

Annual Report 2018



Parc Científic de Barcelona
UNIVERSITAT DE BARCELONA



Annual Report 2018
20 years of innovation



This annual report is printed on *Shiro Echo* paper,
fabricated 100% with recycled fibers and an
elemental chlorine free process.



Highlights 2018

The Park

- > 22.376 m² laboratories
- > 11.428 m² offices
- > 5.057 m² scientific services

Record occupancy levels

- 16.220 m² laboratories occupied
- 8.867 m² office space occupied
- 98% furnished space occupancy
- 74% available space occupancy

Record profits

The 2018 financial year reached historic highs:

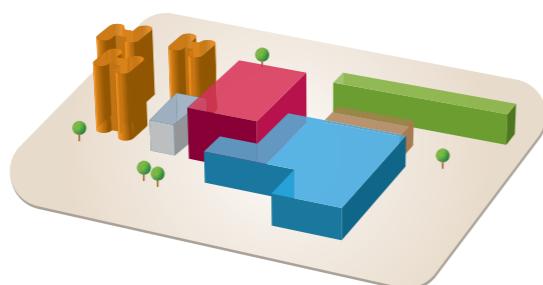
- Income: €19.2 million
- EBITDA: €5.7 million
- Net profit: €1.5 million

Celebrating 20 years of innovation



The Park community

- > 107 entities
- > 6 research centres
- > 82 companies
- > 19 foundations, associations and other entities
- > 2.700 professionals



MedTeX Accelerator

Specialised acceleration programme for medical technology start-ups.

- > 11 participants
- > 12 trainers
- > 11 mentors



Inauguration of "Laigua és vida" by Kelly Arrontes



Editorial

The University of Barcelona initiative is firmly established as a health-sector research and innovation hub.

In 2018, the Barcelona Science Park (PCB) celebrated its 20th anniversary. During the events held to mark the occasion, we have had the opportunity to look back and appraise the excellent work done since the University of Barcelona decided to set up Spain's first science park: an influential facility for conducting outstanding research, innovation and knowledge transfer in relation to goods and services in the field of life sciences that are to the benefit of society. Today, we can proudly say that the Park is a leading international ecosystem for more than 100 entities and 2,700 professionals. It hosts research centres, such as the Institute for Research in Biomedicine (IRB), the Institute for Bioengineering of Catalonia (IBEC) and the Spanish Research Council's Molecular Biology Institute of Barcelona (IBMB-CSIC), where doctoral students, post-docs and principal investigators work; start-ups founded by highly qualified entrepreneurs; large companies in the

sector with R&D&I hubs in the Park, such as Esteve, Ordesa, Enantia, Pharmamar and Qiagen, some of which emerged from the Park's bioincubator; highly specialised service providers, such as the Scientific and Technology Centres of the University of Barcelona (CCiTUB), and professionals engaged in promoting technology transfer from universities to the private sector, such as Biocat and the Bosch i Gimpera Foundation.

If we focus on the operations carried out in 2018, the Park ends the year with excellent indicators: 25,087 m² of client-occupied laboratories and office space (an occupancy rate of almost 100% of furnished spaces), income of €19.2 million and a €1.5 million net profit, up from €0.3 million in 2017. We also reaffirmed our commitment to quality by extending our ISO 9001:2015 quality certification to the Communication Department, meaning that all the Park's management departments and scientific support services have quality certification. In terms of support for entrepreneurship, in conjunction with the Bosch i Gimpera Foundation and the Barcelona Entrepreneurship Institute, the Park played host to the MedTeX Accelerator, an acceleration programme for medical and digital health technology start-ups. In the area of public outreach, the Park continued to promote scientific careers through its "Research in Society" programme, which welcomed more than 5,000 schoolchildren from all over Catalonia.

In this 2018 report, you will find out more about all the aforementioned aspects, with special emphasis on the talented women in our community who have achieved much success as this financial year draws to a close.



At the time of writing this editorial, we are already working to achieve our main objectives for 2019: establishing the Park as one of Europe's health research and innovation hubs; continuing to enhance care for the Park's users; raising the necessary funding to refurbish new laboratory and office spaces and, thus, meet growing demand for them; and, lastly, stabilising the Park's financial situation once and for all, thanks to the excellent results achieved in 2017 and 2018.

Maria Terrades
CEO, Barcelona Science Park

2018 has been a year of recognition for female talent, which is amply represented in the Park community.



Núria López-Bigas
ICREA principal investigator in the
Biomedical Genomics Group

> Researchers at IRB Barcelona explain
the origin of the mysterious periodicity
of the genome



Contents

09

Barcelona Science Park

- > The Barcelona Science Park Foundation and the University of Barcelona
- > Board of Trustees
- > Organisation chart
- > 20th anniversary
- > Team

21

Scientific services

- > Laboratories open to the community
- > Scientific platforms
- > Publications

31

General services

35

Spaces

39

Research in Society programme

43

Quality, safety and the environment

47

Park community

- > The ecosystem
- > Entity success stories

57

Promoting the Park community

62

Budget

.....
Elisabeth Engel

Principal investigator in the Biomaterials
for Regenerative Therapies group, IBEC

Professor at the Barcelona East School of
Engineering, UPC

> Avinent and IBEC create pieces printed
in 3D that regenerate the bones
structures



Barcelona Science Park

The Barcelona Science Park Foundation and the University of Barcelona

Board of Trustees

Organisation chart

20th anniversary

Team





Barcelona Science Park



The Barcelona Science Park Foundation and the University of Barcelona

The Barcelona Science Park Foundation is part of the UB Group and is University of Barcelona-sponsored initiative, which took shape in 1997. The Foundation engages in research-related activities, seeking to foster research quality and, chiefly, expediting the University of Barcelona's connection with the new demands and realities of society in order to achieve the University's overall objectives.

The University of Barcelona strengthens its public service role through the Foundation by facilitating the return to society of its scientific and technical capabilities.

The objectives of the Foundation are to:

- Promote a space and the facilities necessary for the development of basic and applied research and new technologies.
- Foster measures to enhance the efficiency of the university's innovation and research work and its interaction with other research groups, companies and institutions.
- Create an outstanding environment in order to drive innovation and technology transfer activities.

Mission

Promote research, knowledge transfer and innovation in the public and private sectors via smart management of spaces and technology options and of relations and dialogue with the Park community.

Vision

Become the international benchmark in public/private research to enhance Catalonia's role as a scientific leader, its economic growth and its potential to attract talent.

Values

Communication

Commitment

Responsability

Passion

Teamwork

In 20 years, the Park has established itself as one of the leading European ecosystems in life sciences research, technology transfer and innovation.



Board of trustees

The Barcelona Science Park Foundation was set up in 1997 by the University of Barcelona.



Chair

Joan Elias García
Chancellor of the University of Barcelona



First Deputy Chair

Joan Corominas Guerin
Chair of the University of Barcelona's Social Council



Second Deputy Chair

Ernest Pons Fanals
Vice-Chancellor of the UB group at the University of Barcelona (As of 8 June 2018)



Members appointed by the University of Barcelona's Social Council



Carles Vivas Morte

Jordi Hereu Boher



Members appointed by the Government of Catalonia



Francesc Grau Vidal
Secretary for Universities and Research (As of 12 November 2018)



Joan Gómez Pallarés
Director General of Research (As of 12 November 2018)



Secretary

Belén Noguera de la Muela
General Secretary of the University of Barcelona



Non-trustee Deputy Secretary

Miquel Amorós March
Secretary of the University of Barcelona's Social Council



Members representing the University of Barcelona

Oriol Escardíbul Ferrà
General Manager at the University of Barcelona



Àlex Aguilar Vila
Vice-Chancellor for Outreach and Internationalisation at the University of Barcelona



Member appointed by the Spanish National Research Council (CSIC)

