

ACTIVITY REPORT 2017



Bosch i Gimpera
UNIVERSITAT DE BARCELONA

Bosch i Gimpera Foundation

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Edition

Bosch i Gimpera Foundation

ACTIVITY REPORT **2017**



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UNIVERSITAT DE BARCELONA

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PRESENTATION //

I am pleased to present the 2017 Activity Report of the Bosch i Gimpera Foundation.

First of all, I would like to highlight an important fact that illustrates the importance of the work we do at the Bosch i Gimpera Foundation within the innovative ecosystem: the University of Barcelona generates a total economic impact on the European economy of €6.42 for every euro it receives. This information comes from the report “The financial contribution of LERU universities,” based on 2016 data compiled by the independent consultancy firm BiGGAR Economics, at the request of the League of European Research Universities (LERU), which brings together the 23 most research-intensive European universities, including the University of Barcelona (UB).

In this context, during 2017, the collaboration between the UB and the various socio-economic agents through the Bosch i Gimpera Foundation has led to the development of 820 projects, the contracting of € 29.4 million, the licensing of 9 technologies, and the creation of one spin-off. All this activity has resulted in a total revenue of €1.5 million for the UB.

It is also worth highlighting the Open Innovation Forum, held in 2017, the first meeting between Catalan universities and companies, which aimed to respond to the research and innovation challenges

proposed by companies through innovative solutions proposed by universities.

Also this year, we have revamped the FBG website, with the following objectives: presenting the FBG as an approachable entity, which connects university and business in order to transfer innovation to society; highlighting the main areas of activity of the FBG: contract research, business creation, and technologies, materials and licences; offering relevant, clear, and updated information to different user profiles according to their needs: researchers, companies, investors, and mentors; providing a tool to facilitate contact between users and the FBG, in order to offer them personalised and useful attention; and publicising the work of the FBG through the results obtained (Foundation figures and success stories) and the latest information (news, interviews, etc...).

We have also continued organizing the Science + Partners event. This year's edition, the third one, brought together specialists from the business world and researchers working on projects in the field of medical devices and digital health. As a result of the 2016 Science + Partners, Enlighting Technologies, a spin-off of the University of Barcelona that develops intelligent lighting systems, was set up in 2017. The research group presented its technology during the second edition of Science + Partners, and the collaboration with BeAble

Capital, a technology transfer fund that identifies scientific advances with industrial potential to turn them into business projects, emerged from this meeting.

This year 2017 has also seen the continuation of projects such as the call for proposals for the Fund for the Promotion of Innovation—endowed with €124,000 to boost the innovation and transfer activities of researchers at the University of Barcelona—and the Keys to Bio-entrepreneurship, and Health & Bio Team Dating events.

I would also like to emphasize, on the other hand, the good reception given by both researchers and FBG staff to the All Together Meeting project, a series of sessions during which FBG employees learn about the work being done by researchers through real cases of projects that staffers themselves have helped to set in motion, and which at the same time allows researchers to meet the FBG's staff in person. Eleven researchers visited us between the start of the project and the end of 2017.

Finally, I want to thank the team of the FBG for their work, which has once again shown their professionalism and enthusiasm for the project.

// M. Carme Verdaguer
GENERAL MANAGER

CONNECTING RESEARCH AND SOCIETY //

“The FBG is an essential and necessary structure for the transfer of the knowledge generated at the University of Barcelona to industry. It provides us with the necessary support to be able to hire staff, manage budgets, and find other University groups and companies with which we can collaborate.”

Dr. Lluís Francesc Santamaria

Head of the Translational Immunology Research Group (PCB / UB) and Professor of the Department of Cell Biology, Physiology, and Immunology, Faculty of Biology (excerpt from an interview conducted in January 2017)





We are the technology transfer office of the University of Barcelona and our mission is to transfer the results of the research carried out by UB researchers in order to contribute to economic and social progress through innovation.

