

# **Curriculum vitae**

Prof. Alessandro Silvani, MD PhD  
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## **Bibliometric indexes**

SCOPUS: publications = 111; citations = 2560; h-index = 29. Author identifier: 7005417173.

Google Scholar: publications = 114; citations = 3511; h-index = 33, i-10 index = 71.

## **Position**

from 2014 to present: **Associate professor of Physiology**

from 2005 to 2014: Researcher and assistant professor of physiology

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## **Education**

2000: MD, University of Bologna, Italy, cum laude.

2004: PhD in Applied Physiology and Pathophysiology, University of Bologna, Italy.

## **Scientific courses**

2002: Winter School "*Dynamic aspects of brain function: methodologies, concepts, models*", Federation of European Neuroscience Societies (FENS), Kitzbühel, Austria.

2003: Seventh Course of the International School of Neural Networks "E.R. Caianiello": "*Computational neuroscience: cortical dynamics*", "Ettore Majorana" Foundation, Erice, Italy.

2017: Course on "*Role and competence of principal investigators in applications for the ethical authorization to perform experiments on laboratory animals*" (translated), Istituto Superiore di Sanità (*National Institute of Health*), Rome, Italy.

## **Awards**

2002: Poster Prize of the European Sleep Research Society (ESRS).

2004: "Igino Fagioli" Prize of the Italian Sleep Research Society (SIRS), for the best oral communication.

2005: "Igino Fagioli" Prize of the Italian Sleep Research Society (SIRS), for the best PhD dissertation.

2006: ESRS-Weinmann Young Investigator Mobility Award of the European Sleep Research Society.

2017: Teaching prize for best information provider, best ability provider, best learning facilitator, School of Medicine and Surgery, University of Bologna, Italy

## **Grants**

2001: Young researcher grant, University of Bologna, Italy (PI), project title (translated): "*Effects of brain activation on the blood-brain barrier permeability to glucose*".

2001: PRIN Grant, Italian Ministry of University and Research, code 054935\_006 (participant), project title (translated): "*Neural and metabolic processes characterizing sleep and wakefulness*".

2002: FIRB Grant, Italian Ministry of University and Research, code RBAU01KCNZ (participant), project title (translated): "*Effects of brain activation on the blood-brain barrier permeability to glucose*".

2004: PRIN Grant, Italian Ministry of University and Research, code 050080\_001 (participant), project title (translated): *“Sleep and cardiovascular regulation in hypertensive rats”*.

2004: Research Grant, European Sleep Research Society - Sanofi Aventis (PI), project title: *“Sleep in hypertension: attaching sleep pathophysiology to the genome”*.

2009: PRIN Grant, Italian Ministry of University and Research, code SPTRK\_001 (participant), project title (translated): *“Sleep-related and circadian derangements of arterial pressure in animal models of diet-induced obesity”*.

2010: Grant of the Cassa di Risparmio di Bologna Bank Foundation, Italy (participant), project title (translated): *“Role of hypothalamic neurogenesis in the development of diet induced obesity and its sleep and cardiovascular comorbidities”*.

2013: International Short Visit Grant, Swiss National Science Foundation (PI), project title: *“Genetic and pharmacological targeting of hypothalamic pathways controlling muscle tone: towards rodent models of periodic limb movements in sleep”*.

2013: FARB line 2 Grant, University of Bologna, Italy (participant), project title: *“Warm up to wake up: a pivotal role of the hypothalamic arousal system”*.

2015: Grant of the Fondazione del Monte di Bologna e Ravenna Bank Foundation, Italy (participant), project title (translated): *“Clinical and experimental investigation of the pathophysiology of autonomic dysfunction in adult-onset autosomal dominant leukodystrophy (ADLD)”*.

2017: Almaidea Grant, University of Bologna, Italy (PI), project title (translated): *“Innovative orexin receptor agonists for the therapy of narcolepsy”*.