Rosa Menéndez López
Chair of the CSIC



Luís Herrero Borque
Banco Santander



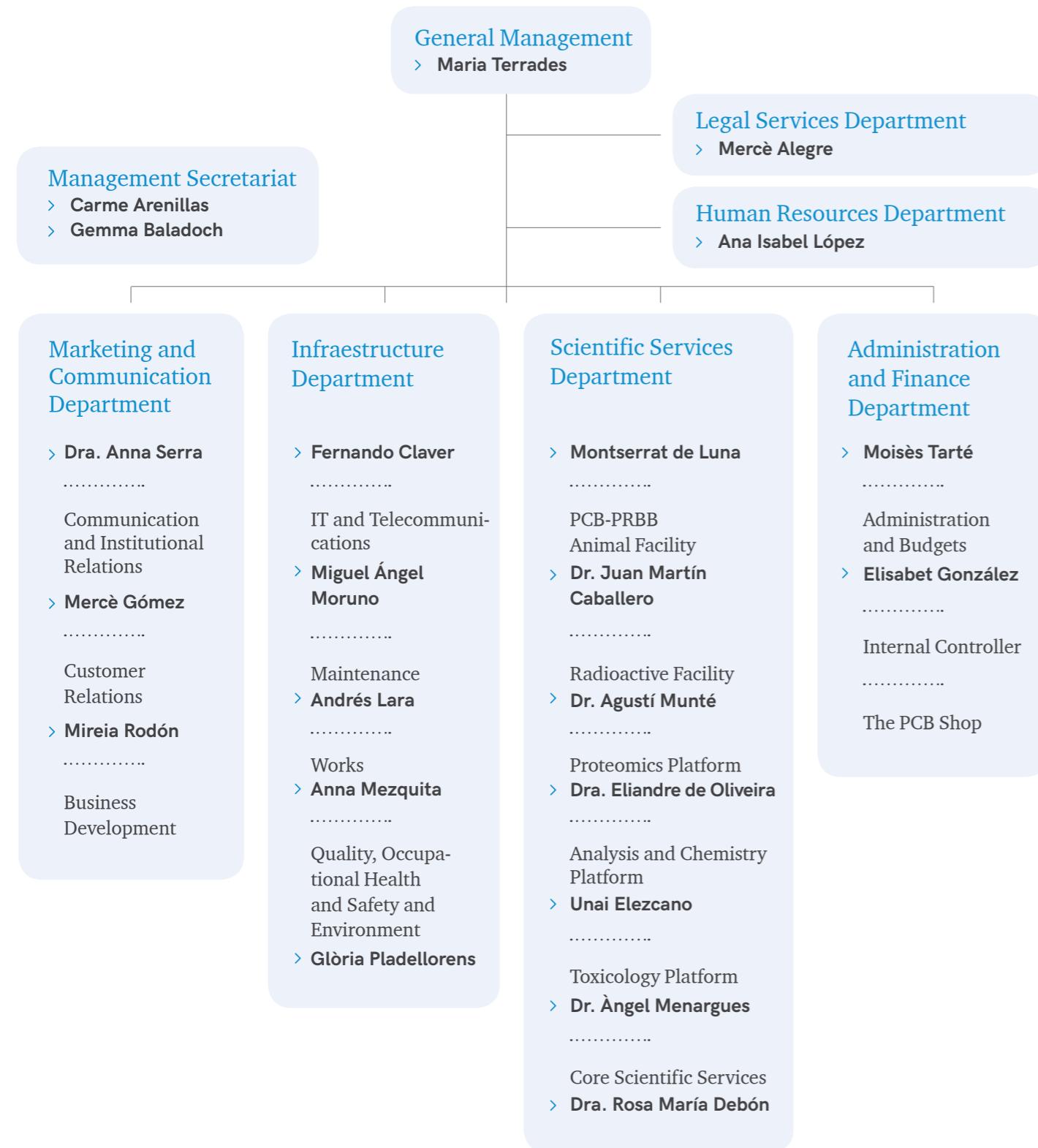
Albert Cirera Hernández
Vice-Rector for Entrepreneurship, Transfer and Innovation of the University of Barcelona (As of 11 December 2018)



Gerardo Pisarello Prados
Barcelona City Council (As of 8 June 2018)



Organisation chart



Maria Terrades
CEO, Barcelona Science Park

Maria Terrades, CEO of the Park

Maria Terrades has been the Park's CEO since June, after her appointment was agreed by the Board of Trustees, chaired by the University of Barcelona Chancellor, Joan Elias. As a result, Terrades is back at the Park, where she was Managing Director for four years between 2010 and 2014.

Elias highlighted the new CEO's experience in management and finance, as well as her team- and project-leadership skills. He also thanked outgoing CEO Ignasi Belda for his dedication as head of the Park.

Terrades has a degree in Economic and Business Sciences from the University of Barcelona and has completed the IESE's Programme for Management Development. She has worked at companies such as PricewaterhouseCoopers and Agbar, where she was Management Planning and Control Director, Strategic Planning Director and Treasury and Finance Director.



20th anniversary

Throughout 2018, activities and events commemorating the Park's 20th anniversary were held, providing an opportunity to: reflect on the growth of the Catalan health sector ecosystem; highlight the talent and resources provided by the Park community to Catalonia; promote women's presence in the sector; raise awareness of quality research conducted by public and private entities; and acknowledge the rewards of promoting entrepreneurship and business cooperation as key factors in the bioregion's success.



20 September 2018: 20th Anniversary Party on Fifteen's terrace

6.00 p.m. Opening remarks, Maria Terrades
6.20 p.m. Cocktails
7.30 p.m. Performance: The Tutsies
8.30 p.m. Closing remarks, Chancellor Joan Elias
8.40 p.m. DJ



Attended by about 800 people from the Park community and guests.

21 December 2018: Institutional event for the 20th anniversary in the Antoni Caparrós auditorium

4.00 p.m. Opening remarks, Maria Terrades and video
4.10 p.m. Park community speakers:
Dr. Meritxell Teixidó, Research Associate. Unit: Ageing and Metabolism Research Group. Design, Synthesis and Structure of Peptides and Proteins, IRB Barcelona
Dr. Josep Samitier, Director IBEC
Dr. Joan Feixas, Director Enantia
Dr. Carlos R. Plata-Salamán, D.Sc., M.D. Chief Scientific Officer, Chief Medical Officer and Head of R&D of ESTEVE
5.30 p.m. Refreshments

Attended by about 100 invited guests.

Website

www.pcb.ub.edu/20anys/

Flickr

Links available on the 20th anniversary website.



Advertisements placed in the print and digital media by the University of Barcelona: La Vanguardia, El Periódico, Mundo Deportivo, Nació Digital.

Print media coverage

Barcelona Science Park posts record profits on its 20th anniversary. The scientific institution expects to end the year with a €1 million profit.

Expansión Catalunya, 21/09/2018, front page and p. 5

Maria Terrades begins a new period at the PCB.

Expansión Catalunya, 25/09/18, p. 2

The richness of the PCB is in its ecosystem. Maria Terrades, CEO of the institution, champions a management model based on customer needs and says she is committed to full repayment of historical debt.

Expansión Catalunya, 02/10/18, front page and p. 8

Barcelona Science Park turns 20 and achieves its first profits. The Park is fully occupied and planning €13 million in investment to expand its facilities.

La Vanguardia, 21/09/18, p. 63

Research and start-ups need more public support. Barcelona Science Park is a large venue where universities, companies and society come together. With 100% of its space occupied, the organisation is seeking funding to upgrade the facility and cater for the companies and entrepreneurs who want to set up there.

El Periódico de Catalunya, 6/10/18, Section +Innovation, pp. 8-9

The Barcelona Science Park has contributed a great deal to today's life sciences ecosystem in Catalonia. In 2018, the Barcelona Science Park is celebrating its twentieth anniversary as a European leader in life-sciences research, innovation and technology transfer.

[IM] MÉDICO HOSPITALARIO, yearbook 2017-18, pp. 70-71

Estimated total value:

€56.602

Estimated total copies sold:

187.968

Estimated total readers:

1.041.000

Sponsors

enantia

ESTEVE

ibmb
the CSIC

ORDESA
GROUP

STAT Dx
Closer to Care

Partners

BELLAVISTA

IEB
Instituto Empresarial
de Biotecnología

Iproteos

BioSeed
Capital

cnag

CCiTUB
Centres Científics i Tecnològics
UNIVERSITAT DE BARCELONA

CRG
Centre de Regulació del Genoma

ProteoDesign

Team

A team of 96 professionals promote the Park



Collective bargaining

In June, negotiations for the collective bargaining agreement were concluded and presented to the Board of Trustees, which approved the final wording.

The UB Group's Social Policy Coordination Committee approved the creation of a common training policy for UB Group entities.

Training and development

- > 3.112 hours of training
- > 63 actions

"Look after yourself (Cuida't)" Programme

In conjunction with the Occupational Health Department, the "Look after yourself (Cuida't)" Programme was set up to promote the health and wellbeing of the Park's workers.