We know two very different worlds very well, the world of university research and the business world, and we also know how to facilitate the collaboration between university and companies in order to increase the university's impact on society. To achieve these goals, we support researchers, entrepreneurs, and investors at different levels in an agile and efficient way, and we do this by:

Providing solutions for people, that is, facilitating the creation of new products that improve people's lives;

Creating opportunities for researchers, entrepreneurs, and investors;

Generating business, that is, facilitating the creation of innovative companies.

InnovationForum

ACTIVITY INDICATORS 2017 //



29.41

Million euros
Projects contracted
with the UB



1.5

Million euros
Profits for the UB



1,929

Active research
projects



801

People hired
within research
projects



667

Companies
and institutions
contracting
research



55

Assessed
inventions



1

New
spin-off
created



9

Licensed
technologies



22

Reviewed
ideas



319

Grants
applied for

INNOVATION AND KNOWLEDGE TRANSFER //

CONTRACT RESEARCH

Annual contracted revenue //



10.95
MILLION



615
PROJECTS

TECHNOLOGIES, MATERIALS, AND LICENCES

124

PATENTS
TO TRANSFER

75

PATENT
APPLICATIONS

12 priority patent applications
9 international patent
applications (PCT)
54 patents in national
phases abroad

9

LICENSING
CONTRACTS
SIGNED


5

SOFTWARE
TECHNOLOGIES
REGISTERED

15

MATERIAL
TRANSFER
AGREEMENTS

€ 270,125 in revenue generated by licences



“All the knowledge generated by our research must be extrapolated to the social reality we live in. It is essential to be able to transfer this knowledge in order to turn it into an asset for the population, and the way to put it at the service of citizens is to work with the business sector.”

Dr. Josep M. Suñé

Director of the Drug Development Service, Faculty of Pharmacy
(excerpt from an interview conducted in November 2017)



BUSINESS CREATION AND SUPPORT FOR THE ENTREPRENEUR

26

ACTIVE SPIN-OFFS

22 business creation ideas received
25 entrepreneurial projects advised

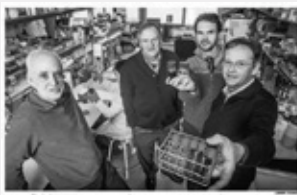
1

NEW SPIN-OFF CREATED

Enlighting Technologies, SL:
development and marketing of new
intelligent lighting systems.

Spin-off shareholdings through UB Innovative and Scientific Culture, SLU (CIC-UB):

Advanced Nanotechnologies, SL; Biocontrol Technologies, SL; Bluephage, SL; Braingaze, SL; Cytes Bio-technologies, SL; Dapcom-Data Services, SL; Enantia, SL; Enlighting Technologies, SL; Genmedica Therapeutics, SL; ImmunNovative Developments, SL; Impetux Optics, SL; Iproteos, SL; Nostrum Biodiscovery, SL; Smalle Technologies, SL, and Virtual Body Works, SL.



Millorar el control en la qualitat de l'aigua

Una empresa nascuda de la UB desenvolupa un sistema de detecció ràpida d'infeccions víriques

Enlightening Technologies és una empresa que s'ha creat després de la sortida de la Universitat de Barcelona (UB) i que desenvolupa un sistema de detecció ràpida d'infeccions víriques. El sistema, desenvolupat per la UB i comercialitzat per la companyia, permet detectar la presència de virus en el líquid que es consumeix, cosa que pot evitar la propagació de malalties i, en alguns casos, la mort. El sistema està basat en la tecnologia de biosensors i permet detectar la presència de virus en el líquid que es consumeix, cosa que pot evitar la propagació de malalties i, en alguns casos, la mort. El sistema està basat en la tecnologia de biosensors i permet detectar la presència de virus en el líquid que es consumeix, cosa que pot evitar la propagació de malalties i, en alguns casos, la mort.

