


# BIST ANNUAL REPORT 2017



Barcelona Institute of  
Science and Technology

Growing together,  
advancing science





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**Barcelona Institute of  
Science and Technology**

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# **BIST**ANNUAL REPORT2017





**Barcelona Institute of  
Science and Technology**

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**BIST CENTRES**







**Barcelona Institute of  
Science and Technology**

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**MEMBERS OF THE BOARD OF TRUSTEES**



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# FOREWORD

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# PROGRESSING WITH SURE STEPS



## **ANDREU MAS-COLELL**

*BIST President*

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The 2017 annual report of the Barcelona Institute of Science and Technology, which we have the pleasure of offering to any interested reader, bears witness to the fact that the institution is pursuing its tasks with sure steps, at a steady pace and with a strict adherence to its founding mission and the lines marked by its strategic plan. In the pages that follow, the reader will find information on all these aspects.

As its president, I would like to mention some of the key decisions made by the BIST Board of Trustees during 2017. In particular:

- **The Institute for Bioengineering of Catalonia (IBEC)** has joined BIST, meaning that we are now a grouping of seven centres. Needless to say, this has strengthened us as IBEC displays the standards of excellence that characterizes all BIST centres.
- **Professor M. Carme Calderer**, a noted mathematician from the University of Minnesota, has joined the Board. I would like to thank and warmly welcome her.
- **Dr. Gabriel Silberman** has been appointed Director General of BIST. He hails from the USA and brings with him the background of a distinguished career in academia and in research management in the private sector. We feel lucky to have him and wish him much success. And, of course, we offer him the complete support of the Board.

Let me conclude by recognizing, as president of the Board, its members for the constant support I have received from them. And, this time on behalf of the entire Board, to the team that runs BIST. Special thanks should go to Professor Miquel A. Pericàs who, during most of 2017 managed to carry out simultaneously, and very effectively, his duties as the director of ICIQ (Institute of Chemical Research of Catalonia, one of the BIST centres) and as interim director of BIST. His willingness to step in when the need presented itself is most commendable, and it is yet another testimony to the commitment of the BIST community to its success. Thanks, Miquel.

# THE FOUNDATION IS LAID



**GABBY SILBERMAN**  
*BIST Director General*

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With the celebration of the official Founding Conference of the Barcelona Institute of Science and Technology, my arrival as the new Director General, and the launch of a myriad of powerful projects throughout 2017, the year was a fruitful and exciting one. We can now confidently say the foundation of BIST has been laid for a strong future.

I was named full-time Director General of BIST during the Annual Board of Trustees meeting on June 26th, 2017. Prior to my arrival, Miquel A. Pericàs, the Director of the Institute of Chemical Research of Catalonia (ICIQ), had done an outstanding job as BIST interim Director General. Miquel was instrumental in building the working groups behind the BIST strategic initiatives, including the BIST Founding Conference on March 31st, 2017 at the Centre de Cultura Contemporània de Barcelona (CCCB). The conference was both a celebration of the BIST community and an opportunity to discuss multidisciplinary scientific research. Notable speakers, such as Jean-Pierre Sauvage, winner of the Nobel Prize in Chemistry in 2016, were part of the programme.

During the conference, the winners of the first annual BIST Ignite Programme to support joint, multi-centre research were also announced. The programme will invest over EUR 500.000 over three years to fund several cycles of Ignite projects.

On the Education front, BIST received EUR 10 million through the prestigious and highly competitive H2020 COFUND grant for the PREBIST and PROBIST programmes, to provide 28 fellowships for PhD students and 61 for post-doctoral researchers between 2017 and 2022. In 2017 BIST and the Universitat Pompeu Fabra launched a joint *Master of Multidisciplinary Research in Experimental Sciences*, with 14 local and international students taking part in its inaugural class.

Institutionally, important strategic changes were made. BIST moved its headquarters to the historical Escola Industrial Complex as a result of an agreement with the Barcelona Regional Council (Diputació de Barcelona). The additional space allows BIST to hold Board meetings, workshops, press conferences, and working group meetings on-site and to share these spaces with the BIST centres for additional joint activities.

The many accomplishments of the BIST and its centres in 2017 would not have been possible without the strong support of their directors, the dedicated members of the working groups, technical committees, task forces, and our generous stakeholders, under the leadership of Miquel A. Pericàs.

We capped 2017 with an inspiring meet-up where each BIST working group had a chance to share the projects they worked on throughout the year, and present their vision for the future. I invite you to read more about these projects in the following pages.



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# INSTITUTIONAL OVERVIEW

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The Barcelona Institute of Science and Technology is a scientific foundation of seven of Catalonia's research centres of excellence. Its main objective is to build new scientific collaborations among these centres, thus giving impulse to multidisciplinary projects to push ever further the frontiers of knowledge.

The **BIST** centres include the **Centre for Genomic Regulation (CRG)**, the **Institute for Bioengineering of Catalonia (IBEC)**, The **Institute of Photonic Sciences (ICFO)**, the **Institute of Chemical Research of Catalonia (ICIQ)**, the **Catalan Institute of Nanoscience and Nanotechnology (ICN2)**, the **Institute for High Energy Physics (IFAE)**, and the **Institute for Research in Biomedicine (IRB Barcelona)**.

Each BIST centre has reached a high level of excellence in its respective areas of expertise and all hold the Spanish Government's *Severo Ochoa Distinction for Scientific Excellence*.

# MISSION & STRATEGIC OBJECTIVES

Our mission is to promote excellent research in a multidisciplinary environment. We are committed to the development and training of scientists to maximize the impact of science on society.

The **Barcelona Institute of Science and Technology**'s aims are:

1. To consolidate excellent multidisciplinary research across the BIST community
2. To develop world class postgraduate education and training
3. To build BIST as a stimulating and supportive work environment
4. To boost the scientific, economic and social impact of research

Since we believe societal challenges need to be addressed with a multidisciplinary approach, BIST aims to become an international reference for excellent research through the right combination of approaches, and to position Catalonia's top researchers among the global scientific elite.

# BOARD OF TRUSTEES



In June 2017, Professor **Gabby Silberman** was appointed BIST Director General, replacing Professor **Miquel Àngel Pericàs**. Professor **M. Carme Calderer** of the University of Minnesota (Twin Cities) joined the board as a new scientific member. Finally, the **Institute for Bioengineering of Catalonia (IBEC)** was approved as the seventh BIST centre in June 2017, and its Director, Professor **Josep Samitier** also joined the board.

