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EDUCATION AND TRAINING

12/01/2022 – CURRENT Perugia, Italy

ASSOCIATE PROFESSOR SSD BIO/09- PHYSIOLOGY (FROM 02.05.2024 SSD BIOS-06/A - PHYSIOLOGY)
University of Perugia

01/11/2003 – 11/01/2022 Perugia, Italy

CONFIRMED UNIVERSITARY RESEARCHER FOR SSD BIO/09-PHYSIOLOGY, FACULTY OF PHARMACY
University of Perugia

01/10/1994 – 31/10/2003 Pisa, Italy

**CONFIRMED UNIVERSITARY RESEARCHER FOR SSD BIO/09-PHYSIOLOGY, FACULTY OF SCIENCES
MM.FF.NN., UNIVERSITY OF PISA**

01/08/2000 – 30/08/2000 Heidelberg, Germany

**RESEARCH FELLOW AT THE MAX-PLANCK INSTITUT FÜR MEDIZINISCHE FORSCHUNG, ABTEILUNG
ZELLPHYSIOLOGIE IN HEIDELBERG (GERMANY) IN THE MOLECULAR BIOLOGY RESEARCH UNIT PROF.
BERT SAKMANN (NOBEL PRIZE 1991), COLLABORATING WITH DR. VEIT WITZEMANN.**

01/02/1999 – 01/02/2000 Heidelberg, Germany

**RESEARCH FELLOW AT THE MAX-PLANCK INSTITUT FÜR MEDIZINISCHE FORSCHUNG, ABTEILUNG
ZELLPHYSIOLOGIE IN HEIDELBERG (GERMANY) IN THE MOLECULAR BIOLOGY RESEARCH UNIT PROF.
BERT SAKMANN (NOBEL PRIZE 1991), COLLABORATING WITH DR. VEIT WITZEMANN.**

01/04/1996 – 01/07/1996 Paris, France

**RESEARCH FELLOW AT THE INSERM LABORATORIES, CENTRE PAUL BROCA IN PARIS, FOR A
COLLABORATION WITH THE RESEARCH GROUP COORDINATED BY DR. JACQUES EPELBAUM.** Centre Paul Broca, Paris

03/1996 Siena, Italy

**SPECIALIZATION DIPLOMA IN COSMETIC SCIENCE AND TECNOLOGY, CUM LAUDE, AT THE UNIVERSITY
OF SIENA, DISCUSSING THE EXPERIMENTAL THESIS: "SPECTROFLUORIMETRIC ANALYSIS OF
SUBSTANCES FOR COSMETIC USE IN CELL CULTURE" (SUPERVISOR PROF. CECILIA ANSELMI)** University of Siena

08/09/1992 – 30/09/1994 Viterbo, Italy

**UNIVERSITARY RESEARCHER FOR E04 GROUP "GENERAL PHYSIOLOGY AND MOLECULAR BIOLOGY",
FACULTY OF SCIENCES MM.FF.NN. OF THE UNIVERSITY OF TUSCIA IN VITERBO** University of Tuscia

04/1992 Firenze, Italy

**PHD IN PHYSIOLOGY, DISCUSSING THE EXPERIMENTAL THESIS ENTITLED: "CALCIUM CURRENTS IN
FROG SKELETAL MUSCLE: NEW AQUISITION ON CHARGE MOVEMENTS, ACTIVATION AND
INACTIVATION" (SUPERVISOR PROF. FABIO FRANCINI)** University of Firenze

1987 Pisa, Italy

QUALIFYING DIPLOMA TO PRACTICE THE PROFESSION OF BIOLOGIST University of Pisa

PUBLICATIONS

Traina, G. (2024) On probiotic integration in the management of inflammation and in maintaining the integrity of the intestinal epithelial barrier. J. Biol. Res. DOI: 10.4081/jbr.2024.12362.

DOI: 10.4081/jbr.2024.12362

Romeo M., Cavaliere G., Traina G. (2024) Bulimia Nervosa and Depression, from the Brain to the Gut Microbiota and Back. Frontiers in Bioscience (Landmark), 29(8): 277 <https://doi.org/10.31083/j.fbl2908277>

Tonlorenzi D., Conti M., Traina G. Oral splint therapy in a female child who improved both posture and writing: a case report. Arch.Ital. Biol. (accepted).

