

**Fundació
Catalunya
La Pedrera**

Science Education Research



Fundació Catalunya La Pedrera

Fundació Catalunya La Pedrera is an independent private foundation led by an expert Board of Trustees.

Founded in 2013, it merged the expertise, professionals, assets, facilities and consolidated activities of pre-existing Foundations, focusing on:

- ▶ **Social development, active and dignified ageing and inclusive employment:**
We offer specialised professional-support programmes for elder people to help them maintain physical and cognitive capacities and improve quality of life for them and their families.
We promote employment initiatives in the agrifood sector for young people at risk, through mentorship and workforce development programs.

- ▶ **Sustainability and territorial management:**
We own and manage a significant network of natural spaces, where we carry out innovative initiatives to adapt to and mitigate the effects of climate change, manage forests properly to reduce risk of forest fires, promote circular bioeconomy and preserve biodiversity and ecological regeneration.
We are transitioning to renewable energy sources in our facilities.

- ▶ **Food for health:**
Through a partnership with Alicia Foundation, we develop technological innovation in cuisine, raising awareness about healthy eating habits and promote research on quality food for people with specific health needs.

- ▶ **Creativity and reflection:**
 - We manage and share with society our exceptional heritage, in particular La Pedrera-Casa Milà (a UNESCO World Heritage Site).
 - We create and offer unique art exhibition experiences.

- ▶ **Encouraging vocations and talent:**
We promote science, research and scientific education and help train the next generation of top scientists.
We also promote innovation and inclusiveness in education to advance towards equal opportunities for all at our own school and through collaborations with educational centres and relevant institutions.



At Fundació Catalunya La Pedrera we have a dream: we envision a world that dignifies ageing, where all young people have the opportunity to reach their full potential and where all children have access to the best education.

A world that is committed to science and sustainability and that is passed on to the next generations, who require the best training to transform and overcome the great challenges that lie ahead.

A world in which different institutions join forces so that the next generation finds a better world.

Fundation Programs and Facilities



Món Sant Benet heritage & congresses facility and resort



MónNatura Delta nature facility



MónNatura Pirineus nature facility



Ageing with dignity



Employment for at-risk youth



Management and protection of natural spaces



Alicia Foundation research of food for health



Exhibitions and Cultural experiences



Vocations and talent



La Pedrera - Casa Milà, UNESCO World Heritage site and our headquarters

Science and Research Programs

We promote research and scientific vocations and talent among pre-College students, offering a wide variety of top-quality programs to encourage scientific research, dissemination and education. We collaborate with research centers, hospitals and scientists to create hands-on experiences in real research settings.

We strive to promote research, science and education in science and technology in Catalonia and to train the next generation of top scientists to play an active role in addressing our world's biggest challenges.

The Foundation supports cutting-edge research and provides unique and life-changing opportunities for young people with outstanding talent, potential and interest in research to further motivate and guide them on their academic and professional paths.

Furthermore, these programs help Research Centers to raise awareness on their work and bring it closer to society.

What makes our science programs unique?

Hands-on experiences

- Practical immersion in the day-to-day activities of research centres, hospitals and science institutes.
- Unique opportunity to do real projects in a real research setting.

Access to programs through application and selection processes

- An educational experience in itself.
- Very similar to applying to access universities or professional positions.
- Key to ensuring the excellence of the projects.

Participant profiles

- Young people with talent, vocation and interest; highly motivated to make the most of the opportunities we offer.
- Groups of young people with shared interests.
- Diverse and open to all, regardless of their socio-economic background, gender and origin.

Approachable and inspiring role models

- Participants interact with senior investigators.
- Work in close contact with junior researchers who are accessible and inspiring role models.

Key skills for personal and career development in science

- In addition to science, the programs work on other key skills: communication, creativity, proactivity, critical thinking, resilience, cooperation, teamwork, stress and time management...
- Essential skills for the participants' personal and professional futures and to help advance science and knowledge.

Science Fellows Community

- The alumni of our programs become members of the Science Fellows Community, where they get access to more opportunities. Within the Community, Fellows can share new projects and ideas, and get or offer mentorship, contact or support from/to thousands of young people with similar interests and great potential in science, technology and research.

Partnerships

- Partnerships that allow us to give pre-university students and young people from the Science Fellows Community access to exceptional immersion experiences and facilities.
- Extensive diverse network of renowned institutions in science, technology and research.
- Significant impact on raising awareness of the work done at the research centers.



We want to play an active role in training the next generations of scientists, helping them reach their full potential and become key actors in tackling the global challenges.

Over the years, we've helped encourage vocations and provided academic and professional guidance to more than 5,000 young people, building an important collaboration network with national and international science institutions.