## CHAIR

**Prof. Andreu Mas-Colell**  
*President, BIST*

## VICE-CHAIR

**Mr. Jaume Giró**  
*CEO, "la Caixa" Foundation*

## SECRETARY

**Dr. Eduard Vallory**  
*President, UNESCO Centre of Catalonia*

## RESEARCHERS

**Prof. Ignacio Cirac**  
*Max-Planck-Institute for Quantum Optics*

**Prof. Joan Massagué**  
*Sloan Kettering Institute*

**Prof. Miquel Salmeron**  
*University of California at Berkeley*

**Prof. Sergi Verdú**  
*Princeton University*

**Prof. Sylvia Daunert**  
*Nanotech Institute of the University of Miami*

**Prof. M. Carme Calderer**  
*University of Minnesota (Twin Cities)*

**Prof. Rolf Tarrach**  
*European University Association*

## INSTITUTIONAL

**Mr. Miquel Molins**  
*President, Banc Sabadell Foundation*

**Mr. Germán Ramón-Cortés**  
*President, Catalunya La Pedrera Foundation*

**Mr. Jordi Segarra**  
*Cellex Private Foundation*

**Mr. David Nogareda**  
*FemCAT Foundation*

## GOVERNMENT

**Hon Santi Vila i Vicente**  
*Minister of Business and Knowledge, Government of Catalonia*

## DIRECTORS

**Prof. Luís Serrano**  
*Director, CRG*

**Prof. Josep Samitier**  
*Director, IBEC*

**Prof. Miquel Àngel Pericàs**  
*Director, ICIQ*

**Prof. Pablo Ordejón**  
*Director, ICN2*

**Prof. Lluís Torner**  
*Director, ICFO*

**Prof. Ramon Miquel**  
*Director, IFAE*

**Prof. Joan Josep Guinovart**  
*Director, IRB Barcelona*

## DIRECTOR GENERAL

**Prof. Gabby Silberman**  
*Director General, BIST*

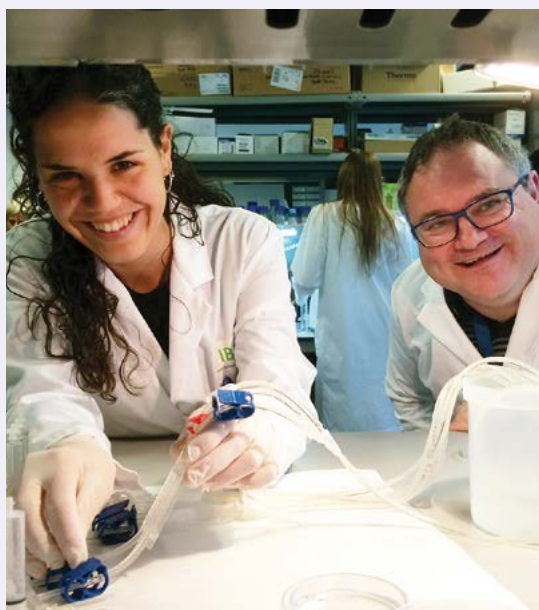
# BIST RESEARCH CENTRES

All BIST research centres are accredited as *Severo Ochoa Centres of Excellence*, are members of the *Catalan Association of Research Entities (ACER)* and of the *Research Centres of Catalunya (CERCA)*, and receive support from the *Catalan Institution for Research and Advanced Studies (ICREA)*.



## CENTER FOR GENOMIC REGULATION (CRG)

CRG is an international biomedical research institute of excellence founded in December 2000 and based in Barcelona. With over 400 scientists, 63% of which are international, the CRG's excellence is based on an interdisciplinary, motivated, and creative scientific team supported by high-end and innovative technologies.



## INSTITUTE FOR BIOENGINEERING OF CATALUNYA (IBEC)

IBEC was established in 2005 and currently has 21 research groups and 250 researchers and staff from 20 different countries. IBEC conducts excellent interdisciplinary research at the frontiers of engineering and life sciences to generate new knowledge by combining fields like nanomedicine, biophysics, biotechnology, tissue engineering and the applications of health information technology.



## THE INSTITUTE OF PHOTONICS SCIENCES (ICFO)

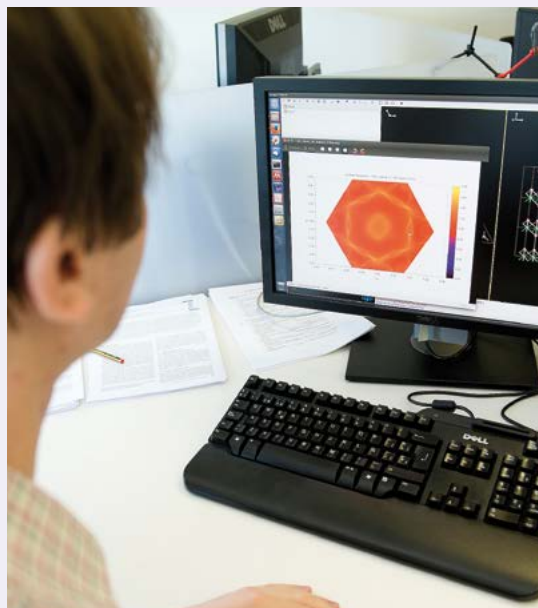
ICFO was created in 2002 and now hosts over 400 ICFOians with more than 50 nationalities in 27 research groups. It is a centre of research excellence devoted to the science and technologies of light, with research programmes in areas such as Health, Energy, Information, Safety, Security and caring for the Environment.

# BIST RESEARCH CENTRES



## INSTITUTE OF CHEMICAL RESEARCH OF CATALONIA (ICIQ)

ICIQ is committed to performing excellent research at the frontier of knowledge in two main areas: Catalysis and Renewable Energy. ICIQ started its research activities in 2004 and hosts over 300 employees. Its 20 research groups work on computational chemistry, carbon dioxide recycling, renewable fuels, catalysis, and artificial photosynthesis.



## CATALAN INSTITUTE OF NANOSCIENCES AND NANOTECHNOLOGY (ICN2)

ICN2 is a non-profit international research institute located close to Barcelona, Spain. Its research lines focus on the newly-discovered physical and chemical properties that arise from the behaviour of matter at the nanoscale. ICN2 has over 200 members and 17 research groups.



## INSTITUTE FOR HIGH ENERGY PHYSICS (IFAE)

IFAE conducts experimental and theoretical research at the frontiers of fundamental physics, namely in particle physics, astrophysics and cosmology. IFAE also works at the cutting edge of detector technology, putting their know-how to the service of very practical challenges.



## INSTITUTE FOR RESEARCH IN BIOMEDICINE (IRB BARCELONA)

IRB Barcelona is a world-class research centre devoted to understanding fundamental questions about human health and disease. It was founded in 2005 and now hosts more than 400 employees from 35 countries who share the common goal of contributing to the advancement of the biomedical sciences through investigator-driven research, and improving quality of life by applying advances in this field.

# BIST TEAM & WORKING GROUPS

The Barcelona Institute of Science and Technology has a small core team to coordinate the various activities within the areas of **research, education, talent, impact, identity, and institutional development**.

In addition to the core team, 14 working groups comprised of representatives from the seven BIST centres, and a coordination committee comprised of the BIST directors all work together to streamline the BIST activities. This structure allows for collaboration between all seven centres in every one of the BIST strategic areas.

## BIST TEAM

The coordination committee and all working groups meet regularly throughout the year to build a common vision and mount joint activities and programmes.



**Núria Bayó**, Education Programmes Manager; **Òscar Gimeno**, General Manager; **Margarita Navia**, Head of Strategic Research Projects; **Elen García**, European Programmes Manager; **Gabby Silberman**, Director General; **Àlex Gonzalez**, Office Manager; **Jenny Kliever**, Communications Officer.

## COORDINATION COMMITTEE



**LUIS SERRANO**

Director of the Centre for Genomic Regulation (CRG)



**JOSEP SAMITIER**

Director of the Institute for Bioengineering of Catalonia (IBEC)



**LLUÍS TORNER**

Director of The Institute of Photonic Sciences (ICFO)



**MIQUEL A. PERICÀS**

Director of the Institute of Chemical Research of Catalonia (ICIQ)



**PABLO ORDEJÓN**

Director of the Catalan Institute of Nanoscience and Nanotechnology (ICN2)



**RAMON MIQUEL**

Director of the Institute for High Energy Physics (IFAE)



**JOAN GUINOVART**

Director of the Institute for Research in Biomedicine (IRB Barcelona)



**GABBY SILBERMAN**

Director of the Barcelona Institute of Science and Technology (BIST)

# WORKING GROUPS



WG = Working Group  
PWG = Programme Working Group  
TF = Task Force

## MULTIDISCIPLINARY RESEARCH WG

Pia Cosma, CRG  
Pau Gorostiza, IBEC  
Niek van Hulst, ICFO  
Pau Ballester, ICIQ  
Jose A. Garrido, ICN2  
Federico Sánchez, IFAE  
Angel R. Nebreda, IRB Barcelona  
Margarita Navia, BIST

## INFRASTRUCTURE WG

Mònica Morales, CRG  
Isabel Oliveira, IBEC  
Gonçal Badenes, ICFO  
Gisela Colet, ICIQ  
Gustavo A. Ceballos, ICN2  
Juan Cortina, IFAE  
Goretti Mallorquí, IRB Barcelona  
Margarita Navia, BIST

