

## Curriculum

### Personal information:

Francesca Mercati:

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### Educational Background

October 4, 2001: Graduated with honors in Veterinary Medicine from the University of Perugia, where she obtained his professional qualification in the first session of 2002.

January - April 2002: Postgraduate internship at the University of Zaragoza, Spain, with a Socrates-Erasmus scholarship.

2001-2004: PhD program in "Pathophysiology and Medicine of Pet Animals" at the Veterinary Anatomy Section of the Department of Veterinary Biopathological Sciences, Faculty of Veterinary Medicine, Perugia.

January 31, 2005: PhD with a thesis on "Identification of stem cells in the hair follicle of domestic animals."

December 2004 – December 2008: Grant recipient for research collaboration. Project: "Identification and localization of stem cells in the hair follicle of domestic animals."

July 3, 2008: Specialization in "Inspection of food of animal origin" from the University of Perugia.

May 2009 - December 2010: Grant recipient of a research grant funded by the Umbria Region (POR FSE 2007-2013), with the project "In vitro study of the cytomorphological and differentiation characteristics of stem cells derived from adipose tissue and in vivo testing of therapeutic efficacy in lesions of the musculoskeletal system of sport horses."

December 31, 2010: University Researcher for the academic discipline VET/01 "Anatomy of Domestic Animals" at the Department of Biopathological Sciences and Hygiene of Animal and Food Production at the Faculty of Veterinary Medicine of Perugia.

2012: National Scientific Qualification for the role of Associate Professor in the academic recruitment field 07/H1 - Veterinary Anatomy and Physiology.

December 28, 2015: Associate Professor for the academic discipline VET/01, Anatomy of Domestic Animals.

2023: National Scientific Qualification for the role of Full Professor in the academic recruitment field 07/H1 - Veterinary Anatomy and Physiology.

### **Current teaching positions**

Lecturer for the "Principles of Anatomy" module (6 credits, 47 hours), bachelor's degree in Biotechnology.

Lecturer for the Livestock anatomy (8 credits, 72 hours), bachelor's degree in Animal Science.

Lecturer for the Anatomy of Birds and Laboratory Animals (1 credit, 10 hours), bachelor's degree in Veterinary Medicine.

Lecturer for the Anatomy of aquatic animals of zootechnical interest (2 credits, 20 hours), bachelor's degree in Animal Science and in Economics and Culture of human nutrition.

### **Academic Management Roles**

Since 2014: Member of the Orientation and Tutoring Committee of the Department of Veterinary Medicine.

In 2016 and 2018: member of the Examination Committee for the Horizontal Economic Progression (PEO) of the technical-administrative-library staff (TAB).

From 2018 to 2022: member of the Joint Students-Teachers Committee of the Department of Veterinary Medicine.

From 2020 to 2023: member of the Erasmus Commission of the Department of Veterinary Medicine, Erasmus contact for the Degree Course in Animal Science and responsible for Erasmus exchanges with partners related to "Crop and livestock production".

Since 2020: member of the Operational Teaching Committee responsible for processing student applications for transfers from other degree programs.

Since March 28, 2023: Delegate for the Department of Veterinary Medicine for Services to Students with Specific Learning Disorders, Special Educational Needs and Disabilities.

From October 6, 2023: Coordinator of the Departmental Committee for Supporting Students with Specific Learning Disorders, Special Educational Needs and Disabilities.

From March 20, 2024: contact person of the Department of Veterinary Medicine for the coordination of dissemination activities related to the Sharper project and the European Researchers' Night event.

### **Research assignments and scientific activity**

Research activity focuses on the morphological study of cells and tissues using different methods: histochemical, immunohistochemical, and immunocytochemical techniques, performed by both light and electron microscopy; molecular biology techniques; cell culture preparation for the study of living cells.

The topics investigated are mainly developed within the following thematic areas:

- study of peptides involved in appetite control and their receptors, particularly those belonging to the class of adipokines, in the digestive, reproductive, integumentary system and other organs and systems of domestic and wild animals.
- Analysis of the climate change effects on sheep pastoral systems in the Umbria-Marche Apennines, using anatomical expertise to analyze potential changes in the relationships between herbivores and plant communities related to animal welfare.
- Study of complex carbohydrates and oxidative stress markers in the digestive tract of livestock fed various types of supplements within the context of a circular economy.
- Study of Nerve Growth Factor (NGF) as a regulating factor of reproductive activity in domestic and wild animals.
- Study of the reproductive activity of the invasive gray squirrel (*Sciurus carolinensis*) present in the Umbria region.
- Morphological and immunohistochemical identification of somatic stem cells located in the epithelial and connective sheath of domestic animal hair follicles.
- Isolation and cytomorphological characterization of mesenchymal stromal cells derived from equine adipose tissue.

2014: Best Poster Award by Italian Association of Small Animal Veterinarians (AIVPA) - AIVPA Multi-hall Congress, Rome, March 15-16, 2014.

