

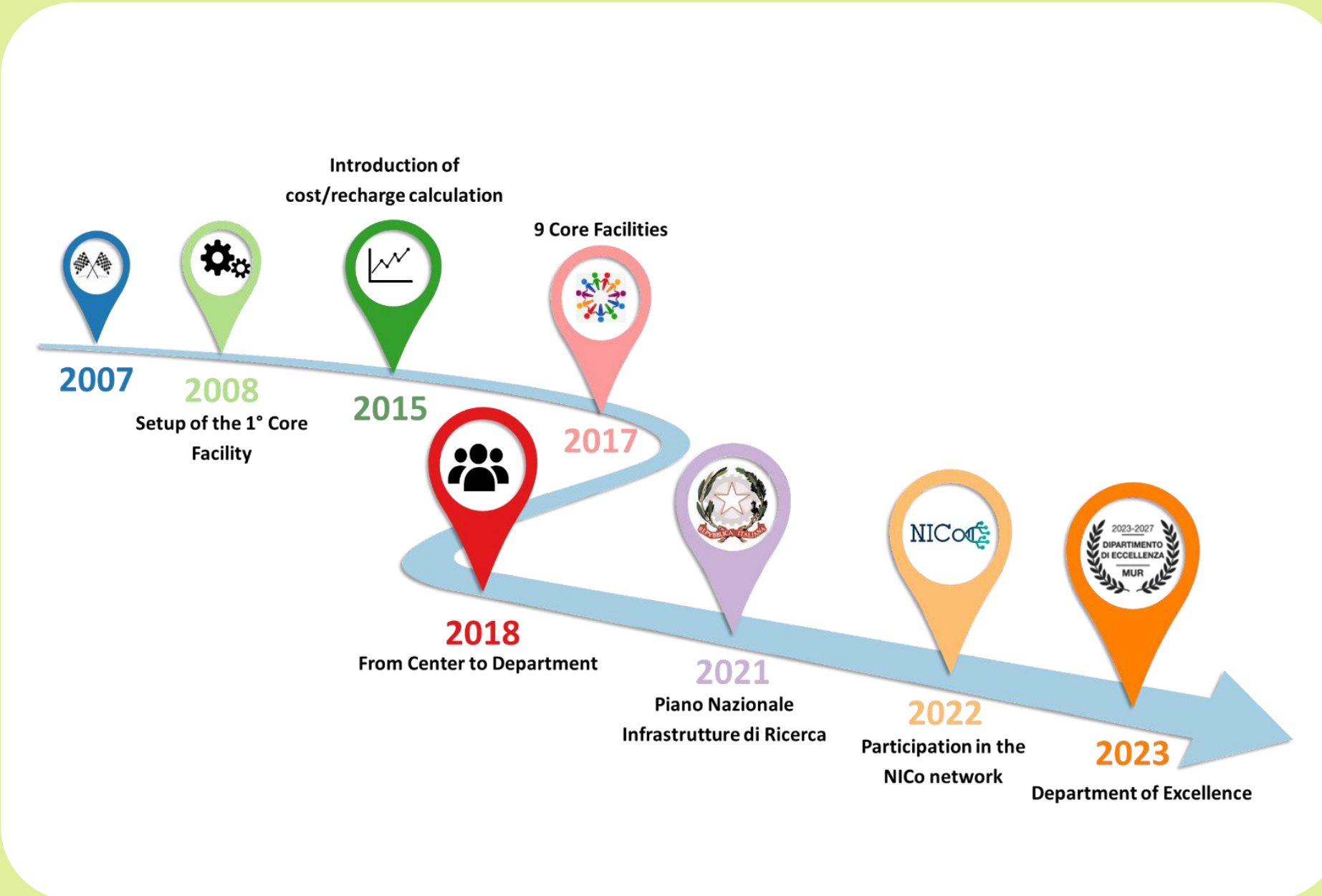
# Core Facilities IRBIO: "just" equipment?



