research and an excellent academic record.
- Candidates must have good working knowledge of English.
- Candidates must not yet have been awarded a doctoral degree.
- Candidates must not have held a PhD contract exceeding twelve months in September 2022.
- Candidates must not have held any fellowship from the Spanish Ministry of Economy, Industry and Competitiveness for the development of a PhD thesis at the time of deadline (March 26th, 2021 January 31st 2022).

4. PhD RESEARCH PROJECTS

In the online application form, candidates will be asked to indicate your preference and priority of up to three PhD groups. The topics are orientative, they will be discussed with the group leader:

- **Design and characterisation of Phenotypic Nanomedicines**
Group: [Molecular Bionics](#)
Group leader: Dr. Giuseppe Battaglia (gbattaglia@ibecbarcelona.eu)
- **Deep Mutagenesis to map the boundary between functional and dysfunctional amyloids**
Group: [Protein phase transitions in health and disease](#)
Group leader: Dr. Benedetta Bolognesi (bbolognesi@ibecbarcelona.eu)
- **Characterization of protein aggregation inhibition as a new antimalarial strategy**
Group: [Nanomalaria](#)
Group leader: Dr. Xavier Fernández-Busquets (xfernandez@ibecbarcelona.eu)
- **Machine learning methods for functional Scanning Probe Microscopy in Life Sciences**
Group: [Nanoscale bioelectrical characterization](#)
Group leader: Dr. Gabriel Gomila (ggomila@ibecbarcelona.eu)
- **Long-distance electron transport between redox partner proteins of the photosynthetic and respiratory chains**
Group: [Nanoprobes and nanoswitches](#)
Group leader: Prof. Pau Gorostiza (pgorostiza@ibecbarcelona.eu)
- **Novel hyperpolarisation-enhanced magnetic resonance imaging tools to study cellular metabolism in organ-on-chip devices and in vivo**
Group: [Molecular imaging for precision medicine](#)
Group leader: Dr. Irene Marco-Rius (imarco@ibecbarcelona.eu)
- **Machine learning based methodologies to control confounding factors in metabolomics.**
Group: [Signal and information processing for sensing systems](#)
Group leader: Dr. Santiago Marco (smarco@ibecbarcelona.eu)

- **Bioprinted hydrogels for microfluidic applications: mimicking cell microenvironment in organ-on-chip devices.**
Group: [Biomimetic systems for cell engineering](#)
Group leader: Dr. Elena Martínez (emartinez@ibecbarcelona.eu)
- **Development of a novel point-of-care label-free microarray platform for the diagnosis of autoimmune and neurodegenerative neuromuscular diseases.**
Group: [Biosensors for bioengineering](#)
Group leader: Dr. Javier Ramón (jramon@ibecbarcelona.eu)
- **Searching for new roles of the immune components on the physiopathology of axonal injuries and demyelinating diseases: Therapeutic modulation of the immune metabolism and epigenome.**
Group: [Molecular and cellular neurobiotechnology](#)
Group leader: Dr. José Antonio del Río (jadelrio@ibecbarcelona.eu)
- **Mechanisms of nuclear mechanotransduction and implications in cancer.**
Group: [Cellular and molecular mechanobiology](#)
Group leader: Dr. Pere Roca-Cusachs (proca@ibecbarcelona.eu)
- **Blood-brain barrier on a chip with integrated monitoring system for neurodegenerative diseases study**
Group: [Nanobioengineering](#)
Group leader: Prof. Josep Samitier (jsamitier@ibecbarcelona.eu)
- **Collective motion of nanobots for crossing 3D-printed biological barriers.**
Group: [Smart nano-bio-devices](#)
Group leader: Prof. Samuel Sánchez (ssanchez@ibecbarcelona.eu)
- **New strategies to combat bacterial biofilms during chronic infections.**
Group: [Bacterial infections: antimicrobial therapies](#)
Group leader: Dr. Eduard Torrents (etorrents@ibecbarcelona.eu)
- **Nuclear mechanotransduction in intestinal organoids and tumoroids.**
Group: [Integrative cell and tissue dynamics](#)
Group leader: Prof. Xavier Trepát (xtrepát@ibecbarcelona.eu)

