

CARLA PALUMBO

(CV – 1983-2025)

Full Professor of Human Anatomy for the Faculty of Medicine and Surgery at the University of Modena and Reggio Emilia, afferent to the Department of Biomedical, Metabolic and Neural Sciences.

ACADEMIC CAREER STEPS (Institution: University of Modena and Reggio Emilia –Ambit: Human Anatomy)

- University Researcher (since May 1st 1983) at the Dental School.
- Associate Professor (since November 1st 1998) at the Medical School.
- Full Professor (since February 15th 2013 up to now) at the Medical School.

CURRENT INSTITUTIONAL POSITIONS HELD AT UNIMORE:

- *Vice President of the Faculty of Medicine* (for the three-year periods 2021-24 and 2024-27)
- *Delegate of the Faculty of Medicine for Education* (for the three-year periods 2021-24 and 2024-27)
- *Coordinator of the Human Morphology Section - DBMN* (c/o Anatomical Institutes) (2012-present)
- *Member of the Board of Directors and President of the EduCare LABORATORY* for Training and Research with "patient trainers".

EXTERNAL POSITIONS AT UNIMORE:

- President of the Committee "Amici della Morfologia" (Friends of Morphology) - national committee, founded in February 2020, aimed at promoting anatomical research and teaching at national and international level
- Member of the Board of Directors of the Italian Society of Anatomy and Histology (SIAI)
- Member of the CRUI Commission for Orientation

PREVIOUS POSITIONS HELD AT UNIMORE:

- *Rector's Delegate for Orientation and Tutoring* (from 2019 until October 2025)
- *Member of the University Teaching Commission* (until October 2025)
- *Director of the Postgraduate Course in METHODOLOGIES FOR THE TEACHING OF MEDICINE WITH "TRAINING PATIENTS" AND "TRAINING CAREGIVERS"* (academic years 2021-22 and 2023-2024)
- *Director of the School of Specialization in Sports Medicine* (2008-2017)
- *Director of the Specialization Course in "Motor Educator"*. (a.y. 2013-14)
- *Vice-President of the Graduate School of Medicine* (2012-2013)
- *Vice Director of the Department of Biomedical, Metabolic and Neuroscience Sciences* (three-year periods 2017-21 and 2021-24)
- *Delegate of the Faculty of Medicine and Surgery for Orientation* (more than a decade)
- *Erasmus Project Referent* for the Course Medicine and Surgery (a.y. 2016-17)

EDITORIAL BOARD MEMBER of the Editorial Board of the following journals:

- JOURNAL OF OSTEOLOGY AND BIOMATERIALS (ISSN: 2036-6795)
- DATASET PAPERS IN BIOLOGY (ISSN: 2314-5307[ON LINE])
- AUSTIN JOURNAL OF MUSCULOSKELETAL DISORDERS (ISSN 2381-8948)
- E_CRONICON ORTHOPAEDICS - Open Access
- FRONTIERS IN PHYSIOLOGY - Skeletal Physiology Section

She serves as a **Reviewer for the following journals:**

- Journal of Anatomy
- Calcified Tissue Research
- Cell and Tissue Research
- Histology and Histopathology
- Bioelectromagnetics
- International Journal of Molecular Sciences
- SCIENCEDOMAIN - Journal of Advanced in Medical and Pharmaceutical Sciences
- Hindawi-BioMed-Research-International
- Annals of Biomedical Engineering



- IJERPH–Int. J. of Environmental Research and Public Health (MDPI)
- Nutrients (MDPI)
- British J. of Medicine and Medical Research
- Frontiers in Physiology-Skeletal Physiology section

SCIENTIFIC RESEARCH

The main research lines are addressed to the following topics: role of bone cells in mineral and skeletal homeostasis in both normal and pathological conditions; morpho-functional interaction between skeletal tissues and biomaterials; *in vitro* conditioning of mesenchymal stem cells to support regenerative medicine techniques for the recovery of osteochondral defects; study of osteoblast-like cells cultured in 2D/3D scaffolds to be used in oro-maxillofacial surgery; approach of new therapies for metabolic diseases of the skeleton. Recently: role of bone cell signaling in musculoskeletal regeneration and study of new natural materials (scleral ossicles) functionalized and engineered for dynamic 3D constructs to be used in skeletal tissue regenerative medicine (a patent and a trademark [Pal-OS[®]] have been filed in this area); Muscle-Bone cross-talk; Peripheral nerve degeneration and consequent alteration of muscle-skeletal cross-talk. OTHER TOPICS: apoptosis in striated muscle fibres after tendon lesions; comparative studies on committed versus multipotent stem cells cultured with different biomaterials; use of Pal-OS[®] powder in 3D printing scaffold for regenerative medicine.

