

Interview

An Interview with Prof. Rosita Gabbianelli

Recent Progress in Nutrition Editorial Office

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Prof. Rosita Gabbianelli



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Rosita Gabbianelli is a Full Professor of Biochemistry at the University of Camerino, Italy. She obtained her PhD in Biology in 1997. Her research focuses on the interplay between early-life exposome and long-term health outcomes, as well as on nutrigenomic strategies aimed at counteracting molecular damage. She serves as a visiting professor in Biochemistry at Jilin Agricultural University (Changchun), and in Nutrigenomics at the School of Food Science and Engineering, Zhengzhou University of Light Industry (China), the University of Porto, ISS-ISEP Porto, the University of Cluj-Napoca, the University of Pharmacy in Hanoi, and Quy Nhon University. She has supervised over 100 students across bachelor's, master's, and PhD programs.

Prof. Gabbianelli serves on the editorial boards of several journals in the field of health sciences. She is the Italian Management Committee (MC) Member for the DEVoTION, PhysAgeNet, and HyperChildNET (substitute MC member) COST Actions, as well as for SENESCeNCE 2030 (substitute MC member). She also serves on the Board of Directors of ISNN, and is a member of NUGO and SIB. Since 2014, she has chaired the Scientific and Organizing Committee of the European Summer School on Nutrigenomics. She is a co-author of 165 peer-reviewed publications, 6 book chapters, 171 presentations at international conferences, and 68 outreach and dissemination activities.

1. Could You Please Tell Us Your Scientific Background?

I am a Full Professor of Biochemistry. After earning a master's degree in Pharmacy, I completed a specialization school in Biochemistry and Clinical Chemistry at the University of Camerino. Subsequently, I obtained a PhD in Biology and completed a postdoctoral fellowship at the University of Ancona (now known as Università Politecnica delle Marche).

In 1999, I returned to the University of Camerino as a Researcher. I also conducted research at the Department of Biology, University of Warwick, Coventry, U.K. Throughout my career, I have visited several laboratories worldwide for research and teaching purposes. I teach Molecular Biology and Nutrigenomics at the University of Camerino (UNICAM), and I am also a visiting professor of Biochemistry at Jilin Agricultural University (Changchun, China) and of Nutrigenomics at the School of Food Science and Engineering, Zhengzhou University of Light Industry (China).

In 2010, I was promoted to Associate Professor, and in 2021, I became a Full Professor of Biochemistry.

2. What Is Your Main Research Area and Current Research Focus?

My main research focuses on the interplay between the early-life exposome and long-term health outcomes, as well as on nutrigenomic strategies aimed at counteracting molecular damage. For over 25 years, I have studied the effects of neonatal exposure to low doses of the pesticide permethrin on the development of Parkinson's disease, developing an animal model of progressive Parkinson's disease in which we also investigated the epigenetic inheritance of neurodegeneration.

Currently, my research team is studying the role of nutrigenomics and epigenetics in aging and disease, with a particular focus on how diet influences inflammatory and pro-oxidant genetic and epigenetic responses. We are also exploring how nutrigenomic approaches can help support healthy physiological responses in exposed individuals.

3. Would You Like to Briefly Share Some of Your Career Development Stories with Us? Such as What Impressed You Most in Your Research Life?

The most interesting aspect of my research has been exploring how adult health can be programmed through epigenetic modulation. When I first discovered epigenetics, I was excited to learn that genetics accounts for only about 25–30% of our health outcomes, while the remaining 70–75% depends on lifestyle—and that the foundations of our adult health are laid during the first 1,000 days of life.

This means that not only the choices we make every day, but also those made by our parents, have a significant impact. What my parents ate, my mother's diet during pregnancy, exposure to stress, environmental factors, and physical activity—all these can modulate our epigenome and, consequently, gene expression.

Given that epigenetic changes can be reversible, understanding how the exposome influences our health offers a valuable opportunity to develop preventive strategies and adopt healthier lifestyles that promote healthy aging throughout our lives.

