EUROPEAN FORMAT FOR CURRICULUM VITAE
L I F E

PERSONAL INFORMATION

Name: **Branchini, Paolo**

Address: **Rome, Italy**

Nationality: **Italian**

WORK EXPERIENCE

2025-PRESENT Elected corresponding member of the Academy of Sciences of the Institute of Bologna.

2013-PRESENT Member of the Institutional Board of Belle2 In this decision-making body , I represent the Rome Tre Section. The Belle2 experiment is conducted at the KEK laboratories in Tsukuba, Japan.

2019-2022 **National Manager for the Belle II experiment for the period 2019-2022.** I oversaw the data collection process for the collaboration, paying particular attention to detector stability and proposed upgrades. In this capacity, I directly coordinated the work of more than 100 Italian scientists, including physicists and technologists. The project received substantial **annual funding** from INFN.

2019-2022 Member of **the Belle II Financial Board**. This body is responsible for administering and organising the resources necessary for the experiment.

2015-2019 Member of the INFN National Scientific Commission 5 (CSN5). The CSN5 defines the strategies for approving and funding INFN-participating experiments studying **accelerators and applied physics.**

2004-2010 Member of the INFN National Scientific Commission 1 (CSN1). The CSN1 defines the approval and funding strategies for INFN-participating experiments studying the interactions of the fundamental constituents of matter with accelerators.

2018-2021 Director of the INFN Laboratory at the RomaTre section of Physics of Surfaces and Interfaces. (Letter of appointment dated 01/02/2018).

2017-2019 Director of **the virtual reality laboratory** that I founded with the aim of enabling better diagnostics and understanding of the events recorded by the Belle2 experiment.

2012-2015 Member of the commission for the BTF Beam Test Facility at the INFN National Laboratories in Frascati.

2012-2018 INFN scientific manager for the EOS award-winning project (EOS: Organic

Electronics for innovative research instrumentation), approved and funded by the Italian Ministry of Education, Universities and Research (MIUR) in 2012 with decree: MIUR.AOODG
in 2012 by decree: MIUR.AOODGCSR.REGISTRO

2007-2015 Technical Director of the KLOE (K long experiment) experiment at the DAFNE collider at the Frascati National Laboratories.

2022 – 2023 I contributed to proposing the I.O.S. (in orbit service) activity together with representatives from Thales Alenia Spazio, Leonardo, Avio, D-orbit and Telespazio. This activity aims to build two satellites and develop key technologies for next-generation in-orbit services, with a view to increasing national capacity. The proposed activity has been funded for the period 2023–2026 for a total of **€235 million€ .**

2022-2023 Coordinator of the ASI working group on: *Artificial Intelligence, Robotics and Cybersecurity.*

2021-PRESENT Research Director, INFN Rome Three Section.

2005 - 2021 Senior Researcher in Physics, INFN RomaTre Section.

1998 - 2005 Researcher in Physics INFN RomaTre Section.

1993 - 1998 Researcher in Physics INFN Sanità Section.

Institutional positions

(2025-2029) Member of the Board of Directors of the INVALSI Research Institute.
(2025-PRESENT) Member of the **Quantum Technologies Coordination Group** Panel appointed by the Presidency of the Council of Ministers.

(2025-PRESENT) Member of the Referee Panel for the European Extreme Light Infrastructure ERIC.

2025-PRESENT Member of the STEM commission for the redefinition of primary and secondary school guidelines.

2024-PRESENT Coordinator of the IMPAR-AI project for the introduction of Artificial Intelligence in school teaching.

2023: Member of the commission for defining guidelines for the development of actions to reinforce the development of mathematical, scientific and technological skills in all school cycles.

2023-2025 Adviser to the Ministry of Education and Merit for STEM and member of the minister's technical secretariat, individual contract awarded as a highly professional scientific expert pursuant to Article 9, paragraph 4, of the Decree of the President of the Council of Ministers No. 167 of 30 September 2020.

2022-PRESENT Member of the Technical-Scientific Committee of the Area Science Park Authority.

2018-2020 Coordinator of the commission for the Ministry of University and Scientific Research on Artificial Intelligence (Decree No. 0003176.27-11-2018).

2019 - 2023 Member of **the ASI Technical Scientific Committee**.

2014 - 2020 Member appointed by INFN for the Partnership Commission for the 2014-2020 POR-FESR programming of the Lazio region.

2019 Member of the Organising Committee of the MIUR conference on Open Data Science.

2019 Member of the Organising Committee of the MIUR conference on the legal aspects of data and for the Data Management Plan.

2019 Member of the ERAC (European Research Area and Innovation Council) commission appointed by the Minister of Education, Universities and Scientific Research (ministerial appointment m_pi.AOODGRIC.REGISTRO UFFICIALE.U.0003735.04-03- 2019).