Spin-off shareholding through the Bosch i Gimpera Foundation: Bluephage, SL.

La Vanguardia, January 2017

Enlightening Technologies, Bluephage, Nostrum Biodiscovery, Impetux Optics, Smalle Technologies, and Iproteos have managed to obtain **€ 1.79 million** in funding through capital increases.

UB RESEARCH GROUPS AWARDED THE TECNIO CERTIFICATION

Centre for the Design and Optimization of Processes and Materials (DIOPMA), Centre of Microsystems Engineering for Instrumentation and Control (CEMIC), Thermal Projection Centre (CPT), Centre for Research on Cellular and Molecular Technology (CELLTEC), Centre for Toxicology Research (CERETOX), and the Drug Development Service (SDM).

This certification, granted by the Generalitat de Catalunya with the support of ACCIÓ, identifies research groups that develop differential technology for companies or facilitate its use.

Total turnover:

€ 4.1 million

Funding source:

58% public - 42% private

6 European H2020 project proposals submitted

7 ongoing H2020 projects

4 priority patent and PCT applications

1 new spin-off created – Enlightening Technologies

Three other groups of the University of Barcelona—Data Science (DS@UB), Applied Mineralogy and Environment (MAiMA), and the Centre for the Production and Validation of Advanced Therapies (CREATIO)—have been awarded a grant to encourage the development of their action plan for technology transfer, which will help them to obtain their accreditation as TECNIO entities.

MANAGEMENT OF RESEARCH AND KNOWLEDGE TRANSFER PROJECTS //

“The FBG is a very useful tool for the management of the whole interaction between research groups and companies or foundations.”

Dr. Jordi Alcaraz

Translational Research Group on Lung Cancer and Lung Fibrosis, Faculty of Medicine and Health Sciences
(excerpt from an interview conducted in June 2017)

€ 29
MILLION

REVENUES
FROM ACTIVITIES

€15.4 million correspond to revenues from projects and €13.6 million to grants.

801

PEOPLE HIRED

As for the Occupational Safety and Health Service, its personnel visited 42 companies and assessed 30 work centres.



GRANTS

Annual contracted revenue //



14.81
MILLION



114
GRANTS

Public and private grants //

70 grants awarded, both by public institutions and private institutions and companies

€2.70 million

Research grants awarded
by the European Commission //

44 projects
€12.11 million

18 projects funded by the Framework Programme, with a revenue of € 7.11 million:
1 ERC Advanced grant awarded to Dr Carles Boix (Faculty of Economics and Business),
and 1 ERC Consolidator grant awarded to Dr Licia Verde (Institute of Cosmos Sciences).

26 projects funded by other offices with a revenue of €5 million.

PROMOTING UNIVERSITY-SOCIETY COLLABORATION //

SCIENCE + PARTNERS

People from the business world and investors (Partners) advise researchers (Science) who lead projects that are advanced enough to be transferred



MEDICAL
DEVICES

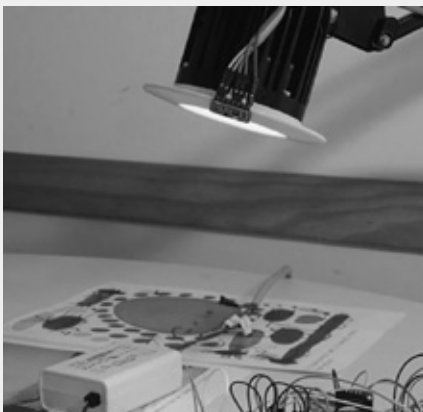


13
PARTNERS



5
PROJECTS

SUCCESS STORY



The new spin-off Enlighting Technologies emerged from the 2016 edition of Science + Partners.

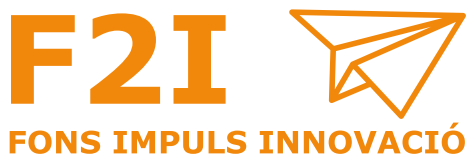
The research group presented their technology during the second edition of Science + Partners, held in 2016, and their collaboration with BeAble Capital resulted from this event.