Compliance with the Social Integration of the Persons with Disabilities Act

Throughout the year, the Park exceeded the mandatory quota for persons with disabilities in compliance with the Social Integration of the Persons with Disabilities Act. By the end of the year, persons with disabilities accounted for 3% of the workforce, one percentage point higher than the minimum required by the Act.

KidsDay

Second edition of the day of workshops, scientific activities and theatre for children of the Park's workers and Ambassadors. Attended by 46 boys and girls aged 3-16, 13 of whom were Ambassadors' children. The day was supported by UB Sports and was made possible by Park employees who volunteered to organise the event.



33 Men

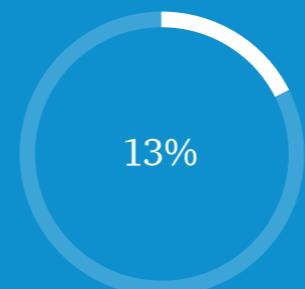
♀ 34%

63 Women

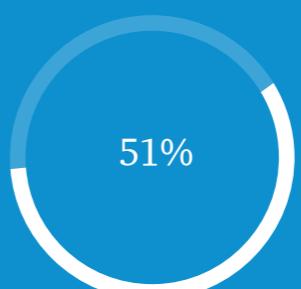
♂ 66%

96 Total

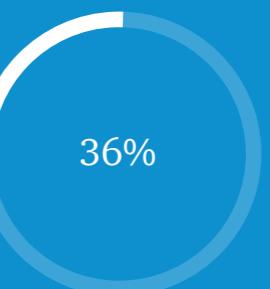
Education



PhD



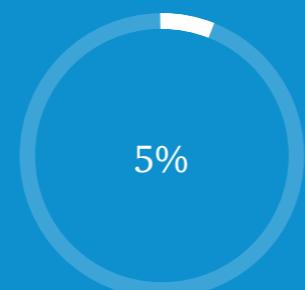
Diploma, degree or
engineering qualification



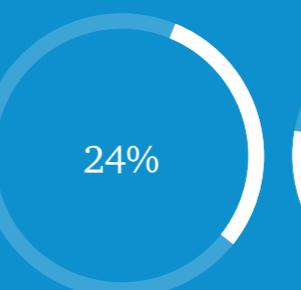
Vocational training, upper
secondary or other

Age

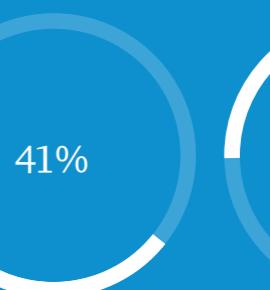
Average age: 44



≤ 30



31-40



41-50



>50



Eliandre de Oliveira
Head of the Proteomics Platform,
Barcelona Science Park

➤ *The Human Protein Atlas will pave the way to personalised medicine*

Scientific services

Laboratories open to the community

Scientific platforms

Publications





Laboratories open to the community

Self-service laboratories, equipment and scientific infrastructure

The Park provides its users with laboratories, equipment and scientific infrastructure on a self-service basis. These laboratories are managed by Park staff who support users and ensure proper operation and suitability of the service for the research requirements of companies and research centres alike.

Users – researchers from the entities headquartered in the Park – can use these scientific infrastructures for independent work and have access to all the equipment owned by the PCB.



Online reservation

Facilities can be reserved online by users, which saves time both for them and for the technical team supporting the spaces.

Special reaction service

The Park has 43 m² of laboratories equipped for special reactions.

Infrastructure and equipment

- Hydrogenation laboratory ATEX regulations allow processes to be carried out at 100 bars.
- Laboratory for toxic products and hazardous reactions
- Specialised technical support

Core Scientific Services

- 7/24
- 365 days
- 1,370 m² of self-service equipped laboratories
- 1,000 users
- Laboratories in Cluster I, Cluster II and Helix
- €227,000 investment in equipment upgrading

Infrastructure and equipment

- 5 clean rooms
- 2 bacterial culture rooms
- 2 yeast culture rooms
- 1 chemical analysis laboratory
- 9 rooms with centrifuges
- 11 rooms with standard equipment
- 5 rooms with stirrers-incubators
- 1 air-conditioned room at 37°C with stirring platforms.
- 9 cold chambers, 5 ultra-low temperature freezer rooms and 2 rooms with cryotanks.
- 6 rooms with spectroscopy equipment
- 3 microscope rooms
- 1 histology room
- 3 dark rooms
- 1 laboratory equipped for protein purification
- Laboratory material washing service

Equipment upgraded in 2018

1 tabletop micro-volume ultracentrifuge, 1 micro-ultra rotor, 1 inverted fluorescence microscope, 2 ultra-low freezers, 1 freeze-dryer pump, 1 photomicrographic camera, 1 CO₂ analyser.

Radioactive facility

- Two extensively equipped central radioisotope laboratories with qualified technical support are available to users for handling molecules marked with radioactive isotopes.
- Optimum safety and radiation protection measures
 - Authorisation of the Radioactive Activities Coordination Service by the Government of Catalonia and the Spanish Nuclear Safety Council.
 - Access to accredited users 140 users
 - 300 m² of exclusive authorised laboratories

Infrastructure and equipment

- 190 m² of shared use laboratories
- Cell culture area
- Animal research area
- Counter room: Beta and gamma counters
- System for capturing digital images using radioactive sample lasers
- Waste storage
- Cold chamber
- X-ray diffraction room
- X-ray irradiator for biological samples

Equipment upgraded in 2018

- Gamma counter
- New user groups added
- IRB Cell Signalling Group and Experimental Particle Physics Research Group at the Institute of Cosmos Sciences

Drosophila

Two equipped fly rooms allow users to research with Drosophila melanogaster as an experimental model, climate chambers and cabinets for growing flies and a preparation room for the fly culture medium.

- Over 40,000 feed tubes per month

Infrastructure and equipment

- Episcopic stereo microscopes
- CO₂ facilities
- Climate chambers and cabinets (at 18 and 25°C)
- 4°C chambers to preserve prepared food
- Kitchen for making and supplying the culture medium

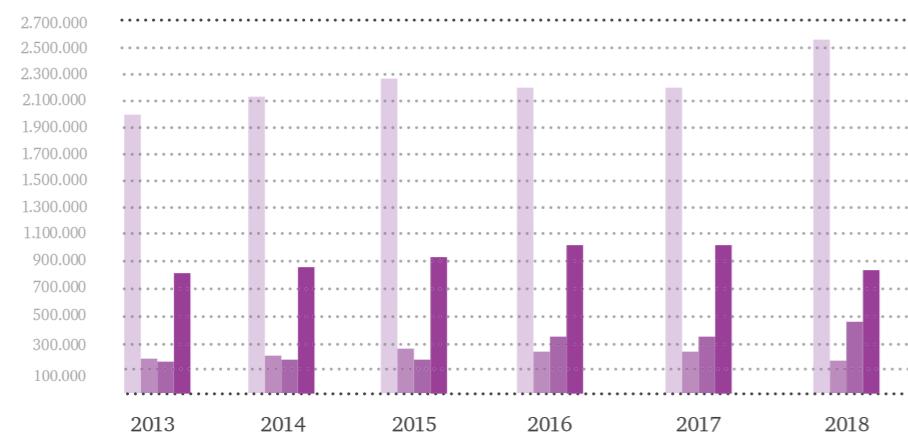




Scientific platforms

The Park has four scientific platforms, with scientific and technical staff and equipment, providing services to entities inside and outside the Park. The platforms afford these entities access to cutting-edge scientific services, which are essential for the research they are conducting. The platforms' location in the Park's ecosystem fosters interaction between the Park's staff and users, thus optimising joint research projects.

Evolution of scientific platforms (€ turnover)



PCB-PRBB Animal Facility Alliance

The Park and the Barcelona Biomedical Research Park (PRBB) have pooled their animal facilities in order to offer a leading platform in research using live models.

- > 3,000 m² in the Park
- > 2 specific pathogen free (SPF) facilities for rodents (rats, mice, hamsters and guinea pigs)
- > 1 facility for *Xenopus laevis* models
- > Over 600 accredited users



The Ethics Committee on Animal Experimentation designated an Authorised Body

The Government of Catalonia has designated the Park's CEEA an Authorised Body for evaluating animal research projects. With this accreditation, the Park can streamline projects and procedures relating to animal facility services.