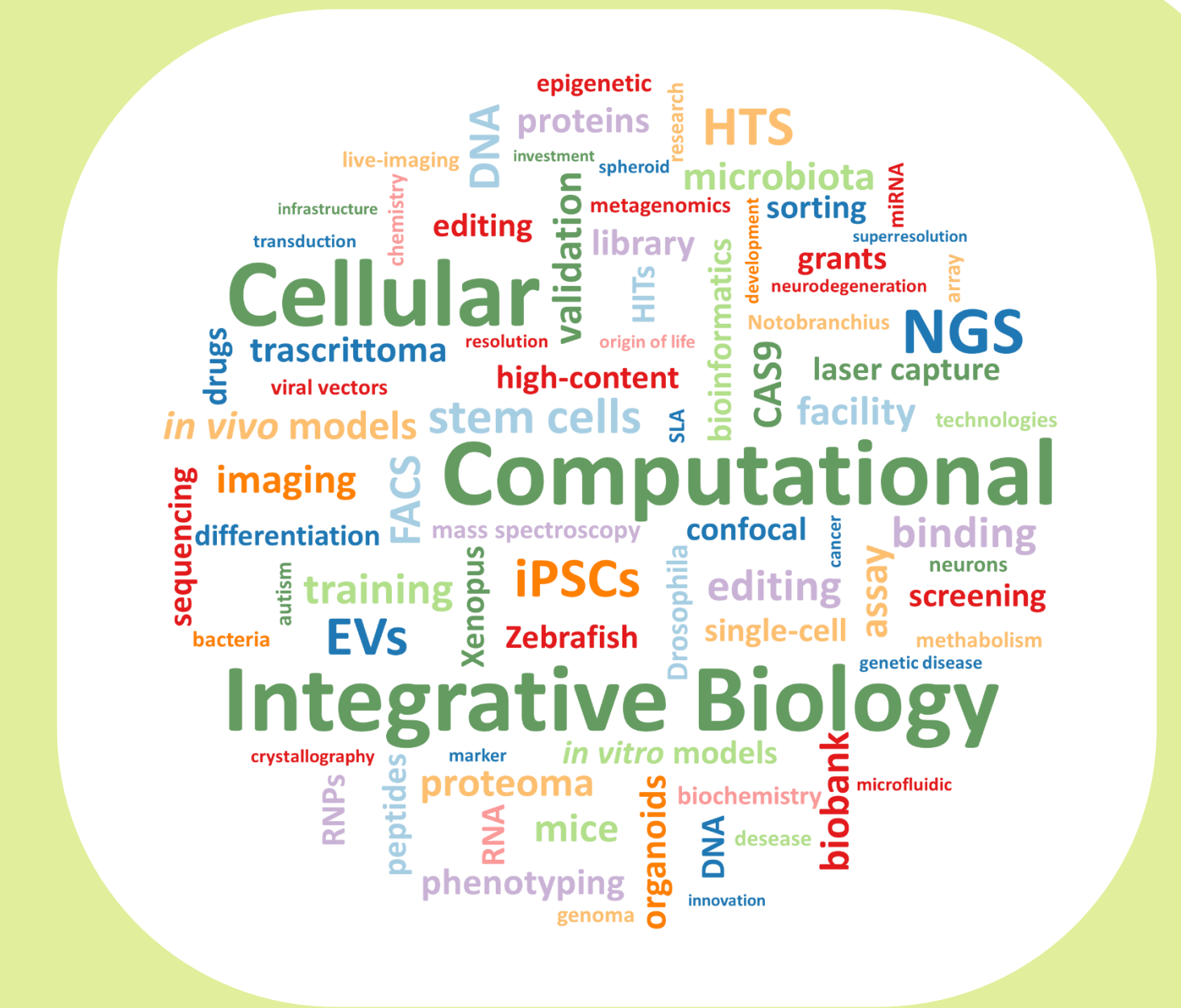
UNIVERSITÀ DI TRENTO  
Dipartimento di Biologia Cellulare, Computazionale e Integrata - CIBIO

Cardano M., Rocuzzo M., Belli R., Bertorelli R., Cavallerio P., Collini M., Cutarelli A., De Sanctis V., Del Bianco C., Gatto P., Longhi S., Mazzeo I., Pancher M., Peroni D., Pesce I., Robbiati S., Scarduello G., Sidarovich V., Toldo C., Valentini C., Zenoniani A., Adami V.

The Department of Computational and integrative Biology (CIBIO), founded in 2007, is a cutting-edge and top-ranked academic biomedicine institute within UNITN, organized as a hybrid research center/university department. CIBIO provides a high level of research services through Core Facilities (IRBIO) operated by highly skilled staff scientists. The efficient and reliable service in the core facility results from close collaboration with the research groups. The sustainability and organization strongly leverage the active involvement of the innovation office and the administrative staff.