2018: Italian Association of Patients with Narcolepsy and Hypersomnia (AIN) grant (PI), project title (translated): *“Development of innovative nanoparticle-based approaches for the therapy of narcolepsy type 1”*.

2021: Carisbo bank foundation grant (PI), project title (translated): *“Translational medical research for the validation of a mouse model of Morvan’s syndrome associated with anti-CASPR2 antibodies”*.

2022: Banca del Monte di Bologna e Ravenna bank foundation grant (PI), project title (translated): *“LOOKING-GLASS: Development of an integrated system of wearable sensors for continuous monitoring of physical activity, sleep, and heart rate in older subjects”*.

2022: Carisbo bank foundation grant (PI), project title (translated): *“LOOKING-GLASS BOLOGNA: Development of an integrated system of wearable sensors for continuous monitoring of physical activity, sleep, and heart rate in older subjects in the Bologna city area”*.

2022: Grant to fund a PhD bursary (3 years, University of Bologna) co-financed by the Italian PNRR program and by Prodigys Technology Srl; project title (translated): *“CROSSROADS: Development of a system to integrate information from distributed and heterogeneous sensors for frail and chronically ill subjects”* (co-tutor).

2022: Italian NRRP Grant (Extended partnership grant); project title: *Age-IT (A novel public-private alliance to generate socioeconomic, biomedical and technological solutions for an inclusive Italian ageing society)* (Task leader of Task 2.3 “Caregiver monitoring: biomedical indicators” in Work Package 2 “Care giving/receiving monitoring” and of Task 3.3 “Monitoring tools selection” in Work Package 3 “Care at discharge”, of Spoke 5 “Care sustainability in an ageing society”).

2022: Italian NRRP Grant (innovative technologies and paths in healthcare) *“DARE (Digital lifelong prevention)”* (Task co-leader, Task 4.3 “A sustainable and technological approach to large-scale prevention of falls and injuries” in Work Package 4 “Digital tools for Primary Prevention” of Spoke 2 “Community-based digital primary prevention”; Work Package 4 co-leader; member of the Spoke 2 coordination team at the University of Bologna).

2023: Italian National grant PRIN2022, code J53D23010940001 *“Chemogenetic and Optogenetic Rescue of Sleep Apnea (COSA) in mice”* (participant).

2023: Italian National grant PRIN2022-PNRR, code P2022RTCCA *“ESTROSA: Energy-autonomous System for Treatment of Obstructive Sleep Apnea”* (participant).

## **Scientist in charge of ethical committee applications**

2018: Project title (translated): “Pilot study of blood-brain transport and in-vivo activity in mice of a novel orexinergic drug for the therapy of narcolepsy type 1” (aut. n° 271/2018-PR, April 9, 2018).

2019: Project title (translated): “Development and validation of a mouse model of Morvan’s syndrome associated with anti-CASPR2 antibodies” (aut. n° 380/2019-PR, May 20, 2019).

2019: Project title (translated): “Detailed characterization of in-vivo activity in mice (*Mus musculus*) of novel orexinergic drugs for the therapy of narcolepsy type 1” (aut. n° 667/2019-PR, September 9, 2019).

2023: Project title (translated): “Pilot study of the relationships between physical activity, sleep, and heart rate in elderly inpatients (LOOKING-GLASS DM)” (bi-centric Italian national clinical study with medical devices, aut. reg. sper. N. 3628, Sept. 9 2023, CEROM ethics committee; scientific responsibility).

2023: Project title (translated): “Feasibility study of integrated sleep and activity monitoring with a sparse network of wearable sensors (LOOKING-GLASS MIAR)” (aut. prot. 0290278, Oct. 9, 2023, Bologna University Ethics Committee).

2024: Project title (translated): “Feasibility study of integrated sleep and activity monitoring for the estimation of the risk of falling in elderly subjects in the general population (DARE FALLSPREDICT GP)” (aut. prot. 0032013, Feb. 6, 2024, Bologna University Ethics Committee).