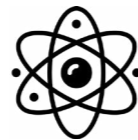
70+
research centres



40+
hospitals



30+
universities



30+
science programmes

A growing network of prescribers from the educative sector have trusted and recommended our programs to their outstanding students:

5.000
teachers

9.000
high schools

Programs to promote vocations in science



» Youth and Science

Age: 14 to 18 years old

When: Summers during 3 years

Youth and Science program aims to encourage talented young people interested in science and technology to go deeper into these fields, fostering their enthusiasm for research and careers in science, through an intensive three-year guidance program that offers unique experiences and opportunities to take part in projects at national and international research centers with real researchers.

Since 2008, in Catalonia, we have chosen 50 10th graders per year, out of hundreds of applicants, through a meticulous selection process based on skill, interest and merit. The program gives them access to excellence experiences over three years prior to their access to College:

YEAR 1

Intensive Science Project



In groups of 10, the 50 students work in one of the 5 scientific research projects proposed, guided by researchers. All live and work together for two weeks at our MónNatura Pirineus facilities in summer. After this first opportunity, the students write a scientific paper, guided by the researchers.

YEAR 2

Internship at a national research center



The second year of the program, each student has the opportunity to do an internship at a national research center of their choice. They become part of a professional team, receive training and take part in the research team's daily tasks for some weeks.

YEAR 3

Internship at an International center or science program



In the third year of the program, each student has the opportunity, during the summer, to do an internship at a research center abroad or to take part in an international science program.

» Mad for Science

Mad for Science program encourages talent and vocations in science and technology among 11th and 12th Graders interested and motivated to work in research. It features specific courses in various fields of science and technology taught by researchers at benchmark research centers.

The program aims to give students the chance to discover the world of research in the field of their choice and guide them towards their academic and professional future in research, so they can go into the field of research that interests them most. The courses are made up of sessions combining theory and practice, held on Saturdays throughout the academic year.

Age: 14 to 18 years old

When: Saturdays during the academic year

DISCIPLINES CURRENTLY OFFERED

SUSTAINABILITY
NUTRITION
ARTIFICIAL INTELLIGENCE
ENERGY
BIOENGINEERING
SUPERCOMPUTING
ECONOMICS
BIOCHEMISTRY
NEW TECHNOLOGIES
CHEMISTRY
BIOMEDICINE
PHYSICS



» Barcelona International Youth Science Challenge (BIYSC)

Age: 16 to 18 years old
Applications: January-April
Dates: 1st fortnight of July
Residential programme

- DISCIPLINES CURRENTLY OFFERED**
- ENERGY
 - NUTRITION
 - ECONOMICS
 - SUSTAINABILITY
 - BIOENGINEERING
 - SUPERCOMPUTING
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 - NEW TECHNOLOGIES
 - BIOCHEMISTRY
 - MATHEMATICS
 - BIOMEDICINE
 - CHEMISTRY
 - PHYSICS

The **Barcelona International Youth Science Challenge (BIYSC)** is an international program that aims to encourage highly talented young students, aged 16 to 18, from all over the world, who meet up and spend two weeks together in July in Barcelona while developing a research project.

The experience fosters the participants' enthusiasm for scientific research and desire to work in science and technology, giving them an exceptional opportunity to get hands-on experience at international research centers based in Barcelona, working on a research project of their choice with top-notch researchers.

Each year, BIYSC and collaborating scientific institutions offer 10 to 15 projects for more than 100 future scientists from all over the world. In addition to the science project, the participants also take part in a complementary social and cultural program and live together and learn from each other in an international group of young people from over 30 countries with shared interests.

The participating young people, chosen through a highly selective application process, have great potential, encouraged by this opportunity that also allows them to build a global network of contacts. For their part, the research centers that host the young people get to raise awareness of their research, position themselves globally and attract international talent.



www.biysc.org



» Youth for Medicine

Age: 16 – 18 yearold
When: Saturdays during the academic year

Youth for Medicine program is for talented 11th and 12th graders interested in a career in medicine. Through this immersive experience in a hospital -from care to research- they become aware of the biggest challenges in medicine, today and in the future, discover different medical specialties, and interact with top professionals and see their day-to-day work and workplaces.

This program gives 150 students the opportunity to discover various diseases, how to diagnose and treat them, and what research is being done to better understand and find effective treatments.

It is a unique opportunity to see what this world is really like and see the professions carried out at a hospital, how they are organized and how the healthcare system works.

Youth for Medicine offers sessions combining theory and practice, held on Saturdays throughout the academic year at the top hospitals in Barcelona and Madrid, each focusing on a different field of medicine. The program has been shown to encourage the participants' interest and boost talent, giving them a broad view of the healthcare system that is key for guiding young students on their academic and professional path in medicine and research.