2020-2021 Member of the National Commission for the definition of admission tests for degree courses with limited enrolment. Ministerial Decree of 07/05/2021 (**Decree: R. 0000570.07-05—2021)** for 2021 and Ministerial Decree of 19/06/2020 (**Decree: R. 0000229.19-06—2020)** for 2020.

2019-2022 Representative of **the MUR** on **the Board of Directors** of the **GARR Consortium**, by resolution **m_pi.AOOUFGAB.REGISTRO UFFICIALE.U.0019077.17-06-2019** of 17/06/2019 of the Ministry of Education, University and Research (2019-2022).

Education and Training

1990 – 1992 PhD in Physics, La Sapienza University of Rome.
1984 – 1989 Degree in Physics, Summa cum laude, La Sapienza University of Rome.

Native language: Italian

Other Languages: English

• Reading skills	Excellent
• Writing skills	Excellent
• Oral Expression Skills	Excellent

Japanese

• Reading skills	Elementary
• Writing skills	Elementary
• Oral expression skills	Elementary

Organisational SKILLS AND COMPETENCES

2019-2024 INFN coordinator for the academic agreement "Academic Agreement on Radiation in Science and Engineering: from cells to materials and detectors", which provides for cultural and scientific exchanges between the following Italian institutions**: INFN, CNR, University of Naples "Federico II"** and Japanese institutions**: KEK, NIMS (**National Institute for Material Science). As part of this agreement, we are studying next-generation radiation detectors based on organic polymers. The agreement had a duration of five years. **Agreement signed by the Rector of the University of Naples (Prof. Gaetano Manfredi), Director of IPNS-KEK (Dr. Katsuo Tokushuko), Director of RCFM-NIMS (Dr. Naoki Okashi), MANA-NIMS (Dr. Takayoshi Sakashi), INFN (Prof. Fernando Ferroni), CNR (Dr. Corrado Spinella).**

Technology Transfer

Damage from radiation to space components

2016-2020 Project manager for standard component (COTS) irradiation testing under a contract between **INFN and Thales Alenia Spazio Italia**. In this context, I designed and defined the irradiation testing strategy. I was also responsible also organised the beam tests conducted at the Southern National Laboratories. The components in question were examined to be qualified for flight in low orbit. This work was fundamental for Thales Alenia Spazio as it allows it to launch low-cost satellites into orbit low-cost satellites using COTS components instead of expensive ad hoc ASICs.

Cultural Heritage

2021-2022 Primary Investigator of the **CHIPIR** experiment at: Rutherford Appleton Laboratories Oxford. In this experiment, a high-intensity neutron beam is used to test the ir radiation of electronic components and detectors, accelerating and highlighting ageing problems. I was responsible for formulating the proposal (later accepted by **RAL**), the design and implementation of the data acquisition system.
2021-2023 Primary investigator for the **PERSEPOLY** project, awarded under the calls for proposals published by the Lazio Region (**L.R.13/2008 - art. 4 – PUBLIC NOTICE FOR RESEARCH GROUP PROJECTS research groups ranking on BUR-2021-38-0). Development of a tool that uses profilometry measurements for the characterisation of works of art.**

2019-2020 Primary investigator for **the regional MU.S.A. project for in situ analysis of works of art using techniques developed in the field of high energy physics experiments (L.R.13/2008 - art. 4 – PUBLIC NOTICE RESEARCH GROUP PROJECTS ranking on BUR-2018-53-0).** As part of the project, a portable scanner was developed based on the phenomenon of X-ray fluorescence for the elemental analysis of works of art with square millimetre resolution.

Medical Physics

As part of the FIRE experiment funded by CSN 5 INFN, he coordinated the RomaTre group that is developing a flexible and biocompatible radiation sensor for the accurate measurement of the dose in cancer patients treated with proton beams.

Dissemination

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The technology transfer activities described above have been published and publicised in many specialist journals and daily newspapers. The diagnostic work carried out on Raphael's masterpiece 'La Fornarina' has been described in many newspapers and on television networks including BBC World.

Bibliometric parameters (source: Web of Science)

ORCID id: orcid.org/0000-0002-2270-9673 Link to publications:
https://www.scopus.com/authid/detail.uri?authorId=7007185851
H-index: 102
Total number of works in print: 906
Total number of citations:~ 59000
According to this site:
https://topitalianscientists.org/TIS_HTML/Top_Italian_Scientists_Experimental_HEP.htm
I am among the most cited researchers in the field of experimental high-energy physics in Italy.