PATENTS: Patent application No. 102020000028229 filed on 11/24/2020. Title (abbreviated): "Use of scleral ossicles for bone regeneration in healthcare and veterinary applications". Proprietorship: UNIMORE Inventor: Carla Palumbo (<https://www.magazine.unimore.it/site/home/notizie/articolo820058150.html>).

TRADEMARKS: " Pal-OS[®]" (owner Carla Palumbo; application n. 3020220001046, filed on 05/01/2022). Classes of use (examples): Morphogenetic protein material for bones to be used in implantable medical devices to induce bone formation and growth (class 5); Biological tissue supports for cells for medical use and Fillers and grafts, for replacement, repair or augmentation of bones (class 10); Production of material for replacement, repair or reinforcement of bones (class 40); Scientific research and development (class 42); Services relating to the preparation of bone substitute material and related derivatives (class 44).

INDEXES: Papers=94; Google Scholar: h-index=37, n. citaz. 4.479; SCOPUS: h-index=29, n. citations=2.684.

ERC sectors: LS3_1 Morphology and functional imaging of cells, LS3_5 Cell differentiation, physiology and dynamics, LS3_7 Cell signalling and cellular interactions.

INTERNATIONALIZATION: Referent Professor for International Agreements with: UMKC (University of Missouri Kansas City, MO, USA), BIOTIS (Univ Bordeaux, France-UE), MUSTAFA KEMAL UNIVERSITY -TURKEY.

Visiting Professor at UMKC, Missouri-USA, June-August 2015.

SCIENTIFIC MANAGER (and holder of related funds) for the following projects:

- Project - departmental FAR-UNIMORE call for proposals (2024) for a research project entitled "*Study of the correlation between PI3K/Akt pathway activation, expression of miR145-5p and its targets, and Ras levels in prostate cancer histological specimens*".
- Project on RER regional funds (16/01/2023 - 15/01/2024) for a research project entitled "*Testing of biomaterials for bone regeneration to be validated on CAM (in ovo model) as an alternative to validation with animal experimentation (in vivo model)*", with which a research grant was funded (tutor C. Palumbo).
- Project - departmental FAR-UNIMORE call for proposals (2023) '*Reproducing the bone marrow niche on scleral ossicles: a peculiar 3D scaffold for studying leukemic lymphoblasts/bone marrow stroma crosstalk in vitro*'.
- Project - FAR-UNIMORE equipment call (2022): 'Olympus CM20 and its EP50 chamber' (instrumentation for qualitative-quantitative data acquisition from incubator cultures).
- FAR-Mission Oriented Project - UNIMORE (2021), funded by FOMO (Modena Foundation), "*ASA Project - an Ethical Alternative to Animal Experimentation: the CAM model*".
- Regional Project (ER- REG. PG 2020 14402 del 10-01-2020) "*Dissemination of the CAM model, by chicken egg, for the validation of 3D constructs to be used in bone regeneration: a refined model for tissue engineering that replaces the use of the animal model*".



- Public Engagement Project - UNIMORE (PE-2021) Project TOC - Training for Orientation and Communication: the importance of language and empathy in university-territory cohesion strategies
- Public Engagement Project - UNIMORE (PE-2020) “Web-Communication, Innovation and Information: Linked Key-Factors to Make The Best Choices”.
- Project - Call for Equipment FAR-UNIMORE (2018): “Tissue processing in semi-automated-linear mode with bimodular control unit (for paraffin embedding)”.
- Project co-funded by Fondazione di Vignola (2013-15), title: “Skeletal alterations following dysmetabolism - up/down-regulation of SOST gene expression (for sclerostin) in animals fed a calcium-rich diet in the absence/presence of bone lesions”.
- Project co-funded by Fondazione di Vignola (2011-2012) “Effect of biophysical stimuli on proliferation and differentiation in the chondrocytic direction of MSCs”.
- Project co-funded by Fondazione di Vignola (2009-2010) “Study of phytoestrogen effects of on osteoblast-like cell cultures to implement osteogenesis in vitro, useful for the improvement of bone injury repair”.
- Project co-funded by Fondazione di Vignola (2007) “Use of adult stem cells taken from human dental pulp in oro-maxillofacial surgery”.
- Projects “Bone Tissue Histophysiology” and “Utilization of Phytoestrogens in Cultures of Osteoblast-like Cells to Enhance Osteogenesis in Vitro.” co-financed with donations by Banca Popolare dell’Emilia Romagna (2007-2008-2009).
- Project co-funded by Lilly-USA (2013-2015) and authorized by the Ministry of Labour, Health and Social Policy - title “Mode and timing of repair of experimentally induced bone lesions (trans-cortical holes) in adult rats with/without supportive drug therapy: structural, ultrastructural and histomorphometric study”.
- Project “Piezosurgery medical device power development study_phase 2” funded in 2013-15 – refunded in 2018 (by Mectron).
- Project “Cell colonization assays of titanium biomaterials with surface treatment” funded in 2013-14 (with donation by Ditta Safe&Simple).

