

## PERSONAL INFORMATION

### Andrea Legati

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## WORK EXPERIENCE

2019 – present day

### Italian NHS Researcher

The Foundation of the Carlo Besta Neurological Institute, IRCCS - Via Temolo 4, 20126 Milano (Italy)

- Study of the genetic causes of mitochondrial dysfunctions in neurodegenerative disorders, optimization of new approaches and bioinformatics pipelines for the analysis of DNA and RNA.

2017 - 2019

### Senior contract researcher

The Foundation of the Carlo Besta Neurological Institute, IRCCS - Via Temolo 4, 20126 Milano (Italy)

- Study of the genetic causes of mitochondrial disorders, responsible for the optimization of NGS approaches and bioinformatics pipelines for the analysis of nuclear and mitochondrial DNA.

2014 - 2017

### Postdoctoral fellowship

The Foundation of the Carlo Besta Neurological Institute, IRCCS - Via Temolo 4, 20126 Milano (Italy)

- Identification of disease genes in mitochondrial disorders through the use of NGS approaches and characterizations of the corresponding proteins.

2013 - 2014

### Postdoctoral fellowship

Semel Institute, University of California Los Angeles (UCLA) - 695 Charles E Young Dr S, Los Angeles, CA 90024 (US)

- Research of new disease genes in neurodegenerative disorders through the use of NGS approaches for the analysis of nuclear DNA.

## EDUCATION AND TRAINING

July 2013

### Introduction to R and Bioconductor workshop

Department of Human Genetics, University of California Los Angeles (UCLA) - 695 Charles E Young Dr S, Los Angeles, CA 90024 (US)

- The course introduces basic concepts, syntax, and usage in R programming, statistical analysis, and visualization techniques

May 2013

### Parallele Computing Class

Institute for Digital Research and Education, University of California Los Angeles (UCLA) - 520 Portola Plaza, Los Angeles, CA 90095 (US)

- The course introduces learn new programming abstractions that will be useful for programming multi-core computers and clusters.

June 2011

### IGA Summer school - Next Generation Sequencing: from samples to data analysis

Scientific and Technological Park "Luigi Danieli" - via Linusso 51, Udine (Italy)

- The course deepens the knowledge on sequencing technologies of second and third generation for the analysis of DNA and RNA.

Marzo 2009

### Course of Statistics for the analysis of biological data

Molecular Biotechnology Center, University of Turin – Via Nizza 52, Turin (Italy)

- Basic knowledge on statistic distributions, on evaluating statistical errors and interval of confidence, on evaluating results on the basis of dedicated statistic tests.

2008 - 2012 **PhD in “Molecular genetics applied to the medical sciences”**

Faculty of Medicine, University of Brescia - Viale Europa, 11, 25123 Brescia (Italy)

- Search for the disease gene in families affected by forms of cerebellar ataxia with unknown molecular defect.

2006 - 2008 **Master of Science in Biotechnology**

Faculty of Mathematical Physical and Natural sciences, University of Padova - Via Ugo Bassi, 58b, 35121 Padova (Italy)

- Experimental thesis in stem cells differentiation: "Analysis of differentiation of Human Embryonic Stem Cells in cardiomyocytes trough in vitro electrophysiological stimulation".

2003 - 2006 **Bachelor of Science in Biotechnology**

Faculty of Mathematical Physical and Natural sciences, University of Padova - Via Ugo Bassi, 58b, 35121 Padova (Italy)

- Experimental thesis in histopathology: "Study of esophageal, intestinal, and gastric tissues of animal models of Barrett's Esophagus".

## ACHIEVEMENTS AND AWARD

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<b>Awards</b>	PhD studentship by Italian Ministry of Education, Universities and Research (2008 – 2012)
<b>Editorial activity</b>	Guest editor for journals “Frontiers in Genetics” (2021 – 2022) and “Frontiers in Neurology” (2020 – 2021). Reviewer for the following journals: “Orphanet Journal of Rare Diseases” (2022), “Frontiers in Neurology” (2022, 2021), “Frontiers in Cell and Developmental Biology” (2021), “ Frontiers in Genetics” (2021), “Metabolic Brain Disease” (2021), “Genes” (2020), “Computer methods and programs in biomedicine” (2019), “Mitochondrion” (2018), “Biochemical genetics” (2017), “Journal of the Neurological Sciences” (2016), “Human Genetics” (2016).
<b>Grants</b>	Co-PI of the project GR-2018-12365610 “Mitochondrial inborn errors of Coenzyme A biosynthesis-associated neurodegeneration: implementation of new disease models and evaluation of Coenzyme A supplementation as potential therapeutic approach”. Funded by the Italian Ministry of Health.

## TECHNICAL SKILLS

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Sequencing: advanced skills in the use of NGS platforms for the analysis of DNA (genomic and mitochondrial) and RNA, for both short-read and long-read based methods; advanced skills in the use of the Sanger sequencer.

Molecular biology: advanced skills in the preparation of DNA and RNA libraries for NGS sequencing approaches, for both short-reads and long-reads based methods; in the preparation of samples for PCR reactions and real-time PCR, in the extraction of nucleic acids from various types of human biological samples (blood, skin and muscle biopsies, urine, saliva, cell cultures).

Biochemistry: skills in the preparation and analysis of samples through Western Blot assay.

Histology: skills in the preparation of immunohistochemical assays on cultured cells and tissues.

Cell cultures: skills in culturing human fibroblast cell lines.

IT: advanced skills in the implementation and use of software and bioinformatics tools for the advanced analysis of NGS data.