Teaching

During my career, I have been an adjunct professor of numerous courses in subatomic physics and experimental physics at RomaTre University and other institutions. I am currently an adjunct Professor for the Data Acquisition and Control course at RomaTre University. I have also been a supervisor for numerous **Master's** theses and **doctoral** theses, and I have also been a tutor for several foreign students for international schools organised as part of the experiments in which I have participated.

Review activities

During my career, I have been a member of many review panels for journals and scholarships. I am currently a member of the editorial board for the journal Applied Sciences.

Research funding

I have been and continue to be the principal investigator for several projects in the field of

High Energy physics and Applied Physics obtained on a competitive basis for a total funding, integrated over time for more than €6 million. I also contributed to the definition of the I.O.S (in-orbit servicing) project, of which I am a member. The project was funded by ASI for **€235 million.**

Conferences

I have been an invited speaker at dozens of conferences in the field of High Energy Physics, electronics, Data Acquisition and Trigger systems, and Particle Detectors. I have also participated in the organisation of several conferences.

Brief summary of research activities

I am an experimental physicist and have worked on various astroparticle and elementary particle physics experiments. I began my career working on the DELPHI experiment at CERN from 1988 to 1999. As part of the DELPHI experiment, I worked on algorithms for identifying beauty particles based on the measurement of the impact parameter using the vertex detector. In 1994, I joined the KLOE experiment at the National Laboratories in Frascati, whose main result was to measure rare decays of the K meson and interferometry. In this experiment, I was mainly involved in contributing to the design and implementation of the data acquisition and trigger system. I then participated in the ARGO experiment held in Tibet. ARGO-YBJ was a high-altitude cosmic ray telescope that made important observations in astroparticle physics, the most significant of which was the study of the proton-antiproton ratio in cosmic rays using the shadow of the Moon. In this experiment, I was responsible for designing and implementing the data acquisition and trigger system. I participated in the ATLAS experiment at the LHC accelerator at CERN. The most important result of this experiment was the discovery of the Higgs boson (which earned Higgs the Nobel Prize). At Atlas, I was responsible for characterising the muon detectors, which were fundamental to the discovery of the Higgs. I also participated in the *crab waist* experiment in Frascati, which aimed to improve the brightness of the DAFNE accelerator by implementing the nanobeam technique. I am an active member of Belle2, an experiment installed at the KEK laboratory in Tsukuba, Japan. In this experiment, I designed and built the front-end electronics for the muon detectors. I also participated in data analysis, focusing more specifically on the search for dark matter candidates. I participated in the definition of the European Jennifer2 project, which was subsequently awarded, and was involved in the study and implementation of photosensors based on organic semiconductors after winning a MIUR award for the design and implementation of circuits based on organic semiconductors. The experience I gained in detector irradiation testing, which was necessary for the experiments I conducted in the field of elementary particle physics, proved invaluable in the characterisation of electronic components in the space sector. This allowed me to work on defining the radiation tests carried out for Thales on COTS components, the aim of which is to produce small, low-cost satellites to be sent into low Earth orbit (LEO). Thanks to the experience gained, findings. The project was entirely funded by the Lazio region and led to the creation of a Macro XRF scanner used to make a chemometric map of Raphael's painting 'La Fornarina'. I also won another research project (PERSEPOLY), also entirely funded by the Lazio region, which built an instrument for measuring the roughness of works of art integrated into the previously developed Macro XRF scanner. As far as management tasks are concerned, I have led research groups both within and outside the INFN. Within the INFN, I was coordinator for the RomaTre section of two scientific commissions, and for four years I was the national manager of Belle2 (an experiment taking place in Japan at KEK). Outside the INFN, I was responsible for radiation testing on COTS components (Thales-INFN contract) and directed the M.U.SA. in cultural heritage for the Lazio Region, and was director of the Surface Physics Analysis Laboratory, a laboratory shared between INFN and RomaTre University, where we also studied the effects of radiation damage on biological systems. I also founded and directed the virtual reality laboratory for two years, where we have a realistic model of the International Space Station and produced a realistic model of the Belle2 experiment that I directed in Japan. Finally, I participated in the definition of the I.O.S. (In-orbit-servicing) project funded by ASI.

I declare that I enjoy civil and political rights, that I have no criminal convictions, that I have not been dismissed or removed from any service, and that I do not fall under any of the grounds for ineligibility or incompatibility provided for by law and the statute.
I also authorise the processing of my personal data in accordance with Legislative Decree No. 196/2003.
The information contained in this curriculum vitae is provided under my personal responsibility pursuant to Articles 46 and 47 of Presidential Decree No. 445 of 28 December 2000, aware of the criminal liability provided for in Article 76 of the same Presidential Decree, for cases of Falsehood in documents and false statement or and false statements.

In witness whereof

Paolo Branchini