## CHEMICAL BIOLOGY PWG

Pau Ballester, ICIQ  
Ernest Giralt, IRB Barcelona  
Margarita Navia, BIST

### GRAPHENE PWG

Frank Koppens, ICFO  
Stephan Roche, ICN2  
Federico Sánchez, IFAE  
Margarita Navia, BIST

### MICROSCOPY PWG

Timo Zimmermann, CRG  
Lorenzo Albertazzi, IBEC  
María García-Parajo, ICFO  
Gonçal Badenes, ICFO  
Jordi Arbiol, ICN2  
Julien Colombelli, IRB Barcelona  
Jorge Domínguez, IRB Barcelona  
Margarita Navia, BIST

### BIG DATA PWG

Roderic Guigó, CRG  
Oriol Bardés, ICFO  
Núria López, ICIQ  
Manuel Delfino, IFAE  
Modesto Orozco, IRB Barcelona  
Ramon Roca-Sastre, IRB  
Barcelona  
Margarita Navia, BIST

### ACADEMICS WG

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Robert Sewell, ICFO  
Pau Ballester, ICIQ  
Arben Merkoçi, ICN2  
Rafel Escribano, IFAE  
Raúl Méndez, IRB Barcelona  
Núria Bayó, BIST

### MANAGERS WG

Bruna Vives, CRG  
David Badia, IBEC  
Dolors Mateu, ICFO  
Lluís Solà, ICIQ  
Lluís Bellafont, ICN2  
Quim Bosch, IFAE  
Margarida Corominas, IRB  
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Òscar Gimeno, BIST

### ACADEMIC TRAINING WG

Imma Falero, CRG  
Carolina Marí, IBEC  
Laia Miralles, ICFO  
Leticia Chico, ICIQ  
Julio Gómez, ICN2  
Quim Bosch, IFAE  
Clara Caminal, IRB Barcelona  
Núria Bayó, BIST

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Laia Miralles, ICFO  
Mario Lorenzo, ICIQ  
Rocío Pérez, ICN2  
Julio Gómez, ICN2  
Quim Bosch, IFAE  
Sylvia Martínez, IRB Barcelona  
Núria Bayó, BIST

### COMMUNICATIONS WG

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Ariadna Goenaga, ICIQ  
Àlex Argemí, ICN2  
Sebastián Grinschpun, IFAE  
Sonia Armengou, IRB Barcelona  
Jenny Kliever, BIST

### ESCOLA INDUSTRIAL TF

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Juan Cortina, IFAE  
Òscar Gimeno, BIST  
Àlex González, BIST

### PROJECTS TF

Michela Bertero, CRG  
Teresa Sanchis, IBEC  
Núria Beltri, ICFO  
Lorena Tomás, ICIQ  
Marta González, ICN2  
Marta Balza, IFAE  
Jorge Domínguez, IRB Barcelona  
Òscar Gimeno, BIST

### KTT WG

Pablo Cironi, CRG  
Xavier Rúbies, IBEC  
Silvia Carrasco, ICFO  
Lluís Solà, ICIQ  
Jordi Reverter, ICN2  
Isaac Esparbé, IFAE  
Cristina Horcajada, IRB  
Barcelona  
Òscar Gimeno, BIST

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# RESEARCH

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At the heart of the BIST research portfolio is the objective to consolidate excellent multidisciplinary research across the BIST community. Each of the seven BIST centres conducts cutting-edge research in their respective areas of expertise and all hold the Spanish Government's *Severo Ochoa Distinction for Scientific Excellence*. BIST and its centres believe giving impulse to collaboration among their talented investigators will help address the complex and multifaceted challenges we face as a society today.

Through the design of actions to foster scientific cooperation, BIST aims to strengthen the competitive posture of its research centres, with a view to increase their positive impact on society.

# JOINT SCIENTIFIC PAPER AFFILIATION



1,175  
ORIGINAL ARTICLES

19%  
INCREASE IN INTERNAL COLLABORATIONS

Since October 2015, the BIST research centres have been signing all scientific publications jointly. Unifying the affiliation has had a massive and immediate impact on the international visibility of the research done at the BIST centres.

Since the beginning of the joint signature practice, a period of 27 months (October 2015 to December 2017), according to the publications indexed in the Web of Science and/or Scopus databases, BIST researcher have published 2,085 original articles. Of these, 1,175 were published in 2017 (compared to 824 in 2016).

In terms of collaboration among the seven BIST centres, during 2017 33 publications included authors from multiple centres. This 19% increase from 2016 shows how researchers have embraced the opportunities to collaborate with their peers in other BIST centres.

When examining the entire 27 month period, the majority of publications have one to five authors (901 documents, 43.2%), followed by six to 25 authors (875, 42%), and finally publications with more than 25 authors (309, 14.8%). In terms of the order of signatures, BIST researchers occupy noteworthy positions (first author and/or corresponding author) in 1,147 of the 2,085 publications (55%).

Another positive impact indicator is the BIST ranking in the *Nature Index* for publications in the prestigious *Nature Journals*. For the period of March 1, 2017 to February 28, 2018, BIST was ranked 108th in the world, 29th in Europe, and 2nd in Spain, by weighted fractional count.





## BIST FOUNDING CONFERENCE

The **BIST Founding Conference**, the first international scientific meeting organized by BIST and its centres, was held on March 31, 2017 at the *Centre de Cultura Contemporània de Barcelona* (CCCB). This event introduced BIST and its centres as a consolidated entity to the broader scientific community. It also served to increase awareness of joint activities and potential collaboration among the centres and BIST within their constituents.

Over 260 researchers and stakeholders attended the full-day event, including BIST scientists, members of the BIST board of trustees, and other external stakeholders.

The conference boasted the participation of a myriad of excellent international speakers, including Jean-Pierre Sauvage, winner of the 2016 Nobel Prize in Chemistry, four internationally renowned invited scientists, and ten members of the BIST scientific community, all highly regarded experts in their respective fields.

The dedicated conference webpage (<http://bist.eu/bist-founding-conference/>) includes the detailed programme, speaker biographies and some speakers' presentation slides.



# IGNITE PROGRAMME



## Background

The BIST Ignite Programme was first launched in December 2016 to promote new collaborations among researchers from the BIST community to facilitate the exchange of knowledge in different scientific fields and help develop new approaches to answer complex research questions.

The programme features a two-stage funding scheme composed of two competitive calls, one for each stage. We begin with a “seeding” stage using an open internal call for groups to submit original ideas to compete for funding of EUR 20.000 per project. After eight months of developing their seeding stage projects, the groups may apply for grants of EUR 50.000 each under the follow-up “boosting” stage, based on the results attained during those eight months and their future plans.

To be considered for funding under the Ignite Programme, projects must involve researchers from at least two different BIST centres and should explore new questions and technological challenges through novel multidisciplinary approaches.

## Results

The inaugural Ignite Programme seeding stage call was launched in December 2016 and closed on March 1st, 2017. Twenty-one proposals were received, and of those eight were selected to receive funding, three more than initially budgeted. The evaluation committee was highly impressed with the overall quality of the proposals and specifically requested the three runner-up proposals be considered for funding as well. The winners were announced at the BIST Founding Conference on March 31st, 2017.

During April and May of 2017, the programme workflow was adjusted based on lessons learned in preparation for the second instance of a seeding stage, opened in October 2017 with a deadline of January 15th, 2018. Its results are thus beyond the scope of this report.

Also towards the end of 2017, the eight winning projects of the inaugural seeding stage were evaluated and three of them were selected to receive additional funding within the boosting stage of the programme.

Looking toward the future, we see the Ignite projects as further evolving by attracting competitive funding or investment support. We shall continue to showcase their results and the experience of their multi-centre teams to further encourage this type of collaboration.

