

CV Juan F Poyatos

Logic of Genomic Systems Lab (CNB-CSIC)

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EDUCATION

- 1998 PhD, Complutense University, Madrid, Theoretical Physics
Thesis title: *Trapped ions, Schrödinger cats, and Quantum Computations.*
- 1992 BSc (5-year degree), Complutense University, Madrid,
Theoretical Physics

POSITIONS

- 2018-2019 Visiting Professor (Dic 2018 to April 2019),
Center for Genomics and Systems Biology,
New York University, New York, USA
- 2018-2020 Visiting Professor, Polytechnic University of Madrid
- 2010-2011 Abel Extraordinary Chair (Sep 2010 to March 2011),
Centre for Ecological and Evolutionary Synthesis (CEES),
Department of Biology, University of Oslo, Oslo, Norway
- 2009-2010 Visiting Professor (Sep 2009 to Sep 2010),
Centre for Ecological and Evolutionary Synthesis (CEES),
Department of Biology, University of Oslo, Oslo, Norway
- 2007-present Tenured Group Leader,
Spanish National Centre for Biotechnology (CNB),
Spanish National Research Council (CSIC), Madrid, Spain
- 2003-2007 Staff Scientist (and Ramón y Cajal Fellow),
Structural and Computational Biology Programme,
Spanish National Cancer Centre (CNIO), Madrid, Spain
- 2002-2003 Research Fellow,
NASA Centre for Astrobiology (CSIC/INTA),
Torrejón de Ardoz, Madrid, Spain
- 2001 Visiting Research Fellow (September to December),
Pathology Department, Northwestern University Medical
School, Chicago, Illinois, USA
- 1996-1998 Visiting Graduate Student,
Institute for Theoretical Physics,
University of Innsbruck, Innsbruck, Austria

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BRIEF RESEARCH TRAJECTORY

Juan F. Poyatos studies at **Complutense University, Madrid**, where he obtained a BSc (Licenciado; 5-year degree) in Theoretical Physics. After participating in a number of postgraduate projects in plasma physics, climate fluid dynamics and quantum optics (as part of his civilian service alternative to what was then compulsory military service in Spain), he decides to pursue a PhD in Quantum Mechanics and Quantum Computation under the direction of Prof. Juan Ignacio Cirac (now at the Max-Planck Institute for Quantum Optics, Germany). The thesis is entitled "Trapped Ions, Schroedinger Cats, and Quantum Computations" (1994-1998). Most of this work was done at the **University of Innsbruck, Austria**, one of the best schools for Quantum Mechanics in Europe. The originality of this thesis lies in the combination of novel theoretical ideas on quantum information and computation with precise proposals on how to implement them experimentally, in the specific platform of the trapped ions by electromagnetic fields. The approach of bringing theoretical ideas close to an experimental validation would become a primary goal throughout his career.

He subsequently engaged in postdoctoral studies at the **University of Oxford** (UK, 1998-2001) under the supervision of Professor Artur Ekert. It is in Oxford where his interests in Biology started. After a stay in the department of Pathology at **Northwestern University** (Chicago, USA, 2001), working on the examination of high-throughput gene expression data and metabolic networks, he is back to Spain as a Research Fellow in the **NASA associated Astrobiology Centre** (2002-2003) of the Spanish National Research Council (CSIC). He moved then to the **Spanish National Cancer Research Centre** (CNIO, 2003-2007) as a staff scientist and Ramon y Cajal Fellow. There, he directs the Evolutionary Systems Biology Initiative, a research program whose focus was the study of cancer from a quantitative and system-level perspective. After four years at CNIO, he gets a permanent position in the **National Centre for Biotechnology** (CNB-CSIC), where he leads the establishment of the Systems Biology Program and heads the Laboratory of Logic of Genomics Systems (LoGS) since July 2007. At LoGS, he is combining theory and experiments to address a wide range of questions on the systemic organization of biological systems and their control of complex phenotypes. Over the recent years, he also held visiting professor positions at various universities, including the Centre for Ecological and Evolutionary Synthesis at the **University of Oslo** in Oslo, Norway, the **Polytechnic University** in Madrid, Spain (where he is currently teaching a course on Systems and Synthetic Biology) and the Center for Genomics and Systems Biology at the **New York University**, in New York, USA.