FUND FOR THE PROMOTION OF INNOVATION

€124,000 to foster the innovation and transfer activities of the researchers of the University of Barcelona.

Second edition of this call, which includes two types of grants: the **Valorisation Fund grant**—endowed with € 100,000—aims to fund proofs of concept of research projects, and the **Mentor**

in Residence scheme—with a total budget of € 24,000—aims to promote the creation of new spin-offs by providing the funds to hire a mentor to complement the entrepreneurial team.



“The FBG represents the opportunity to work with companies and to transfer knowledge through the UB.”

Dra. Mireia Ribera

Coordinator of Adaptabit, a working group on digital accessibility in teaching, research, and teaching innovation, Faculty of Mathematics and Computer Science (excerpt from an interview conducted in September 2017)

Valorisation Fund //

€100,000

Second Call

4 projects funded

€25,000 per project

"Inhibitors of androgen receptor dimerization: First-in-class drugs for the treatment of prostate cancer," led by Dr. Eva Estébanez Perpiñá (Faculty of Biology). The aim is to experimentally validate the potential of this new action mechanism for the treatment of prostate cancer.

"New generation of SMDs for printed electronic circuits," led by Dr. Albert Cirera Hernández (Faculty of Physics). The aim is to build a prototype and validate new devices.

"Automated food recognition system for catering facilities," led by Dr. Petia Radeva, Faculty of Mathematics and Computer Science. The objective is to perform a proof of concept and validate the technology under real conditions.

"Therapeutic and prophylactic effects of soluble Epoxide Hydrolase Inhibitors (sEHI) in Acute Pancreatitis (AP) and in Endoscopic Retrograde Cholangiopancreatography (ERCP)-Induced AP," led by Dr. Santiago Vázquez Cruz (Faculty of Pharmacy and Food Science). The aim is to confirm the curative and prophylactic effects demonstrated by previous work.

Mentor in Residence //

€24,000

Second Call

4 projects funded

€6,000 per project

"SaaS for automated true colour recognition." Dr. Daniel Prades (Faculty of Physics).

"LogMeal: A Computer Vision-based environment for smart restaurants." Dr. Petia Radeva (Faculty of Mathematics and Computer Science).

"Inhibitors of androgen receptor dimerization: First-in-class drugs for the treatment of prostate cancer." Dra. Eva Estébanez (Faculty of Biology).

"Development of a neurotoxicology and drug tracking platform." Dr. Josep M. Canals (Faculty of Medicine and Health Sciences).

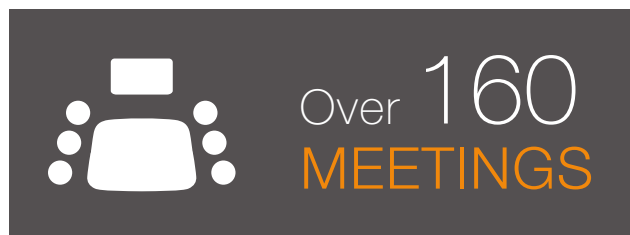


OPEN INNOVATION FORUM



“The Open Innovation Forum provides a pioneering environment in which universities and research centres offer their knowledge to companies, sharing their efforts to ensure an optimal response to the challenges and real concerns of the business world. Without a doubt, building these bridges is and will continue to be a determining factor in the growth of innovation in companies, which is ultimately synonymous with competitiveness.” **Joan Romero**, Managing Director of ACCIÓ

HEALTH & BIO TEAM DATING



Speed dating between scientists and entrepreneurs, with the aim of building a balanced team capable of leading a start-up in the field of life sciences.

