

# Scientific Profile

RESEARCH, CARE, PEOPLE



# FROM BENCH TO BEDSIDE

The scientific history of Auxologico began in 1958 in the Northeast of Italy. Centro Auxologico Piancavallo was the first Italian Auxology centre (a multi-disciplinary science specialized in human physical growth) fully dedicated to abnormal growth in children. In 1972, Auxologico became a fully recognized Institute for Hospitalization and Health Care (IRCCS), establishing itself as a centre of excellence for treatments and the most advanced scientific research (in collaboration with several universities).

Aside from consolidating its auxo-endocrine-metabolic research, in the 90s, Auxologico began to focus on new disciplines, including cardiovascular, cerebrovascular, neurodegenerative, immunological and aging-related diseases, while actively participating in national and international research networks. This was made possible by increasing Auxologico's activities in Milan, in particular, through the opening of both the San Luca Hospital and the Cusano Centre for Biomedic Research. Auxologico's research activities have always focused on the prevention, diagnosis, treatment and rehabilitation of some of the most common diseases of modern society

and their genetic-molecular nature. This is done through constant research of genetic mechanisms related to neurodegenerative, endocrine and cardiovascular diseases with the aim of applying a translational perspective, in other words, a transfer of experimental laboratory data to patient care and vice versa. Auxologico has greatly contributed also to other areas of research: biological effects generated by environmental factors, the use of advanced technologies (including immersive virtual reality techniques and robotics), integrated imaging between various diagnostic methods, as well as the participation in numerous experimental, pharmacological and technological trials. Highly specialized rehabilitation methods (part of a care model that focuses on the patient) which are at the core of multidisciplinary research and clinical programs. Auxologico strive to achieve full recovery of the patient's mental and physical abilities. The integrated, biomedical-clinical and rehabilitation approach of Auxologico is, in many ways, unique, being based on a wide network of hospitals that are directly connected to several smaller and peripheral structures, making up a strategic network of clinical-scientific units.

# AREAS OF CLINICAL AND SCIENTIFIC EXCELLENCE

Over the years, Auxologico has achieved outstanding clinical and research excellence in the following areas:

## Cardiovascular diseases

Heart attacks, strokes, arrhythmias, hypertension, atherosclerosis, peripheral arterial diseases, electrophysiology, genetic cardiomyopathies, cardiovascular imaging, telemedicine and digital technologies in cardiology, sleep cardio-respiratory alterations and genetic cardiac arrhythmias

## Neurological diseases

Amyotrophic Lateral Sclerosis, Parkinson's, Alzheimer's, Multiple Sclerosis, dementia, strokes and cerebro-vascular diseases

## Endocrine and metabolic diseases

Diabetes and severe obesity, pituitary and adrenal diseases, thyroid disorders, growth disorders, anorexia, bulimia and osteoporosis