2024: Project title (translated): “Development of a multi-variable model beyond the state of the art for the estimation of the risk of falling in elderly subjects (DARE FALLSPREDICT)” (bi-centric Italian national clinical study with medical devices, aut. reg. sper. N. 3698, Feb. 15, 2024, CEROM ethics committee; scientific responsibility).

## **Patents**

2022: Italian patent n. 102022000013894, filed on June 30, 2022, with international extension n. ITPF7490WO filed on June 28, 2023, with title (translated) “Artificial protein and its applications”; percentage of inventive contribution: 40%.

## **Peer review**

Served as a peer reviewer for the following (41) journals: American Journal of Physiology, Annals of Neurology, Annals of Clinical and Translational Neurology, Autonomic Neuroscience, Behavioral Brain Research, Biological Psychology, BMC Neuroscience, Brain Pathology, Cephalalgia, Chronobiology International, Clinical Autonomic Research, Clinical and Experimental Pharmacology and Physiology, Clinical Neurophysiology; EBioMedicine, European Journal of Pharmacology, European Journal of Preventive Cardiology, Frontiers in Physiology, Frontiers in Neural Circuits, Frontiers in Neurology, Frontiers in Neuroscience, Frontiers in Psychiatry, Fundamental and Clinical Pharmacology, Headache, IEEE Transactions on Biomedical Engineering, International Journal of Psychophysiology, Journal of Applied Physiology, Journal of Clinical Sleep Medicine, Journal of Physiology, Journal of Sleep Research, Neurobiology of Disease, Neurology, Neuroscience, Physiological Genomics, PLOS ONE, Psychoneuroendocrinology, Respiratory Physiology and Neurobiology, Scientific Reports, Sleep, Sleep and Breathing, Sleep Medicine, Sleep Medicine Reviews.

2011-2018: Review Editor for Frontiers in Physiology, section of Integrative Physiology

From 2017: Member of the Editorial Board (Academic Editor) for PLOS ONE

2018-2020: Review Editor for Frontiers in Neuroscience, section Sleep and Circadian Rhythms

2018: Listed among “Top reviewers for 2017” for the journal Sleep by the Sleep research Society

From 2019: Associate Editor for Frontiers in Physiology, section of Integrative Physiology

2020: Editor in charge of the research topic “The integrative physiology of metabolic down-states”, Frontiers in Physiology, Frontiers in Neuroscience and Frontiers in Neurology

From 2020: Associate Editor for Frontiers in Neuroscience, section Sleep and Circadian Rhythms

2021: Listed among “Top reviewers for 2020” for the journal Sleep by the Sleep research Society

2026: Associate Academic Editor, Journal of Sleep Research

2020: reviewer for the 30th annual meeting of the Italian Association of Sleep Medicine (AIMS), October 25-27, web conference.

2022: reviewer for the 31st AIMS annual meeting, March 11-16, 2022, Rome

2022: reviewer for the WorldSleep 2022 meeting, World Sleep Society, March 11-16, 2022, Rome

2022: reviewer for the 32nd AIMS annual meeting, September 15-17, 2022, Rimini, Italy

2023: reviewer for the eSLEEP Europe virtual congress, European Sleep Research Society (ESRS), October 4-6, 2023.

2023: reviewer for the WorldSleep 2023 meeting, World Sleep Society, October 20-25, 2023, Rio de Janeiro, Brazil.

2023: reviewer for the 33rd AIMS annual meeting, November 24-26, 2023, Milan.

2023: reviewer for Sleep Europe 2024, 27th Congress of the ESRS, September 24-27, 2024, Sevilla, Spain.

2024: reviewer for the 34th AIMS annual meeting, November 29 – December 1, 2024, Tirrenia, Italy

2025: reviewer for the WorldSleep 2025 meeting, World Sleep Society, September 5-10, 2025, Singapore.

