

## Barbara Benedetti

Researcher

### EDUCATION AND TRAINING

March 2019

#### PhD in Science and technology of chemistry and materials

thesis: "Development and optimization of innovative analytical methods for the determination of phytoestrogens in soy-food by chromatographic techniques coupled to mass spectrometry"

University of Genoa, Department of Chemistry and Industrial Chemistry, Genoa, Italy

December 2013

#### Master degree in Analytical Chemistry

thesis: "Extraction and determination of methylxanthines and flavanols in cocoa samples by HPLC-DAD and chemometrics"; Graduated with Honors (110/110 cum laude)

University of Rome, Sapienza, Rome, Italy

October 2011

#### Bachelor degree in Chemistry

thesis: "Preparation and XPS study of crystalline silicon suitable for the adhesion of gold nanoparticles"; Graduated with Honors (110/110 cum laude)

University of Rome, Sapienza, Rome, Italy

### PROFESSIONAL HISTORY

January 2021 – today

#### Researcher

Research Focus:

- LC-MS and GC-MS methods development
- Chemometrics, Experimental design
- Innovative sample preparation
- Emerging contaminants
- Passive sampling

Teaching activities:

- Advanced Analytical Techniques class (master degree course in Chemical Sciences), 2 cfu
- Analytical Chemistry II class (Bachelor degree course in Chemical Sciences and Technologies), part 2, 1 cfu
- Chemometrics For Food Analysis class (master degree course in Chemical Sciences), 4 cfu
- Laboratory assistance for the Analytical Chemistry I class (Bachelor degree course in Chemical Sciences and Technologies)
- Laboratory assistance for master students, PhD students, post-doc researchers

University of Genoa, Department of Chemistry and Industrial Chemistry, Genoa, Italy

November 2019- December 2020

**Post-doc research fellow**

Research Focus:

- LC-MS method development
- Chemometrics, Experimental design
- Analysis of food and industrial by-products by HPLC-DAD, HPLC-MS/MS, GC-MS

CREA (Council for Agricultural Research and Agricultural Economy Analysis), Research centre on Food and Nutrition, Rome, Italy

November 2018 – October 2019

**Research fellow**

Research Focus:

- LC-MS and LC-HRMS method development
- Analysis of biological, food and environmental samples by targeted and untargeted approaches

University of Rome, Sapienza, Rome, Italy

November 2015 – October 2018

**PhD**

Research Focus:

- LC-MS and GC-MS methods development
- Innovative sample preparation for phytoestrogens in food
- Chemometrics: Principal component analysis and Experimental design

University of Genoa, Department of Chemistry and Industrial Chemistry, Genoa, Italy

September 2017 – October 2017

Abroad traineeship during PhD

- Analysis of emerging contaminants in environmental samples by LC-MS

Spanish council for scientific research (CSIC), Barcelona, Spain

November 2014 – May 2015

**Post-graduate traineeship (“Leonardo Da Vinci”- Unipharma Graduates Project)**

Research Focus:

- Molecular Imprinted Polymers synthesis
- Solid Phase Extraction using Molecular Imprinted Polymers
- Analysis of fluoroquinolones by HPLC-DAD

University of Barcelona, Torribera Food Campus, Sta. Coloma de Gramenet (Barcelona), Spain

## EXPERIENCE

### MAIN SEMINARS

**10 march 2023** Seminar: From QuEChERS to DES: Innovative techniques toward an improved sample preparation.

University of Modena and Reggio Emilia

**05 april 2024** Seminar: Practical applications of DOE for analysis and process optimization.

University of Salerno (Fisciano, SA, Italy).

**SCIENTIFIC RESPONSIBILITY FOR RESEARCH PROJECTS ACCEPTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW**

**February 2025-February 2027** “Exploitation of targeted and untargeted analytical strategies for WASTewater monitoring: toward a sustainable water management according to the principles of circular economy (EXWASTER)”

Financed by the grant “PRIN2022” of the Ministry of University and Research. Principal Investigator: Caterina Durante (University of Modena and Reggio Emilia)

**September 2022-December 2024** Novel Approaches in White Analytical chemistry to Reliably assess Environmental contamination (AWARE)

Financed by the grant “Curiosity Driven 2021” in the framework of “NextGenerationEU” program. Principal Investigator: Barbara Benedetti

**EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES**

**November 2024-February 2026** Guest editor of the special issue “Optimization of Advanced Separation Technologies for the Analysis of Emerging Contaminants”

Journal: Separations MDPI (EISSN 2297-8739).

**PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES**

**19 september 2018** “Best flash oral presentation” award during the XXVII congress of the analytical division of the Italian Chemical Society.

**MAIN CONGRESSES**

**31 august-4 September, 2025** Combining passive sampling, LC-HRMS/MS and Regions Of Interest Multivariate Curve Resolution: potentialities and challenges.

Oral contribution at Euroanalysis 2025 (Barcelona, Spain)

**15-18 September, 2024** Extraction of emerging contaminants from treated wastewater by a polymeric biodegradable film and following analysis by target and non-target LC-MS.

Oral contribution at the 3<sup>rd</sup> European Sample Preparation Conference and 2<sup>nd</sup> Green and Sustainable Analytical Chemistry Conference (Chania, Greece)

**18-22 July, 2023** Exploring the potentialities of a starch-based biodegradable polymer in white analytical chemistry: study on the extraction of emerging contaminants from water samples

Oral contribution at the 25<sup>th</sup> International Symposium on Advances in Extraction Technologies (Tenerife, Spain).

**27-30 june 2023** The power of DoE: how to solve complex analytical problems by multivariate optimization strategies

Oral contribution at the XI Colloquium Chemometricum Mediterraneum 2023 (Padova)

**26-27 April 2022** Evaluation of polycyclic aromatic hydrocarbons contamination in botanical extracts for human consumption: development of a specific sample pre-treatment method followed by GC-MS analysis.

Oral contribution at the 10<sup>th</sup> Franco-Italian Days of Chemistry (Toulon, France).

14-16 March 2022 Detection of trace emerging contaminants in seawater by POCIS:  
optimization of the sampler processing to enhance the accuracy of the LC-MS/MS analysis.

Oral contribution at the 2<sup>nd</sup> European sample preparation e-conference.

#### PUBLICATIONS

Complete list of publications:

<https://www.scopus.com/authid/detail.uri?authorId=57219654179>