Traina, G. (2024) Mast Cells in Human Health and Diseases 2.0. Int. J. Mol. Sci. 25, 6443. <https://doi.org/10.3390/ijms25126443>.

Traina, G., Tuszyński, J.A. (2023) The neurotransmission basis of post-traumatic stress disorders by the fear conditioning paradigm. Int. J. Mol. Sci. 24, 16327. <https://doi.org/10.3390/ijms242216327>

Cavaliere G., Traina G. (2023) Neuroinflammation in the Brain and Role of Intestinal Microbiota: An Overview of the Players. J. Integr. Neurosci. 22(6): 148.<https://doi.org/10.31083/j.jin2206148>.

Conte, C., Baldi, E., Bucherelli, C., di Vito, R., Petri, D., Traina, G. (2023) Modulation of synapse-related gene expression in the cerebellum and prefrontal cortex of rats subjected to the contextual fear conditioning paradigm. Neurobiology of Learning & Memory, 203, 107776

Traina, G. (2023) Mast Cells in Human Health and Diseases. Int. J. Mol. Sci. 24, 6668. <https://doi.org/10.3390/ijms24076668>

di Vito, R., Di Mezza, A., Conte, C., Traina, G. (2023) The crosstalk between intestinal epithelial cells and mast cells is modulated by the probiotic supplementation in co-culture models. Int. J. Mol. Sci. 24, 4157. <https://doi.org/10.3390/ijms24044157>.

Cimmino, F., Catapano, A., Villano, I., Di Maio, G., Petrella, L., Traina, G., Pizzella, A., Tudisco, R., Cavaliere G. (2023) Human, cow and donkey milk comparison: focus on metabolic effects. Journal of Dairy Science 106:3072–3085 <https://doi.org/10.3168/jds.2022-22465>

Traina, G. (2022) The Connection between Gut and Lung Microbiota, Mast Cells, Platelets and SARS-CoV-2 in the Elderly Patient. Int. J. Mol. Sci., 23, 14898. <https://doi.org/10.3390/ijms232314898>.

di Vito, R.; Conte, C.; Traina, G. (2022) A Multi-Strain Probiotic Formulation Improves Intestinal Barrier Function by the Modulation of Tight and Adherent Junction Proteins. Cells, 11, 2617.doi.org/10.3390/cells11162617.

Traina, G. (2022) Probiotics and Microbiota-Derived Molecules for Inflammation, Neuroinflammation and Mood Disorders. Applied Sciences, 12, 8727. <https://doi.org/10.3390/app12178727>.

di Vito, R.; Levorato, S.; Fatigoni, C.; Acito, M.; Sancinetto, L.; Traina, G.; Villarini, M.; Santi, C.; Moretti M. (2022) In vitro toxicological assessment of PhSeZnCl in human liver cells. Toxicological Research, doi:10.1007/s43188-022-00148-y.

Grispoldi, L., Chalias, A., Barzi, E., Pecorari, L., Tassinari, M., Saraiva, C., García-Díez, J., Karama, M., El-Ashram, S., Traina, G. and Cenci-Goga, B. T. (2022) Effect of packaging and storage conditions on some quality traits of bovine meat. *Italian Journal of Food Safety*, 11(2), 10038. doi:10.4081/ijfs.2022.10038

Traina, G.; Tuszyński, J.A.; Cocchi, M. (2022) Molecular Insights in Psychiatry. *Int. J. Mol. Sci.* 2022, 23, 4878. doi.org/10.3390/ijms23094878.

Cocchi, M.; Mondo, E.; Romeo, M.; Traina, G. (2022) The Inflammatory Conspiracy in Multiple Sclerosis. A Crossroads of Clues and Insights through Mast Cells, Platelets, Inflammation, Gut Microbiota, Mood Disorders and Stem Cells. *Int. J. Mol. Sci.* 23, 3253. doi.org/10.3390/ijms23063253.