## WINNING PROJECTS OF THE INAUGURAL IGNITE PROGRAMME

Seeding stage winners announced in March and April 2017

2nd stage winners announced in January 2018

- **CALIX4TRANS** ("Transport of small molecules and ions across lipid bilayers using synthetic carriers"), led by Pau Ballester of ICIQ and Manuel Palacín of IRB Barcelona
- **Nirgraph** ("Near-Infrared Graphene Optoelectronic Devices with Atomically Controlled Nanostructures"), led by Aitor Mugarza of ICN2, Francisco Javier García de Abajo of ICFO, and Valerio Pruneri of ICFO
- **ZPRO** ("Pushing the Tumor's Detection Limits in Positron Emission Tomography (PET): Developing Novel Materials with High-Z Value"), led by Federico Sánchez of IFAE and Emilio Palomares of ICIQ
- **THEIA** ("Towards the implementation of a multi-electrode array for retinal prosthesis"), led by Pablo Loza-Álvarez of ICFO, José Antonio Garrido of ICN2, and Mokhtar Chmeissani of IFAE
- **GenStorm** ("An integrated approach to visualize and model the spatial conformation of genes at the nanoscale level"), led by Marie Victoire Neguembor of CRG and Pablo Dans Puiggrós of IRB Barcelona
- **eTANGO** ("Enlightening TANGO"), led by Felix Campelo of ICFO and Ishier Roate of CRG
- **OxiFlowPas** ("Continuous flow oxidation processes via plasmon-assisted photocatalysis"), led by Romain Quidant of ICFO and Miquel A. Pericàs of ICIQ
- **InWOC** ("In-situ atomic resolution transmission electron microscopy of heterogeneous water oxidation catalysts"), led by José-Ramón Galán-Mascarós of ICIQ and Jordi Arbiol of ICN2

2nd  
STAGE  
WINNER

2nd  
STAGE  
WINNER

2nd  
STAGE  
WINNER



Members of the *GenStorm Ignite* project

# STRATEGIC RESEARCH PROGRAMMES

As part of the BIST mission to foster multidisciplinary research and new collaborations within the BIST centres, four areas of research have been identified as strategic: chemical biology, microscopy, graphene and 2D materials, and big data and data management. Throughout 2017, BIST has penetrated these areas, building the beginnings of research programmes.

## BIST GRAPHENE AND 2D MATERIALS PROGRAMME

Graphene and 2D materials are currently the focus of attention in research and industrial communities worldwide. BIST already has strong, internationally recognized groups working in these areas, and now aims to approach this research in an interdisciplinary manner.

With the leadership of the BIST centres, Barcelona could become a benchmark location for 2D materials research and for the race to bring applications to the market. BIST aims to facilitate this goal.

To work towards this, BIST already reached a number of notable milestones in 2017. BIST took the first steps in the preparation of the **GraphCAT RIS3CAT** initiative, for which BIST is envisioned to participate through matching funds. Two BIST centres (ICFO and ICN2) were co-organizers of the **Mobile World Congress**, the world's largest graphene conference with over a thousand participants and two Nobel Laureates, which took place in Barcelona during February of 2018. Finally, BIST participated in the 2017 **Open Eureka Innovation Week** in May of 2017 with a presentation and a booth.

## BIST MICROSCOPY PROGRAMME

Considering the research interests and strengths of the BIST centres, two parallel strategic areas of work within the Microscopy Programme were identified: 1) Advanced Electron Microscopy (AEM), and 2) Advanced Optical Microscopy (AOM).

**AEM** is used to obtain information about materials and biological entities at the atomic scale, a tool of great importance in some of the leading research being carried out in Catalonia. A joint initiative with non-BIST actors, including the ALBA synchrotron and the Consejo Superior de Investigaciones Científicas (CSIC), was launched to procure this cutting-edge equipment for use by BIST researchers and other Catalan scientists.

The joint initiative aims to acquire two microscopes, one to study materials and the other for use in structural biology studies. Both will be located at the ALBA synchrotron. A call for proposals to partially fund these acquisitions is expected in 2018.

**AOM** helps directly visualize biological processes at the cellular and subcellular level. Some of the BIST centres already have powerful AOM facilities with top-level technical expertise, though there is room for growth and further collaboration. The aim of this programme is to help the centres maintain their world-leading position in AOM by catalyzing, synergizing, and complementing their already outstanding work. The BIST AOM working group produced a roadmap for collaboration that includes:

1. Acquisition of new instrumentation to keep the BIST centres at the forefront of AOM technology, contributing to maintaining an internationally leading position.
2. Definition of transversal collaborative projects within the BIST centres.
3. Definition of common actions among the BIST centres intended to share knowledge and expertise among the researchers and technicians working in AOM.

## BIST INITIATIVE IN CHEMICAL BIOLOGY

A new dimension of collaboration between ICIQ and IRB Barcelona is envisioned through the establishment of a strong research programme in Chemical Biology. This programme builds on strong foundations in both chemistry, at ICIQ, and biology, at IRB Barcelona, and aims to recruit two new group leaders and refurbish laboratories to serve their research needs.

In 2017, an executive programme was drafted and approved, the foundation for the proper functioning of the programme was set, and a recruitment panel was nominated for the selection of new group leaders. The recruiting process, starting with the publication of an open call for group leader candidates, is expected in 2018.

# INFRASTRUCTURES



## Working group

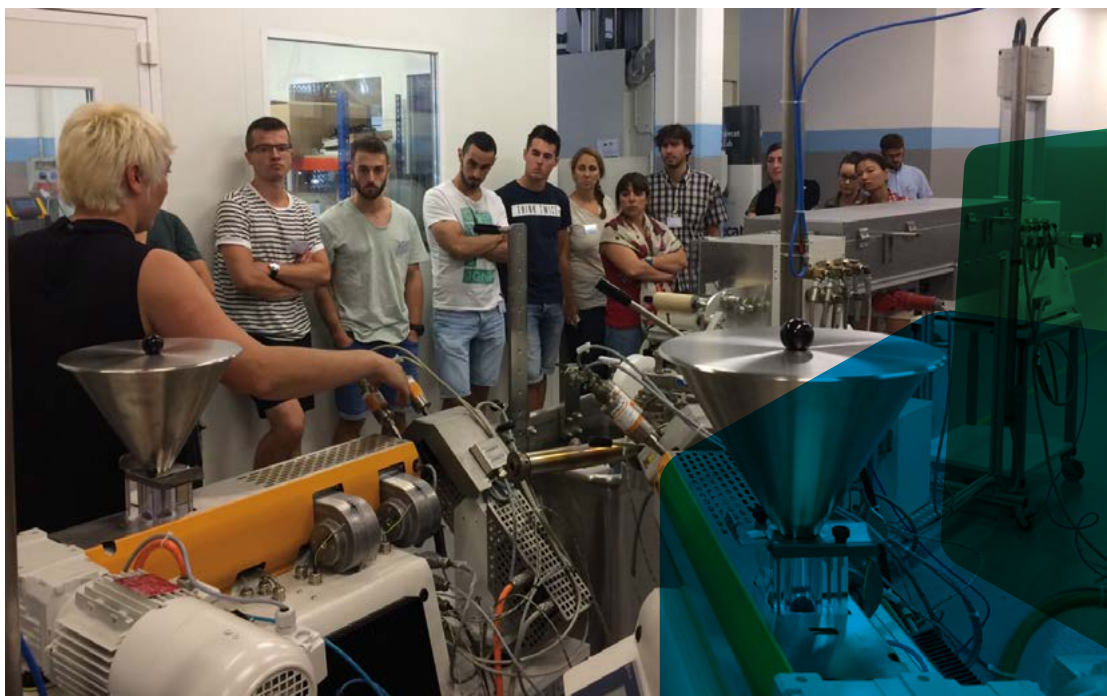
The BIST centres each have cutting-edge research infrastructures and BIST aims to promote an optimized and efficient use of these in order to facilitate carrying out joint BIST projects with greater scope and impact, bringing benefit too all.