2017: Annual Award for Best Publication – 2016, by the University of Perugia to young scholars for the publication "Evaluation of Storage Conditions on Equine Adipose Tissue-Derived Multipotent Mesenchymal Stromal Cells" (<https://doi.org/10.1016/j.tvjl.2014.02.018>).

2021: Best Poster Award by Italian Society of Veterinary Sciences - SISVet 2021, AMV Session, 74th SISVET Conference, Virtual Edition.

From 2017 to 2022: Member of the Scientific Committee of the Italian Association of Veterinary Morphologists (AMV).

Since 2019: Member of the Teaching Board of the PhD Program in "Ethics of Communication, Scientific Research, and Technological Innovation," Medical-Health Curriculum, at the University of Perugia.

Since 2020: Invited Review Editor in the Specialty Section "Animal Reproduction - Theriogenology" of Frontiers in Veterinary Science (ISSN 2297-1769), Frontiers.

09/01/2020- 03/31/2022: Guest Editor of the Special Issue "The World of Adipokines: Their Presence and Distribution in the Organism and Their Relevance in Veterinary Medicine" in Animals (ISSN 2076-2615), MDPI.

02/1/2022 - 03/31/2023: Guest Editor of the Special Issue "New trends in animal anatomy" in Annals of Anatomy (ISSN 0940-9602), Elsevier.

1/10/2023 - 31/03/2025: Guest Editor of the Special Issue "New trends in animal anatomy - 2023" in Annals of Anatomy (ISSN 0940-9602), Elsevier.

Since 2024: Invited Review Editor in the Specialty Section "Animal Nutrition and Metabolism" of Frontiers in Veterinary Science (ISSN 2297-1769), Frontiers.

2024: Member of the Scientific Committee of the XV National Congress of the Societas Herpetologica Italica, July 17-21, 2024

Projects:

2008: Member of the project by the Fondazione Cassa di Risparmio di Perugia - Basic Research Call 2008 "Cytomorphological characterization of mesenchymal stem cells from equine adipose tissue and evaluation of their ability to influence the regenerative process of musculoskeletal tissue."

2012: Member of the project by the Fondazione Cassa di Risparmio di Perugia - Call 2013 - Scientific and Technological Research: "Use of a scaffold of fibroin and mesenchymal stromal cells (MSCs) for the treatment of equine skin wounds."

2015: Member of the University Project FAR 2014-15 funded by the University of Camerino: CLIMAPP "Climate changes, grasslands and livestock management: a multidisciplinary study to improve the sustainable development of Apennine pastoral systems."

2015: Member of the 2015 Basic Research Project funded by the University of Perugia: "Study of the adipokines apelin and resistin in the genital tract of sheep raised on pastures with different nutritional values."

2018: Scientific director of the 2018 Basic Research Project funded by the University of Perugia: "Adipokines as diagnostic markers of obesity: clinical and molecular studies."

2019/2020: Member of the 2019-2020 University FAR project funded by the University of Camerino: "The African turquoise killifish *Nothobranchius furzeri*: a new model of diet-induced obesity - KILLOB."

2022: Member of the 2021 Basic Research Project funded by the University of Perugia: "Ovulation induction factors in sheep: role in estrous seasonality and inflammatory processes."

2022: Member of the 2022 Cariper Project (Call for Proposals, Scientific and Technological Research Sector: Climate emergency and green transition: impact on the environment, health, economic and social development): "Animal welfare and the circular economy: the study of molecules related to energy metabolism aimed at supporting viticulture and pastoral activities in the Umbrian region."

2023: Member of the University Project (WP6): "From Biodiversity to Product and Back: One Health Supply Chain Models in the Apennines" BIO-PRO-BIO.

October 13, 2023: Member of the Joint Commission in the collaboration agreement between the Department of Veterinary Medicine of Perugia, the Alfonso X El Sabio University (UAX), and the Alfonso X El Sabio University Foundation (FUAX) of Madrid, Spain, with the project: Comparative studies of tissues of animal production.

2025: Member of the "One Health" project funded by the Umbrian Banking Foundations.

### **Membership in Scientific Societies**

Member of the Italian Association of Veterinary Morphologists (AMV), the Italian Society of Veterinary Sciences (SISVet), and the European Association of Veterinary Anatomists (EAVA).

### **Editorial board member**

Member of the Editorial Board of the scientific journal Veterinary Sciences (ISSN: 2306-7381) – MDPI.

### **Third Mission/Patents**

2023: Scientific coordinator for research collaboration with Anatomage Italy srl – Milan.

***Public engagement:*** 2023 Outreach Project "Children, Future Consumers of Animal Products: Sheep as a Model for Raising Awareness of Animal Welfare and Biodiversity Conservation."

### ***Continuing Education:***

Since 2016, she has participated in the Orientation and Tutoring activities of the Department of Veterinary Medicine (Orientation Fairs; Unipg Orienta Express; PCTO; PNRR "Active Orientation in the School-University Transition," etc.).

Since 2018, she has participated in the organization and implementation of scientific dissemination events included in the Sharper project European Researchers' Night event and Researchers@school initiatives for the Department of Veterinary Medicine.