Turnover 2018

PCB-PRBB Animal Facility Alliance	2.527.699 €
Proteomics	181.001 €
Toxicology	470.272 €
Combinatorial Chemistry	813.411 €

ANIBIO implementation

Implementation of the Animal Welfare Incident monitoring system through the ANIBIO platform, which enables more flexible and efficient management of the health and welfare of the nearly 12,000 animals housed there.

Guarantee and quality

Verification of the application of good laboratory practices carried out by Esteve's Quality Assurance Unit.

Adoption of the Transparency Agreement on Animal Research sponsored by the Spanish Confederation of Scientific Societies (COSCE), with the collaboration of the European Association for Animal Research (EARA).

Existence of the Ethics Committee on Animal Experimentation (CEEA), which ensures the application of the Government of Catalonia's animal research regulations, in 2018.

Proteomics Platform

The Proteomics Platform provides advice and technology to enable the completion of studies ranging from small- or large-scale identification of proteins to quantitative analysis of their level of expression.

Member of the Spanish proteomics network *ProteoRed*

Member of the Carlos III Health Institute platforms network: PRB3 - Biomedical Resources Network Platform - *ProteoRed - ISCIII*



Research projects

	ITACAT: Impact of Thrombus Analysis in stroke patients in Catalonia. La Marató TV3 Foundation nou
	#20171930, 2018-2020

In partnership with IDIBELL's Proteomics Platform.

In this project proteomics is used to reveal the protein expression profile that can explain the processes associated with thrombus formation and also help to classify strokes.

	HEALS - Health and Environment-wide Associations based on Large population Surveys
	FP7, 2013-2019

In conjunction with the Park's Toxicology Platform, it is designed to assess individual exposure to environmental stress and predict health outcomes in Europe.

Proteomics is used in this project to detect changes influenced by exposure to heavy metals and pesticides in cellular models.



Dr. Eliandre de Oliveira, scientific leader at the B-Debate on clinical proteomics

On 7-8 November, the leading national and international experts in proteomics will meet at CaixaForum Barcelona for a new edition of B-Debate, an initiative by Biocat and "la Caixa" Foundation. Four renowned scientists in this field, including Dr Eliandre de Oliveira, head of the Park's Proteomics Platform, will lead the meeting.



Toxicology Platform

The Toxicology Platform delivers services for innovation, research and development in experimental in vitro and in vivo toxicology and ecotoxicology in order to select new candidates and assess the safety of a wide range of products from pharmaceutical, biotech, cosmetic, veterinary, food, healthcare, personal hygiene, chemical, nanomaterial and environmental organisations and companies. To this end it has facilities, equipment and qualified personnel to carry out experimental studies, analytical determinations, histotechnology, interpretation of data and safety and expert reports and evaluations, all under good laboratory practice (GLP) health standards and following national and international guidelines and requirements.

Member of the Toxicology Research Group (GRET)
.....
Member of the Toxicology Research Centre (CERETOX) (TECNIO Agent)



New activities in 2018

Two new service activities have been launched in ADMITE/KP and microbiology to enhance the field of safety and efficacy assessment.

Guarantee and quality:

The service has been audited by the Research Quality Assurance Service so that it can carry out the Toxicology Platform's GLP studies.

The Toxicology Platform renews and extends its certificate of compliance with Good Laboratory Practices

The platform has renewed its Good Laboratory Practice (GLP) compliance certificate for all types of in vivo and in vitro toxicity, mutagenicity and ecotoxicity studies with medicines for human and veterinary use, medical devices and cosmetics. The centre is also expanding for microbiological studies of bactericidal efficacy.

Research projects

CIEN, CDTI

Evaluation of the safety profile of several nanomaterials (nano-silicates). A series of in vitro (cytotoxicity, genotoxicity, inflammation, eye irritation, sensitisation, bioavailability) and in vivo acute and subacute inhalation tests is performed.

NEOTEC, CDTI

Evaluating the safety profile of a new food additive so that it can be brought to market. Specifically, acute and subchronic toxicity and genotoxicity tests are carried out.

AGAUR

Evaluation of a microbiomic promoter based on a wine by-product for the optimisation of fermented products and food supplements, in which it participates in subacute in vivo tests in which immunogenicity, serum biochemistry, histology, haematology and behaviour are evaluated, as well as the evaluation of in vivo efficacy as a prebiotic of the product administered subacutely.

RETOS, PRECLINONCO

Project in partnership with IUCT-INKEMIA, LEITAT and VHIR based on developing a preclinical regulatory programme for new drug candidates for use in oncology.

The aim is to initiate and validate analytical and bioanalytical methods to evaluate formulations and plasma levels of candidates and conduct ADMET (in vitro metabolism, pharmacokinetics, bioavailability, PK/PD analysis), genotoxicity, acute and sub-acute toxicity testing to find the dose range to be used in regulatory toxicology to achieve human administration.

Partnerships

Methodology to combine competencies and capabilities for preclinical research on the efficacy and safety of cosmetic products and medical devices in vitro and in vivo, thus opening the door to clinical research in humans.

Mitochondrial toxicology with Prof. A. Zorzano of the IRB to add competencies and services aimed at investigating the efficacy and safety of in vitro test products.

The UB's Production and Validation Centre for Advanced Therapies (CREATIO) to reinforce and promote research in in vitro and in vivo neurotoxicology by both centres.



Combinatorial Chemistry Platform

The Combinatorial Chemistry Platform provides technology and expertise to perform on-demand compound chemical synthesis projects for medical and biological chemistry projects. It also has the equipment and extensive experience for carrying out chromatographic analysis and the preparation and fractionation of natural extracts.

Agreements with companies

The Combinatorial Chemistry Platform has units with private companies where platform staff are exclusively engaged in business projects. This model with a long-term vision of regular cooperation allows complete integration of the platform's staff with the companies' personnel and thus optimises teamwork and communication.

> PCB-Esteve Unit

> PCB-Almirall Unit





Publications



Articles

- **Photodissociation Mass Spectrometry of Peptides and Proteins.**
Encyclopedia of Analytical Chemistry, 2018
- **Proteolysis in septic shock patients: plasma peptidomic patterns are associated with mortality.**
British Journal of Anaesthesia, 2018, 121 (5): 1065-1074
- **An innovative approach for the integration of proteomics and metabolomics data in severe septic shock patients stratified for mortality.**
Scientific Reports, 2018, 8:6681
- **Leptodactylus latrans Amphibian Skin Secretions as a Novel Source for the Isolation of Antibacterial Peptides.**
Molecules, 2018, 11;23(11)
- **Anti-platelet aggregation activity of two novel acidic Asp49-phospholipases A(2) from Bothrops brazili snake venom.**
Int J Biol Macromol, 2018, 107(Pt A):1014-1022
- **An in vitro cytotoxic approach to assess the toxicity of heavy metals and their binary mixtures on hippocampal HT-22 cell line**
Toxicol Lett., 2018, 282:25-36
- **Comparative In Vitro Toxicity Evaluation of Heavy Metals (Lead, Cadmium, Arsenic, and Methylmercury) on HT-22 Hippocampal Cell Line.**
Biol Trace Elem Res. 2017 Oct 9
- **Design of a true bivalent ligand with picomolar affinity for a G protein-coupled receptor homodimer.**
Journal of Medicinal Chemistry, 2018, 61, 9335-9346
- **Cell penetrating grafting peptides of PLGA nanoparticles to enhance cell uptake.**
European Polymer Journal, 2018, 108, 429-438
- **Environmental effects determine the structure of potential β -amino acid based foldamer.**
Chemistry, an European Journal, 2018, 24, 10625-10629
- **Stimuli-responsive functionalization to spatially and temporally control surface properties: Michael vs. Diels Alder type additions.**
Journal of Physical Chemistry B, 2018, 122, 4481-4490
- **Solid-phase synthesis of homodetic cyclic peptides from Fmoc-MeDbz-resin.**
Tetrahedron Letters, 2018, 59, 1779-1782
- **A test battery for assessing the ecotoxic effects of textile dyes.**
Chemico-Biological Interactions, 2018, 291, 171-179
- **Mitochondrial DNA and TLR9 drive muscle inflammation upon Opa1 deficiency.**
The EMBO Journal, 2018, e96553