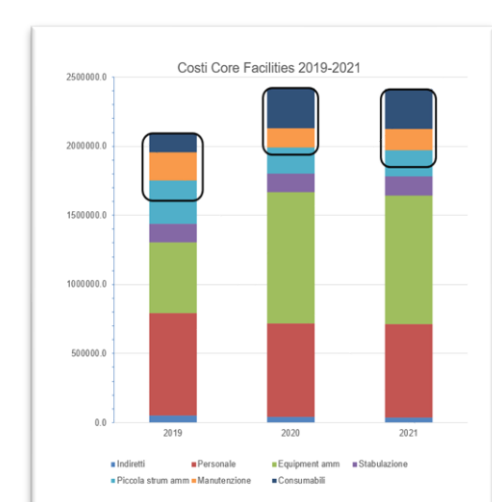
Between 2018 and 2020, IRBIO was updated thanks to 7 million € in funding from European Regional Development Fund (FESR) and was mapped in the list of Italian Research Infrastructures (PNIR 2017-2023). In 2023, CIBIO was recognized as "Department of Excellence" by the Italian Ministry of University and Research. IRBIO plays the role of ambassadors of the excellence of CIBIO research, providing integrated services that exploit the technological and scientific diversity of CIBIO and act as innovation hubs, facilitating the interaction between the researchers and the external partners. IRBIO CF staff is actively involved in several initiatives at the local, national and international level, assuming a crucial role within the organization.



<p><b>NEXT GENERATION SEQUENCING</b></p> <ul style="list-style-type: none"> <li>DNA sequencing: <ul style="list-style-type: none"> <li>Whole Genome</li> <li>Exome</li> <li>ChIP-seq</li> <li>Mitochondrial-seq</li> </ul> </li> <li>RNA sequencing: <ul style="list-style-type: none"> <li>miRNA-seq</li> <li>Stranded RNA-seq</li> <li>Low input RNA-seq</li> </ul> </li> <li>Metagenomics</li> </ul> <p>ngs.unitn@gmail.com</p>	<p><b>MASS SPECTROMETRY &amp; PROTEOMICS</b></p> <ul style="list-style-type: none"> <li>Protein and small molecule identification and quantification</li> <li>Quantitative proteomics</li> <li>Post-translational modifications</li> <li>Intact protein analysis</li> </ul> <p>ms.cibio@unitn.it</p>	<p><b>ADVANCED IMAGING</b></p> <ul style="list-style-type: none"> <li>Wide-field and confocal imaging</li> <li>Super Resolution microscopy</li> <li>Live-cell imaging</li> <li>Laser capture microdissection</li> <li>Image analysis automatization</li> <li>In-vivo imaging</li> </ul> <p>imaging.cibio@unitn.it</p>	<p><b>HIGH THROUGHPUT SCREENING &amp; VALIDATION</b></p> <ul style="list-style-type: none"> <li>Chemical Libraries</li> <li>Assay development</li> <li>High Content Screening</li> <li>Hits confirmation and validation</li> </ul> <p>hts.cibio@unitn.it</p>	<p><b>CELL ANALYSIS &amp; SEPARATION</b></p> <ul style="list-style-type: none"> <li>Cell phenotyping</li> <li>Cell Cycle Analysis</li> <li>Cell Proliferation</li> <li>Cell sorting</li> <li>EVs analysis</li> <li>Cell Viability and Apoptosis assays</li> <li>Small particle analysis</li> </ul> <p>cascf.cibio@unitn.it</p>	<p><b>PROTEIN TECHNOLOGY</b></p> <ul style="list-style-type: none"> <li>Expression and purification of recombinant proteins</li> <li>Generation of expression constructs</li> <li>Biochemical assays</li> <li>Binding studies</li> </ul> <p>protech.cibio@unitn.it</p>	<p><b>CELL TECHNOLOGY</b></p> <ul style="list-style-type: none"> <li>Somatic cell reprogramming</li> <li>Organoids</li> <li>Genome-editing</li> <li>Differentiation</li> <li>Electrophysiology</li> <li>Cell metabolism profiling</li> </ul> <p>celltech.cibio@unitn.it</p>	<p><b>SINGLE CELL</b></p> <ul style="list-style-type: none"> <li>RNA-seq</li> <li>Spatial transcriptomics</li> </ul> <p>Available instrumentation:</p> <ul style="list-style-type: none"> <li>Chromium 10X Genomics</li> <li>icell8 cx Takara</li> </ul> <p>singlecell.cibio.unitn@gmail.com</p>	<p><b>MODEL ORGANISMS</b></p> <ul style="list-style-type: none"> <li>Mice</li> <li>Zebrafish</li> <li>Notobranchius</li> <li>Xenopus</li> </ul> <p>mof.cibio@unitn.it</p>
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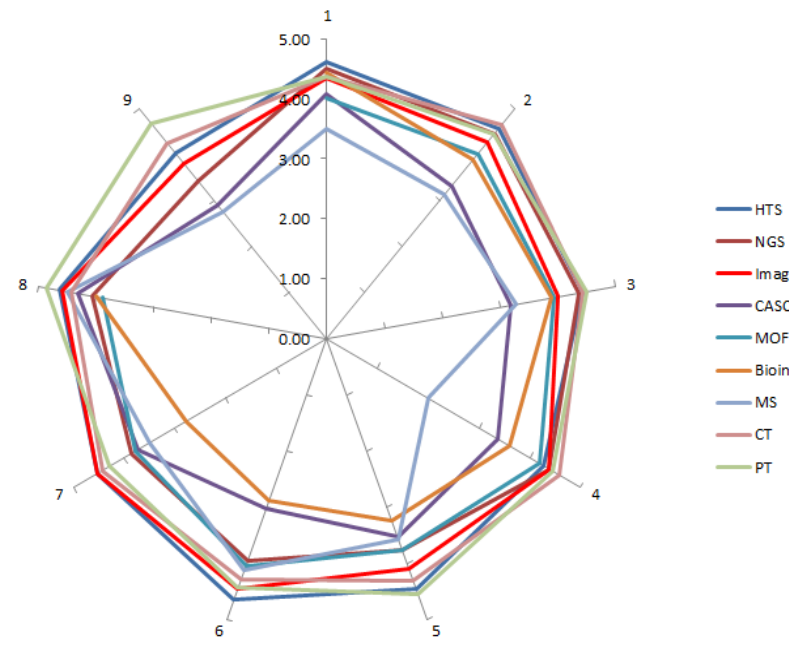
## Management and administration