During 2017, the BIST infrastructure working group (consisting of the BIST heads of core facilities) participated in visits to all core facilities at the BIST centres to learn about the techniques and instrumentation in each centre, as well as the way the facilities are organized and managed. The visits served to give the working group an ample vision of all facilities and to bring to light collaboration opportunities.

The infrastructure working group also started working on common issues such as fees and the acquisition of a core facilities management software. A first draft of a BIST core facilities catalogue was created.

## 3D printing course for BIST members

On July 5<sup>th</sup>, 2017, BIST organized a 3D printing course at the *Centre Tecnològic de Catalunya* (eurecat) in Cerdanyola. Members of all BIST centres participated in this full-day event.



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# EDUCATION

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Encouraging young people to begin a research career and training them to develop it successfully are core elements of the BIST mission and key instruments for promoting excellent multidisciplinary research. For this reason, BIST and its centres offer high impact postgraduate education, creating a new master programme focused on multidisciplinary research, and coordinating the academic programmes already offered at the BIST centres in order to increase efficiency and impact.

BIST aims to become an international reference for graduate education by innovatively training talented students to face complex projects that solve societal needs. BIST students are involved in cutting-edge collaborative research projects in a multidisciplinary environment, and learn transferrable skills such as advanced techniques in science, scientific communication, project management, and research integrity.

# MASTER OF MULTIDISCIPLINARY RESEARCH IN EXPERIMENTAL SCIENCES



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## BACKGROUND

Launching a master programme in multidisciplinary sciences has been a key goal since BIST was first established. In 2017, this master degree was officially launched, in partnership with Pompeu Fabra University (UPF), and with the support of the BIST community.

The master is the first of its kind in Spain, a pioneering programme focused on hands-on research at centres of excellence. It equips students with everything they need to become an excellent researcher in today's multidisciplinary landscape, and prepares them to ultimately pursue a PhD, thereby pouring highly trained research talent both into Catalan research centres, as

well as into international institutions. In September 2017, fourteen excellent students started the inaugural programme, completing their major research projects either at one of the BIST centres or the UPF Department of Experimental and Health Sciences (DCEXS).

### MILESTONES

The master was approved as an official programme by the *Catalan University Quality Assurance Agency (AQU)* and the *National Agency for the Evaluation of Quality and Accreditation (ANECA)* in 2017. Next, the structure of the programme was finalized, with the aim of creating a community for the students, supporting them throughout the year, promoting their mobility across the BIST centres and DCEXS, and facilitating the coordination with the people from each centre involved in the execution of the master.

In March 2017, a call for major research projects yielded 55 proposals from group leaders at BIST and DCEXS. Students chose from these 55 proposals during the application process.

To attract excellent students, both local and international, an extensive advertising campaign was launched which eventually led to the recruitment of 14 students: 12 Spanish, 2 international, and 6 female, 8 male. The selection committee granted fellowships to all 14 students to cover tuition and, in some cases, mobility and living allowances based on the eligibility of each student.

In 2017, an agreement was also signed by UPF, BIST, and the BIST centres to cover legal, economic, academic, and intellectual property aspects of the master.



**BIST**  
Barcelona Institute of Science and Technology

**upf.** Universitat Pompeu Fabra Barcelona

[bist.eu/master](http://bist.eu/master)

# Master of Multidisciplinary Research in Experimental Sciences

A pioneering program focused on hands-on research at scientific centres of excellence in Barcelona

60 ECT credits  
1 academic year  
September 2017 start  
English language  
15 fellowships available

## 2017 MASTER ACTIVITIES

### Welcome event

As a kick-off to the programme, a welcome event was held on September 12th, 2017 at UPF. It served to present the master to the BIST community and to welcome the inaugural students. Participating in the event were the UPF rector (**Jaume Casals**), the BIST president (**Andreu Mas-Colell**), and the directors (**Roderic Guigó** and **Robert Sewell**), coordinators (**Rubén Vicente** and **Nuria Bayó**), academic commission (**Luciano Di Croce**, **Raúl Méndez**, **Pau Ballester**, **Rafel Escribano**, **Arben Merkoçi**), and trainers of the master programme.



### Training Days

The master students meet once per month to visit the research centres involved in the programme. These days include a discussion session with an internationally recognized speaker, workshops on science communication and responsible research, and a visit to the centre's facilities. The first training day was held at ICFO on December 2nd, 2017 with Monica Ritsch-Marte, Director of the Division for Biomedical Optics at the Medical University of Innsbruck, as speaker.

### BIST Colloquium Series

As part of the master programme, all students are required to attend the **BIST Colloquium Series**, monthly lectures and discussion sessions with internationally recognized researchers, providing a broad exposure to multidisciplinary research in experimental sciences. The series is open to the entire BIST community.

## BIST Colloquium Series

Monthly lectures and discussions with international researchers, providing broad exposure to multidisciplinary research

 <p><b>Mircea Dincă</b> Professor, Department of Chemistry Massachusetts Institute of Technology (MIT) January 15, 2018 at ICN2</p>	 <p><b>Luca Giorgetti</b> Group Leader Chromosome structure and transcriptional regulation Friedrich Miescher Institute for Biomedical Research May 7, 2018 at CRG</p>
 <p><b>Mauricio Barahona</b> Professor, Faculty of Natural Sciences Department of Mathematics Imperial College London March 5, 2018 at DCEXS</p>	 <p><b>Iaria Malanchi</b> Group Leader, Tumour-Host Interaction Laboratory The Francis Crick Institute June 4, 2018 at IRB Barcelona</p>
 <p><b>Serena DeBeer</b> Director, Department Inorganic Spectroscopy Max Planck Institute for Chemical Energy Conversion April 9, 2018 at ICIQ</p>	 <p><b>Alain Blandat</b> Professor, Neutrina Group University of Geneva July 2, 2018 at IFAE</p>

### Effective Researcher Course

This two-day course held at BIST trained students in the following areas: project planning, effective working practises, working with others in the research environment, maximizing personal impact, remote communication, negotiation skills, getting feedback, and designing new collaborative projects in a multidisciplinary environment.



# BIST PHD TRAINING PROGRAMME

## BACKGROUND

Promoting the training of BIST PhD students was a key goal for 2017. The **BIST PhD Training Programme** was executed with two main objectives: 1) to run novel training activities to promote multidisciplinary research and 2) to explore opportunities for establishing synergies within the BIST centres. All PhD students working at the BIST centres were targeted in this training programme, including the eight students that began their PhDs in October 2016 on a BIST fellowship.

## MILESTONES

### Discovering the BIST community

During 2017, the BIST centres organized one day visits to their facilities for BIST PhD students. These visits were successful in allowing students to learn about the specific research, core facilities, and culture of each centre and to promote interaction among the students. The events took place in January (at ICFO), April (at ICIQ), May (at IRB Barcelona), and June (at ICN2 and IFAE). Up to 36 participants came to each event.



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[bist.eu](http://bist.eu)

## Discovering the BIST Community!

## Effective Researcher Course

The **Effective Researcher Course**, led by trainers from the Career Development Organisation (CRAC-VITAE), was a two day workshop held at the EADA training centre on December 15-16, 2016 in Collbató, with the evaluation and follow-up done in early 2017. Twenty-four students, including the BIST PhD Fellows, were trained in project planning, effective working practises, working with others in the research environment, maximizing personal impact, relationship with PhD supervisors, negotiating skills, getting feedback, and designing collaborative multidisciplinary projects. The students rated this course 4.5 out of 5 for overall satisfaction.



## GradSchool Course

The **GradSchool Course**, led by CRAC-VITAE, was a three day workshop aimed at second and third year PhD students, and held at the Montanyà Hotel & Lodge in Barcelona. The course focused on training skills, effective communication of complex issues, teamwork and group dynamics, giving and receiving feedback, consulting and problem solving, action planning, understanding

ethical issues in research, and designing new collaborative multidisciplinary projects. Thirty-eight PhD students participated, and eight people from the BIST community also attended, to be trained as trainers for future editions of the GradSchool course. The students rated this course 4.4 out of 5 for overall satisfaction.