Posters

- **Role of circulating cells in mediating proteolysis in septic shock.**
47th Society of Critical Care Medicine (SCCM) Congress, San Antonio, 25-28 February, 2018
- **A System-based Comparative Proteomics Approach to Investigate Heavy metals mixtures toxicity mechanism relates to the neurodegeneration on Hippocampal cell line.**
EUROTOX 2018, Brussels, 2-5 September, 2018
- **An innovative approach to integrate proteomics and metabolomics data in severe septic shock 15th International Conference on Computational Intelligence methods for Bioinformatics and Biostatistics.**
CIBB 2018, Caparica, 6-8 September, 2018
- **Synthesis of different length monodisperse cholesterol-PEGn-peptide to increase pharmacokinetics of multifunctional nanovesicles for Fabry disease.**
16th Iberian Peptide Meeting / 4th Chemical Biology Group Meeting (EPI XVI), Barcelona 5-7 February, 2018
- **Synthesis of different lengths of highly monodisperse cholesteryl-PEGn-peptide conjugates.**
35th European Peptide Symposium, Dublin, 26-31 August, 2018



Oral Presentations

- **A Proteomics Study on Septic Shock Patients: an Overview on Sepsis-Induced Myocardial Dysfunction.**
12th EUPA Congress, Santiago de Compostela, 16-20 June, 2018
- **Multivalent oligoethylene glycol (OEG) dendritic platforms as chemical tools to study GPCR oligomerization.**
Sixth Meeting on Dendrimers (EDEN 6), Seville 22-23 February, 2018
- **Design of a true bivalent ligand with picomolar binding affinity for a G protein-coupled receptor (GPCR) homodimer.**
16th Iberian Peptide Meeting/4th Chemical Biology Group Meeting (EPI XVI), Barcelona 5-7 February, 2018



General Services

Judit Anido
CEO, Mosaic Biomedicals

> *Recognised at the Fem Talent
2018 awards*



General Services

Here at the PCB we manage those general services needed by our users so that they may focus in their core business tasks: innovation, research, development, and so on.

Front desks and mail management

- > 8h - 19h
- > 4 reception desks located in Cluster I, Cluster II, Torres and Helix buildings
- > Information and services points for users and visitors
- > Meeting Rooms Management
- > Mail and Courier daily management

Receptions and distribution of goods per year **28.300**
receptions/year

Daily cleaning routes (18% increase in routes over 2017) **47**
daily routes

Works and maintenance

- > Renovations projects and coordination for users' spaces
- > Facilities maintenance, preservation, optimization and functionality
- > Power supply together with decalcified and demineralized water supply
- > Laboratory gases supply
- > Liquid nitrogen and dry ice dispensation

Maintenance operations per year at users' request **6.500**
operations

Preventive maintenance operations per year **11.300**
operations

Security

- > 24/7
- > Access control and perimeter surveillance by means of closed-circuit tv
- > Fire and intrusion detection
- > Centralised alarms for general air conditioning, freezers and freezing rooms, UPS power and intelligent power-save circuits

Phone and computer network

- > Access to scientific network for public entities
- > Internet output for companies
- > Possibility to use Ibercom or Telefonica as a corporate phone network, or otherwise other companies can be hired.
- > IP services
- > WIFI network, VPN and printers for shared use
- > Server hosting at Data Processing Centre
- > Safe systems in order to diminish any risks related to communications network.
- > Microcomputing services



Lab clothes' cleaning services

Service includes the resting of three customized coats per user together with weekly cleaning

Shop 'Botiga'

One may find offices and labs' expendable material

Waste management

Door to door collection of laboratory waste	68,1 tons	68,4 tons
of biological waste		
of chemical waste		

Centralized management of offices' waste and others		180 m ³
of EPS boxes		



Catering services

	2 restaurants can accomodate
	5 lunch box users' areas

	512 car parking spaces
	14 adapted car parking spaces

	54 motorbike parking spaces
	21 bicycle parking spaces

Meeting rooms

	Meeting rooms for hosting 4 to 28 people
	Waiting rooms
	Auditorium 140 people
	Multipurpose room 120 people
	Room 70 people

	11.568 hours of room reservations
	(18% increase in occupancy over 2017)

	35% average occupancy in 2018
--	-------------------------------

.....
Teresa Tarragó

CEO, Iproteos

> Iproteos together with IBEC and VHIR,
they are to develop an innovative
therapy against solid tumours



Spaces

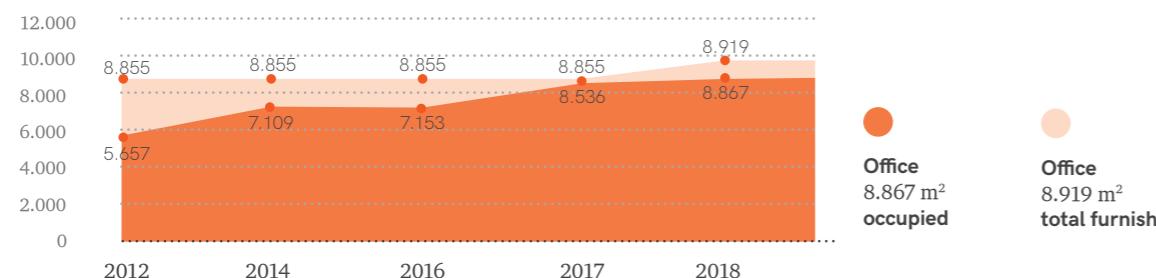




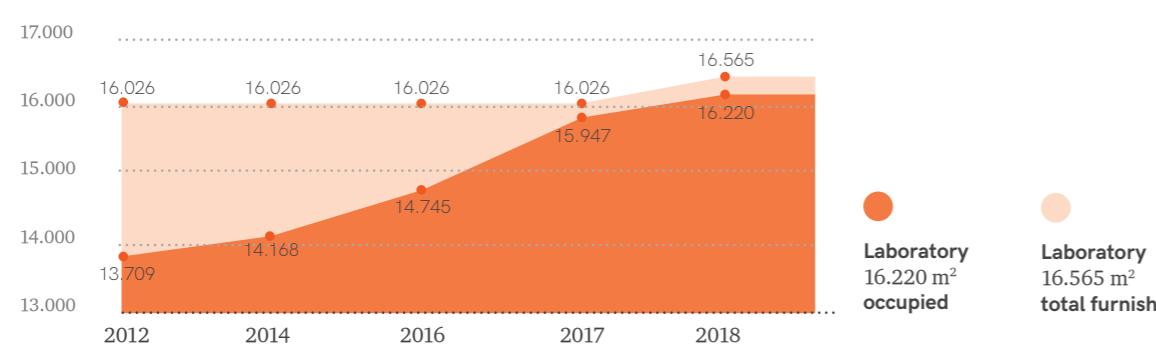
Spaces

The Park has over 33,800 m² of office and laboratory area available to users.

Evolution in occupancy of office spaces (m² net floor area)



Evolution in occupancy of laboratory spaces (m² net floor area)



Refurbishing new laboratories

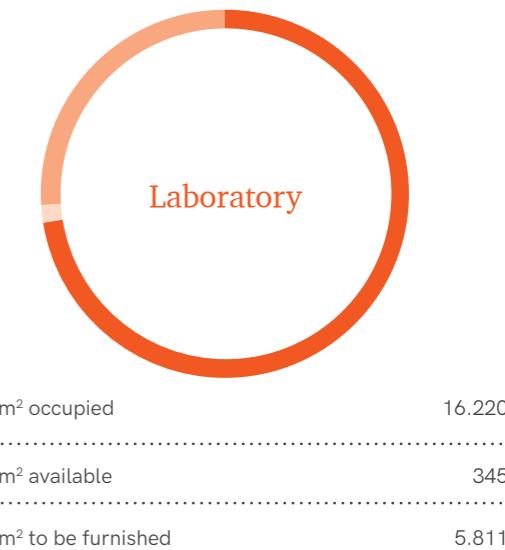
The Park is refurbishing five new laboratories covering 300 m² on the first floor of the Cluster II building at its own expense. These spaces permit the expansion of Proteodesign and Iproteos, and the IBEC research centre — businesses that already established on-site — and the arrival of two external companies, Hipra and Farmaprojects.

GalChimia moved into the Park in a new laboratory which meets its space (100 m²) and operational needs. GalChimia has borne the cost of furnishing this new laboratory.



Current occupancy and growth spaces

The Park has laboratory growth spaces (5,811 m²) in the Cluster II building and office space (2,509 m²) available in both the Cluster II building and the Cube building.