Tonlorenzi D., Conti M., Traina G. (2021) The influence of mandibular stretching on athletes subjected to high intensity workout. *ARCHIVES ITALIENNES DE BIOLOGIE*, 159: 178-186

Traina G. (2021) Caulerpenyne affects bradykinin-induced intracellular calcium kinetics in LoVo cells. *APPLIED SCIENCES* 11, 2697. doi.org/10.3390/app11062697

Conti M., Tonlorenzi D., Brunelli M., Traina G. (2021) Learning effect and repeatability of stabilometric measurements: "standard" vs. usual foot placement. *ARCHIVES ITALIENNES DE BIOLOGIE* 159: 95-103. DOI 10.12871/00039829201441.

Traina G. (2021) The role of mast cells in the gut and brain. *JOURNAL OF INTEGRATIVE NEUROSCIENCE* 20(1), 185-196. DOI:10.31083/j.jin.2021.01.313

Traina G. (2020) Learning processes in elementary nervous systems. *JOURNAL OF INTEGRATIVE NEUROSCIENCE* 19(4), 673-678. DOI:10.31083/j.jin.2020.04.318.

Cocchi M., Traina G. (2020) Tryptophan and membrane mobility as conditioners and brokers of gut-brain axis in depression. *APPLIED SCIENCES*, 10(14), 4933. doi:10.3390/app10144933.

Traina, G., Cocchi, M. (2020) Mast Cells, Astrocytes, Arachidonic Acid: Do They Play a Role in Depression? *APPLIED SCIENCES*, 10, 3455. doi:10.3390/app10103455

Grispoldi L., Giglietti R., Traina G., Cenci-Goga B. (2020) How to Assess in vitro Probiotic Viability and the Correct Use of Neutralizing Agents. *FRONTIERS IN MICROBIOLOGY*. 11:204. doi: 10.3389/fmicb.2020.00204.

Brunelli M., Conti M., Tonlorenzi D., Traina G. (2020). Changes of sensory and pain thresholds in healthy subjects after mandibular at maximum mouth opening: implications for temporomandibular disorders therapy. *ARCHIVES ITALIENNES DE BIOLOGIE*, 158, 17-23.

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Tonlorenzi D., Brunelli M., Conti M., Covani U., Traina G. (2019). An observational study of the effects of using an high oral splint on pain control. *ARCHIVES ITALIENNES DE BIOLOGIE*, 157, 66-75. DOI 10.12871/00039829201923.

Albi E., Cataldi S., Baldi E., Bucherelli C., Ferri I., Sidoni A., Codini M., Conte C., Beccari T., Traina G. (2019) Vitamin D receptor expression and acid sphingomyelinase activity in prefrontal region of a learning animal model. ARCHIVES ITALIENNES DE BIOLOGIE, 157, 120-128. DOI: 10.12871/00039829202043

Guelfi R., Conti M., Zanfrini S., Brunelli M., Traina G. (2019) Postural disorders produced by school furniture on a population of a junior high school. ARCHIVES ITALIENNES DE BIOLOGIE, 157, 14-22. DOI 10.12871/00039829201912

Traina G. (2019) Mast Cells in Gut and Brain and Their Potential Role as an Emerging Therapeutic Target for Neural Diseases. FRONTIERS IN CELLULAR NEUROSCIENCE. 13:345. doi: 10.3389/fncel. 2019.00345.

Taticchi A, Urbani S, Albi E, Servili M, Codini M, Traina G, Balloni S, Patria FF, Perioli L, Beccari T, Conte C. (2019) In Vitro Anti-Inflammatory Effects of Phenolic Compounds from Moraiolo Virgin Olive Oil (MVOO) in Brain Cells via Regulating the TLR4/NLRP3 Axis. MOLECULES, 10;24(24):4523. doi: 10.3390/molecules24244523.

Federighi G., Traina G., Bernardi R., Baldi E., Bucherelli C., Scuri R. (2018) Contextual fear conditioning modulates the gene expression over time. ARCHIVES ITALIENNES DE BIOLOGIE, 156(1-2), 40-47.

Sichetti M, De Marco S, Pagiotti R, Traina G, Pietrella D. (2018) Anti-inflammatory effect of multi-strain probiotics formulation (L. rhamnosus, B. lactis and B. longum). NUTRITION 53, 95-102. doi.org/10.1016/j.nut.2018.02.005.

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Filipescu IE, Leonardi L, Menchetti L, Guelfi G, Traina G, Casagrande-Proietti P, Piro F, Quattrone A., Barbato O., Brecchia G. (2018) Preventive effects of bovine colostrum supplementation in TNBS-induced colitis in mice. PLoS ONE 13(8): e0202929.

