



# BEST

Bioengineering Excellence Scientific Training  
Postdoctoral Programme

**1ST CALL FOR PROPOSALS**

**June 2016**

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## Introduction to IBEC and Bioengineering Excellence Scientific Training (BEST)

The Institute for Bioengineering of Catalonia (IBEC) is a leading-edge multidisciplinary research centre based in Barcelona that conducts excellent interdisciplinary research at the frontiers of engineering and life sciences in order to generate new knowledge by putting together fields like nanomedicine, biophysics, biotechnology, tissue engineering and the applications of health information technology.

The Programme in Bioengineering Excellence Scientific Training (BEST) aims to attract experienced international researchers in the areas of Nanomedicine, Cell Engineering and ICT for Health, the three research flagships at IBEC.

The expertise encompassed by each flagship is as follows:

- **Nanomedicine:** nanobiosensing; microfluidics; nanofabrication using soft lithographies and related techniques; beyond-AFM/ST microscopy tools to characterize biological samples at the nanoscale; drug delivery; nano-scale characterization of bacterial-host interactions; organ/lab-on-chip technologies; nanorobotics; nanoscopy.
- **Cell Engineering:** biomaterials for regenerative medicine; reprogramming stem cells; control differentiation of stem cells; rapid prototyping for biomaterials; cell-material interaction; biomimetics; microencapsulation for antibacterials and other therapeutic agents; mechanobiology protocols and their translation to clinical purposes; cellular and molecular biology; antibacterial strategies.
- **ICT for Health:** application of advanced information and communication technologies to healthcare, such as modelling; signalling processing; automatics/control software for robotics; imaging; robotics for minimally invasive surgery.

IBEC currently has 18 research groups and 250 researchers and staff from 20 different countries. The location of IBEC in the Parc Científic de Barcelona offers a highly stimulating biomedical environment in which the institute can work closely with organisations from the public and private sector interested in the biomedical application of nanotechnology.

IBEC is part of a new wave of research initiatives set up in the last decade, with shared interests and points of view concerning how to advance the frontiers of knowledge in

experimental science to benefit clinical and biomedical research. The common denominator shared by these new initiatives is their focus on the enormous challenge of how to make life science quantitative on any scale, taking full advantage of the unprecedented power of the convergence between nano, bio and ICT.

IBEC is one of the top research institutions labelled as a Severo Ochoa Research Centre by the Spanish Ministry of Economy and Competitiveness (in charge of research and innovation policies), which recognizes excellence at the highest international level in terms of research, training, human resources, outreach and technology transfer.

IBEC was awarded, in recognition of its commitment to continuously improving its HR policies in line with the recognition and awarding of the 'Human Resources Excellence in Research' from the European Commission, and according to the requirements of The European Charter of Researchers and The Code of Conduct for the Recruitment of Researchers (Charter and Code) IBEC has set up an international, transparent, equal-opportunities recruitment procedure to select the most qualified researchers for the BEST programme.

The BEST Postdoctoral Programme will provide exceptional training opportunities for up to 24 (in 2 calls of 12 positions per call) high-potential fellows, with a 2-year contract at IBEC and funded interdisciplinary and intersectoral placements at world-class research centres, hospitals and companies within IBEC's global network of collaborating institutions. Fellows will be hosted within an IBEC research group or the group of an IBEC associated researcher, where they will develop their own research project.

The BEST Programme is a postdoctoral fellowship scheme part funded by the European Commission under Horizon 2020's Marie Skłodowska-Curie Actions COFUND scheme and the Severo Ochoa programme of the Spanish Ministry of Science and Competitiveness.

### **Why apply for BEST Fellowship?**

The BEST Postdoctoral Programme is a great opportunity to acquire international experience while boosting research and career development skills.

Fellows will be hosted within an IBEC research group or the group of an IBEC associated researcher, where they will develop their own research project.