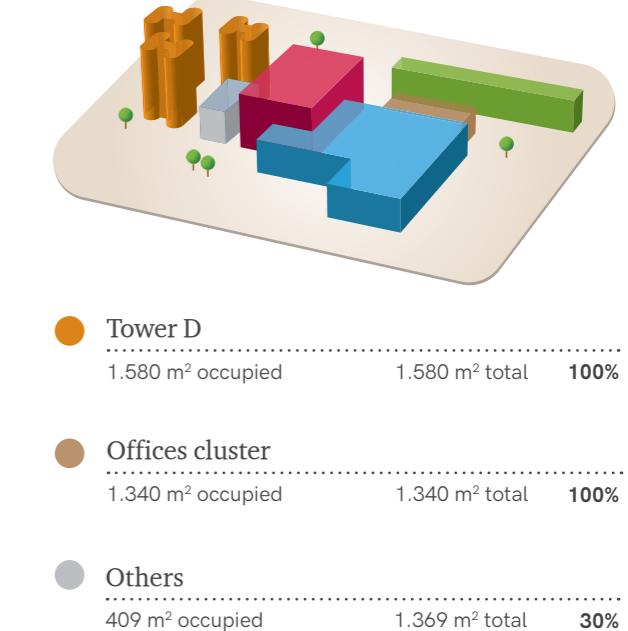


Occupancy of available spaces 74%

Occupancy of furnished space 98%

Occupancy by buildings

	Building m ² occupied	m ² total	% occupied
Cluster I	8,951 m ² occupied	9,234 m ² total	97%
Cluster II	3,918 m ² occupied	11,178 m ² total	35%
Helix	3,440 m ² occupied	3,440 m ² total	100%
Tower I	3,521 m ² occupied	3,712 m ² total	95%
Tower R	1,928 m ² occupied	1,950 m ² total	99%
Others	409 m ² occupied	1,369 m ² total	30%





Research in Society programme

.....
Julie Masse

Sales and marketing Director at GalChimia

> *GalChimia opens an R&D centre
at the Barcelona Science Park*





Research in Society programme

Bringing live science to the general public is the Park's commitment to society. Through the Research in Society programme we encourage open and interactive dialogue between the public and researchers.

Workshops

The programme's objectives include identifying a murderer by analysing their DNA and understanding diabetes, Alzheimer's and arteriosclerosis through experimental workshops held in the Park. Practising researchers welcome schools to the Park every week and give them a guided tour of its facilities and one of the scientific workshops we have designed. Teachers and students get to see scientific equipment in the Park that is rare in schools and have the unique experience of interacting with researchers.

16 years

promoting careers
in science

>4.500

participants per year
Aged 10-18



Discover Research

Primary Year 5 and 6 students

1.019
Students

85
Teachers

20
Schools

48
Activities

2
Workshop themes

Do Research

Lower and upper secondary and vocational training students

1.380
Students

135
Teachers

68
Schools

43
Activities

7
Workshop themes

BATX2LAB

The Park hosts first year upper secondary students about to start their Research Project (RP). The students carry out the practical part of their RP in the laboratories of entities in the Park, under the supervision of Park community researchers.

- 14th edition
- 1st year upper secondary students
- 41 research projects supervised
- 23 researchers
- 3 prize winners present their RPs at the Live Research Fair

Live Research Fair

The Live Research Fair brings together a selection of 11 interdisciplinary research groups from all over Catalonia in a single space for four days. Students, teachers and society as a whole have the opportunity to talk face-to-face with researchers, learn about the Catalan research currently being carried out and perform small experiments.

- 16th edition
- 4 days at Fira CosmoCaixa
- Lower and upper secondary, vocational training and the general public
- Attendance: 1,205 students, 95 teachers, 41 schools, 543 members of the general public
- 91 researchers
- 11 research centres

Opened by:

Barcelona Science Park CEO (until June 2018), Ignasi Belda

Barcelona Science Park Director of Marketing and Communication, Anna Serra

Director of the Science Knowledge Unit and CosmoCaixa, Jordi Portabella

Director of CosmoCaixa, Lluís Noguera

The BATX2LAB programme receives the Barcelona Educational Innovation Award.

The BATX2LAB programme was chosen as the winner of the Barcelona Education Innovation Award in the High School category in the first edition of the awards, created by Barcelona City Council to recognise altruistic initiatives for educational innovation and change carried out by schools and organisations in the city.

Science and Technology in Feminine

Under the tagline 'The universe is waiting for you to change it. Will you be the next great scientist to go down in history?', the Park organised events for first-, second- and third-year lower secondary students to spark their interest in and ability to do research and ignite their entrepreneurial spirit. The events were held with the support of Bayer Hispania and as part of the 'Science and Technology in Feminine' project sponsored by the Association of Science and Technology Parks of Spain (APTE).

- 1st edition
- 4 days of talks and workshops
- 112 first- to third-year lower secondary students
- 3 schools
- 1 travelling exhibition in 14 schools and the Sagrada Família Library

Partnerships

- Exporecerca Jove
- Yomo
- Science, technology and innovation festival
- Fourth University of Barcelona Science Festival
- Sants and Les Corts district festivals
- iFest: The Young leaders interaction fest

Our thanks to our partners:



PCB-PRBB
ANIMAL FACILITY
ALLIANCE

Our thanks for the financial support of:



FEDER
FUNDACIÓN ESPAÑOLA
DE LA CIENCIA Y LA TECNOLOGÍA



University of Girona's 'lollipop' to detect infectious diseases, best disruptive idea at iFEST

The University of Girona team's idea meets the challenge set by the Barcelona Science Park and consists of a smart sweet that analyses the patient's saliva and geolocates and sends the results in real time. It was judged the best innovative solution in the iFEST Dream BIG Challenge, which had over 7,000 entrants.

Sílvia Frutos
Founder and CTO, Proteodesign
➤ Recognised at the Fem Talent
2018 awards



Quality, safety and the environment





Núria Verdaguer

IBMB-CSIC Director

Scientific Director of the Structural Biology Unit

- *The Structural Biology Unit at IBMB-CSIC receives €400,000 from the 2017 "La Marató de TV3" telethon*

The Park is firmly committed to quality, safety and the environment

Quality



ISO 9001 since 2011

➤ **Scientific services:**

Core scientific services, radioactive facilities, special reactions service.

➤ **General services:**

Reception and user services, goods reception and distribution, fitting out and remodelling spaces, maintenance service, shop and related services, IT and communications service, waste management, cleaning and security.

Certificate of compliance with Good Laboratory Practice principles pursuant to Royal Decree No. 1369/2000

- Toxicology platform for carrying out toxicology and ecotoxicity studies with drugs (for human and veterinary use), medical devices and cosmetics.

- Laboratoris Esteve animal facility unit.

ACCIÓ accredits the Park as an Innovation Voucher programme supplier.

Support for entities in the Park to obtain and retain ISO 9001, ISO 17025 or any other certified standard for their business sector.

Occupational health and safety

We provide ongoing workplace risk assessments, employee training and information, health check-ups and actions related to emergency plans for Park employees.

We handle business coordination of OHS measures for entities in the Park along with all actions connected with the buildings' Emergency Plan, including training about what to do in the event of an emergency.



Environment



ISO 14001 since 2011

- Environmental management of buildings and facilities.

- Support for entities in the Park to obtain and retain ISO 9001, ISO 17025 or any other certified standard for their business sector.

Environmental performance

- The electricity consumed is 100% renewable.
- Consolidation of a channel of communication and environmental awareness with the community through the weekly newsletter T'interessa.
- 100% reduction of plastic waste produced by water bottles and glasses used in the meeting rooms.