## Autoimmune diseases

Lupus, rheumatoid arthritis, Antiphospholipid syndrome and Systemic Sclerosis

## Genetic disorders

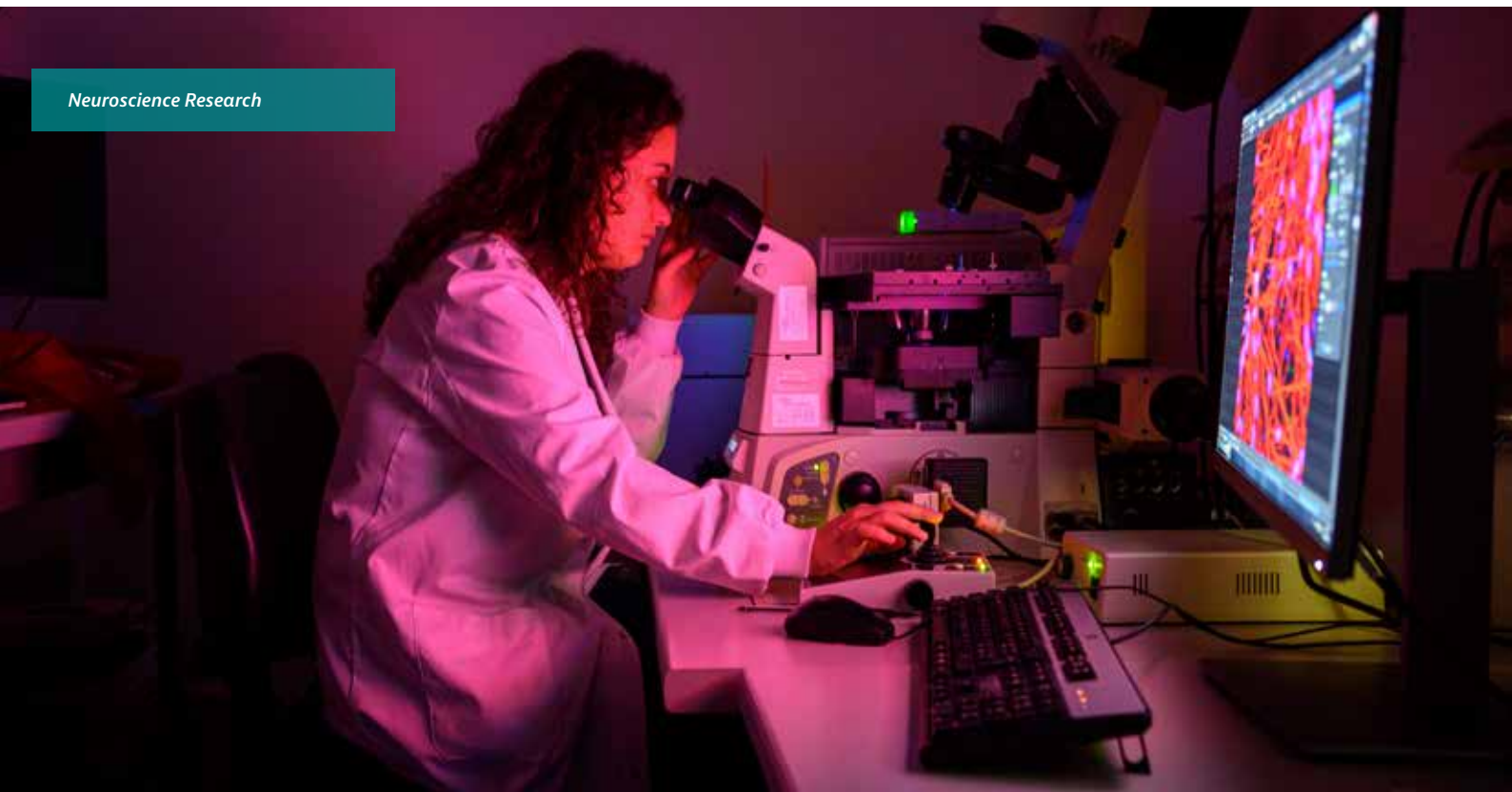
Mental retardation, syndromic diseases, metabolic bone disorders, retinal changes and oncological diseases