The research contract will include the following conditions:

- Fellows will be offered a 2-year contract with full security coverage for the performance of a research project. Researchers are assured according to the Spanish Social Security system during the term of their employment contract. Full security coverage includes health and accident insurance, pension plan and unemployment benefits. Provisions for annual and sickness leave will follow Spanish regulation and the internal policy of IBEC.
- Annual living and mobility allowances: the amount that the researcher will receive is 32.572€ yearly gross salary with full security coverage, which includes health and accident insurance, pension and unemployment benefits.  
Annual Family allowance: Beyond that, researchers coming to Barcelona with their families (persons linked by marriage or a relationship with equivalent status to marriage or dependent children being maintained by the researcher) will receive an annual family allowance of 1.817 €. In this case, the amount that the researcher will receive is 34.345 € yearly gross salary. The family status of a researcher will be determined at the beginning of their contract and will not be revised during the lifetime of the action. Additionally, at the end of the 2 year labour contract, researchers will receive indemnities according to Spanish labour law.
- 23 working days of paid holidays and 9 leave days for personal matters yearly.
- Measures to reconcile work and family life: Maternity and paternity leave (16 weeks), leave for breastfeeding (14 days or 1 hour/day during 9 months), telecommuting, shorter hours for guardianship or leave to care for children and relatives.

- Additionally, 9.600€ have been annually allocated for research & training activities, including complementary training programme to develop non-scientific skills useful to improve fellow's career development. These funds will be managed by IBEC.

In order to offer BEST fellows the highest quality of research and training options, we have assembled a network of partner organizations that covers at an international level all scientific and technological expertise related to research fields offered to BEST fellows at IBEC: Cell Engineering, Nanomedicine and ICT for Health. Moreover, the network includes stakeholders from all three sectors involved in biomedical research: academia, clinicians and industry.

The fellows will have the opportunity to stay up to 3 months of their 2 year contract at IBEC at other international/intrasectorial institutions. Stays will be funded by the BEST programme.

The global network of collaborating institutions includes 16 research centres and universities, 5 hospitals and 11 companies from 13 countries (Australia, Belgium, Denmark, France, Germany, Ireland, Israel, Italy, Korea, Singapore, Spain, United Kingdom, USA) in 4 different continents (Europe, America, Asia, Australia).

The hosting institutions for BEST fellows will not be restricted to the current list of Partner Organisations. Depending on the needs of BEST fellows, more organizations could be added.

Each BEST fellow will prepare a Personal Development Plan (PDP) to identify both professional development needs and career objectives. The main objective of PDP will be to qualify them to access to high level positions in academia or industry with a strong component of management and leadership. Special care will be taken to ensure that the PDP fulfil the needs of the current employment market. Based on the PDPs of Best fellows, a personal training plan will be designed, defining suitable stays and complementary training on Leadership and management skills, Innovation skills, Communication skills; Outreach and Responsible Research and Innovation.

IBEC Human Resources Unit will offer administrative assistance from the date of researcher's acceptance and during their entire stay at IBEC, particularly on legal matters, visa, health insurance, relocation and local regulations. The Human Resources Unit aims to facilitate some of the processes involved in the settlement phase experienced by researchers, including those who bring family members.

### **Who can apply?**

In order to be eligible, candidates have to accomplish with the following requirements:

- Candidates must have been awarded a PhD degree prior to recruitment (from February 1<sup>st</sup> to April 30<sup>th</sup> 2017).
- Candidates are eligible for a period of 5 years following the award of the PhD degree at the time of recruitment. This limit will be extended in situations of documented career breaks such as maternity/paternity leave (up to 12 months per child), sick leave, forced displacement due to armed conflicts and military service for the necessary duration.
- Candidates of all nationalities are eligible. However, if they have resided or worked in Spain for more than 12 months in the 3 years prior to recruitment, they are not eligible. Please note that for refugees under the Geneva Convention, the refugee procedure (i.e. before refugee status is conferred) will not be counted as 'period of residence/activity' in Spain.
- Candidates must be first author on at least one peer-reviewed publication.
- Candidates must have an excellent command of the English language.

Candidates are allowed to apply for only one fellowship, as the fellowship cannot be held simultaneously with other fellowships of any kind. In this sense, fellows are expected to work regularly on their research project and regularly attend related scientific events which implies full time dedication to the fulfillment of the research project. Other responsibilities than research, such as teaching, if minimal, can be carried out.

All documents requested for the application have to be fulfilled and provided prior to the call deadline.