4. Where Do You Get the Latest News about Your Research Area, or Where Do You Take Inspiration From?

On PubMed, I have access to all relevant publications. For certain research topics, I also use the Cochrane Library. I follow journals such as *Nature*, *The Lancet*, and *JAMA* on a daily basis. Another important source of information is attending scientific meetings.

5. Considering the Progress in Your Research Area, Could You Please Share with Us Some Hot Topics in Your Research Field? And What Challenges and/or Developments May Be Encountered in the Coming Years?

Quantifying biological age by measuring methylation changes in specific regions of the methylome presents a promising opportunity for researchers to assess the impact of various environmental factors—such as diet, physical activity, pollution, and stress—on biological aging. Accelerated biological aging, meaning the faster aging of our cells, is linked to an increased risk of disease.

To address this, researchers have developed epigenetic clocks based on environmentally induced methylation changes, which can be used to estimate how certain lifestyles may either speed up or slow down biological aging. These epigenetic clocks, based on CpG methylation, are being developed to be both informative and easy to detect, facilitating their translation into clinical practice.

The key challenge now is to effectively communicate this evidence to policymakers and the general public, in order to promote science-based prevention strategies and support public health through education on healthy lifestyle choices.

6. Do You Also Offer Training and/or Further Education in Your Area?

Since 2014, I have organized the European Summer School on Nutrigenomics every two years at the University of Camerino (UNICAM), inviting eminent experts in the fields of epigenetics and nutrigenomics to participate. More information is available at: <https://nutrigenomics.unicam.it>.

In addition, I teach Molecular Biology and Nutrigenomics at UNICAM, Biochemistry at Jilin Agricultural University (Changchun), and Nutrigenomics at the School of Food Science and Engineering, Zhengzhou University of Light Industry (China), as well as at the University of Porto, ISS-ISEP Porto, the University of Cluj-Napoca, the University of Pharmacy in Hanoi, and Quy Nhon University.

My research team includes both PhD and master's students working on nutrigenomics.

7. Is There a Book You've Read that You'd Recommend Universally (i.e., to Everyone You Meet)?

I would suggest the following reference:

- Nutritional Epigenomics, 2nd Edition, Volume 14 – March 1, 2026, Academic Press, Editor: Bradley S. Ferguson.
- Principles of Nutrigenetics and Nutrigenomics - Fundamentals of Individualized Nutrition, 2020, Elsevier, Edited by: Raffaele DE Caterina, J. Alfredo Martinez and Martin Kohlmeier.
- Early Life Origins of Ageing and Longevity, 2019 Springer, Edited by Alexander Vaiserman.

8. What Valuable Suggestions or Experiences Would You Like to Share with Young Scholars Regarding How to Be a Professional Researcher?

A good researcher should be passionate about their work and naturally curious. They must read scientific literature thoroughly, remain flexible, and critically evaluate the results of their research. Attending conferences and actively engaging with colleagues, while being proactive and collaborative within their research team, are also essential qualities.

9. What Is Your Long-Term Research Goal?

It involves exploring the epigenetic mechanisms associated with healthy aging, starting from the neonatal stage and throughout life. It also entails communicating to stakeholders the role of the exposome in modulating epigenetics and gene expression, in order to guide research aimed at promoting a healthy life. Education represents a key goal in driving societal change.

10. What Attracts You to Join the Editorial Board of *Recent Progress in Nutrition*?

The journal includes research studies on key topics in the field of nutrition, highlighting recent findings on the crucial role of food intake in promoting a healthy life.

11. What Do You Think of the Future of *Recent Progress in Nutrition*, an Open-Access Journal?

I believe that all journals should be open access and free, to allow researchers worldwide—including those in low-income countries—to access scientific literature. A key aspect for a journal is to have an impact factor and be recognized by the scientific community. Every scientific journal should strive to achieve these two goals.