IRBIO CF staff is managed by a coordinator and supported by dedicated administrative staff within the Research Management Division. An **electronic booking system** and a **full cost accounting system** is shared by all the CFs. Since 2018, the methodology for the calculation of the applied rates has been certified by an external auditor.



The users of IRBIO CFs are requested to abide by a series of General and specific access rules.

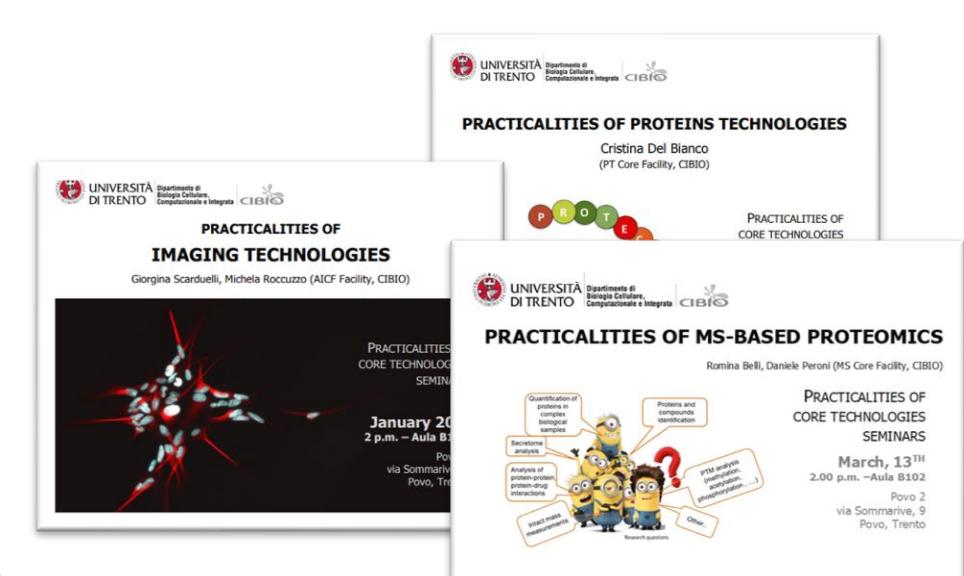
Periodic **surveys** provide valuable feedback to core managers from their client based about expectations and perceptions of the quality of the offered services.



Spider diagram displays the preliminary results of the 2018 survey for the CFs: 1-4 addressing quality, 5-9 accessibility of the services.

## Education and Training

IRBIO CFs organize a series of internal seminars focused on **practicalities** and techniques involved in their fields of expertise. The aim is to engage with new and potential users and to update the existing ones with the latest applications.



