

Laura Sturla

Associate Professor

EDUCATION AND TRAINING

2025

National Scientific Qualification 2023 for Full Professor Sector 05/E1-General Biochemistry BIOS-07

Effective from March 14, 2025 to March 14, 2037

1998

Ph.D. in “Cellular and Molecular Biotechnologies Applied to the Biomedical Field”

Dissertation title: “GDP-L-fucose Metabolism in Prokaryotic and Eukaryotic Cells”

University of Brescia

1994

Professional Qualification in Biology

University of Genova

1993

Master’s Degree in Biological Sciences

Thesis title: “Immunization with Erythrocytes as Carriers of Antigens of Vaccinal Interest”

University of Genova

PROFESSIONAL HISTORY

2006-2019

Assistant Professor (SSD BIO/10)

During this period, LS focused on studying the molecular mechanisms of signal transduction, with particular attention to the biochemistry of abscisic acid (ABA). Her contribution was crucial in identifying the human receptors of ABA, the proteins LANCL1 and LANCL2. Abscisic acid, originally known as a phytohormone, is in fact conserved across different kingdoms and is also present in mammals, where it is produced by various cell types. It plays a fundamental role in the response to environmental stress by acting through the LANCL1/2 receptors. The ABA-LANCL1/2 system is essential in regulating energy metabolism, as it activates the AMPK/PGC-1 α /ERR α pathway. Activation of this signaling pathway promotes glucose uptake, respiration, and mitochondrial biogenesis, as well as favoring the uncoupling of oxidative phosphorylation in human white and brown adipocytes, murine skeletal muscle cells, and rat cardiomyocytes.

University of Genova-Department of Experimental Medicine-Biochemistry Section

2003-2006

Research Contract

Research Contract within the FIRB Negotiated Project “Molecular Recognition and Cellular Function”, supervised by Prof. Michela Tonetti.

University of Genova-Department of Experimental Medicine-Biochemistry Section

2001-2003

Research Contract

Research Contract within a scientific collaboration between the University of Genoa and the “Giannini” Institute.

University of Genova-Department of Experimental Medicine-Biochemistry Section

1999-2000

Postdoctoral Research Activity in the Scientific Area 05 – Biological Sciences

University of Genova-Department of Experimental Medicine-Biochemistry Section

ACADEMIC APPOINTMENTS

2023-2024

Head of Quality Assurance (RAQ), Department of Experimental Medicine

University of Genova

2018 ad oggi

Coordinator of the Biochemistry Course within the Degree Program in Motor Sciences, Sport and Health

University of Genova

2018 ad oggi

Member of the Admission Committees for the Degree Program in Motor Sciences, Sport and Health

University of Genova

2012-2015

Member of the Board of the Department of Experimental Medicine

University of Genova

2011 ad oggi

Member of the Admission Committees for the Degree Programs in Medicine and Surgery and Health Professions

University of Genova

EXPERIENCE

MAIN SEMINARS AND PRESENTATION AT INTERNATIONAL CONGRESSES

2025: Oral Presentation Selected Speaker. Title: “The ABA/LANCL1-2 Hormone/Receptor System Controls Cardiomyocyte Mitochondrial Function and ROS Metabolism in Cardiomyocytes through ERR α ” 59th International Congress of ESCI (European Society for Clinical Investigation), Genoa, May 21–23, 2025.

2022: Invited Speaker and Moderator of the Keynote Presentations at the International Conference on Diabetes, Metabolism and Endocrinology (Hybrid Congress), Orlando, October 17–18, 2022. Presentation title: “Role of the Abscisic Acid/LANCL System in Glycemic Control: A Promising Aid to Combat Diabetes and Metabolic Syndrome.”

2022: Keynote Speaker and Member of the Organizing Committee at the Virtual 4th World Congress on Diabetes and Endocrinology. Presentation title: “Abscisic Acid Is a Promising Aid to Combat Prediabetes and Improves Insulin Action on Glycemia in a Murine Model of Type 1 Diabetes.”

