



4º ESO - CNIC

The Madrid 4th Year ESO + Company Program, an initiative of the regional Directorate General of Secondary Education, aims to bridge the gap between the educational system and the labor market by offering educational placements in companies and institutions. This complementary activity program is being adopted by an evergrowing number of schools across the region, helping young people to make informed decisions about their academic and professional futures by motivating them and equipping them with essential skills.

The CNIC collaborates annually through the 4ºESO-CNIC Program. In 2025, 23 science students from 22 schools were selected from a pool of 125 applicants and spent three full days in the CNIC laboratories, exploring potential scientific careers.



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 2025, 15 students from the following universities completed internships at the CNIC related to their final degree thesis dissertation (TFG) under the guidance of a CNIC supervisor:

- 8 students from the Autonomous University of Madrid
- 2 students from the Complutense University of Madrid
- 2 students from the University Alcalá de Henares
- 2 students from the University Carlos III of Madrid
- 1 student from the Polytechnic University of Madrid

In 2025, an additional 37 students from Spanish and international universities participated in various types of university internships at the CNIC under the mentorship of a CNIC supervisor. This group included 28 students from 10 Spanish universities, five Erasmus students from universities in Amsterdam, Naples, Pavia, Roma, and Twente, and four other international students from universities in Hamburg, Lyon, Toulouse, and Nanyang.

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 master's degree students enrolled at a Spanish university to carry out their experimental project (TFM) in a CNIC laboratory.

Fellowships in 2025: 9

Other Master's Student Internships

In 2025, another 18 students from the following universities worked on their TFM under the guidance of a CNIC supervisor:

- 7 students from the Autonomous University of Madrid
- 7 students from the Complutense University of Madrid
- 1 student from the University of Valencia
- 1 student from the University of Grenoble Alpes, France
- 1 student from the University of Amsterdam, the Netherlands
- 1 student from Maastricht University, the Netherlands



PROGRAMS FOR UNDERGRADUATE STUDENTS

Internships 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 2025: 31



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 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 2025: 93

Graduate students at the CNIC awarded a PhD degree in 2025: 14

Enrolled at the Autonomous University of Madrid: 11

Enrolled at the Complutense University of Madrid: 3

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 from 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.

Attendees 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 2025: 14

PROGRAMS FOR RESIDENT MEDICAL INTERNS

RES@CNIC-SEC PROGRAM

The Res@CNIC-SEC Program, a 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 on the program 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 2025: 25 from the following hospitals:

- Complejo Asistencial Universitario de León
- Hospital Universitario Fundación Jiménez Díaz
- Hospital Clínic de Barcelona
- Hospital Clínico San Carlos
- Hospital Universitario La Paz
- Hospital Universitario de Cruces
- Hospital Universitario de Navarra
- Hospital Universitario de Oviedo
- Hospital Universitario La Paz
- Hospital Universitario Lucus Augusti
- Hospital Universitario Puerta de Hierro
- Hospital Universitario Ramón y Cajal
- Hospital Universitario Virgen del Rocío



INVESMIR CNIC-SEC PROGRAM

The INVESMIR SEC Program, a collaboration with the **Spanish Society of Cardiology (SEC)**, offers advanced resident medical interns the opportunity during their specialization period to extend 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 2025, two cardiology interns, from Hospital Universitario Joan XXIII (Tarragona) and Ciudad Real Hospital Complex, participated in the program.



MD-PHD CNIC-SEC PROGRAM

The new CNIC-SEC MD-PhD Program, also in collaboration with the **Spanish Society of Cardiology (SEC)**, trains medical residents in advanced research in the fields of cardiology and cardiovascular disease. This program seeks to integrate clinical professional development with scientific research, so that participants can apply the knowledge they gain at their centers within the National Health System. The partnership between the CNIC and the SEC allows participants to conduct their doctoral thesis research in a world-class research environment with access to leading experts in the field.

Calls for the program are opened annually. Up to six positions will be awarded



OTHER EXTERNAL ROTATIONS

Seven residents from the following hospitals completed external rotations at the CNIC in 2025:

- Hospital Universitario Príncipe de Asturias
- Hospital General Universitario de Ciudad Real
- Hospital Universitario Virgen de las Nieves
- Hospital Universitario Severo Ochoa
- Hospital Universitario Fundación Jiménez Díaz

PROGRAMS FOR RESEARCHERS

CARDIO JOVEN CNIC-SEC PROGRAM

The aim of this program—another SEC collaboration—is to support high-quality translational cardiovascular research in the Spanish

National Health System by providing theoretical and practical training to cardiologists with a research vocation. One trainee is selected every two years.

The program is aimed at cardiologists wanting to undertake advanced clinical and research at any center within the Spanish National Health System.

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).

b) International training visits toward a Master's Degree are offered at the London School of Hygiene and Tropical Medicine (90 ECTS).

COFUND CURE HEART AND BRAIN POSTDOCTORAL PROGRAM

The Cure Heart & Brain program collaborates with a diverse set of 24 partners to offer participating postdoctoral researchers secondment opportunities and specialized training.

The two calls of this program garnered a total of 67 applications, which were evaluated by members of the CNIC's External Scientific Advisory Committee. The selection and recruitment process adhered 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 based on scientific excellence.

The program has enabled the recruitment of 12 international postdoctoral researchers (6 women and 6 men) from the Czech Republic, France, Germany, Italy, Portugal, the Netherlands, the United Kingdom, China, Cuba, Japan, and South Korea.



VALENTÍN FUSTER PROGRAM

The VALENTÍN FUSTER Program was created to train a new generation of translational cardiovascular researchers—clinicians and scientists who can connect research and patient care, applying scientific advances in the clinic while using real-world clinical challenges to drive new research.



At the same time, the program promotes the integration of research as a fundamental part of the medical career within the Spanish National Health System.

This program—a partnership with the 12 de Octubre Hospital Research Institute (i+12)—supports the appointment of a physician specializing in translational cardiovascular research at 12 de Octubre University Hospital (H120) through a five-year contract.

PRACTICAL TRAINING FOR TECHNICAL SCHOOL STUDENTS

In 2025, the program welcomed nine technical school students for three-month placements in CNIC laboratories. Participants were enrolled in vocational programs in Pathological Anatomy and Cytodiagnostics, Clinical and Biomedical Laboratory, and Cell Culture, gaining hands-on experience in a research environment.

CNIC supports these placements through collaboration agreements with 21 technical training colleges. Each college nominates one candidate, and host research groups select participants from the submitted applications.

The CNIC also works with two public centers in Madrid that offer intensive biomedicine-related training: Instituto de Educación Secundaria Moratalaz, which specializes in Clinical and Biomedical Laboratory, and Instituto de Educación Secundaria San Juan de la Cruz, which focuses on Diagnostic Imaging and Nuclear Medicine. In September 2025, seven students from these centers began extended seven-month placements 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 SEC. The course is aimed at R3, R4, and R5 residents in cardiology and other specialties related to cardiovascular disease, as well as translational researchers working in the field of cardiology.

Participants are given 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 2025, XVII edition of this course, was held online in the SEC Campus and was attended by 149 participants.

