

2017 Annual Report

INSTITUT de
BIOLOGIA
EVOLUTIVA **ibe** CSIC
upf.



5

programmes

20

research labs

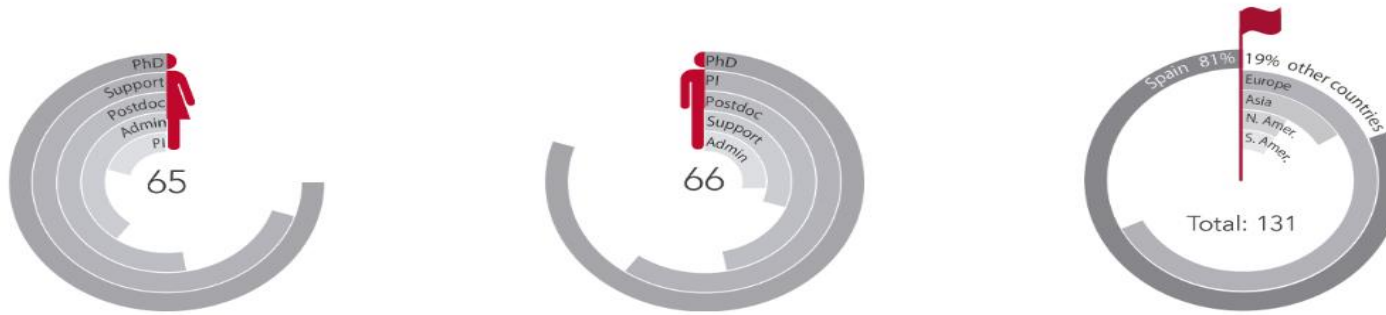
131

people

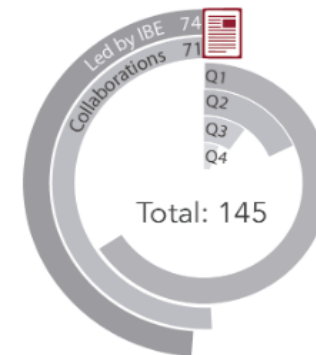
The Institute of Evolutionary Biology (IBE) is a joint Institute of the Spanish National Research Council (CSIC) and Pompeu Fabra University (UPF) founded in Barcelona in 2008. Its research focuses on the processes and mechanisms that generate biodiversity, and covers areas such as genetic and molecular evolution, population genetics, complex systems biology and ancient DNA. Over a hundred people participate in the Institute, which has 20 research labs distributed across five scientific programmes.

IBE in numbers

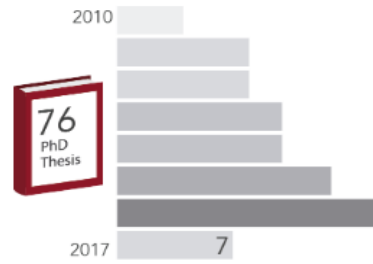
People



Publications



Training



Funding



Highlighted papers



Arauna, L.R. *et al.* (2017) **Recent historical migrations have shaped the gene pool of Arabs and Berbers in North Africa** *Molecular Biology and Evolution* 34(2):318-329



Escoda, L. *et al.* (2017) **Using relatedness networks to infer contemporary dispersal: application to the endangered mammal *Galemys pyrenaicus*** *Molecular Ecology* 26, 3343-3357



Fernandez-Nicolas, A.; Bellés, X. (2017) **Juvenile hormone signaling in short germ-band hemimetabolous embryos** *Development*, 15;144(24):4637-4644



Grau-Bové, X. *et al.* (2017) **Dynamics of genomic innovation in the unicellular ancestry of animals** *Elife*. 6. pii: e26036.



Kuderna, L.F.K. *et al.* (2017) **A 3-way hybrid approach to generate a new high quality chimpanzee reference genome (Pan_tro_3.0)** *GigaScience* 1:6(11):1-6



Rodríguez, J.A. *et al.* (2017) **Antagonistic pleiotropy and mutation accumulation influence human senescence and disease** *Nature Ecology and Evolution* 1(3):55





Spataro, N. *et al.* (2017) **Properties of human disease genes and the role of genes linked to Mendelian disorders in complex disease aetiology** *Human Molecular Genetics*, Volume 26, Issue 3, 1 February 2017, Pages 489–500



Amor, D.R. *et al.* (2017) **Spatial dynamics of synthetic microbial mutualists and their parasites** *PLoS Computational Biology* 13(8): e1005689