KEYS TO BIOENTREPRENEURSHIP



Seventh edition of the ‘Keys to Bioentrepreneurship’ course. The aim of this course is to showcase the personal experience of the most successful Catalan bioentrepreneurs working at the forefront of innovative international companies for the benefit of the university community.

TRADE FAIRS AND SEMINARS

Mobile World Congress, Infarma, BioEUROPE Spring, Graphispag, eShow, Construmat, Cosmobeauty, B-Travel, SIL, Sonar+d, Expoquimia, IOT, Smart City, Beauty Innovation Day.

AWARDS OF THE SOCIAL COUNCIL OF THE UB AND THE FUNDACIÓ BOSCH I GIMPERA

Antoni Caparrós Prize, for the best knowledge transfer project //

F. Javier Luque, for the optimisation of software for drug development.

The collaboration between UB researchers, led by F. Javier Luque, a professor at the Faculty of Pharmacy and Food Sciences, and the company Pharmacelera, has allowed the development of a methodology to create new molecular descriptors, that is, quantitative representations of the properties of molecules that allow for computational analysis and treatment.

On the basis of these new molecular descriptors, Pharmacelera has developed tools such as PharmQSAR and PharmScreen, both of which facilitate the discovery of new drugs and have already been used by several pharmaceutical and biotech companies. These are new computer tools that facilitate the design of drugs to treat diseases such as cancer.

Narcís Prat, for the “RiuNeT” project, a citizen science mobile application developed by the UB’s research group on Freshwater Ecology and Management (FEM). This tool provides a better understanding of river ecosystems and, at the same time, allows us to assess ecological quality and hydrological status in a simple, fun, and rigorous way. Through different indicators (for example, the presence of a riverside forest, the absence of water flow, the presence of garbage, and the types of organisms inhabiting the ecosystem), RiuNeT evaluates aspects such as the hydromorphological, biological, and hydrological quality of the river,

which are key factors for the management of these ecosystems. This information, once validated by researchers, is accessible to water experts and managers, such as the Catalan Water Agency (ACA) and the Jucar River Basin Agency (CHJ), but also to anyone interested in the project. RiuNeT enables citizens to get closer to nature and learn about river ecosystems, while facilitating the relationship between the government and citizens and the participation of the latter in environmental decision-making processes.

Senén Vilaró Prize, for the best innovative business //

Iproteos, SL, is a biotechnology spin-off company of the University of Barcelona and the Institute for Biomedical Research (IRB Barcelona) dedicated to the research and development of drugs to treat currently unmet medical needs. IPROTech technology represents the scientific core on which the spin-off is based. This technology makes it possible to design drug candidates based on

peptides, called peptidomimetics, and it also accelerates the search and development of new drug candidates. In 2016, this biotechnology spin-off obtained €1.5 million in private funding. Thus, between public and private investments, Iproteos has already managed to obtain €3 million in external capital.

GOVERNMENT OF CATALONIA REFERENCE NETWORKS

The FBG manages six of the
eight Reference Networks of the
Government of Catalonia //



COMMUNICATION //

SUCCESS STORIES

Examples of technologies or products that have been developed at the UB and are being used either by a company or by a public administration.



Atlas of Barcelona's Nesting Birds

The project was born with the aim of mapping the location of the birds breeding both in Barcelona.



Binding, a software program that improves the reading skills of children

The 95% of children who follow the Binding program complete it successfully and manage to improve their reading skills.



Concert of sculptures in China

Accompanied by the renowned pianist Lang Lang and the violinist Cheng Xi, the percussionist Alejandro Coello played the four steel sound sculptures.



Awaken the trees

In 2010, the European Union banned the substance that was commonly used to break the dormancy, which brought about the demand for an alternative product.

INTERVIEWS

We interview researchers from the University of Barcelona in order to give visibility to their pro-

jects, and to disseminate and publicise the importance of knowledge transfer to society.