As coordinator of the **InnoCore project**, the CIBIO's Core Facilities contribute to the theoretical and practical part of courses in advanced technologies in Life sciences.

- Advanced Imaging
- Genomics Technologies
- Proteomics and protein characterization
- High Throughput Screening



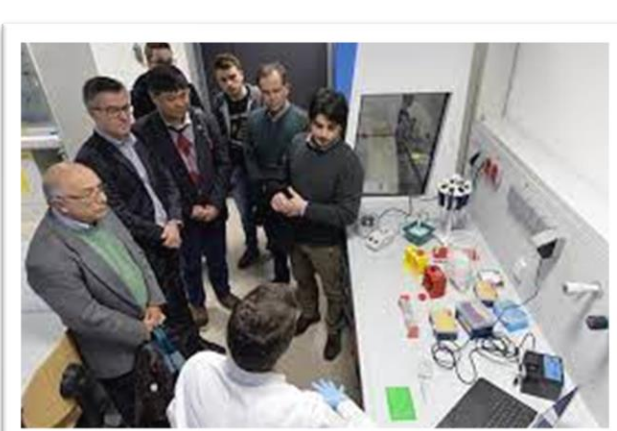
A certification of the competences acquired within the InnoCore educational programs is issued with an Open Digital Badge.



**InnoCore Challenge** is an innovative education practice where biotech and pharma companies address students with real technological issues. The teams are supported by core facilities staff and innovation experts

## Outreach and Networking

### OUTREACH ACTIVITIES



Core Facilities at CIBIO are the place-to-visit for institution, sponsor and patient associations.

**CIBIO OPEN DAYS**  
Students are periodically guided around the labs to directly show them the lab activities.



### BIO FACILITY DAYS

Starting from 2015, IRBIO Core facilities periodically organized events aimed to open potential collaborations between academic research and industries. Dedicated to scientists and facility staff from academia, industries and clinics.



### INNOCORE DAYS

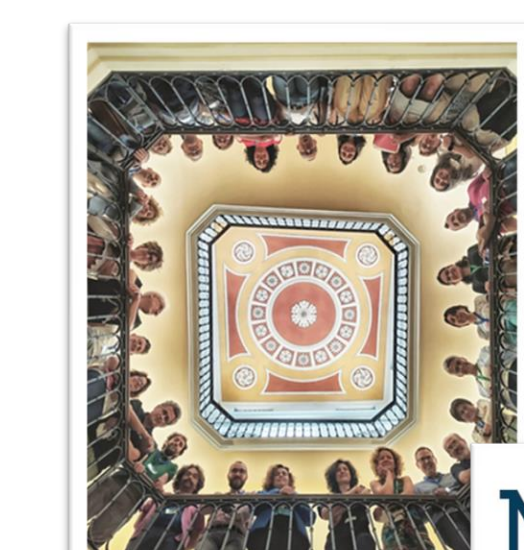
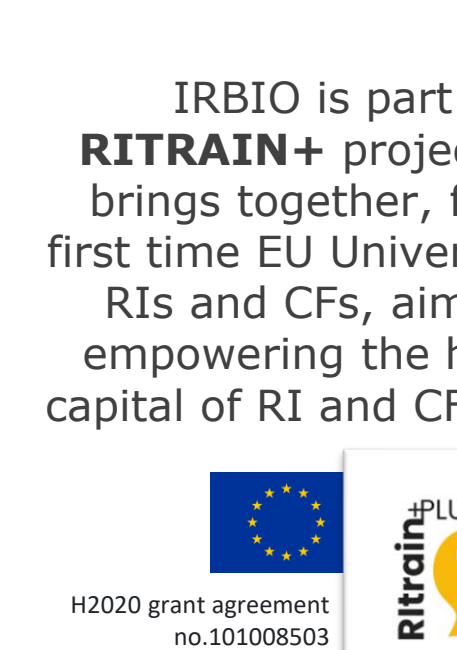
In the frame of the InnoCore project, the University of Trento hosted the InnoCore Day on Genomics and Drug Discovery in June 2022. This event was part of a series of conferences aimed at presenting to the academic and industrial scientific community the importance of Core Facilities in modern Life Science, not only from a scientific and technological point of view, but also in education and innovation.



IRBIO's CF staff is actively involved in the activities of the **CTLs** association.



IRBIO promoted the webinar series **ITALIAN MEETING OF THE CORE FACILITIES** from May 2021 to November 2021



IRBIO hosted the **NICO KICK-OFF MEETING** June 6th, 2022

