

## Introduction

### CIBERES training program 2016-2019

#### CIBERES objectives and structure

CIBERES is a thematic area of CIBER (Centro de Investigación Biomédica en Red) focused on respiratory medicine. The network was created as a result of the increasing complexity and knowledge in the biology and management of diseases that pulses the need to collaborate among different specialties and between basic and clinical research. The mission of CIBERES, as defined in its roadmap, is summarized as follows: 1) To foster excellence in research in respiratory diseases. 2) To help solving healthcare problems in the field of respiratory diseases. 3) To foster its research groups' participation in international research activities, especially the ones included in European Framework R+D+I programs. 4) To promote safe transfer of research results to society and in particular to the productive sector. 5) To train innovative and competitive researchers in respiratory diseases and 6) To make sure society learns about the main progress made in respiratory research. CIBERES is made up of more than 30 Research Groups including basic, clinical and epidemiological research and belonging to institutions of different nature: university hospitals, universities, Public Research Organizations. CIBERES forms an extensive team of human resources involving over 400 people, with a part of staff researchers hired directly by CIBERES. The organisation structure consists of the Scientific Management headed at present by Prof. Ferran Barbé that coordinates the work performed in the 9 Scientific Lines into which the CIBERES groups are divided, along with the Management Committee. The lines are grouped into 3 programs: chronic respiratory diseases, infectious respiratory diseases, and singular respiratory diseases. The CIBER Technical Unit is located at the ISCIII headquarter and provides the administrative support required for the Institution to operate.

#### Description of CIBERES training program

The training program was initiated under the leadership of Joan Albert Barberà (2008-2014), followed by Ana Obeso (2014-2015) and Cristina Prat (2015-2019), always with the support of a training committee (<https://www.ciberes.org/en/transversal-programmes/training-programme>). The main actions implemented included the following.

**A. Program for training research staff.** It is meant to support young people with training in any of the disciplines of Biomedicine, for them to get under way a research career in the field of respiratory diseases. The aim of this programme is to launch a call for awarding *starting grants* of up to one year of duration for university graduates who wish to take part in research projects in respiratory diseases at CIBERES groups. This grant has a *shuttle function* with the aim of cove-

ring the period between the researcher's joining this programme to when any other subsequent aid, grant or financing source of longer length is obtained, enabling them to complete a doctoral thesis in the field of respiratory diseases.

**B. Program for improvement of mobility.** This program includes several modalities: 1) Registration or enrolment expenses for training courses or learning activities. 2) Travel expenses and allowance for attending training courses or activities outside the usual place of residence, including travels to plan or collaborate with laboratories in the frame of collaborative research projects. 3) Stays for learning techniques or skills in another laboratory (including CIBERES, CIBER or external laboratories, both national and international).

**C. Program for fostering interest in respiratory research.** This program has the aim of *disseminating the scientific activity* of the CIBERES and the achievements accomplished, in order to arouse young people's interest for respiratory research. The main action is the CIBERES training sessions that have been taken place since 2008.

**D. Endorsement** of courses, congresses, training sessions or similar events, organized by CIBERES members, and with scientific interest for CIBERES members, increasing the visibility of CIBERES.

#### Strategic objectives 2016-2019

After an internal and external analysis, the scientific committee constituted in 2015 boosted a strategic plan establishing as the main goals: 1) To foster skills in respiratory research, but also in *innovation* and competitiveness. 2) To improve the *dissemination* of main activities and results from CIBERES to the society. 3) To establish collaborations to share training opportunities with related scientific societies such as SEPAR. 4) To strengthen the *internationalization in CIBERES*. The objectives were translated into the existing training activities and also a program for external fundraising was added. The main achievements are summarized as follows.

**1. Starting grants.** The number of grants was increased and adapted to a different scoring system that included the evaluation results of the host group in order to increase the impact of the action. A new call (Plus) was promoted to consolidate the work of the ones obtaining the best impact on the starting grant. The human resources structure and policy did not allow the latest 2 editions, but still the success is demonstrated by the fact that more than 50% of the fellows have got a PhD grant.

**2. Mobility.** The main action has included the option to promote longer stays (3 to 6 months), preferably international, and evaluation aims to attract high level applicants, and also includes the host group evaluation criteria in order to increase the impact of the results. It is a permanently open call launched while funding is available and it has

increased substantially in number and quality. It has become a requisite to mention the fellowship if a publication was generated.

**3. Training days.** The action was already very successful since its first edition in 2008 as a forum for exchange of ideas between senior and junior researchers. In 2016, in the context of the unification of CIBER technical office, some changes had to be implemented but simultaneously launching the strategic objectives. Priority was given to find a common space to meet the initiatives with other CIBER areas, that were presented to consolidate and/or promote synergies. Presentations were incentivized to be performed in English in order to improve skills. Therefore, in 2016 the collaboration was with CIBERBBN (Bioengineering, Biomaterials and Nanomedicine) including talks presenting the results of the intramural projects CIBERES-CIBERBBN:SEPAR; in 2017 with CIBERFES (Frailty and Healthy Ageing) and an intramural call was launched; and in 2018 with CIBERONC (Oncology) in order to promote one of the new areas. Complementary talks aimed to implement researcher tools by presentations of the platforms of internationalization and funding opportunities in H2020, innovation and transfer of technology, and the research support (Pulmonary Biobank Consortium CIBERES but also support on clinical trials, genomics and proteomics, bioinformatics). In 2019, as a strategic action there was a meeting with the external advisory board during the American Thoracic Society congress. On the other hand, in the context of the celebration of Annual International ERS congress in Madrid, there has been the collaboration between ERS and SEPAR presenting starting grants and mobility grants during the annual meeting. The grants 2019 will sponsor the presentation of results in the ATS congress in Philadelphia 2020, including presentation to the external advisory board.

**4. Dissemination.** A milestone achieved in 2018 and continued in 2019 is the agreement with Elsevier to promote the abstracts to be published as a supplement in *Archivos de Bronconeumología*, with more than 1000 visits to the web to date. The next step to consolidate this collaboration has been networking SEPAR and European Respiratory Society. Impact on social media has also increased.

**5. Fundraising support program.** The final objective of these grants is to increase the uptake of external resources in CIBERES through the increase of funded projects by aiding the researcher with the writing and presentation of European/international project proposals. The program is just initiated and has been very positively evaluated in terms of training and acquisition of experience.

#### Future perspectives

The underlying structure is not easily flexible but the training program is dynamic and a field for stimulating creativity to develop and assure successful ideas. The work for health needs a transdisciplinary view, integrated into the one health approach, in a globalised world that needs to adapt to the challenges such as ageing, non-communicable diseases, environmental pollution, climate change and availability of resources, impact of social and economic aspects, and also to take into account the gender dimension, the digital transformation of health, the impact of social media, the next generation technologies, integration of big data and omics. Participation in international networks and discussion forums needs to be accessible in the early stage of the career and the training program has aimed to contribute to this by sharing knowledge between disciplines in order to perform an integrated research.

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