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# TALENT

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BIST aims to attract, retain, and develop the brightest researchers and professionals by providing career development activities to meet their needs at all stages of their professional growth. We are also dedicated to providing a supportive working environment for the entire BIST community.

# MARIE SKŁODOWSKA-CURIE COFUND PROGRAMME

The 2017 Marie Skłodowska-Curie COFUND call of the European Commission (EC) was extremely competitive, with 138 proposals submitted. BIST and its centres submitted two proposals: **"PREBIST"** for PhD students and **"PROBIST"** for postdoctoral researchers. Both were funded. This 100% success rate is highly remarkable and unusual, especially considering that the proposals were the first ever submitted by BIST. Moreover, BIST and its centres obtained funding totalling nearly **EUR 10 Million**, which is the maximum permitted per call for any institute.

This success in the 2017 COFUND call is a major milestone. The funding allows more PhD students and post-doctoral fellows than ever before to complete cutting-edge research in one of the five participating BIST centres of excellence (ICFO, ICIQ, ICN2, IFAE, IRB Barcelona) while also receiving world-class professional development and career training.



## PREBIST

**PREBIST** provides fully-funded positions to 28 PhD students to conduct their doctoral studies in one of the participating BIST centres. PhD students are selected based on two calls (2017-2018).

The first PREBIST call attracted 410 applicants from 67 countries, a massive success in terms of international representation.



## PROBIST

**PROBIST** provides fully-funded positions to 61 postdoctoral researchers to conduct research in one of the participating BIST centres. Postdoctoral researchers are selected based on four calls (2017-2019).

The first PROBIST call received 576 applications from 70 countries.

# TRANSFERABLE SKILLS TRAINING

BIST is dedicated to helping researchers gain the skills necessary during the transition stages of their research careers. As such, BIST and the BIST centres have designed training programmes for PhD students, postdoctoral researchers, and junior group leaders and conducted courses for each of these groups in 2017.

## Making PhD students effective researchers

As outlined in the *Education* section, BIST conducted two courses in 2017 as part of the PhD training programme: 1) **Effective Researcher course**, a two-day course aimed at first year PhD students, and 2) **GradSchool course**, a three day course aimed at second and third year PhD students. More information can be found on page 41.

## Training postdoctoral researchers to be leaders

Targeted at postdoctoral researchers, the VITAE **Leadership in Action** course was a three day workshop held at the EADA Training Centre in Collbató May 10-12, 2017. Thirty-six postdoctoral researchers participated and learned to develop their own leadership skills to face new challenges. Subjects covered included: practising leadership, setting objectives, impact and influence, solving problems, coaching and feedback, values and motivation, communication skills, and presentation skills. Participants rated the course an average of 8 out of 10.

The 2017 leadership in action course was the first edition conducted for BIST postdoctoral researchers and is expected to be offered annually.





## Helping junior group leaders become the best leaders they can be

The course **Leading for Success in Science** was the first of its kind offered to BIST group leaders. The three day course was promoted through CRG, one of the BIST centres, and offered to the entire BIST community through the Barcelona Biomedical Research Park (PRBB) *Intervals* programme. It was designed by *hfp consulting*, which provides professional development workshops exclusively for the scientific community. The course took place July 3-5 in Barcelona. Of the 15 participants, 11 came from BIST centres. The objective of the course was to improve the leadership skills of Junior Group Leaders and at the same time offer the opportunity to establish a peer support group across the different research centres. The course allowed participants to have very useful discussions about leadership topics relevant to their work in an intimate and open environment. Participants rated the course an average of 4.6 out of 5.



# WOMEN IN SCIENCE

## BIST ROUND TABLE: EMPOWERING WOMEN IN SCIENCE WITHIN THE BIST COMMUNITY



**Barcelona Institute  
of Science and  
Technology**

A goal for the BIST community is to address the gap that exists between the number of women in the BIST centres who are research associates or senior postdoctoral researchers (41%) and the percentage of women who are group leaders (only 15%). BIST aims to recognize the value and excellent research done by the female scientists at the BIST centres and to support them in their path to achieving group leader positions.

To do this, BIST first held the **BIST Round Table on Empowering Women in Science within the BIST Community** in November of 2017 to collect information from the entire BIST community about the specific needs in this area. BIST then launched the first action within the **BIST Women in Science Programme**: the **Mothers of Science** supporting grant.

### BIST Round Table- Empowering Women in Science within the BIST Community

This round table was held on November 28th at the Centre Cívic Urgell in Barcelona. It was open to the entire BIST community with the purpose of learning about existing initiatives at the BIST research centres, success stories, as well as gaining insight into the needs of women in science, and potential programmes to address these needs. The event began with a panel discussion moderated by **Pastora Martínez**, Vice-Rector for Globalization and Cooperation at the Universitat Oberta de Catalunya (UOC), and included one representative from each BIST centre (**Benedetta Bolognesi**, CRG, **Núria Montserrat**, IBEC, **María García-Parajo**, ICFO, **Monica H. Pérez-Temprano**, ICIQ, **Neus Bastus**, ICN2, **Laia Cardiel**, IFAE, and **Neus Prats**, IRB Barcelona). Following the panel, small breakout group discussions were facilitated to enable participants to share their ideas, concerns, best practises, and finally present a set of suggested actions in a plenary setting. In total, 140 people took part in the event.

A full report on the topics discussed during the round table was published and serves as a starting off point for developing a comprehensive programme to support female scientists in the BIST community.



## To the Mothers of Science

The **Mothers of Science** supporting grant grew from the **CRG Women Scientists Support Grant (WOSS)** initiative. Because of its success within CRG, the grant was opened up to the entire BIST community and a coaching component was added.

The Mothers of Science grant was designed during 2017 and launched on February 11<sup>th</sup>, 2018 – the international day of women and girls in science.



# TO THE MOTHERS OF SCIENCE

Supporting grant  
for BIST scientists

**10 fellowships**

At BIST, we want to recognize and support the work and value of scientist mothers so that they become pioneers in their fields.

Apply at [www.bist.eu](http://www.bist.eu)

**Deadline: 12/03/2018**



Barcelona Institute of  
Science and Technology

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# IMPACT

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BIST is dedicated to driving knowledge to society. BIST works in coordination with the knowledge and technology transfer units at the seven BIST centres to enable translation and commercialization of the intellectual and industrial property rights portfolio.

BIST aims to bring the outcomes of the research done at the BIST centres to society by establishing mechanisms that route basic research towards commercial and social innovation and by raising the awareness and understanding of science among the general public.

# GETTING TO KNOW THE KTT COMMUNITY

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Throughout 2017, the BIST Knowledge and Technology Transfer (KTT) Working Group focused on becoming familiar with the activities carried out at every BIST centre, sharing experiences and identifying opportunities for promoting new technology transfer programmes and activities.

Initial meetings of the working group, which consist of the heads of the KTT departments at each BIST centre, have provided a global picture of the structures, activities, procedures, results, and needs at each centre. This has allowed the working group to progress with a common KTT strategy.



# FROM SCIENCE TO BUSINESS



As part of its goal to bring more knowledge about technology transfer into the BIST centres, BIST has partnered with the ESADE Business School in Barcelona to bring the **From Science to Business** course to BIST researchers. This initiative, first offered by ICFO and now open to the entire BIST community, is aimed at senior researchers, postdoctoral researchers, and doctoral students. It focuses on helping professionals familiarize themselves with the business world, understand how companies work and create value, and become acquainted with BIST scientists involved in the process of creating new companies.

In 2017, the course was offered from May 29<sup>th</sup> to June 1<sup>st</sup>. All BIST centres sent participants, for a total of 26. The course kicked off with a welcome event organized by BIST and IRB Barcelona on May 29<sup>th</sup>, which included a panel discussion between prominent local entrepreneurs, giving participants a chance to learn, ask questions, and get to know each other.