- **Tumor-associated fibroblasts as co-travelers of cancer cells during brain metastatic dissemination in lung cancer**

Associated Researcher: Dr. Jordi Alcaraz (jalcaraz@ibecbarcelona.eu)

Co-supervisor: Dr. Pere Roca-Cusachs

- **Develop a womb model to study human embryo implantation**

Group: Bioengineering in reproductive health

Group leader: Dr. Samuel Ojosnegros (sojosnegro@ibecbarcelona.eu)

- **Superpredatory vesicles: synthetic cells to fight antibiotic-resistant superbugs**

Group: New group to join IBEC in 2022

Group leader: Dr. César Rodríguez-Emmenegger

- **Highly Mobile Hydrogels to Deliver Human Neural Progenitor Cells for Spinal Cord Injury Repair**

Group: Severo Ochoa Research Distinguished Professor

Group leader: Prof. Samuel I. Stupp

If a candidate is shortlisted for interviews, he/she will have the opportunity to select up to two more PhD project proposals.

5. HOW TO APPLY

From December 15th 2021 until January 31st 2022, an online application form will be available through the [IBEC International PhD Programme](#) dedicated site.

You will be required to provide the following information in your application:

- Personal data and CV
- Cover letter, including motivation for applying
- A scan of your Certified Academic Record, showing grades obtained (degree and masters). If these are not in Catalan, Spanish or English, applicants should attach a translation in one of these languagesⁱ
- Education experience: what, when and where you have studied. In order, to standardize the final marks in your application form, we will need that you submit your educational certificate using the relation of scales of foreign grades to the equivalent Spanish grades provided by the General Secretariat of Universities of the Spanish Ministry of Education, Culture and Sport (instructions and template included in the application form) and the ranking of your university according to the [Times Higher Education](#).

- Explanatory document certifying that the candidate is eligible to apply for a doctoral programme when the number of ECTS does not appear in the Certified Academic Record. This explanatory document may be an official description of the country's educational system issued by the university or published on its website, or the admissions requirements to the university's doctoral programme.
- Research experience
- Current Status
- Publications, Presentations in conferences, Awards/fellowships
- 2 letters of recommendation from lecturers or researchers with whom you have studied or worked and who can judge your potential as a PhD student. Only letters with official letterhead and signature will be accepted. Reference letters cannot be provided by IBEC's Group Leaders or associated researchers that will be the future supervisors of the fellow. Please be sure to inform your referees that their letters must be uploaded in the online application tool before the deadline (January 31st, 2022).

Only those applications submitted before the deadline provided with all the required information and documents will be evaluated.

Once the application is submitted, candidate will automatically receive an acknowledgment of receipt.

6. REQUEST FOR REDRESS

After receiving the results, candidates will be allowed to inquire a request for redress by sending a written request within two weeks to phd@ibecbarcelona.eu

Evaluation panel will study each case. The redress procedure will look at procedural shortcomings and into possible errors, not against evaluation panel decisions or experts' ratings and comments. The outcome of the redress procedure will be a report with motivation of rejection or a letter informing about the reincorporation to the selection process.

The outcome of the redress will be sent to applicants within the next 10 days from the reception of the request for redress.

7. SELECTION PROCEDURE



IBEC is committed to the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (The Charter & Code).

HR EXCELLENCE IN RESEARCH

In 2015, IBEC gained the HR Excellence in Research Award in recognition of our ongoing commitment. At the mid-term evaluation in 2017, IBEC was successful in

Our Recruitment and Selection Policy is based on the OTM Strategy (Open, Transparent and Merit-based recruitment) <http://www.ibecbarcelona.eu/jobs/> and accept applications without distinction on any grounds. Candidates with disabilities are strongly encouraged to apply. Our commitment to OTM-R principles can also be found in our Gender and Diversity plan.