## Aging-associated diseases

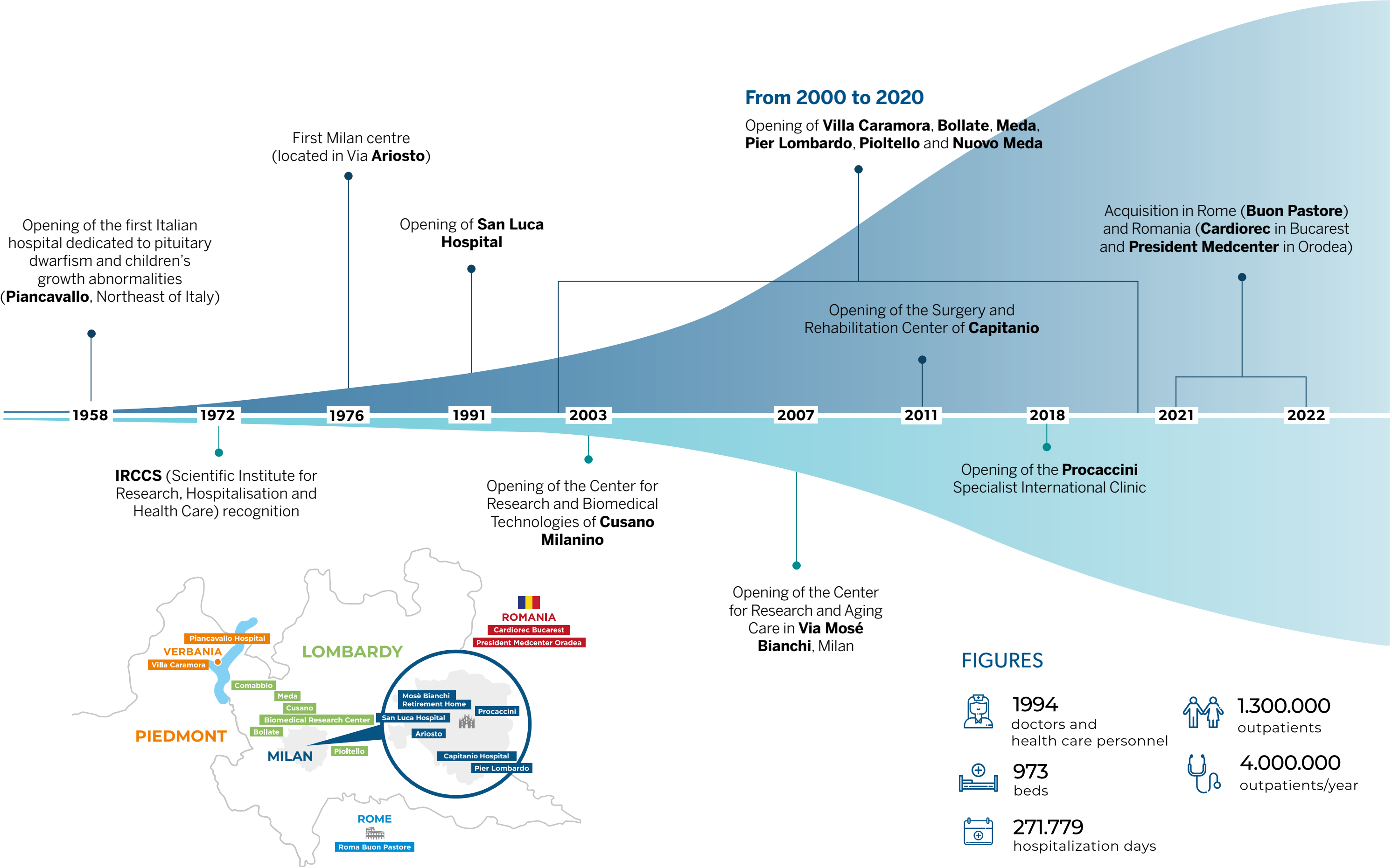
Atherothrombotic, neurodegenerative, immunological respiratory, urological, bone/joint-related diseases, as well as diabetes (and relating complications) and frailty syndrome