After the welcome event, participants attended three days of sessions at the ESADE Business School. They rated the course very highly, with an average score of 4.63 out of 5 for overall satisfaction (i.e. to what extent the programme met the participants' expectations) and an average score of 4.65 out of 5 for the quality of the teaching sessions.

# CERCA KTT PROOF OF CONCEPT PROJECT

An important milestone for the knowledge and technology transfer (KTT) portfolio of BIST is designing a proposal to be submitted to the 2018 CERCA (*Centres de Recerca de Catalunya*) call for projects on the “**creation of technology acceleration aggregated entities**”.

This project aims to create a structured entity to coordinate and enhance the KTT capabilities already present at the various centres, take advantage of the BIST level for marketing activities of technologies, and develop more training activities for the KTT teams and BIST researchers with a vocation for entrepreneurship.



# OUTREACH

A top priority for all BIST centres is to bring science to society through training and dissemination activities. These are geared towards many audiences, including primary and secondary students, and the general public. BIST provides support for these activities by facilitating collaboration among the centres, promoting joint activities, and running dissemination campaigns. Some of the activities carried out by the BIST centres in 2017 are highlighted below.

## Crazy about Science

Crazy about Science is a year-long science mentorship programme that gives students in the first year of their baccalaureate the opportunity to be integrated into international science research centres and complete hands-on work in cutting-edge laboratories. Through this, students become well positioned for a possible professional career in scientific research. In 2017, IRB Barcelona ran its **Crazy about Biomedicine** programme, ICIQ its **Crazy about Chemistry**, and ICN2 and IFAE the **Crazy about Physics** programme. The courses kicked off on January 13<sup>th</sup> and ran throughout 2017.

## Barcelona International Youth Science Challenge (BIYSC)

The BIYSC is a two-week international excellence programme developed to offer participants a world class experience working on research projects, attending scientific lectures and debates, and enjoying the company of peers from around the world that share the same passions. CRG, IBEC, ICFO, ICIQ, IFAE, and IRB Barcelona all hosted students in the prestigious programme that ran from July 10<sup>th</sup> to July 21<sup>st</sup> for 100 students from the ages of 16 to 18.



## Summer internships

The BIST centres each offered a summer internship programme in 2017. These were aimed at national and international university students, giving them the opportunity to spend one to three months between June and October 2017 completing hands-on research with world-class scientists at the BIST centres.



**BIST** Barcelona Institute of Science and Technology

### Ready for a taste of world-class research over the summer?

The research centres of the Barcelona Institute of Science and Technology are offering internships during the summer of 2017. Apply now to spend 1-3 months between June and October 2017 doing hands-on research with world-class scientists in one of the six BIST centres. The program is open to national and international university students and there are opportunities for both undergraduate and Master students.

**Topics covered include:**  
 Biomedicine – Chemistry  
 – Genomics – Informatics –  
 Mathematics – Nanotechnology –  
 Photonics – Physics – Structural  
 Biology  
 and more...

[www.bist.eu/summer](http://www.bist.eu/summer)

Logos of partner organizations: XPRG, Sabadell Foundation, Fencat, Cellex, Fundació Cellex La Pedrera, Generalitat de Catalunya, CRG, ICFO, ICIQ, ICN2, IFAE, IRB.

## Youth Mobile Festival (YoMo)

BIST centres took part in the Youth Mobile Festival (YoMo) from February 27th – March 2nd, 2017. YoMo is part of the **Mobile World Congress**, the world's largest gathering for the mobile industry. During YoMo 2017, CRG, ICFO, IRB Barcelona, ICN2, and ICIQ all presented Outreach activities aimed at youth.

## Festa de la Ciència

The BIST centres participated in the 11th edition of **Festa de la Ciència**, organized each year by the Barcelona City Council. This edition took place on May 27-28, 2017 in the Parc de la Ciutadella in Barcelona and focused on the challenges of the future, with activities like workshops, micro-talks, demonstrations, debates, and more.



# SPIN-OFF COMPANIES

Bringing technology to industry is an important priority for BIST and the BIST centres. BIST believes the innovations from labs need to reach society and become tools to make the world a better place.

The BIST centres currently have 23 active spin-offs.



## Applied Nanoparticles

Spin-off of ICN2, UAB and ICREA that was created in 2013 and works on biogas production.



## Biod

Spin-off of ICN2, CTB, UPM, ISOM and IDM that was created in 2010 and develops proprietary technology for measuring biochips and biosensors.



## Cosigno

Spin-off of ICFO founded in 2008 that offers optical engineering services.



## Earthdas Graphene Powered Mobility

Created in 2016 as a spin-off of ICN2 that works on energy storage based on graphene and applied to mobility technologies.



## Futurechromes

Spin-off company created in 2014 with participation from ICN2 that works on the creation of advanced photochromes.

## GRAPHENICALAB

### Graphenicalab

Spin-off of ICN2 that was created in 2016.



## Hemophotonics

Founded in 2013 as a spin-off of ICFO, it commercializes portable, non-invasive and real-time blood flow monitoring devices based on photonics.



## Inbiomotion

Spin-off of IRB Barcelona and ICREA founded in 2010 that develops biomarkers to predict bone metastasis.



## Iproteos

Launched in 2011, this spin-off of IRB Barcelona and UB develops new therapeutic approaches to neurological and vascular diseases.



## Microomics

Spin-off from CRG and the Catalan Institute for Research and Advanced Studies (ICREA), created in 2017 and specialized in microbiome analysis.



## Nanotargeting

Spin-off of ICN2 and Nanonica holding, founded in 2011, and develops new drugs using nanoparticles.



#### Nostrum Biodiscovery

Spin-off of IRB Barcelona, BCN-CNS, UB and ICREA created in 2015 that offers specialized services for drug development based on bioinformatics.



#### Paperdrop Diagnostics

This spin-off of ICN2 created in 2016 is a nanobiotech company focused on the development of new diagnostic tools.



#### ProCareLight

Spin-off of ICFO founded in 2012 that works in safety issues related to laser and light emitting systems.



#### qGenomics

Spin-off of CRG and UPF created in 2008 that offers analysis and interpretation services of genomic data.



#### QuSide

Spin-off of ICFO founded in 2017, exploits photonics technologies and leverages the maturity of the semiconductor manufacturing industry to develop quantum technologies for the cyber-security and super-computation worlds.



#### Radiantis

Spin-off of ICFO established in 2005 that manufactures systems for laser tuning and instrumentation for optical diagnostics.



#### Rob Surgical Systems

Created in 2012 by IBEC and UPC, this spin-off develops Bitrack, a robotic system for use in minimally invasive laparoscopy surgery.



#### Sensia

Founded in 2004, this spin-off of ICN2 develops analytical instrumentation based on graphene biosensing.



#### Signadyne

Spin-off of ICFO created in 2011 and acquired by Keysight Technologies in 2016. It produces control, test and measurement systems for several industries.



#### Simune Atomistic Simulations

Established in 2014, this spin-off of ICN2 develops advanced materials to meet industry and research needs.



#### Surgitrainer

Spin-off founded in 2015 by CREB-UPC with the support of IB-Sant Pau and IBEC, to provide training and accreditation in minimally invasive surgical techniques.

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# IDENTITY

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BIST aims to foster a common culture and a sense of belonging to the BIST community, encouraging its members to work together in creative and collaborative ways and strive towards common goals. BIST also aims to promote the BIST brand in order to increase the visibility of its centres and the excellent research they carry out.

# BUILDING THE BIST COMMUNITY



Building the BIST community is a transversal focus that permeated all activities carried out in 2017. The goal has been to promote a sense of belonging to BIST and build an internal BIST identity. Although each of the BIST centres already has a well-established brand and internal community, the goal of BIST is to create a sense of belonging to a greater purpose – that together BIST is more than the sum of its parts.