In line with the principles defined in the OTM-R procedure, selection processes are governed by the following principles:

- Transparency throughout the whole process
- Equal opportunities in the selection and hiring of personnel
- Non-discrimination on grounds of sex, age, ethnic, national or social origin, religion, sexual orientation, language, disability, political opinions or social and economic condition
- Merit based evaluation
- Confidentiality as the cornerstone of the selection process
- Principle of public dissemination of the selection processes, which must also be internationally comparable

Applications will be reviewed by a selection committee made up of IBEC group leaders and administration staff.

Applicants CVs will be reviewed in terms of academic record, research experience and additional merits.

In mid-March 2022, results will be communicated. Shortlisted candidates will be asked to contact their preferred group leaders and get to know their research lines and the PhD project. This will serve to evaluate the knowledge and expertise of the candidate related to the particular research project and his/her adequacy to the corresponding research group.

After the talks with the PIs, candidates will be asked to make a final ranked list of their preferred PhD research projects and supervisors.

An online presentation about our institute and the International PhD Programme benefits will be offered to the shortlisted candidates invited to online interview: stimulating, interdisciplinary and high quality international scientific environment and training programme with specific training path for PhD: new methodologies in imaging techniques, nanomaterials technology, nanofabrication, biosensors, biosignal interpretation, lab-on-a-chip approaches and many more, seminars and PhD discussions and outreach activities, specialized scientific and technological courses, complementary skills training and career development activities, symposium and retreats, as well as social activities.

On April 1st – 10th 2022, online interviews of shortlisted candidates will be held. Interviews with the selection committee will assess candidate's motivation and the following competencies: communication, critical and analytical thinking, team and collaborative working, commitment, proactivity and open mind. All candidates will receive a guideline document to prepare the interview.

The interview will also be an opportunity for the candidate to expose any personal requirement or clarify doubts.

On April 20th – 24th 2022, the results of the call will be published, and the acceptance letters will be sent to the candidates with the highest scores.

In order of evaluation score, they will be able to choose their final PhD Project and supervisor, taking into account that each PhD research project can only have one fellowship, so if a candidate with a higher score chooses a particular PhD research project, candidates with lower scores will have to choose another one from their list of preferred PhD projects and supervisors.

Applicants who have not been successful but have received a positive evaluation will be put on a waiting list for future positions.

8. USEFUL DATES

- **December 15th, 2021**: Launch of the call.
- **January 31st, 2022**: Deadline for submission of applications.
- **Feb 1st – Feb 15th, 2022**: Check of eligibility Criteria.
- **Feb 16th – March 10th, 2022**: Evaluation of the candidates' CVs.
- **March 11th – 14th, 2022**: Communication of results of the evaluation of the candidates' CVs. Invitation of shortlisted candidates for an online interview.
- **March 15th – 25th, 2022**: Shortlisted candidates will be asked to contact the IBEC supervisors and get to know their research and PhD project.
- **March 28th – 31st, 2022**: Shortlisted candidates will present a final ranked list of their preferred PhD research projects and supervisors.
- **April 1st – 10th, 2022**: Online interviews with the selection committee.

- **April 20th – 24th, 2022:** Publication of final list of selected candidates. Letter of acceptance to be signed by candidates.
- **As of November 2022:** Start of the research assistant contract
- **May 2023** (to be confirmed, based on the resolution of the call 'Ayudas para contratos predoctorales para la formación de doctores' by the Spanish Ministry of Science and Innovation): Start the of the PhD fellowships.

9. CONTACT

If you have any further questions about IBEC Severo International PhD Programme fellowships, or if there are particular issues you'd like to discuss regarding your application, please contact phd@ibeccbarcelona.eu.

ⁱ For the future enrolment in the Doctoral program, Official University only accepts an official translation of educational certificates. The verification of an equivalent level of studies will be made by the university when the admission to the PhD Programme procedure starts. Should this verification not be successful, the fellowship would be withdrawn.



Institute for Bioengineering of Catalonia



Strategic Initiatives, Human Resources and Communications and Outreach Units

Institute for Bioengineering of Catalonia (IBEC)

www.ibecbarcelona.eu/phd