## Rehabilitation


Cardiovascular, orthopedic, nutritional and respiratory pathological conditions





OVER 60 YEARS OF RESEARCH AND CLINICAL CARE





FIGURES

 **1994**  
doctors and  
health care personnel

 **973**  
beds

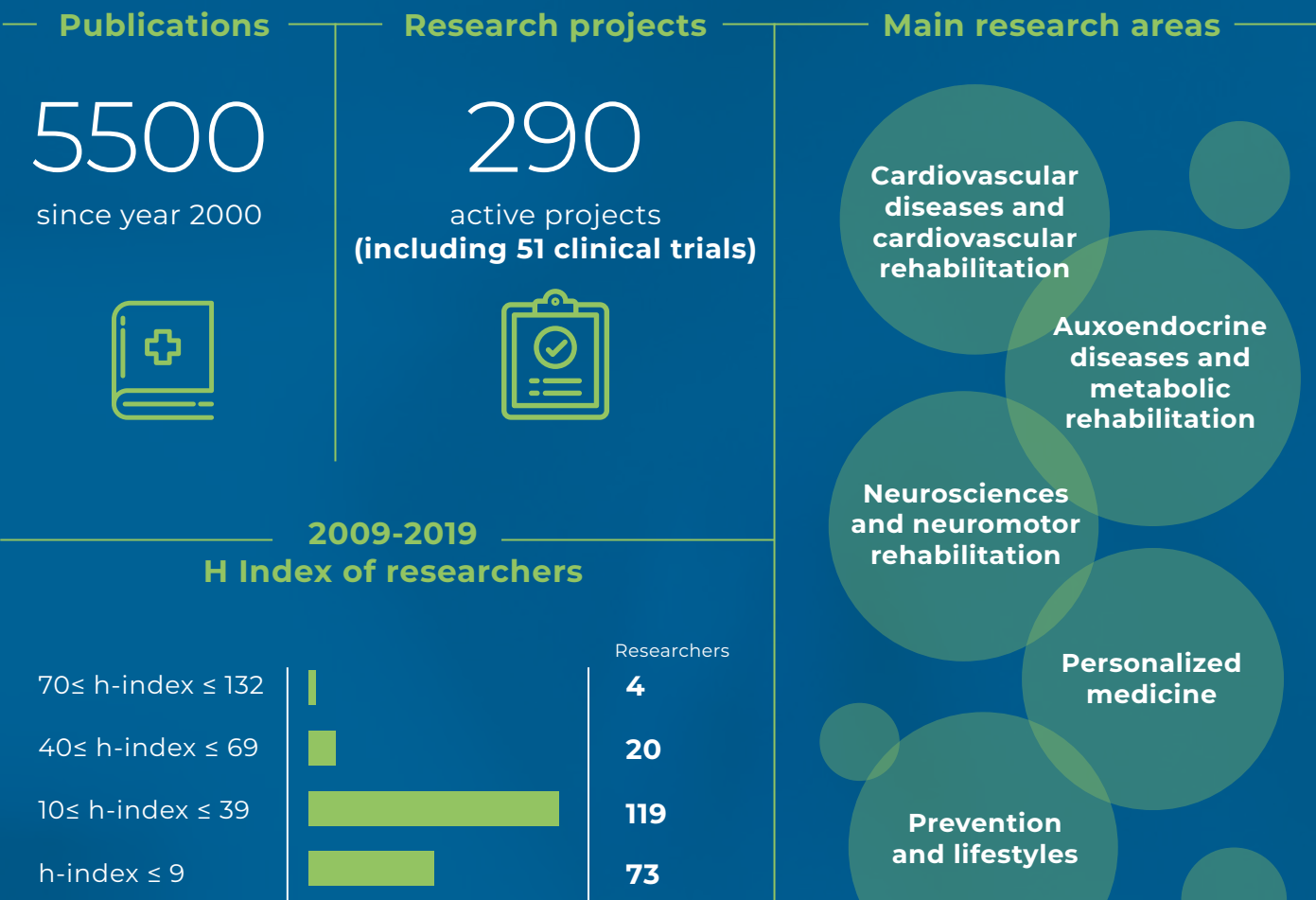
 **271.779**  
hospitalization days

 **1.300.000**  
outpatients

 **4.000.000**  
outpatients/year



SCIENTIFIC ACTIVITIES IN 2022: RESEARCH FIGURES



- Facilities, equipment and services
- 7,000 square meters dedicated to research and training
  - Hamilton Microlab Star for automated preparation of DNA library
  - Illumina MySeq Next Generation Sequencer
  - Illumina NextSeq 500 Next Generation Sequencer
  - Illumina iScan SNPs for genotyping, methylation analysis and analysis of Expression
  - Quanterix SR SIMOA for ultra-sensitive determination of protein
  - Gait Analysis and Equi Test
  - 2 CAVEs for Immersive Virtual Reality
  - 3 diagnostic and research MRI machines by Tesla
  - Interventional Cardiology Unit
  - Da Vinci Robot for surgery
  - Biostatistics - Bioinformatics and Statistical Genomics
  - Analysis of Signals - Bibliographic Services



Center for Research and Biomedical Technologies,  
Cusano Milanino (MI)