## **How to apply?**

Applications can be submitted from June 1<sup>st</sup> until September 11<sup>th</sup> 2016 through the online application platform available in the IBEC website: <https://careers.ibecbarcelona.eu/>

Applicants will need:

- To register in the BEST online application platform and create a new account.
- To fill in the Eligibility Section.
- To submit all required documents in the Application Section:
  - Complete Curriculum Vitae with a full list of publications, years dedicated to research, conferences, projects, awards, mobility, tech transfer and teaching activities.
  - Letter with a declaration of interests.
  - One of the three IBEC areas that may be of interest: Nanomedicine, Cell Engineering and ICT for Health.
  - The research group in which they would like to work.
- To write a proposal of a prospective research project to be carried out. IBEC invites applicants to get in touch with the Group Leader or Associated researcher of their choice, in order to discuss with them their research project. The project should have a maximum length of 6 pages plus references and should be written using the template downloadable at the <https://careers.ibecbarcelona.eu/> (See Annex I).

Projects involving more than one research group are welcome, but a main supervisor at IBEC must be designated.

- The BEST ethical issues table (template provided in the online application platform), where any ethical issues arisen from their research proposal, should be pointed out and along with details about how they will be addressed to comply with Horizon2020 ethical principles.
- Certificate or official notification of the award of each academic degree (BsC, MsC and PhD).
- Contact details of the two referees that will support their application. Each referee will receive an email with a link where they will be able to upload the letter in PDF format on the online application platform.



Once an application is submitted, the candidate will receive automatically an acknowledgement of receipt together with an application reference number.

All personal data requested by IBEC from applicants will be treated in accordance with the principals of Spanish Personal Data Protection Act (LOPD, 15/1999).

Only online applications will be eligible. Only applications submitted by the call deadline will be evaluated (including the reception of the reference letters).

Proposals submitted online can be resubmitted as many times as needed before the deadline (September 11<sup>th</sup>).

### **Selection and evaluation criteria**

#### **a) The selection process**

The selection process is organized in four stages and will last 3 months, starting on 12<sup>th</sup> September 2016 until the 15<sup>th</sup> December 2016:

**Stage I:** Eligibility check – 2 weeks.

**Stage II:** Evaluation of CV and research proposal – 2 months.

**Stage III:** Interviews – 2 weeks.

**Stage IV:** final decision – 1 week.

Candidates should meet the requirements set at each stage to proceed onto the next. All candidates will be informed by e-mail at the end of each evaluation Stage.

#### **Stage I: Eligibility check**

Candidates' compliance with the minimum eligibility requirements will be verified by an Eligibility committee composed of senior officers from the Institute's Support Units (led by the Head of Human Resources). The eligibility will be checked on the basis of the information provided by the applicant.

Candidates who meet all eligibility criteria will be included in the evaluation stage.

## Stage II: Evaluation of CV and research proposal

The evaluation will be performed by three panels of experts, according to IBEC's research areas (Nanomedicine, Cell Engineering and ICT for Health). Each panel will be chaired by a member of IBEC's International Scientific Committee (ISC). Two additional international external experts in the reference area chosen by the chair will complete each panel.

- Candidates' CV will be resolved on scientific achievements and research merits based. Each evaluator will give a score to CV between 0 a 5 based on the evaluation criteria.
- Candidates' research proposal will be resolved following the evaluation criteria.

CVs and research projects will be evaluated by the respective Evaluation Panel, first independently by each reviewer, and finally at a consensus meeting for each panel. Each application will receive a consensus score that will allow to establish a final ranking for the results of the evaluation of CV and research project.

## Stage III: Interviews of final candidates

Short-listed candidates (regardless of their chosen research area) will be invited for a videoconference. Interviews will be conducted by a Selection committee composed by the 3 chairs of the 3 evaluation panels, an independent expert from one of the three panels that evaluated the CV and the research proposal, the Director of IBEC, also as a Secretary, and the Head of Human Resources.

The evaluation will be based on an individual presentation of research experience and research proposal by each candidate to the members of the committee, followed by an individual interview of the candidate. During the interview competencies such as Communication skills; Project planning and delivery; Time management; Self-career management; Analytical and critical thinking; Ethics and integrity or Leadership will be evaluated.

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

## Stage IV: Final decision

The final decision will be taken in a consensus meeting of the Selection committee.

Final candidates will be ranked according to the weightings of the scores in stages II, III and IV.

A reserve list of candidates will be identified. In case that one or more final candidates withdraw, they will be replaced by the candidates in the reserve list, following the Selection Committee priority order.

