



# TRAINING PROGRAMS

Training is one of the CNIC's core activities, and the Center has devised a comprehensive training plan, the CNIC-Joven Training Plan that includes programs for participants at all levels, from high-school students to postdoctoral researchers and MDs (<https://www.cnic.es/en/training-cnic>). The CNIC-Joven Training Plan aims to fulfill the personal goal of Valentín Fuster "to attract and train the brightest young people from the earliest ages to create a pool of researchers of excellence in the field of cardiovascular research."

## HIGH SCHOOL STUDENTS INTERSHIPS

### ACERCATE PROGRAM



The Acércate Program provides top-performing senior high school graduates in the Science and Technology track with a unique opportunity to immerse themselves in the world of biomedical research. Through a rigorous national selection process, the program seeks to ignite and nurture their passion for pursuing a career in biomedical science.

Over the course of one week at CNIC, participants are introduced to the fundamentals of modern biomedical research. They gain hands-on experience by conducting supervised experiments, mastering advanced techniques, operating cutting-edge scientific equipment, and presenting their findings—all under the expert mentorship of CNIC researchers.

*Fellowships in 2024: 8*

### 4º ESO – CNIC



The Madrid Directorate General of Secondary Education launched the 4th Year ESO + Company Program in the 2008-2009 academic year. This program, classified as a complementary activity, is being adopted voluntarily by an increasing number of schools. Its aim is to bridge the gap between the educational system and the labor market by providing educational placements in companies and institutions. This initiative helps young people become better prepared to make informed decisions about their academic and professional futures, motivating them and equipping them with essential skills.

The CNIC collaborates with the 4ºESO-CNIC Program every year. In 2024, 21 science students from fourteen schools spent four full days at the CNIC laboratories exploring possible scientific careers.

## PROGRAMS FOR UNDERGRADUATE STUDENTS

### INTERSHIPS ARE OFFERED TO UNIVERSITY STUDENTS IN THE FOLLOWING PROGRAMS:

#### CICERONE PROGRAM

The Cicerone Program is open to advanced undergraduate students and Master's students in biomedicine-related disciplines. Participants extend their scientific training through hands-on experience of laboratory-based biomedical research during the summer recess. In addition to carrying out a supervised research project, the students attend CNIC seminars and workshops. The aim of the program is to give students first-hand knowledge of biomedical research so that they can make informed choices about pursuing a scientific career.

*Fellowships in 2024: 35*

#### CURRICULAR AND EXTRACURRICULAR UNIVERSITY PRACTICAL PROGRAM

The CNIC offers practical training in cardiovascular research to visiting undergraduate students through formal collaborative agreements with Spanish and international universities.

In 2024, 12 students from the following universities began internships at the CNIC related to their final degree thesis dissertation (TFG) under the guidance of a CNIC supervisor:

- 7 students from the Autonomous University of Madrid
- 3 students from the Complutense University of Madrid
- 1 student from the University Alcalá de Henares
- 1 student from the University Carlos III of Madrid

In 2024, an additional 18 students from both Spanish and international universities participated in various types of university internships at the CNIC under the mentorship of a CNIC supervisor. This group included seven students from Spanish universities, seven Erasmus students from universities in Amsterdam, Prague, Hannover, and Twente, and four other international students from universities in Edinburgh, London, Mahidol, and Vienna.



## PROGRAMS FOR MASTER'S AND GRADUATE STUDENTS

### MASTER'S FELLOWSHIP CNIC-ACCIONA PROGRAM AND FUNDACIÓN CAROLINA-CNIC MASTER'S FELLOWSHIP PROGRAM

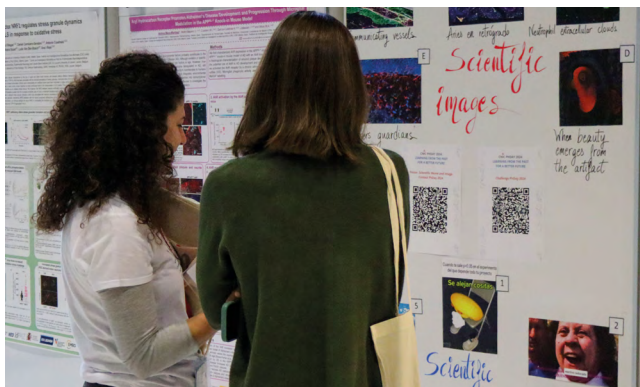
These grants provide funding for students studying for a master's degree at a Spanish university to carry out their experimental project (TFM) in a CNIC laboratory.