.....
Anna Esteve-Codina

Data analyst in the Functional Genomics
team, CNAG-CRG

> *New clues to analyse gene expression
through epigenetics*

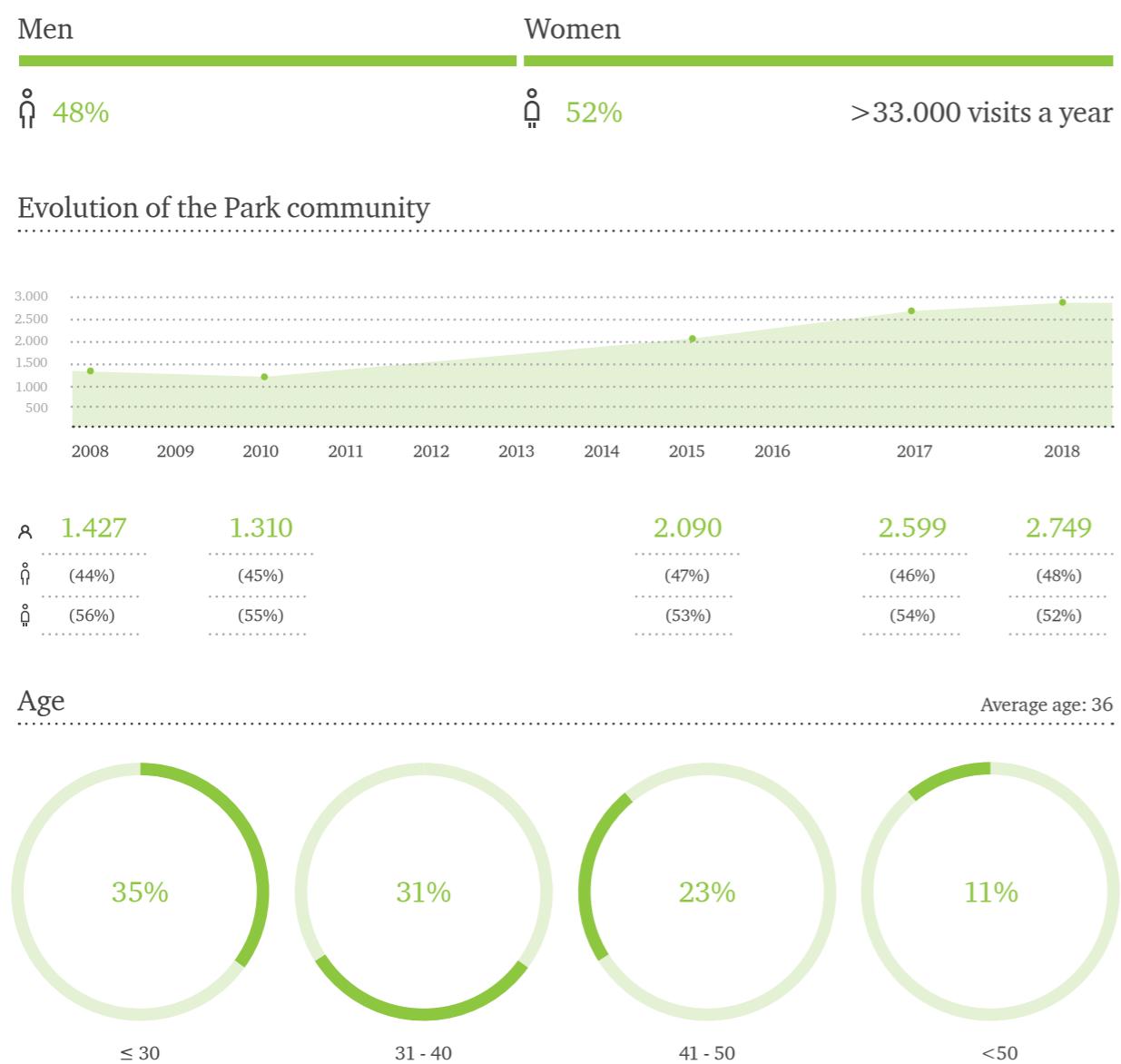


Park Community

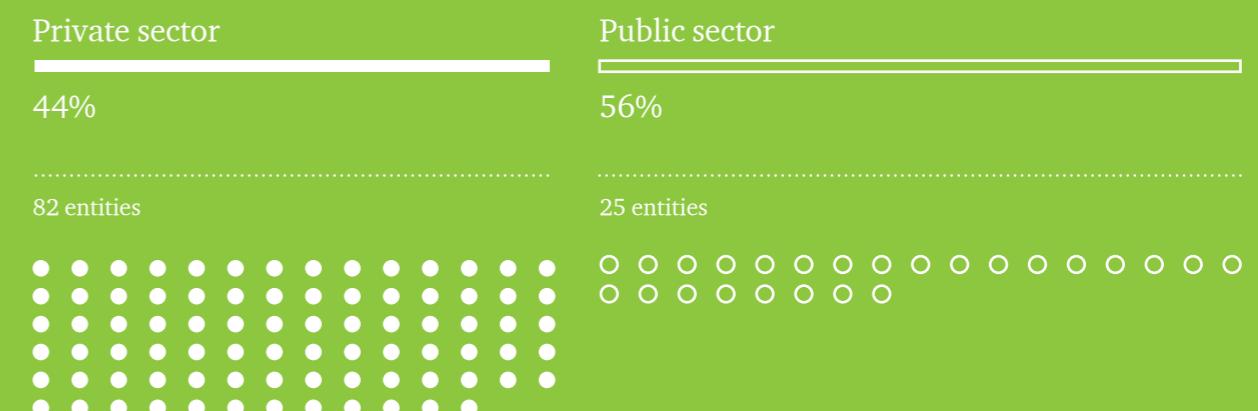


The ecosystem

The Park community brings together more than 2,700 researchers, entrepreneurs, businesspeople and other professionals. The health sector predominates in the ecosystem with pharmacy, biotechnology, medical devices, nutrition and cosmetics operations.



The Park promotes interactions and collaborations between large public research centres, companies and other entities based in the Park from both the public and private sectors.



Sector	%
Health	98
Medical biology	47
Pharmacy	12
Chemistry	4
Medical devices	4
Cosmetics	4
Agrifood	2
Nanotechnology	1
Other health	23
ITC	2
Environment	2





A total of 107 entities are based in or associated with the Park.

The ecosystem is made up of six leading public research centres, pharmaceutical, biotech and nutrition companies, SMEs, start-ups, University of Barcelona units and non-profit organisations.

Entities already based in the Park



New entities in the Park



Associated entities



New associated entities





Entity success stories

Minoryx starts a phase II/III clinical study of MIN-102 for treating adrenomyeloneuropathy



New Born Solutions creates the first non-invasive 3-second screening device for infant meningitis



Bionure initiates a Phase I clinical trial of its BN201 compound in the United Kingdom



Bioinformatics company Mind the Byte acquires Intelligent Pharma



The CCiTUB's NMR Laboratory renews its qualification as a Singular Scientific and Technological Infrastructure



IRB Barcelona receives a €1.5 million bequest, two ERC Proof of Concept grants and funding from the Spanish Association Against Cancer and "La Marató de TV3" telethon.



Several IBEC projects selected by the new MIT-Spain "la Caixa" Foundation Seed Fund call, the BBVA Foundation in the 'Grants for Biomedicine Research Teams' programme, the CaixaImpulse programme, the Spanish Association Against Cancer and "La Marató de TV3" telethon.



SOM Biotech launches a Phase IIa clinical trial of a drug for Huntington's disease.



Biomedical industry in Catalonia raises €102 million in investment in 2017.



The Structural Biology Unit at IBMB-CSIC receives €400,000 from "La Marató de TV3" telethon.



Laboratorios Ordesa leads a research project on food allergies sponsored by the CDTI with a budget of €8.1 million.



The GAEM Foundation launches its inclusive charity campaign 'Yo Doy mis Pasos'.



DTI Foundation launches "Save 1 million lives" campaign.



Researchers from CNAG-CRG and IDIBAPS receive an €8.3 million ERC Synergy Grant.



Dutch holding company Qiagen acquires Stat-Dxper

The Netherlands-based Qiagen group, which is listed on New York's Nasdaq, has entered into an agreement to acquire Stat-Dxper for \$191 million, around €154 million. The Catalan biotech, founded in 2010 by engineers Jordi Carrera and Rafael Bru, specialises in developing advanced "Closer to Care" diagnostic solutions.





Partnerships and alliances

Iproteos, IBEC and VHIR to develop an innovative therapy to combat solid tumours



Avinent joins with IBEC to create 3D bioprinted prostheses that become real bone



Chemotargets signs a research collaboration agreement with the FDA's Center for Drug Evaluation and Research



CRG and Eugin sign a collaboration agreement on molecular research in assisted reproduction



IBEC joins forces with FEDER to collaborate on solutions for rare diseases



AELIX Therapeutics and Gilead Sciences sign a clinical research collaboration agreement for HIV cure



ICCCUB becomes a Scientifica International technological partner



Reig Jofre and Leanbio create the joint venture Syna Therapeutics



Appointments



- **Jaume Amat**
CEO of Specipig, new chair of CataloniaBio & HealthTech
- **Francesc Posas**
new director of IRB Barcelona
- **Laurent Nguyen**
new CEO at Bionure Farma

Awards and recognitions



- **Azierta**
European Medal for Merit in Work

- **Stat-Diagnostica**
Bioèxit 2018 CataloniaBio award

- **Iproteos**
Senén Vilaró award

- **Barcelona Science Park**
Secondary award for best practice in science parks APTE



- **Judit Anido**
Fem Talent 2018 Award

- **Xavier Trepat**
Selected member of EMBO

- **Salvador Aznar**
Selected member of EMBO

- **Martí Manalich**
Josep Trueta Award

- **Pere Roca-Cusachs**
Premi Ciutat de Barcelona 2018 Award for Life Sciences



Anniversaries



- **UB Scientific and Technological Centres:**
30 years of technology working for research and innovation.

