

CURRICULUM VITAE

Personal information

First name / Surname **Paris Debora**
Address Istituto di Chimica Biomolecolare (ICB), Consiglio Nazionale delle Ricerche (CNR), Via Campi Flegrei 34, 80078, Pozzuoli (Napoli), Italy
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Nationality Italian

Occupational field **Research; NMR-based metabolomics and multivariate data analysis**

Work experience

Dates 2019 - Present
Occupation or position held Research (Permanent staff)
Main activities and responsibilities NMR-based metabolomics and multivariate data modeling
Name and address of employer Istituto di Chimica Biomolecolare (ICB), Consiglio Nazionale delle Ricerche (CNR), Via Campi Flegrei 34, 80078, Pozzuoli (Napoli), Italy.
Type of business or sector Public Research Organization

Dates 2018 – 2019
Occupation and position held Fixed term researcher at the ICB-National Research Council (CNR), Italy
Main activities and responsibilities NMR based metabolomics on EBC samples collected from patients with Cystic Fibrosis.
Name and address of employer Istituto di Chimica Biomolecolare (ICB), Consiglio Nazionale delle Ricerche (CNR), Via Campi Flegrei 34, 80078, Pozzuoli (Napoli), Italy.
Type of business or sector Public Research Organization

Dates 2009-2016
Occupation and position held Post-doc and Fixed term researcher at the ICB-National Research Council (CNR), Italy
Main activities and responsibilities NMR-based metabolomics and data modeling
Name and address of employer Istituto di Chimica Biomolecolare (ICB), Consiglio Nazionale delle Ricerche (CNR), Via Campi Flegrei 34, 80078, Pozzuoli (Napoli), Italy.
Type of business or sector Public Research Organization

Education and training

Dates November 2006 – December 2009
Title of qualification awarded PhD in Organic Chemistry, discussing the thesis: "NMR based metabolomics and multivariate statistical analysis strategies applied to biofluids, cells and tissues". (Supervisor Prof. Rosa Lanzetta).
Name and type of organization providing education and training University of Naples, Federico II (NA), Organic Chemistry

Dates October 2006
Title of qualification awarded Degree in Physics, specialization in Medical Physics, with highest mark and honors (*summa cum laude*), discussing the experimental thesis "Nuclear Magnetic Resonance (NMR) spectroscopy based metabolomics on spheroids and solid tumors" (supervisor Prof. Pietro Luigi Indovina).
Name and type of organization providing education and training University of Naples, Federico II (NA), Physics.

Dates July 2016 – June 2017
Title of qualification awarded Master in Criminalistic techniques, discussing the thesis: "NMR spectroscopy of vitreous humor and data Modeling to assess post-mortem interval of corpses". (Supervisor Prof. Fabio Fagiolari).

Publications and additional information

Co-author of 48 articles and reviews in peer-reviewed scientific journals (H-index=18 according to SCOPUS and Web of Science: ORCID ID: 0000-0003-4526-8353, as of October 2021, 50% of them as first or co-first author, on NMR-based metabolomics, NMR technique or data modeling.

Currently permanent researcher at the CNR-ICB Institute of Biomolecular Chemistry of Pozzuoli, Napoli (Italy). I received the **Graduation in Physics cum laude** from the University of Napoli "Federico II" in the 2006 starting my experiences in metabolomics with the thesis "**metabolomic study of the apoptotic process induced by ionizing radiation in MG-63 human spheroids by Nuclear Magnetic Resonance spectroscopy**". Then I received the **Ph.D in Chemistry** from the University of Napoli "Federico II" in 2009, defending the PhD thesis "**Development and Application of Advanced NMR Techniques for Biomarkers Identification**" which resulted in the independent publication of a monograph integrally extracted from it ("**Advanced NMR Techniques for Biomarkers Identification**". **LAP LAMBERT Academic Publishing GmbH & Co., Saarbrücken, Germany, 2010. ISBN: 978-3-8433-8635-7**). During the triennial PhD period (2006-2009), I worked on the development and implementation of new spectroscopic tools for high throughput analysis in metabolomic investigations. The purpose of the PhD research activity was to explore the recent NMR improvements by applying and developing new metabolomic strategies for biomarkers discovery, including NMR data handling, peaks quantification and fast data acquisition. From 2009 to 2011, I worked as post-doctoral position at ICB-CNR on different metabolomics projects, practicing with the acquisition of mono- and multidimensional NMR experiments at high-resolution NMR spectrometers, the processing and the quantification of spectral data. In particular, I strongly focused on the analysis and spectral signal assignments of metabolic profiles arising from different kinds of biological samples: microalgae and microorganisms, *in vivo* cells, cell and tissue extracts, biofluids (blood, urine, saliva, respiratory condensate). All the gained experience was then devoted to teaching activities and scientific dissemination as **invited speaker involved in lectures and summer schools dealing with multivariate data analysis in NMR-based metabolomics studies** (Lecturer at the Department of Molecular Medicine in Pavia; Lecturer at the National Cancer Institute IRCCS - Pascale Foundation in Napoli; Lecturer at 3 Summer Schools at University of Cagliari; Workshop on Chemometrics at San Raffaele Institute in Milano etc.). Recently, I am involved in diverse metabolomic projects covering wide-ranging biological fields: the analysis of exhaled breath condensates for airway diseases characterization (Cystic Fibrosis, Asthma, COPD, Long Covid effects), cells and tissues metabolic profiling to study genetic disorders (Duchenne muscular dystrophy, DiGeorge syndrome), cancer (Prostate cancer, Thyroid carcinoma, Hepatocarcinoma), metabolic conditions (Obesity, Hyperammonemia, Bed rest), and neurodegenerative diseases (Alzheimer, Parkinson). My strong interest is in multivariate statistical analysis applied to different biological issues by making large use of unsupervised methods as PCA, and supervised techniques (PLS, PLS-DA, OPLS, OPLS-DA), the use of statistical models for data prediction and dataset integration, network and pathway analysis.

Personal skills and competences

Mother tongue(s) **Italian**

Other language(s) English, French.

Technical skills and competences

1. NMR physics and theory:
 - Peak analysis and integration;
 - Design of selected NMR experiments;
 - Software development for NMR processing;
2. Metabolomics/metabonomics of biofluids, cells and tissues:
 - Metabolomics/metabonomics by high-resolution NMR;
 - Statistical data analysis and modeling.
3. Cell systems biology:
 - Metabolic profiles of *in-vivo* cells and microorganisms;
 - Design of new NMR experiments for fast observation of metabolic fingerprint;
 - Metabolic pathway bioinformatics and data integration;
 - New algorithms for data modelling and analysis.

Computer skills and competences

Good knowledge of statistical programs and data integration, network analysis (R, Origin, AMIX, Chenomx)
Data modeling based on NMR/MS and any biological data.