De Marco S., Sichetti M., Meradyan D., Piccioni M., Traina G., Pagiotti R., Pietrella D. (2018) Probiotic Cell-Free Supernatants Exhibited Anti-Inflammatory and Antioxidant Activity on Human Gut Epithelial Cells and Macrophages Stimulated with LPS. Evidence-Based Complementary and Alternative Medicine, 2018,1756308, doi.org/10.1155/2018/1756308.

Albi E, Cataldi S, Ferri I, Sidoni A, Traina G, Fettucciari K, Ambesi-Impiombato FS, Lazzarini A, Curcio F, Ceccarini MR, Beccari T, Codini M. (2018) VDR independent induction of acid-sphingomyelinase by 1,23(OH)2 D3 in gastric cancer cells: Impact on apoptosis and cell morphology. BIOCHIMIE 146; 35-42.

Menchetti L, Barbato O, Filipescu I.E., Traina G., Leonardi L., Polisca A., Troisi A., Guelfi G., Federica P., Brecchia G. (2018) Effects of local lipopolysaccharide administration on the expression of Tool-like receptor 4 and pro-inflammatory cytokines in uterus and oviduct of rabbit does. THERIOGENOLOGY 107; 162-174.

Traina G. (2017) Mast cells in the brain- Old cells, new target. JOURNAL OF INTEGRATIVE NEUROSCIENCE 16; S69-S83.

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Traina G., Scuri S. (2017) ACETYL-L-CARNITINE AFFECTS THE ELECTRICAL ACTIVITY OF MECHANORESENSORY NEURONS IN *HIRUDO MEDICINALIS* GANGLIA. *EMBJ* 12(08); 36-40.

Barbato O., Guelfi G., V.L. Barile, L. Menchetti, C. Tortiello, C. Canali, G. Brecchia, G. Traina, J.F. Beckers, N. Melo de Sousa (2017) Using real-time PCR to identify pregnancy-associated glycoprotein 2 (PAG-2) in water buffalo (*Bubalus bubalis*) blood in early pregnancy. *THERIOGENOLOGY* 89; 106-113.

Traina G., Casagrande Proietti P., Menchetti L., Leonardi L., Tomasello G., Barbato O., Piro F., Brecchia G. (2016) COLON MICROBIAL COMPOSITION IS CORRELATED WITH THE SEVERITY OF COLITIS INDUCED BY 2,4,6-TRINITROBENZENESULFONIC ACID IN MICE. *EMBJ*, 11 (23):165-175.

Traina G., Menchetti L., Rappa F., Casagrande-Proietti P., Barbato O., Leonardi L., Carini F., Piro F., Brecchia G. (2016) Probiotic mixture supplementation in the preventive management of trinitrobenzenesulfonic acid-induced inflammation in a murine model. *JOURNAL OF BIOLOGICAL REGULATORS & HOMEOSTATIC AGENTS*, 30(3):895-901.

Traina (2016) The neurobiology of acetyl-L-carnitine. *FRONTIERS IN BIOSCIENCE* (Landmark Ed.) 21, 1314-1329.

Menchetti L., Traina G., Tomasello G., Casagrande-Proietti P., Leonardi L., Barbato O., Brecchia G. (2016) Potential benefits of colostrum in gastrointestinal diseases. *FRONTIERS IN BIOSCIENCE*, 8, 344-365.

Tomasello G., Abruzzo A., Sinagra E., Damian P., Damiani F., Traina G., Campanella C., Rappa F., Marino Gammazza A., Noto M., Palumbo VD., Damiano G., Lo Monte AI. (2015) Nutrition in IBD patient's. What are the prospects? *PROGRESS IN NUTRITION*, 17(2), 79-86.

Tomasello G., Sinagra E., Raimondo D., Palumbo VD., Puleio R., Cottone M., Damiani P., Traina G., Abruzzo A., Damiani F., Buscemi S., Noto M., Lo Monte AI. Validation of a modified model of TNBS-induced colitis in rats. How to induce a chemical colitis in rats, (2015) *ACTA BIOMEDICA*, 86(1); 92-96.