- **DTI Foundation:**
A decade promoting research and training in donation and transplants.



- **The Bosch i Gimpera Foundation marks its 25th anniversary**



- **Pharmaphenix**
celebrates 10 years as a leading international pharmaceutical consultancy.

- **iLS**
five years connecting companies with world experts in health sciences.



Rita Vassena

Scientific Director, Group Eugen

➤ *Alliance between CRG and Eugen
on molecular research in assisted
reproduction*

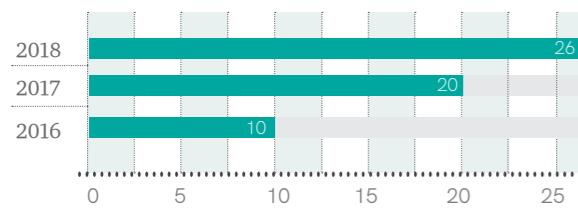
Promoting the Park community





Promoting the ecosystem is one of the Park's cornerstones

Events organised by the Park



882 participants

2016

1260 participants

2017

2660 participants

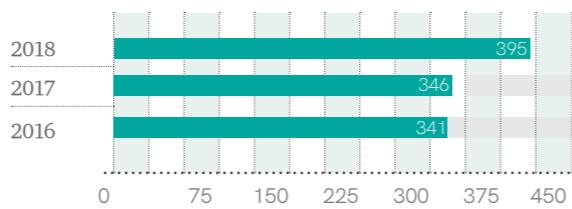
2018

First Ambassadors programme

32 CEOs of companies and research centres in the Park join the first Ambassadors programme. The aim is to create forums for in-depth interaction between the Park's management and the entities based as well as networking opportunities between senior management in the health sector.



Events organised in the Park



18.650 participants

2016

18.900 participants

2017

21.710 participants

2018

Cocktail Connection

Every two months a two-hour interactive networking event is held for the Park community. The Cocktail Connection is for professionals from both the public and private sectors in the community who are looking for a relaxed networking venue. Newcomers have the chance to introduce themselves and the Park's management shares initiatives of interest to the entire community.

Kelly Arrontes blends art and science in her "L'aigua és vida" mural at the Park

Kelly Arrontes has completed her artistic project: a more than 125-metres long mural that decorates the walls of the corridor connecting the Park's Cluster I and Cluster II buildings. The painter is legally blind as she only has 9% of normal vision and is a member of ONCE, the Spanish organisation for the blind. Supported by Agbar.

Agbar



Launching MedTeX, the accelerator for medical technology start-ups

The Park, the Bosch i Gimpera Foundation and the Barcelona Entrepreneurship Institute have given the go ahead for the MedTeX acceleration programme, a ground-breaking initiative co-financed by ACCIÓ to boost emerging enterprises with an innovative business project that shows a clear international commitment within the field of medical technologies and eHealth.

Participants:



Trainers:

- > Ignasi Belda, Barcelona Science Park
- > José Alarcón, University of Barcelona
- > Pedro Alonso Juncar, Banco Santander
- > Alejandra Pérez, Banco Santander
- > Xavier Cañadó, Banco Santander
- > Xavier Arroyo, University of Barcelona
- > Javier Domínguez Olivar, Bellavista
- > Marta Princep, Bellavista
- > Rosa María Abadie, Bellavista
- > Francesc Miatet, Bellavista
- > Juan Tugores, University of Barcelona
- > Josep Lluís Falcó, GENESIS Biomed

Mentors:

- > Alfons Hidalgo, Infinitec Activos
- > Alfons Nonell, Mind the Byte
- > Carlos Buesa, Oryzon
- > Ignasi Belda, Barcelona Science Park
- > Joan Adan, Stat Diagnostica
- > Joan Bertran, Cebiotex
- > Joan Feixas, Enantia
- > Josep Lluís Falcó, GENESIS Biomed
- > Olga Durany, Greenaltech
- > Oriol de Tera, Meteosim
- > Teresa Tarragó, Iproteos

wwwpcb.ub.edu/MedTeX/

Thanks to our partners:



Preferències

Collaboration with Spanish TV in the programme "Preferències" led by José María Carrasco. Once a month, he welcomes a guest from the Park with the aim of informing the public about health sector innovation and excellence.

Guests 2018:

- > Joan Bertran, Cebiotex
- > Teresa Tarragó, Iproteos
- > Ángel Menargues, Barcelona Science Park
- > Javier Ramón, IBEC
- > Raúl Insa, SomBiotech
- > María Rodríguez-Palmero, Ordesa
- > Alfons Hidalgo, Infinitec
- > Oriol de Tera, Meteosim





'Upcycled', imatge premiada en el concurs 'Un dia al PCB 2018' (Autora: Jelena Stanisavljevic)

Events, conferences and workshops organised

- > Wild Card informative session
- > Sangeet Sabha - an Indian classical music evening
- > Accelerating success in drug development & clinical trials conference
- > Charles River & The Jackson Laboratory seminar
- > Inauguration of the "Water is Life" mural by Kelly Arrontes
- > Safety in the use of centrifuges and ultracentrifuges
- > Funding business R&D&i in the bio-health sector. New developments - CDTI
- > MedTeX Accelerator Conference
- > Presentation: At the feet of giants: scientific communication for tomorrow
- > NEOTEC new developments: grants for funding new technology-based business projects
- > Second International Congress on Bioeconomics
- > Second APTE Congress
- > Film screening: "I'll push you"
- > Regulatory aspects to consider in the early stages of medical device development
- > Blood donation day
- > Fourth edition of the "A Day at the Park!" photo contest
- > Glass of Christmas cava



Coverage in the general press,
trade press and industry websites

2017	1.129
2018	1.141



Annual visits to
www.pcb.ub.edu

2017	111.144
2018	111.869



News items posted
on the website

2017	161
2018	145

Participation in national and international conventions and congresses

- > ISBA Conference in India
- > Transfiere Forum
- > 12th Iberian Meeting of Science and Technology Parks
- > BIO International Convention, Boston
- > BioSpain, Seville
- > Barcelona Industry Week
- > 16th APTE International Conference
- > 11th Biomedical Research Platforms Annual Conference

Partnership

- > 10th Summer School on Medicines
- > Salt University Students' Forum

Afternoons at the Park

The "Afternoons in the Park" programme was launched as a space for leisure and health. It holds weekly yoga, zumba and salsa classes open to the entire Park community.



Bioeconomics experts warn about the need for sustainable use of biological resources

Nearly 150 researchers, technicians and business people gathered in the Park at the Second International Congress on Bioeconomics, jointly organised by Cajamar and the Association of Science and Technology Parks of Spain in partnership with the Park and the Lleida Agrifood Science and Technology Park.



Mar Massó

CEO, Bionure

- > Bionure initiates a Phase I clinical trial of its BN201 compound in the United Kingdom

Budget

Income description	Budget amounts	Year-end amounts
Leases	9.950	10.185
Service provision	8.591	8.804
Grants/donations	257	257
Recurring income	18.798	19.246
Expenditure		
Staff	-4.202	-4.071
Maintenance and services	-9.007	-9.511
Recurring expenditure	-13.209	-13.582
EBITDA	5.589	5.664
Financial expenses	-950	-989
EBTDA	4.639	4.675
Amortisation and depreciation	-4.573	-4.598
Capital grants applied	1.476	1.379
Profit	1.542	1.456

Amounts in thousands of €
Year-end as of 31/12/2018

2018 reached historic highs: €19.2 million in income and €5.7 million in EBITDA.



Barcelona Science Park

Where Science Becomes Business



c/Baldiri Reixac, 4-12 i 15
08028 Barcelona
Tel. (+34) 93 402 90 60 | info@pcb.ub.cat