«In the future, translational immunology should be able to predict some diseases in order to prevent them»

Lluís Francesc Santamaria
RESEARCH GROUP ON
TRANSLATIONAL IMMUNOLOGY



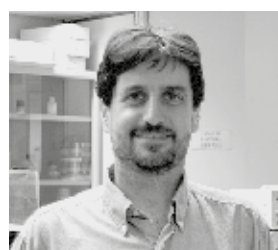
“We try to get people to see, touch, and experience the past”

Xavier Hernández
DIDPATRI



“We have to imbue hospitals with humaneness”

Verònica Violant
RESEARCH GROUP ON
HOSPITAL PEDAGOGY IN NE-
ONATOLOGY AND PEDIATRICS



“I do not know if we will succeed in curing cancer, but we will manage to turn it into a chronic disease and keep it under control”

Jordi Alcaraz
TRANSLATIONAL RESEARCH
GROUP ON CANCER AND
PULMONARY FIBROSIS



“Researchers who only care about publications are missing out on half the story”

Maribel Trillas
CO-FOUNDER BIOCONTROL
TECHNOLOGIES



Technology should adapt to people, not the other way around”

Mireia Ribera
ADAPTABIT



“It is not that there is more discrimination, but there are more platforms to give voice to it”

Olga Jubany
SOCIAL ANTHROPOLOGIST



“Many of prescription drugs people take have been formulated by us”

Josep Mª Suñé
DRUG DEVELOPMENT
SERVICE (SDM)



“We can now know when and how severely will a patient with Parkinson’s disease suffer from dyskinesia”

Cristina Malagelada
DEPARTMENT OF
BIOMEDICINE OF THE
FACULTY OF MEDICINE



“Investing in biotech is helping to build a better society and a better world”

Teresa Tarragó
CEO of IPROTEOS



“Maybe in the future data banks will be more important than conventional banks”

Jordi Vitrià
DIRECTOR OF THE DATA
SCIENCE @UB GROUP



ALL TOGETHER MEETING

A meeting of the staff of the FBG with a researcher of the University of Barcelona. It has the twofold aim of helping FBG staffers to better understand the work of researchers through the

real cases of projects that they have a hand in launching, and of letting researchers meet the FBG's staff in person.

We have met:



LIÚÍS GARRIDO

Institute of Cosmos Sciences



ALBERT SOLER

Applied Mineralogy and Environment (MAiMA)



LOURDES FAÑANÁS

Department of Evolutionary Biology, Ecology and Environmental Sciences of the Faculty of Biology



DANIEL PRADES

Department of Engineering: Electronic Section of the Faculty of Physics

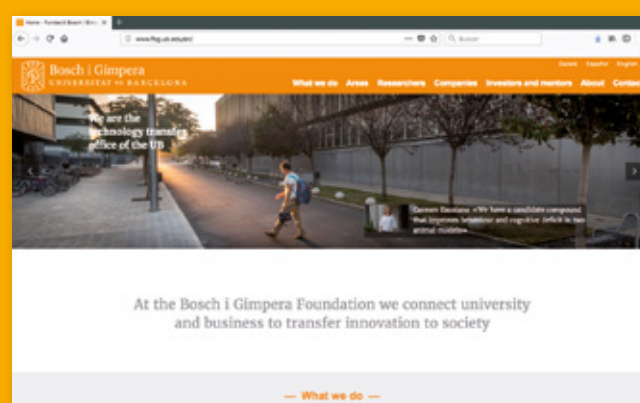


JORDI SERRA

Department of Evolutionary Biology, Ecology and Environmental Sciences of the Faculty of Biology

NEW WEBSITE

We have revamped our website, which is now simple and intuitive to navigate, with the aim of presenting the FBG as the showcase for UB technology, focused on the user and their needs.



