EDUCATION AND TRAINING

1987	Technical High School Diploma – "F. Selmi" Technical Institute (Modena)
1994	Degree in Biological Sciences (105/110) – University of Modena Internship at the Department of Biomedical Sciences, Section of General Pathology, University of Modena
1995	Qualification for the profession of Biologist – University of Modena
1995-1998	Ph.D. in Experimental Pathophysiology (University of Pavia) 1997 Training period (three months) at the "Department of Environmental and Occupational Health", Graduate School of Public Health, Pittsburgh, PA, USA 1999 PhD title awarded
1999-2003	Postgraduate School in Clinical Pathology (University of Pavia) 2003 Specialization in Clinical Pathology
1999-2002	Research Grant: "Study on the role of nitric oxide in diseases characterized by chronic inflammatory processes." Supervisor: Prof. Aldo Tomasi. Department of Biomedical Sciences, Section of General Pathology, University of Modena and Reggio Emilia
2003	Research Grant: "Modulation of redox status, cytokine production, and nitric oxide in keratinocytes exposed to lipid peroxidation end-products." Supervisor: Prof. Aldo Tomasi. Department of Biomedical Sciences, Section of General Pathology, University of Modena and Reggio Emilia
2004	Project-based collaboration contract: "Role of nitric oxide in hypotensive syndromes in patients with chronic renal failure." Supervisor: Prof. Anna Iannone. Department of Biomedical Sciences, Section of General Pathology, University of Modena and Reggio Emilia
2005-2006	Subject Expert in SSD MED/05 and MED/04 for the academic year 2005/2006
2006-2007	Project-based collaboration contract: "Alterations in asymmetric dimethyl-arginine levels in diabetic patients with renal failure." Supervisor: Prof. Anna Iannone. Department of Biomedical Sciences, Section of General Pathology, University of Modena and Reggio Emilia
2007-present	University Researcher, SSD MED/05 "Clinical Pathology" – University of Modena and Reggio Emilia.

TEACHING ACTIVITIES

Undergraduate Courses

- Degree in Physiotherapy: General Pathology lecturer (2003-2007)
- Degree in Cardiovascular Physiopathology and Cardiovascular Perfusion Techniques: General Pathology lecturer (2005-2007)
- Degree in Dietetics: General Pathology lecturer (2007-2013)
- Degree in Dental Hygiene: General Pathology lecturer (2012-2013); Clinical Pathology lecturer (2007-2012)
- Degree in Biomedical Laboratory Techniques: Clinical Pathology lecturer (2005-2006); Clinical Pathology lecturer (2008-present)
    - 2018-2019 Coordinator of the Integrated Course in Immunology, Clinical, and Endocrine Pathology
    - 2019-2020, 2020-2021 Coordinator of the Integrated Course in General and Clinical Pathology
    - 2021-present Coordinator of the Integrated Course in General and Clinical Pathology I
- Degree in Dentistry and Dental Prosthetics: Clinical Pathology lecturer (2005-2006); Clinical Pathology lecturer (2008-2024); since 2012 Coordinator of the Integrated Course in Medical Sciences 1
- Degree in Health Assistance: Clinical Pathology lecturer (2022-2023)

Master's Degree Courses

- Master's in Experimental and Applied Biology: Lecturer in Clinical Pathology (2014-2015)

Ph.D. School

- Doctoral School in Clinical and Experimental Medicine: Lecturer in Clinical Pathology (2007-2014)

Specialization Schools

Lecturer in Clinical Pathology in the following specialization schools:

- Clinical Pathology
- Anatomical Pathology
- Clinical Biochemistry
- Microbiology and Virology
- Emergency and Urgent Medicine
- Hygiene and Preventive Medicine
- Anesthesia, Resuscitation and Intensive Care
- Clinical Pharmacology, and Toxicology

OTHER APPOINTMENTS

- Specialization School in Clinical Pathology: Acting Secretary (2007-2018)
- Member of various examination, graduation, and specialization committees
- Thesis supervisor for Bachelor's and Master's degrees in Biomedical Laboratory Techniques, Medicine and Surgery, Biotechnology, and Experimental Biology.
- Member of the Joint Teaching-Student Committee of the Faculty of Medicine and Surgery, University of Modena and Reggio Emilia.

