# Roberto Preste

## Personal information

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Sex: M | Date of birth: 02/01/1991 | Nationality: Italian

## Publications

*Calabrese FM, Balacco DL, **Preste R**, Diroma MA, Forino R, Ventura M, Attimonelli M* - **NumtS colonization in mammalian genomes** - Sci Rep, 2017 (doi: 10.1038/s41598-017-16750-2)

*Clima R, **Preste R**, Calabrese C, Diroma MA, Santorsola M, Scioscia G, Simone D, Shen L, Gasparre G, Attimonelli M* - **HmtDB 2016: data update, a better performing query system and human mitochondrial DNA haplogroup predictor** - Nucleic Acid Res, 2017 (doi: 10.1093/nar/gkw1066)

# Work experience

**April - May 2018**

## Web Developer

*ELIXIR Project "Integration of the ELIXIR-IIB HmtDB resource into RD-Connect", Institute of Biomembranes, Bioenergetics and Molecular Biotechnologies, National Research Council, Bari, Italy*

- Development of an Application Programming Interface (API) to allow programmatic access to HmtDB data
- Standardization of the HmtDB data format according to RD-Connect specifications

**April 2017 - Ongoing**

## PhD Student

*PhD in Functional and Applied Genomics and Proteomics, Department of Biosciences, Biotechnologies and Biopharmaceutics, University of Bari "Aldo Moro", Bari, Italy*

- Study and development of Big Data analysis protocols for biological data
- Development of the Human Mitochondrial Database (http://www.hmtdb.uniba.it)
- Design and development of the Human Mitochondrial Variants Database ( http://www.hmtvar.uniba.it)
- Development of a bioinformatics software for identification and analysis of human NumtS sequences

**October 2016 - Ongoing**

## Co-founder, Bioinformatician, Web Developer

*BROWSer - Bioinformatics Resource for Omics-Wide Services, Spin-off of the University of Bari "Aldo Moro", Bari, Italy*

- Development of bioinformatics analysis pipelines to analyse NGS data from Whole Exome Sequencing and RNA-Seq projects
- Design and development of the BROWSer website (https://browser-bioinf.com)

**March - September 2016**

## Web developer

*ELIXIR Hub, Wellcome Trust Genome Campus, Hinxton, Cambridge, UK*

- Management of the ELIXIR intranet
- Design and production of the Bioschemas website (http://bioschemas.org)
- Active collaboration with the Bioschemas development community
- Design and production of a registry and validation portal on Bioschemas data

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**November 2015 - March 2016**

## Post-graduate internship

*Department of Pathological Anatomy, Policlinico "Le Scotte", Siena, Italy*

- Active collaboration in a research project to study and characterise post-translational modifications in Rb-related proteins in mesotelioma cell lines
- Management of cell cultures and performing of cytotoxicity assays on human cell lines
- Protein extraction and Western Blot assays

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**January - July 2015**

## Didactic - integrative Tutor

*Labo-Biotech, Department of Biosciences, Biotechnologies and Biopharmaceutics, University of Bari "Aldo Moro", Bari, Italy*

- Educational counselling and management of a series of seminars for students of "Medical and Pharmaceutical Biotechnologies" and "Processes and Products Innovation Biotechnologies" courses
- Management of a remedial course in Applied Physics
- Management of the Faculty website (http://www.biotec.uniba.it)

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**November 2014 - July 2015**

## University internship (MSc)

*Bioinformatics lab (supervisor: Prof. Attimonelli M.), Department of Biosciences, Biotechnologies and Biopharmaceutics, University of Bari "Aldo Moro", Bari, Italy*

- Automated updating of a human mitochondrial genomes' database (http://hmtdb.uniba.it)
- Implementation and optimization of several scripts for bioinformatics analysis
- Creation of an automated pipeline for searching RNA editing events in human mitochondrial genomes

