Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Luigi D. Notarangelo

Name: **Luigi Daniele Notarangelo**
Born: **7 October 1956**

Research Priorities: Paediatrics, immune system, severe combined immunodeficiencies (SCID), stem cell transplants, induced pluripotent stem cells (iPSCs), CRISPR technology

Luigi D. Notarangelo is an Italian-American paediatrician and an expert on immune diseases. He discovered genetic mutations which can lead to sever immunodeficiencies. Using this foundation, he explores gene therapies for congenital immunodeficiencies.

Academic and Professional Career

since 2017	Head, Laboratory of Clinical Immunology and Microbiology, National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), Bethesda, USA
since 2016	Head, Laboratory of Host Defenses, Laboratory of Clinical Infectious Diseases, Immune Deficiency Genetics Section, NIAID, NIH, Bethesda, USA
since 2006	Professor of Paediatrics and Pathology, Harvard Medical School, Boston, and Holder of the Jeffrey Modell Endowed Chair in Paediatric Immunology Research, Boston Children's Hospital, Boston, USA
2000 - 2006	Head, Department of Paediatrics, University of Brescia, Brescia, Italy and Director, Istituto Angelo Nocivelli – Centre for Research into Molecular Medicine, University of Brescia, Brescia, Italy
1996	Professor of Paediatrics, University of Brescia, Brescia, Italy
1994	Associate Professor of Paediatrics, University of Brescia, Brescia, Italy
1984 - 1992	Postgraduate Study of Paediatrics, Allergies and Cytogenetics, University of Pavia, Pavia, Italy

1980 MD, University of Pavia, Pavia, Italy

Functions in Scientific Societies and Committees

2015 - 2016 President, Clinical Immunology Society, Milwaukee, USA

2002 - 2006 President, European Society for Immune Deficiencies (ESID)

2002 - 2006 Co-Chairperson, Committee “Primary Immunodeficiencies”, International Union of Immunological Societies (IUIS)

Member, Manton Center for Orphan Disease Research, Boston Children's Hospital, Boston, USA

Project Coordination, Membership in Collaborative Research Projects

2014 Grant “Next Generation Sequencing Reveals Skewing of the T and B Cell Receptor Repertoires in Patients with Wiskott-Aldrich Syndrome”, NIH, USA

2004 Grant “X-linked Immunodeficiencies”, NIH, USA

Honours and Awarded Memberships

since 2006 Member, German National Academy of Sciences Leopoldina, Germany

2005 European Union Descartes Prize for Excellence in Science

Research Priorities

Luigi D. Notarangelo is a paediatrician and an expert on immune diseases. He discovered genetic mutations which can lead to sever immunodeficiencies. Using this foundation, he explores gene therapies for congenital immunodeficiencies.

Notarangelo focuses primarily on signals controlling the maturation of T and B lymphocytes. As immune cells, T and B lymphocytes are part of the acquired immune system. Insufficient T or B lymphocytes mean that the acquired immune system does not form correctly after birth, leading to what is known as severe combined immunodeficiency (SCID). Together with his team, Luigi D. Notarangelo succeeded in identifying genetic defects responsible for SCID and other immunodeficiencies, such as, for example, SCID due to JAK3 deficiency, Omenn Syndrome due to RAG gene errors and IL7R gene defects, immunodeficiency with Hyper IgM due to CD40L or CD40 deficiency.

Additionally, Luigi D. Notarangelo’s work attempts to define the genotype-phenotype correlations of such disorders. This might make it possible to predict the severity of the illness based on the

specific genetic deficiency. He aims to find more effective treatments for children with congenital immunodeficiencies as well as to improve the results of haematopoetic stem cell transplants for SCID patients.

Luigi D. Notarangelo's laboratory has developed induced pluripotent stem cells (iPSCs) from patients with immunodeficiencies. In his most recent work, he has attempted to use modern technology such as CRISPR-Cas9 to correct genetic defects in haematopoetic stem cells and iPSCs. He was involved in gene therapy studies for X-linked SCID and Wiskot-Aldrich Syndrome.