SCIENTIFIC TRAINING COURSES

- "HPLC Reverse Phase Analysis: Working Under Optimal Conditions." Chemtek Analitica, Bologna, June 14, 2001.
- "Free Radicals, Nitric Oxide, and Inflammation: Molecular, Biochemical, and Clinical Aspects." NATO-ASI, SFRR, FEBS, UNESCO-MCBN, IUBMB-sponsored course, Antalya, Turkey, September 23 – October 3, 2001.
- "Theoretical-Demonstrative Course on Proteomics." Bio-Rad Laboratories, Beckman-Coulter, University of Modena and Reggio Emilia, Department of Anatomy and Histology, Modena, January 19-20, 2005.

RESEARCH TOPICS

GENERAL PATHOLOGY: Oxidative Stress Studies

- Study on cellular metabolism and toxic action mechanisms of hydroperoxides.
- Studies on the antioxidant mechanism of β-carotene.
- Research on the role of free radicals and nitric oxide (NO) in the pathogenesis of septic shock in rats.
- Studies on experimental endotoxin shock and protection by N-acetylcysteine.
- Studies on the antioxidant and prooxidant effects of an iron chelator, Desferal, under oxidative stress conditions in cells and liposomes.
- Studies on the different susceptibility to lipid peroxidation of red blood cells from patients with renal failure undergoing hemodialysis or transplantation.

CLINICAL PATHOLOGY: Proteomics Studies

- Atherosclerosis.
  Proteomic analysis of atherosclerosis progression and the effects of pharmacological treatments.
- Optimization of Sample Preparation for Proteomic Analysis
  Optimization of methods for removing highly abundant serum proteins to improve serum proteome analysis.
- Lung Cancer
  Identification of serum biomarkers for non-small cell lung carcinoma.
- Apheresis

Proteomic evaluation of the apheresis process for the treatment of familial hypercholesterolemia.
Assessment of the effectiveness of different membranes for hemofiltration.

- Restless Legs Syndrome (RLS)
  Identification of potential serum biomarkers for restless legs syndrome and investigation of their possible link to cardiovascular risk.
- Prostate Cancer
  Search for serum and urinary biomarkers of prostate adenocarcinoma. Evaluation of the role of inflammation in the search for prostate adenocarcinoma biomarkers.
  Assessment of differences in urinary proteomic profiles among prostate adenocarcinoma patients with varying risks of disease progression.
- Chronic Pain
  Research on urinary and serum biomarkers associated with chronic pain, particularly in medication-overuse headache and drug-induced nephropathy, with correlations between animal models and humans.
- Migraine
  Proteomic analysis of serum and urine from patients with menstrual-related and postmenopausal migraine, and evaluation of hormone levels to identify potential biomarkers.
- Periodontitis
  Proteomic analysis of periodontal pocket tissue, gingival crevicular fluid, plaque, and saliva from patients diagnosed with periodontitis to identify diagnostic, prognostic, and predictive biomarkers of the disease.

TECHNICAL SKILLS AND METHODOLOGIES

- HPLC chromatography with UV-Vis diode array, fluorescence and electrochemical detectors.
- UV-Vis spectrophotometry for biochemical analyses.
- Ultracentrifugation techniques for subcellular fractionation.
- Isolation of rat hepatocytes by collagenase perfusion.
- Cell culture techniques, including keratinocytes and fibroblasts.
- Proteomics methodologies: 1D/2D electrophoresis, mass spectrometry (SELDI-ToF, MALDI-ToF, ESI-Q-ToF).
- Immunochemical techniques: Western Blot, ELISA.

Modena, 2026-05-13