*Fellowships in 2024: 11*

Other Master's Student Internships

In 2024, another 18 students from the following universities began to work on their TFM under the guidance of a CNIC supervisor:

- 7 students from the Autonomous University of Madrid
- 3 students from the Complutense University of Madrid
- 2 students from the Polytechnic University of Madrid
- 1 student from the University of Valencia
- 1 student from the University of Amsterdam, the Netherlands
- 1 student from Vrije Universiteit Amsterdam, the Netherlands
- 1 student from Università degli Studi di Firenze Scienze della Salute Umana, Italy
- 1 student from Hannover Medical School



### PREDOCTORAL (PhD) PROGRAM

The Predoctoral Program provides a unified framework for all CNIC researchers who are working toward a doctoral degree. All predoctoral researchers are signed up to this program, irrespective of their funding source.

The aims of the program are to ensure uniform quality of predoctoral training at the CNIC and further to ensure fair and equal access of predoctoral researchers to training opportunities.

The Program schedules regular meetings between the predoctoral fellow and his or her thesis committee, composed of the thesis director, another CNIC group leader, and an external expert.

*Graduate students studying for a PhD degree at the CNIC in 2024: 113*

- Graduate students at the CNIC awarded a PhD degree in 2024: 23
- Enrolled at the Autonomous University of Madrid: 19
- Enrolled at the Complutense University of Madrid: 2
- Enrolled at the Polytechnic University of Madrid: 1
- Enrolled at the University Carlos III of Madrid: 1

The CNIC PhD Office is the forum for scientific support, guidance, and growth of all PhD students enrolled on the CNIC Predoctoral Program, independently of their university affiliation or funding source. The office is coordinated by a group leader appointed by the CNIC management.

This office also includes two permanent members (Head of the CNIC Scientific Management office and a manager of the Research Office), and one senior and one junior PhD student, who are elected by the CNIC's PhD students.

### FRONTIERS IN CARDIOVASCULAR RESEARCH MASTER'S MODULE

This postgraduate course is run by the CNIC as part of the Universidad Autónoma de Madrid (UAM) Molecular Biosciences Master's Program. This optional module provides a broad overview of cardiovascular biology, including perspectives from basic, clinical, and translational research.

Attendants on this course are enrolled UAM Master's students, CNIC predoctoral researchers, and participants in the Res@CNIC SEC Program (see below).

UAM Master's students in 2024: 22

## PROGRAMS FOR RESIDENT MEDICAL INTERNS

### RES@CNIC SEC PROGRAM



The Res@CNIC-SEC Program (in collaboration with the Spanish Society of Cardiology, SEC) offers resident medical interns the opportunity during the first years of their specialization period to learn about the latest techniques in cardiovascular research being used in the CNIC laboratories, under the guidance of a CNIC scientist. Residents participating in RES@CNIC also receive training in theoretical aspects of cardiovascular research through an expert-led taught module. The Program also seeks to create links and collaborations so that on conclusion of their MIR specialization period, these professionals will have the chance to undertake research projects in their respective Hospitals in partnership with CNIC scientists.

*Participants in 2024: 25 from the following hospitals:*

- Complejo Asistencial Universitario de León
- Complejo Hospitalario Universitario A Coruña
- Hospital Clínic de Barcelona
- Hospital de la Santa Creu i Sant Pau
- Hospital Universitario Central de Asturias
- Hospital Universitario Clínico San Carlos
- Hospital Universitario Cruces





46

Hospital Universitario de La Princesa

Hospital Universitario Fundación Jiménez Díaz

Hospital Universitario La Paz

Hospital Universitario Ramón y Cajal

Hospital Universitario Virgen de las nieves Granada

Hospital Universitario Virgen del Rocío

### INVESMIR SEC PROGRAM

The INVESMIR SEC Program offers resident medical interns the opportunity during their specialization period to further their training through a research project in one of the CNIC's laboratories, under the supervision of a CNIC scientist.

An important aim of the program is for participants to establish contacts and collaborations with CNIC researchers that will support them, after completion of their MIR specialization training, in pursuing their own research projects at their centers within the Spanish National Health System. In 2024 one resident cardiologist intern from Hospital Universitario Joan XXIII (Tarragona) participated in this Program.

## PROGRAMS FOR RESEARCHERS

### COFUND CURE HEART AND BRAIN POSTDOCTORAL PROGRAM

The Cure Heart & Brain postdoctoral COFUND program, led by CNIC, invites outstanding researchers of any nationality to conduct cutting-edge research on the heart, the brain, and their interconnection—topics of critical medical and social significance.