THE INSTITUTION //

BOARD OF TRUSTEES

Joan Elias i Garcia, chair

Joan Corominas Guerin,
first deputy chair since 22 May 2017

Oriol Escardíbul Ferrà, second deputy chair

Belén Noguera de la Muela, secretary

Àlex Aguilar Vila,
board member since 13 January 2017

Domènec Espriu Climent,
board member since 19 January 2017

Jordi Codina Sans,
board member until 27 April 2017

Francisco Sánchez Montero,
board member since 28 April 2017

Enric I. Canela Campos, board member

Carles Vivas Morte, board member

Pere Lluís Cabot Julià,
board member until 15 March 2017

Josep Batista Trobalón,
board member since 24 May 2017

Luis Herrero Borque, board member

Carles Penas Babot, board member

Fernando Tejerina García,
board member until 24 January 2017

Anicet R. Blanch Gisbert,
board member since 25 May 2017

Jordi Roig Bonet, board member

WHERE ARE WE?

The Fundació Bosch i Gimpera is represented in the boards of trustees of the University School of Hospitality and Tourism (CETT-UB), and the Barcelona Science Park (PCB). We are also members of the advisory board and steering committee of the Barcelona UB Entrepreneurship Institute (BIE), jointly founded by the FBG and the UB, and members of the monitoring committee of the Energy Sustainability Chair, and the committee of the Barcelona University Centre (BCU). We also represent the UB in the Enterprise & Innovation Community of the League of European Research Universities (LERU), and we are members of the following clusters: Beauty Cluster Barcelona, RailGrup, Advanced Materials, and Mental Health.



WHO ARE WE?

Staff of the Fundació Bosch i Gimpera:

GENERAL MANAGEMENT //

Jordi Naval, general manager (until 2 October);
M. Carme Verdaguer, general manager
(since 5 October);
Berta Serdà, secretary

Technical Office: Maria Segú, head

Communication and Marketing:

Mariona Ferrer, head

Team: Cristina Ugía and Nerea Oñate*

MANAGEMENT //

M. Teresa Plo, manager

Administration, Financial Management, and General Services: Sergi Ros, head of administration; Ana Giménez, head of financial management. Team: Anna Apellániz, Digna Cárcoba, Yvonne Mata, Arnau Sánchez,* Daniel Pierrá, Sònia Salom, Gemma Sánchez, Cristina Serra, Marta Tort, and Elisabeth Vico

Public and International Grants Unit:

Mònica Cunill, head. Team: Albert Casas and Víctor Linares

Human Resources, Health, and Safety:

Mercè Tejedor, head. Team: Pili Morales, Laura Ramos, Mireia Solsona, and Sandra Tello

Technology: Àlex Closa, head.

Team: Andreu Valls

International Research Projects, UB-FBG

mixed office: FBG - Financial management:

Xavier Gutiérrez, head. Team: Núria Benítez, Heura Boix,** Anna Ferrando, Sheila López, Sandra Martín, Begoña Navarrete**, and Anna Rovira

INNOVATION AND KNOWLEDGE TRANSFER //

Lurdes Jordi, director

Contract Research: Salvador Mena, head

Valorisation and Licensing: Inma Íñiguez, head

Business Creation: Esther Riambau, head

Contracts: Gemma Casamitjana, head

Innovation and Knowledge Transfer Team:

Francesc Benlliure, Jose Conde, Laia Crespo, Isabel Durán, Belén Gámez, Raquel Jiménez, Eva Martín, Joaquim Moreno, Nil Neira,* Gloria Roselló, Carles Taulé,* Jordi Vallès, and Dolors Vega

STRATEGIC PROJECTS //

Carme Verdaguer, director

Staff related to the Reference Networks of the Government of Catalonia: Anna Alsina,** Pablo Bou, Silvia Chellini, Gemma Hernández, Karsten Kruger, Josep Pascual, and Lali Sanz

(*) Interns.

(**) Replacement of staff on maternity or temporary incapacity (TI) leave, voluntary resignation, or retirement.



Bosch i Gimpera
UNIVERSITAT DE BARCELONA