This challenge has been approached in part through key messaging and branding materials present at the activities and programmes run by BIST in 2017. Some examples include:

- BIST PhD Fellows' visits to BIST centres (January – July)
- BIST Founding Conference (March 31)
- Leadership in Action course (May 10 - 12)
- From Science to Business course (May 29 – June 1)
- VITAE GradSchool course (June 7 - 9)
- Board of Trustees meeting (June 26)
- Master of Multidisciplinary Research in Experimental Sciences Welcome Event (September 12)
- Master of Multidisciplinary Research in Experimental Sciences Research Skills Course (November 2)
- BIST Round Table: Empowering Women in Science in the BIST Community (November 28)
- COFUND programmes: PREBIST and PROBIST





### Working groups meet-up

On December 14<sup>th</sup>, 2017, BIST invited all members of its working groups and technical committees to an afternoon celebration at the BIST offices. The event gave each group the chance to showcase the projects they worked on in 2017 and to learn what each of the other groups had focused on. It also gave the community a chance to thank and celebrate Miquel A. Pericàs, the outgoing BIST Director. The afternoon ended with a networking cocktail hour, where members got to know each other better and discussed inter-centre projects in an informal setting. Around 65 BIST members attended the event, with representatives from each working group / technical committee present.

### BIST newsletter

With the BIST Communications Working Group, the groundwork was laid in 2017 for a BIST newsletter, a monthly mailing to be sent to the entire BIST community (over 2000 people) to ensure that all members are up-to-date on what is happening at BIST and its centres. This tool serves to make information more consistent and frequent and ensures that all members have easy access to BIST updates. The tool is also useful for engaging external audiences, such as the media and other stakeholders interested in keeping up to date on BIST activities. The newsletter launched in January, 2018.

# COMMUNICATIONS TOOLS



Developing strategic and targeted communications materials is key for engaging both the internal BIST community and external stakeholders. In addition to the BIST newsletter, several other communications tools were developed throughout 2017.

## BIST Brand Book

A milestone of 2017 was the creation and distribution of the BIST Brand Book, including the BIST logo, fonts, colours, and guidelines for consistent use. This tool has served as a stepping stone for ensuring that the BIST brand is represented correctly and consistently in all promotional materials, web pages, and all BIST events, whether led by BIST or by one or more BIST centres.

## 2016 Annual Report

The 2016 BIST Annual Report was written in 2017 and presented to the BIST Board of Trustees during their meeting on June 26th. It served as an overview of all of the projects undertaken during the year.

## BIST website

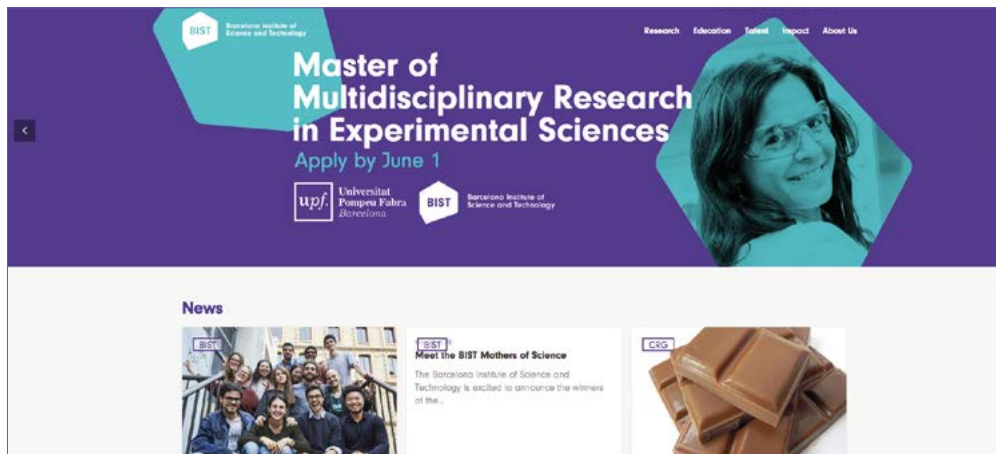
Significant improvements were made to the BIST website (<http://bist.eu/>), including the implementation of a more intuitive navigation menu, a much more consistent posting schedule for news and events, and the creation of new pages:

- **Impact page** (<http://bist.eu/impact/>)
- **Talent page** (<http://bist.eu/talent/>)
- **Meet the team page** (<http://bist.eu/meet-the-team/>)
- **Ignite Programme page** (<http://bist.eu/ignite/>)
- **Founding Conference page** (<http://bist.eu/bist-founding-conference/>)
- **BIST-UPF Master of Research page** (<http://bist.eu/master/>)
- **BIST Colloquium Series page** (<http://bist.eu/colloquia/>)
- **PREBIST page** (<http://bist.eu/prebist/>)
- **PROBIST page** (<http://bist.eu/probist/>)

From January 1, 2017 to December 31, 2017, a total of 120 news pieces were published on the BIST website. The website had 60,265 sessions (an average of 165 sessions per day) and 37,279 users (an average of 102 users per day). Of the sessions, 61.4% were from new users and 38.6% from returning users. Roughly 54% of users were male and roughly 46% were female. Sessions came from 165 different countries.

## Social media

The BIST **Twitter** and **LinkedIn** accounts were maintained throughout 2017 with a significant increase in the number of posts and general activity as compared to 2016. A **Facebook** account was also created and, in order to manage all three accounts from one platform, so was a **HootSuite** account. From January 1, 2017 to December 31, 2017, BIST gained a total of 1,261 new followers across its social media platforms. Twitter was the most-used platform, with a total of 710 new followers, 20,331 profile visits, 861 mentions, and 304,184 tweet impressions.



# MEDIA STRATEGY



A key element to building the BIST identity is gaining visibility in the media. To work towards this, a media strategy was developed in 2017 to be executed in 2018. The strategy includes three main parts. First, BIST will send out press releases about its activities more frequently and consistently. Second, local journalists will be invited to meet with the BIST Director General to become more acquainted with the BIST direction and vision. Third, BIST aims to engage international media through inviting key international journalists to visit Barcelona and showing them that BIST is indeed a centre of reference. The first two parts have been ongoing since January 2018 and the third is a mid-term goal.

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# FACTS & FIGURES

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## PEOPLE

**2,327** BIST COMMUNITY

**523**  
Postdoctoral  
Researchers

**598**  
PhD Students

**166**  
Principal  
Investigators (PI)

**41%**  
International

**43%**  
Women

**7 PEOPLE**  
BIST CORE TEAM



## PUBLICATIONS

**1,175**  
TOTAL

**19%**  
Increase in internal  
collaborations  
(from 2016)

**108<sup>TH</sup>** WORLD / **29<sup>TH</sup>** EUROPE / **2<sup>ND</sup>** SPAIN

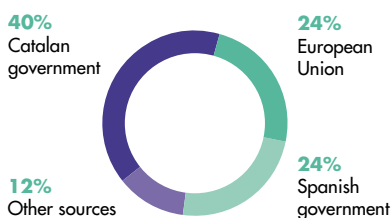
Nature Index WFC position  
(for period of March 1, 2017 – February  
28, 2018)



## FUNDING

**130M€**  
BIST CENTRES  
GLOBAL BUDGET

### BIST CENTRES FUNDING BY SOURCE



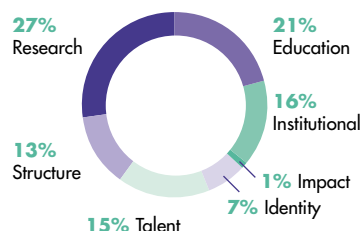
**11**  
ERC GRANTS  
RECEIVED IN 2017  
(OUT OF 76)

**1.35M€** BIST FOUNDATION  
2017 BUDGET:

### BY ORIGIN



### BY APPLICATION



## INNOVATION

**4** spin-offs created in 2017 out of  
**23** active companies

**30** new patent  
applications in 2017

## BIST CENTRES



## MEMBERS OF THE BOARD OF TRUSTEES