Traina, G., Scuri R. (2015) Transcription and protein synthesis inhibitors influence long-term effects of acetyl-l-carnitine on non-associative learning in the leech. *NEUROCHEMISTRY INTERNATIONAL*, 80, 72-78.

Tomasello, G., M-N. Zeenny, M. Giannanco, D. Di Majo, G. Traina, E. Sinagra, P. Damiani, R. Jurjus Zein, A. Jurjus, A. Leone (2015) INTESTINAL MICROBIOTA MUTUALISM AND GASTROINTESTINAL DISEASES. *EMBJ*, 10(1), 65-75.

Bellavia, M., F. Rappa, M. Lo Bello, G. Brecchia, G....A. Jurjus, P. Schembri-Wismayerl, M. Cocchi, G. Zummo, F. Farina, A. Gerbino, F. Cappello, G. Traina (2014). Lactobacillus casei and bifidobacterium lactis supplementation reduces tissue damage of intestinal mucosa and liver after 2,4,6-trinitrobenzenesulfonic acid treatment in mice. *JOURNAL OF BIOLOGICAL REGULATORS & HOMEOSTATIC AGENTS*, vol.28 (3), p.251-261.

Persichetti E., De Michele A., Codini M., Traina G. (2014). Antioxidative Capacity of Lactobacillus Fermentum LF31 Evaluated In Vitro by Oxygen Radical Absorbance Capacity Assay. *NUTRITION*, vol. 30, 936-938.

Federighi, G., Macchi, M., Bernardi, R., Scuri, R., Brunelli, M., Durante, M., Traina G. (2013). Differentially expressed genes in *Hirudo medicinalis* ganglia after acetyl-l-carnitine treatment. *PLOS ONE*, vol. 8, ISSN: 1932-6203, doi: 10.1371/journal.pone.0053605.

Paolo Blasi, Aurélie Schoubben, Giovanna Traina, Giuseppe Manfroni, Lanfranco Barberini, Paolo Francesco Alberti, Carlo Cirotto, Maurizio Ricci (2013). Lipid nanoparticles for brain targeting III. Long-term stability and in vivo toxicity. INTERNATIONAL JOURNAL OF PHARMACEUTICS, vol. 454, p. 316-323, ISSN: 0378-5173

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Giuseppe Federighi, Giovanna Traina, Monica Macchi, Cristina Ciampini, Rodolfo Bernardi, Elisabetta Baldi, Corrado Bucherelli, Marcello Brunelli, Rossana Scuri (2013). Modulation of gene expression in contextual fear conditioning in the rat. PLOS ONE, ISSN: 1932-6203, doi: 10.1371/journal.pone.0080037

Giovanna Traina, Paolo Bigini, Giuseppe Federighi, Leopoldo Sitia, Gabriela Paroni, Fabio Fiordaliso, Monica Salio, Caterina Bendotti, Marcello Brunelli (2012). Lipofuscin accumulation and gene expression in different tissue of mnd mice. MOLECULAR NEUROBIOLOGY, vol. 45 / 2012, p. 247-257, ISSN: 0893-7648.

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Macchi M., Durante M., Bernardi R., Traina G. (2008). Ribosomal RNA characterization in the leech *Hirudo medicinalis*. ARCHIVES ITALIENNES DE BIOLOGIE, vol. 146, p. 205-208, ISSN: 0003-9829.

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G. TRAINA, PETRUCCI C, GARGINI C, AND BAGNOLI P (1998). Somatostatin enhances neurite outgrowth in PC12 cells. DEVELOPMENTAL BRAIN RESEARCH, vol. 111, p. 223-230.

G. TRAINA, LANNEAU C, ARNOUX A, POROKHOV B, BAGNOLI P. AND EPELBAUM J (1998). Expression and coupling of somatostatin receptors in rat adrenal (PC12) and pituitary (GC) cell lines. NEUROSCIENCE LETTERS, vol. 252, p. 131-134.

Giovanna Traina (1996). Intracellular free calcium and its modulation. ARCHIVES ITALIENNES DE BIOLOGIE, vol. 134, p. 323-339.

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Giovanna Traina, Gigliola Fontanesi, Paola Bagnoli (1994). Maturation of somatostatin immunoreactivity in the pigeon retina: morphological characterization and quantitative analysis. VISUAL NEUROSCIENCE, vol. 11 / 1994, p. 165-177.