Hospitals involved in Barcelona



Hospitals involved in Madrid



Research support programs

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» Talents

Talents program is an initiative to promote research among healthcare professionals and retain talent. We work in collaboration with the main public hospitals in the Barcelona metropolitan area.

We offer post-residency grants to junior specialists and healthcare professionals, who stand out in their specialty, so they can carry out a research project or their doctoral thesis simultaneously with their clinical practice.

It also includes grants to boost research among senior medical specialists, to consolidate their dedication to research.

Participating hospitals



» BIST

Fundació Catalunya La Pedrera collaborates with the Barcelona Institute of Science and Technology (BIST) and its seven member research centers, further expanding our commitment to promoting science and fostering excellence in the research arena.

Since 2017, the Foundation has been a member of the BIST Board of Trustees and contributes funding its operating budget, programs and activities.

One of the most noteworthy joint actions is the Master of Multidisciplinary Research in Experimental Sciences (MMRES), a pioneering program that allows students interested in going into research to get training and practical experience in scientific research at the BIST research centers. This degree is organized by the BIST Dolors Aleu Graduate Centre (BIST DAGC), which is affiliated with Pompeu Fabra University, and the Catalunya La Pedrera Foundation is associated with BIST DAGC as a member of its governing bodies.

In addition to providing support for BIST programs and research at its member centers, the partnership with the Foundation promotes opportunities for young researchers to start their career in science.



» Ignacio Cirac – Fundació Catalunya La Pedrera Chair

Created in 2007, the Ignacio Cirac – Fundació Catalunya La Pedrera Chair at the Institute of Photonic Sciences (ICFO) is a joint initiative of these two organizations and Dr Ignacio Cirac. This distinguished Catalan physicist, who has won awards worldwide, is Chairman of the ICFO Scientific Advisory Board, the world top specialist in his area of knowledge, and Director of the prestigious Max-Planck Institute of Quantum Optics in Germany.



With this Chair, the three parties aim to attract talent to Catalonia, raise awareness, and position the region on the global front-line of research in the specific field of science and technology of quantum information.

Education



Beyond its commitment to scientific education, Fundació Catalunya La Pedrera also works on education and innovation programs, which generate synergies with the science programs and facilitate learning opportunities to give everyone access to the best education, so they can develop their talent.

To do so, the foundation promotes top-quality innovative educational initiatives, as part of formal and non-formal education, and in partnership with other institutions. Projects for children and teenagers to encourage their learning and promote equal opportunities, as well as training for teachers to improve and transform schools.

The goal is for all participants to make the most of their potential, regardless of their personal situation or background, in order to provide more opportunities and transform the educative system and the society.

» Tandem Schools

In the field of formal education, we promote the Tandem Schools program, a pioneer and innovative initiative helping transform schools in disadvantaged areas, through a partnership with relevant scientific and cultural institutions.

Over three academic years, we facilitate collaboration and teamwork between the School and the Institutions, and guide the schools through this transformation process. With this program we help making the Schools singular, through innovation, so they can provide the best education possible in areas where opportunities are limited.



» Escola Oms i de Prat

Our experience in innovative education in schools is also applied at Oms i de Prat School, a primary and secondary school owned by the Foundation.

At this School, located in a low-income neighborhood in Manresa, we provide the best opportunities and cover the needs of students through an innovative approach. We apply flexible methodologies and incorporate teaching strategies that foster skills-based learning, team-work and critical thinking, so that students can make the most of their potential and talents.



» Educational Mentoring Program

Educational mentoring program is an after-school program that helps to improve academic performance and success and prevents risky behaviours, like truancy.

This program strives to improve participants' relationship to learning, promote effective thinking, self-sufficiency and better academic results for students aged 6 to 16. We help these students with their homework, and introduce them to study strategies, routines and skills to help make the most of their abilities and competences.

Our experience has given us a good understanding of students' educational weaknesses and the strategies that can help overcome them.



What's next



In addition to continuing and reinforcing the consolidated programs of excellence, we are working to broaden opportunities in the following areas:

Synergies to expand science programs for young people.

- New partnerships to offer to talented students interested in science new opportunities in more fields of science and technology.
- Collaboration with institutions in other countries to promote and replicate our science programs in their regions.

Reinforce the Science Fellows Community and our network of partners.

- Maximize the potential of the Science Fellows Community: a growing network of young people with great talent and interest and with a bright future in science.
- Boosting the huge, exciting network we have of fellows, researchers, research centers, hospitals and universities to generate more synergies.

Teamwork and cooperation

- Promoting an international network of institutions that work to promote science among pre-College students.
- Collaborating, improving and generating new, bigger opportunities to encourage talented young people to go into science all over the world.
- Developing an international community of young people with a bright future in research to help generate a global context of collaboration, which is essential to develop science and research and find solutions to the global challenges.
- Promoting scientific diplomacy at early career stages.

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