The selection and recruitment process adheres to the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, ensuring a merit-based, independent, and transparent approach.

Fellows have the freedom to select their host research group at CNIC and choose from a variety of secondment options. Applicants may propose their own research topics, provided these align with the Center's objectives and can be feasibly executed within CNIC's infrastructure.

The Cure Heart & Brain program collaborates with 24 Associated Partners worldwide, representing diverse sectors. These partners enhance the program's translational scope by offering secondment opportunities and specialized training.

In 2024, four postdoctoral researchers joined CNIC through the program's first call. In 2025, the remaining eight positions will be filled from applicants to the second call.



More info:  
[www.cnic.es](http://www.cnic.es)



Co-funded by  
the European Union





## CARDIO JOVEN PROGRAM

The aim of this Program (also organized in collaboration with the SEC) is to foster high-quality translational research in the cardiovascular area in Spanish National Health System centers through training programs providing theory and practical training for cardiologists with a research vocation. One trainee is selected every two years year.

Specific aims:

a) To create the figure of the cardiologist researcher by providing high-quality training in clinical research methods, including statistical analysis and the latest basic research techniques used in cardiovascular biomedicine, as well as opportunities to explore any clinical area of cardiology in greater depth (sub-specialization).

The program is aimed at cardiologists who aspire to carry out advanced clinical and research work at any center within the Spanish National Health System.

b) International training. The Program offers a period of training toward a Master's Degree at the London School of Hygiene and Tropical Medicine (90 ECTS)

## VALENTÍN FUSTER PROGRAM

The VALENTÍN FUSTER Program was established with the aim of:

Developing a profile of a translational cardiovascular researcher capable of bridging the gap between research and clinical practice by applying research-generated knowledge to patient care and generating research hypotheses from clinical practice.

Supporting the integration of research as a key component of the medical career path within the National Health System.

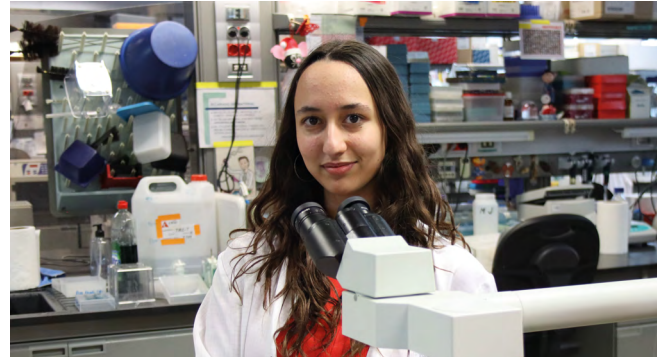
This program, in collaboration with the 12 de Octubre Hospital Research Institute (i+12), facilitates the incorporation of a translational research physician specializing in cardiovascular fields at the 12 de Octubre University Hospital (H12O) through a five-year contract.



## PRACTICAL TRAINING FOR TECHNICAL SCHOOL STUDENTS

In 2024, the program welcomed 15 technical school students specializing in "Pathological Anatomy and Cytopathology," "Clinical and Biomedical Laboratory," and "Cell Culture" to gain hands-on experience in CNIC's laboratories during a three-month training period.

The CNIC maintains collaborative agreements with 19 technical training institutions to support these internships. Each center submits a single candidate, and the host research groups select participants from among the nominations.



Additionally, the CNIC collaborates with the two DUAL Centers in Madrid offering biomedicine-related programs: Instituto de Educación Secundaria Moratalaz, specializing in "Clinical and Biomedical Laboratory," and Instituto de Educación Secundaria San Juan de la Cruz, focusing on "Diagnostic Imaging and Nuclear Medicine." In September 2024, four students from these DUAL Centers began their nine-month practical training at the CNIC.

## CNIC CONTINUING EDUCATION PROGRAM

### CARDIOVASCULAR PATHOPHYSIOLOGY COURSE: FROM SYMPTOMS TO GENES

This course is organized by the CNIC in partnership with the Sociedad Española de Cardiología (SEC). The course is aimed at R3, R4, and R5 residents in cardiology and other specialties related to cardiovascular disease, and translational researchers working in the field of cardiology.

Participants receive an overview of the molecular and genetic factors underlying cardiac diseases and gain a current understanding of cardiac physiology through the presentation and discussion of papers authored by CNIC scientists. These sessions are further enriched by contributions from a clinical expert specializing in the topic of each paper.

The XVI edition of this course was held in the SEC Auditorium on December 12, 2024.