### b) Criteria for the selection of fellows

Five criteria will be used in evaluating the candidates:

1. Researcher's CV
2. Quality of research
3. Impact
4. Feasibility of the project
5. Interview.

Evaluation criteria are divided into sub-criteria:

Evaluation of CV – Phase II	Evaluation of research proposal – Phase II			Interview – Phase III
	Quality	Impact	Feasibility	
Research experience	Interdisciplinary and multidisciplinary approach	Potential of acquiring skills in terms of career development	Complementarity between research proposal and IBEC's research expertise and interests	Presentation and communication skills
Research results	Clarity of research methodology	Ability to attract collaborative partners and create a long-term network (both with academia/industry)	Appropriateness of the workplan (regarding calendar, milestones... etc.) to achieve the proposal objectives	Leadership skills
Interdisciplinary approach	Originality of the project	Contribution to European excellence and		

Evaluation of CV – Phase II	Evaluation of research proposal – Phase II			Interview – Phase III
	Quality	Impact	Feasibility	
		competitiveness through transfer of knowledge		
Independent thinking and other skills		Relevance of the proposal in relation to state of the art		

Evaluation scores will be awarded for each of the four criteria, but not for the sub-criteria. However, sub-criteria will be considered by evaluators in the assessment of each criterion.

Evaluation criterion	CV	Quality	Impact	Feasibility	Interview
Threshold	4/5	3/5	3/5	3/5	3/5
Weighting (%)	40	20	20	10	10
Priority in case of ex aequo	1	2	3	4	5

Threshold: In each Selection Stage, candidates will have to reach the minimum threshold to go to the following stage. In addition, an overall threshold of 18/25 is established to be selected or included in the reserve list.

### c) Request for redress

After receiving the results of each evaluation stage, candidates will be allowed to inquire a request for redress by sending a written request within two weeks to [bestprogramme@ibecbarcelona.eu](mailto:bestprogramme@ibecbarcelona.eu).

Evaluation panels in each selection stage will study each case and re-evaluate the application. 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.

#### **d) Acceptance of the fellowship**

During the second half of December 2016 the first 12 ranked candidates will be asked to sign an acceptance letter and will have to start the fellowship within 3 months of notification of successful evaluation, from February 1<sup>st</sup> until April 30<sup>th</sup> 2017.

#### **Ethical issues**

The BEST programme will take into account both the need to ensure freedom of research for the participating fellows and the need to develop projects in the interest of the physical and moral integrity of individuals.

Thorough ethical review is an integral part of all scientific research and is needed, not only to respect the legal framework, but also to enhance the quality of research. Ethical review of all proposals will be done in line with Horizon 2020 guidance on research ethics and is mandatory for all applications.

Within IBEC, all research activities respect fundamental ethical principles, as well as national legislation, relevant EU legislation and standards, international conventions and directives, and the opinions of the European Group on Ethics and Protection of Animals (e.g. 99/167/EC: Council Decision of 25/1/99 and EC Directive 86/609). These principles include the need to ensure the freedom of research and the need to protect the physical and moral integrity of individual and the welfare of animals. National and local committees that judge the ethical aspects of the intended experiments have to give their explicit approval before any experiment starts.

During the application stage, candidates will be required to fill in the online application platform the Ethical Issues Table (see Annex II) and if any ethical issues arise, the proposal will be subject to a complete Ethics screening that will assess the ethical

implication for the proposed research and assess whether they have been appropriately addressed in the work plan.

When needed, the applicant, with the support from the project manager of the research groups where they will be placed, will prepare all ethics-related documents mandatory under EU or national legislation and apply for the approval of the corresponding Ethics Committee.

Such documents will be submitted to the REA before starting any ethically sensitive experiment.

## **Calendar**

First call:

- **1<sup>st</sup> June 2016.** Launch of the first call
- **11<sup>th</sup> September.** Deadline for submission of applications
- **12<sup>th</sup>–23<sup>th</sup> September.** Eligibility check
- **26<sup>th</sup> September – 25<sup>th</sup> November.** Evaluation of CVs and research proposal
- **28<sup>th</sup> November – 12<sup>th</sup> December.** Videoconference interviews of final candidates
- **15<sup>th</sup> December – 15<sup>th</sup> December 2016.** Final decision
- **1<sup>st</sup> February – 30<sup>th</sup> April 2017.** Start of the first call of BEST programme fellowships

## **Contact details**

### **Human Resources, IBEC**

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## **Annexes / Templates**

Annex I: Research proposal template

Annex II: Ethical Issues table