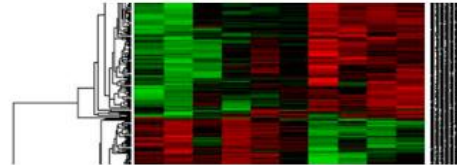
Macia, J. *et al.* (2017) **Synthetic associative learning in engineered multicellular consortia** *Journal Royal Society Interface* 14: 20170158

Research Labs



Animal Biodiversity & Evolution programme

- Phylogeny and Phylogeography of Mammals lab
- Systematics, Biogeography and Evolution of Reptiles lab
- Water and Cave Beetle Evolution lab
- Herbivore Beetle Evolution lab
- Butterfly Diversity and Evolution lab



Comparative & Computational Genomics programme

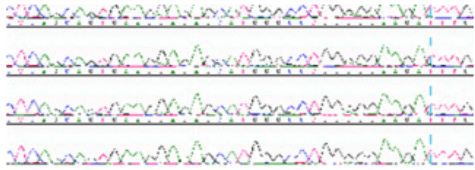
- Paleogenomics lab
- Comparative and Evolutionary Genomics lab
- Evolutionary and Functional Genomics lab



Functional Genomics & Evolution programme

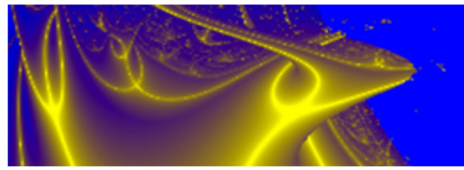
- Evolution of Insect Metamorphosis lab
- Nutritional Signals in Insects lab
- Insect Reproduction lab
- Evolution and Developmental Biology lab
- Multicellgenome lab
- Transposable Elements and Host Genomes lab





Population Genetics programme

- Evolutionary Systems Biology lab
- Evolutionary Population Genetics lab
- Genomics of Individuality lab
- Human Genome Diversity lab



Complex Systems programme

- Complex Systems lab
- Language Evolution lab

Outreach

IBE places great emphasis on explaining the research it undertakes through the organisation of activities like workshops, exhibitions and conferences, as well as open days. Here are four of the main activities carried out in 2017 by the Institute to engage with the public through science.





Barcelona International Youth Science Challenge (BIYSC) & Joves i Ciència

These two programmes of the Catalunya-La Pedrera Foundation are aimed at stimulating scientific talent among students. In July 2017, within BIYSC, a group of international students between the ages of 16 and 18 took part in the scientific challenge “Uncovering the hidden diversity of the oceans” using cutting-edge techniques at IBE. Also in the summer, and within the Joves i Ciència programme, IBE welcomed two secondary school students with a particular interest in science into its labs and a group of IBE researchers worked with a further ten students on a project on biodiversity and evolution during a scientific field trip in the Pyrenees.



PRBB Open Day, BIOJUNIOR & Youth Mobile Festival (YoMo)

IBE participates regularly in the activities led by the Barcelona Biomedical Research Park (PRBB). While the first two are organised by the PRBB and take place on its premises, YoMo is held in the Fira de Montjuïc as part of the Mobile World Congress. In 2017, IBE participated in YoMo with workshops organised by the Complex Systems lab and the Evolutionary and Funcional Genomics lab. On the PRBB Open Day, 17 IBE members volunteered to be involved and principal investigator Jaume Bertranpetit gave the talk “Una visió evolutiva de l’envelliment i la mort”. At BIOJUNIOR, several IBE researchers explained their research to secondary school students.





Women in Evolution

IBE celebrated a gender awareness day with the support of the PRBB and the European Society for Evolutionary Biology (ESEB) which took place on 29 May. It included talks given by three women scientists who work in different areas of evolutionary biology: Ángela Nieto, Patricia Beldade, and Leslea Hlusko. These were complemented with two additional, related talks by Gerlind Wallon, deputy director of EMBO, and Magdalena Skipper, director of the Altius Institute for Biomedical Sciences, aimed at outlining the impact of measures implemented at the organisational and editorial level. These talks were followed by an open debate.



Science at Christmas

The dystopian society portrayed in the *Blade Runner* film saga sparked the discussion on the prophecies made in both films and the place of science in this regard in the *Science at Christmas* programme, which took place at the Centre de Cultura Contemporània de Barcelona (CCCB) on 13 December. Will artificial intelligence replace human abilities? Will it be possible to design artificial organs or extend human longevity?, were some of the questions that a panel consisting of Ricard Solé, principal investigator at IBE, Gemma Marfany, Àngel Raya and Manuel Moreno tried to answer. *Science at Christmas* is organised every year by the IBE.