Gigliola Fontanesi, Giovanna Traina, Paola Bagnoli (1993). Somatostatin - like immunoreactivity in the pigeon visual system: developmental expression and effects of retina removal. VISUAL NEUROSCIENCE, vol. 10, p. 271-285.

Fabio Francini, Lucia Pizza, Giovanna Traina (1992). Inactivation of the slow calcium current in twitch skeletal muscle fibres of the frog. THE JOURNAL OF PHYSIOLOGY, vol. 448, p. 633-653.

CATARSI S, GARCIA-GIL M, TRAINA G., BRUNELLI M. (1990). Seasonal variation of serotonin content and nonassociative learning of swim induction in the leech *Hirudo medicinalis*. JOURNAL OF COMPARATIVE PHYSIOLOGY. A, NEUROETHOLOGY, SENSORY, NEURAL, AND BEHAVIORAL PHYSIOLOGY, vol. 167 / 1990, p. 469-474.

● CONFERENCES AND SEMINARS

11/11/2022 – 12/11/2022 Roma

Invited Speaker at the AGGEI 2022 Campus Congress (Association of Young Italian Gastroenterologists and Endoscopists) with the presentation: Selective probiotic integration for the modulation of intestinal permeability.

04/10/2021 Online

Invited Speaker at the "Academic Mondays" Conference of the Georgofili Academy, Central-East Section, with the lecture: Intestinal microbiota, nutrients and inflammation.

17/12/2020 Online

Invited Speaker at the International Conference, The 9th QPP Meeting Quantum Paradigms of Psychopathology, with the lecture: Mast cells, astrocytes, arachidonic acid: do they play a role in depression?

13/09/2019 – 15/09/2019 Torino

Invited Speaker at the International Conference, The 8th QPP Meeting Quantum Paradigms of Psychopathology, with the lecture: Anxiety, stress and microbiota: the brain seen by a physiologist.

13/10/2018

Invited Speaker at the International Conference, The 7th QPP Meeting Quantum Paradigms of Psychopathology, Microbiota & brain: the thinking organs.

27/08/2018 – 31/08/2018

Invited Speaker at the Politecnico of Torino for the Summer School on Neuroscience: Brain and gut from molecules to mood, with the lecture: Elementary animal model of learning.

27/08/2018 – 31/08/2018

Invited Speaker at the Politecnico of Torino for the Summer School on Neuroscience: Brain and gut from molecules to mood, with the lecture: Mast cells in gut and brain.

16/06/2017 – 17/06/2017

Invited Speaker at the International Conference "Biological consciousness-A journey from bacteria to animals and humans", The 6th QPP Meeting Quantum Paradigms of Psychopathology, with the lecture: Mast cells and brain.

19/05/2017 Verona

Invited Speaker at the Course in Posturometric techniques, organized by the University of Verona, with the lecture: Neurophysiology of posture.

01/10/2016 Como

Invited Speaker at the International Conference "Looking from the quantum brain.. & for the gut-brain axis", The 5th QPP Meeting Quantum Paradigms of Psychopathology, with the lecture: Gut epithelial barrier: the experimental model.

30/09/2016 Como

Invited Speaker at the Conference-Course "Oxysterols, brain, heart and mood disorders" with the lecture: The microbiota and the experimental model of inflammation.

13/05/2016 – 14/05/2016 Napoli

Invited Speaker at the Second University of Naples in the course: Occlusion and posture: posturometric and stabilometric techniques" School of Specialization in Orthodontics , with the lecture entitled: Neurophysiology of the postural tonic system.

08/05/2015 – 09/05/2015 Napoli

Invited Speaker at the Second University of Naples in the course: Occlusion and posture: posturometric and stabilometric techniques" School of Specialization in Orthodontics , with the lecture entitled: Neurophysiology of the postural tonic system.

23/09/2014 Perugia

Invited Speaker at the Conference: Trigemino-vagal reflex and cardiac arrest, with the lecture "Neurophysiology of the trigemino-vagal reflex".

08/09/2008 Bologna

Invited Speaker at the Academy of Sciences of Bologna at the meeting "Molecular aspects in neurodegenerative diseases" with the lecture entitled: New therapies for neurodegenerative diseases.