PARTICIPATION IN PROJECTS CO-FINANCED BY MURST

- “Neuronal modulation of endocrine, paracrine, autocrine, and mechanical mechanisms controlling bone metabolism” co-financing MURST (2004-2006).
- “The nuclear cycle of inositol lipids: localization, effector molecules, and correlation between PI-PCL and PI-3-K-dependent signalling” co-financing MURST (2003-2005).
- “Central control of bone remodeling: modulation of endocrine, paracrine, autocrine, and mechanical factors” co-financing MURST (2001-2003).
- “Morphological and Pharmacological Study on Cells and Factors that Regulate Bone Modeling and Remodeling” co-financing MURST (1997-99); renewed with the same title in 1999-2001.

AWARDS

“**Lifetime Achievement in Physiopathology**” awarded by the ‘Centre for Women Development of Venus International Foundation’ as part of the 10th Annual Women's Meet - AWM 2025 held in Chennai, India (March **2025**).

In the **TOP 5 for the Italian Intellectual Property Award 2023**: the patent proposal ranked second in the MEDical-TECH category for female entrepreneurship.

AWARD for the best scientific work presented at the XLI Congress of the Italian Society of Anatomy -SIA (Torino-Italy, September **1986**) and “Poster-Award” at the LXX Congress of the Italian Society of Anatomy and Histology (Rome, December 2016). Invited speaker for the opening lecture at the XXXIIIrd European Symposium on Calcified Tissue (Heidelberg, Germany, April **1996**).

DIDACTIC ACTIVITY, as holder, is all performed in the various courses of the Faculty of Medicine and Surgery of Modena and Reggio Emilia University: Human Anatomy-I and Human Anatomy-II for the Course in Medicine and Surgery; Human Anatomy for the inter-university degree course of “health care assistant” and “Health and Sport”;



various teachings of Human Anatomy in various Postgraduate Schools. Professor of Human Anatomy at THE MILITARY ACADEMY OF MODENA.

EDITORIAL ACTIVITY: Italian translation of the text “Elements of Human Anatomy and Physiology” by Elaine N. Marieb (Zanichelli Ed., 2001); co-editor of the comments to anatomical tables in the text “Guide to interpretation of the Atlas of Human Anatomy” by Frank H. Netter (Masson Ed., 2004 and 2007); co-author of texts of Human Anatomy: “Anatomia del Gray” for students of the Medical School (Sorbona ed., 2009); “Fondamenti di Anatomia Umana” for students attending Courses of the Health Professions (Palumbo et al., Sorbona Ed., 2010).

AUTHOR OF THE FOLLOWING CHAPTERS OF SCIENTIFIC TEXTS

- Chapter "Embryology and Anatomy of the Thymus Gland" by C. Palumbo (Ch. 2 of the book "Thymus gland pathology - Clinical, Diagnostic, and Therapeutic Features" - Lavini, Moran, Morandi, Schoenhuber Eds. Springer-Verlag Italy, 2008, ISBN 978-88-470-0828-1.
- Chapter "The anatomy and its variant" by C. Palumbo, M. Ferretti, V.R. Lo Vasco (Chap. 1 of the book "Visceral and renal artery aneurysms" - Silingardi, Gennai (Edizioni Minerva Medica), 2021, ISBN 978-885532-096-2.

“I authorise the processing of my personal data pursuant to Legislative Decree 196 of 30 June 2003 and Article 13 GDPR”

Carlo Palumbo