2017: Oral Presentation-Selected Speaker. Presentation title: “Abscisic Acid Enhances Glucose Disposal and Induces Brown Fat Activity in Adipocytes In Vitro and In Vivo.” 51st International Congress of ESCI (European Society for Clinical Investigation), Genoa, May 17–19, 2017.

2016: Laura Sturla held a seminar titled “Role of Abscisic Acid and the LANCL2 Receptor in Glucose and Lipid Metabolism” within the Ph.D. Program in Cellular and Molecular Biotechnologies, University of L’Aquila.

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

2025-2027: Laura Sturla is the Principal Investigator (PI) of the University of Genova Unit within the PRIN 2022 Project (Protocol 20224E5AY9) entitled: “Novel Players Defining Brown vs. White Adipose Tissue Development and Metabolic Programming: The Impact of Early Life Stress on Vulnerability to Obesity.” PRIN 2022 Funding, project start: February 5, 2025, duration: two years.

The main objective of the project is to understand the biological bases involved in adipose-metabolic programming. Certain environmental stimuli and early-life stress exposure can activate mechanisms that promote adipose tissue accumulation by altering its functional development and increasing vulnerability to an obesogenic diet. The study will focus on factors, such as abscisic acid, NAD and related signaling pathways, that influence adipogenic differentiation from white and brown preadipocytes and can modulate browning, a process that transforms white adipose tissue into a brown-like tissue with higher mitochondrial activity and energy expenditure. Gene expression and metabolic studies will be conducted to characterize the factors that increase susceptibility to obesity.

University of Genova

TEACHING OR RESEARCH POSITIONS (FELLOWSHIPS) AT FOREIGN UNIVERSITIES AND RESEARCH INSTITUTES

1999-2000-2003: Research Activity (three periods totaling six months).

During these research periods abroad, Laura Sturla focused on studying GDP-fucose metabolism and the related genetic disease LADII (Leukocyte Adhesion Deficiency type II).

Department of Molecular Biology, Boston University, Boston, Massachusetts, USA

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

2024-present: Associate Editor for the journal Molecular Diagnostics and Therapeutics (Section of Frontiers in Molecular Biosciences), Impact Factor 3.9.

2023-present: Member of the Editorial Board of Nutrients, Impact Factor 4.8.

2023-present: Associate Editor of the journal Frontiers in Pharmacology, Impact Factor 5.988.

2023-2024: Guest Editor of the Special Issue of Nutrients entitled “The Role of Bioactive Compounds in Blood Glucose Control”, part of the Editorial Board of Nutrients, Impact Factor 4.8.

2022: Author of the book “Chemistry and Biochemistry for Motor Sciences”, published by Edises.

PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES

2025: Member of the Italian Biochemical Society (SIB).

2016-2017: Member of the European Foundation for the Study of Diabetes (EFSD).

PARTICIPATION IN THE CREATION OF NEW BUSINESS ENTITIES (SPIN-OFFS), DEVELOPMENT, USE AND COMMERCIALISATION OF ACADEMIC PATENTS

2008: International Patent EP08161825 entitled “Screening Assay for the Identification of Agonists/Antagonists of Abscisic Acid”. Sturla, L., Fresia, C., Guida, L., Bruzzone, S., Scarfi, S., Fruscione, F., Millo, E., Magnone, M., Basile, G., De Flora, A., Zocchi, E.
University of Genova

OTHER EXPERIENCES

Laura Sturla is currently the author of 80 publications in international journals, with an H-index of 36 and a total of 2,996 citations.

Since 2018, Laura Sturla has been a Professor member of the Ph.D. Program in Experimental Medicine at the University of Genova. During this period, she has supervised five Ph.D. students and has served as co-supervisor for one Ph.D. student within the INTEGRATED Research Project Innovative Training Networks H2020-MSCA-ITN-2018 and for one Ph.D. student within the European Research Project NADIS HORIZON-MSCA-DN-2021.

Since 2017, Laura Sturla has been teaching numerous Pathways for Transversal Skills and Orientation (PCTO), providing both laboratory and online lessons.