March - June 2013

## University internship (BSc)

*Organic Chemistry lab (supervisor: Prof. Farinola G.), Department of Chemistry, University of Bari "Aldo Moro", Bari, Italy*

- Culture, purification and functionalization of diatoms' frustule through organosilanes chemistry
- Purity analysis of compounds using FTIR

## Education and training

2013 - 2015

## Master's Degree in Cellular and Molecular Biology (LM-6)

*Department of Biosciences, Biotechnologies and Biopharmaceutics, University of Bari "Aldo Moro", Bari, Italy*

Final mark: 110/110

Thesis in Bioinformatics and Comparative Genomics (supervisor: Prof. Attimonelli M.): "Automated characterization and annotation of nucleotide variants in human mitochondrial DNA and RNA"

2009 - 2013

## Bachelor's Degree in Medical and Pharmaceutical Biotechnologies (L-2)

*Department of Biosciences, Biotechnologies and Biopharmaceutics, University of Bari "Aldo Moro", Bari, Italy*

Final mark: 103/110

Thesis in Organic Chemistry (supervisor: Prof. Farinola G.): "Functionalization of nanostructured biosilica"

2004 - 2009

# High school Diploma (scientific - biologic studies)

*Liceo Scientifico - Biologico, I.T.A.S. Principess Maria Pia, Taranto, Italy*

Final mark: 87/100

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# Personal skills

### Communication skills

Good communication and integration skills, mainly developed during my tutoring activities in University, since constant student-tutor as well as tutor-administrators interactions were needed; I further improved these skills during my work at ELIXIR, in which I had to periodically present the goals I had achieved and the tasks I was going to tackle for an ongoing project.

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### Organizational and managerial skills

Great skills in job organization and distribution of tasks, gained during my work at ELIXIR and University internships, in which it was required to work on a specific project analyzing one particular side of it, though cooperating and sharing findings with the whole working group.

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### Job-related skills

Great knowledge of bioinformatics tools to analyse and characterise biological sequences; great propensity to create new tools and problem-based computational resources.

Great knowledge of web development and various web programming frameworks and Content Management Systems.

Great knowledge of Python frameworks for data analysis, visualization and machine learning.

Good knowledge of nucleic acids extraction, purification and sequencing protocols from biologic samples.

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### Computer skills

- Great knowledge of the main packages for bioinformatics data analysis, both web-based and stand-alone

- Great knowledge of Python and Shell programming languages
- Great knowledge of HTML, CSS, JavaScript, Wordpress and Drupal CMS and of web development in general
- Great knowledge of the MS Office suite, OSs (especially UNIX-based ones) and web navigation

I have, and always had, a great passion for IT in general, besides bioinformatics, and I'm very interested in learning new programming languages and data analysis protocols.

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## Conferences attended

- FEBS/EMBO Course "Mitochondria in Life, Death and Disease", Selva di Fasano (BR), Italy, 9-13 October 2017
- ELIXIR-IIB Course "Machine Learning for Biologists", S.Michele all'Adige (TN), Italy, 4-7 September 2017
- ELIXIR-IIB Course "Training Course on RNA-Seq Data Analysis", Milan, Italy, 18-20 July 2017
- 14° BITS (Bioinformatics Italian Society) annual meeting, Cagliari, Italy, 5-7 July 2017
- CHARME/EMBnet/NETTAB Workshop "Reproducibility, Standards and SOP in bioinformatics", Rome, Italy, 25-26 October 2016 (with the talk "Bioschemas: structured data markup for life sciences with Schema.org")
- Workshop "Mitochondrial Medicine: developing new treatments for mitochondrial disease", Cambridge, UK, 4-6 May 2016
- Workshop "Javascript for Visualization", Norwich, UK, 21-22 April 2016
- 2° ELIXIR All Hands Meeting, Barcelona, Spain, 8-10 March 2016
- 12° BITS (Bioinformatics Italian Society) annual meeting, Milan, 3-5 June 2015