Auxologico Piancavallo , Oggebbio (VB)



## SCIENTIFIC RESEARCH LABORATORIES



Cardiovascular Imaging Center



Transcranial magnetic stimulation

### Scientific Direction

Prof. Gianfranco Parati

### Technical Management of Research Center and Biomedical Technologies

Dr. Anna Maria Di Blasio



### Experimental Laboratories

#### Directors

#### Scientific Direction - Research Center

Prof. Gianfranco Parati

#### Cardiological Research

Prof. Gianfranco Parati

#### Research on Rehabilitation of the Elderly and Cerebro-Vascular Diseases

Dr. Marco Stramba-Badiale

#### Technological Research applied in Psychology - ATNP Lab

Prof. Giuseppe Riva

#### Geriatric Neuro-endocrinologic and Oncological Research

Prof. Giovanni Vitale

#### Endocrine-Metabolic Research

Prof. Luca Persani

#### Neuroscience Research

Prof. Vincenzo Silani

#### Research on Neuromotor Rehabilitation

Prof. Luigi Tesio

#### Clinical Neuropsychology Research

Prof. Nadia Bolognini

#### Research on Bone Metabolism

Dr. Alberto Falchetti

#### Research on Nutrition and Obesity

Prof. Simona Bertoli

#### Molecular Biology Research

Dr. Anna Maria Di Blasio

#### Research on Medical Cytogenetics and Molecular Genetics

Prof. Lidia Larizza

#### Research on Clinical Immunology and Rheumatology

Prof. Pier Luigi Meroni

#### Cardiac Arrhythmias Research on Genetic Basis

Prof. Peter J. Schwartz

#### Research on Exercise Medicine

Prof. Daniela Lucini

#### Auxo-Endocrinologic Research

Dr. Alessandro Sartorio

#### Research on Metabolism

Dr. Massimo Scacchi

#### Clinical Neurobiology Research

Prof. Alessandro Mauro

#### Respiratory Pathophysiology Research

Dr. Paolo Fanari

#### Research on Rehabilitation, Biomechanics and Ergonomics

Prof. Paolo Capodaglio

#### Psychological Research

Prof. Gianluca Castelnuovo

#### Vascular Surgery Research

Dr. Renato Casana

#### Urological Research

Dr. Andrea Cestari

#### Orthopedic Research

Prof. Marco D'Imporzano

#### Ophthalmology and Neurophthalmologic Research

Dr. Fulvio Bergamini

#### Research on Endocrine Surgery

Prof. Gianlorenzo Dionigi



INTERNATIONAL AND NATIONAL NETWORKS

Reti IRCCS

- Cardiology Network (Rete Cardiologica IRCCS)
- Italia Longeva, National Network for Research on Aging and Active Longevity
- Network Association of Neurosciences and Neurorehabilitation (RIN)

Reti ERN

- ERN EURO-NMD - Network Neuromuscular Diseases
- Endo-ERN - Network on Endocrine Conditions
- ERN GUARD-HEART - Network on Diseases of the Heart
- ERN EURACAN - Network Adult Cancer

Rete ESADA

- The European Sleep Apnoea Database

International collaborations



Auxologico collaborates with several international research institutes based in about 70 countries.



Non-stop medical education and scientific dissemination activities



94

Events and training courses



1354

Participants



760

Training hours

Universities with undergraduate and postgraduate schools within Auxologico



- University of Milan-Bicocca
- University of Milan
- Catholic University of the Sacred Heart
- University of Turin
- University of Eastern Piedmont



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**SCIENTIFIC DIRECTION**

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**TECHNICAL DIRECTION OF RESEARCH CENTRE AND BIOMEDICAL TECHNOLOGIES**

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**ADMINISTRATIVE OFFICE**

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[seg.sci@auxologico.it](mailto:seg.sci@auxologico.it)

## HOW TO SUPPORT AUXOLOGICO'S RESEARCH

### Fully deductible donations

#### **5X1000 in the income statement:**

Putting Auxologico's tax code in the box dedicated to funding research organizations: 02703120150