2025: reviewer for Sleep Europe 2026, 28th Congress of the ESRS, October 20-23, 2026, Maastricht, The Netherlands.

2025: reviewer for SLEEP 2026, 40th annual Meeting of the Associated Professional Sleep Societies (APSS), June 14-17, Baltimore, USA.

2013: Research program “Futuro in Ricerca 2013”, Italian Ministry of University and Research, Italy.

2014: Research program “Émergence: Nouvelle thématique au renouvellement scientifique de l’Université de Toulouse”, France

2016: Research Program “Preludium”, Polish National Science Center (Narodowe Centrum Nauki – NCN), Poland.

2016: VQR 2011-2014 Research Assessment Exercise, Italian National Agency for the Assessment of University and Research (ANVUR), Italy.

2019: Research Grant Program, the Restless Legs Foundation ([www.rls.org](http://www.rls.org)), USA.

2020: Research program “FISR2020 Covid19 Research”, Italian Ministry of University and Research, Italy.

2021: Swiss National Science Foundation and the National Natural Science Foundation of China (NSFC) joint call for joint research projects, Switzerland.

2022: Call for research proposals, Israel Science Foundation (ISF), Israel.

2022: Call for research proposals, Marsden Fund Council, New Zealand.

2024: Call for research proposals, Fédération pour la Recherche sur le Cerveau (FRC), France.

2024: Israel Science Foundation (ISF) Personal Research Grants, Israel.

2024: Swiss National Science Foundation (SNSF) Advanced Grants, Switzerland.

2024: Member of the Italian National Group of Evaluation Experts in the Biological Sciences (GEV05), Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR), Italy.

2024: Call for research proposals, Fédération pour la Recherche sur le Cerveau (FRC), France.

2025: French National Initiative in Digital Health, INSERM and INRIA, France.

2025: ERC Consolidator Grant, European Commission.

2025: Call for research proposals from research fellows, University of Florence, Italy.

2018: 1 PhD thesis in Neuroscience, University of Parma, Italy.

## Activity in scientific societies

Membership, past: International Society for Cerebral Blood Flow and Metabolism (ISCBFM); Italian Society for Sleep Research (SIRS); Italian Society of the Study of the Autonomic Nervous System (AINV); American Physiological Society (APS); International Society of Autonomic Neuroscience (ISAN).

Membership, present: Italian Association for Sleep Medicine (AIMS); Italian Physiological Society (SIF); European Sleep Research Society (ESRS), European Restless Legs Study Group (EURLSSG), European Narcolepsy Network (EuNN).

Service:

2008-2013: member of the board of the Italian Sleep Research Society (SIRS).

2010-2013: secretary of the Italian Sleep Research Society (SIRS).

In 2013, contributed to the fusion of the Italian Sleep Research Society and the Italian Association of Sleep Medicine (AIMS).

2012-2015: Member of the Education Committee of the European Federation of Autonomic Societies (EFAS)

2016: Member of the Evaluation Committee for awarding the “Igino Fagioli” prize of the Italian Association of Sleep Medicine (AIMS).

2018-2024: member of the board of the Italian Association for Sleep Medicine (AIMS).

2018-2024: member of the Scientific Committee of the Italian Association for Sleep Medicine (AIMS).

2020-2022: chair of the Outreach Committee of the Italian Association for Sleep Medicine (AIMS).

2021-2022: member of the Teaching Committee of the Italian Association for Sleep Medicine (AIMS).

2022-2024: chair of the Scientific Committee of the Italian Association for Sleep Medicine (AIMS).

2022-2024: co-chair of the Scientific Committee of the European Sleep Research Society (ESRS).

From 2023: auditor for finances of the European Narcolepsy Network (EuNN).

From 2024: chair of the Scientific Committee of the European Sleep Research Society (ESRS).

From 2025: member of the scientific committee of the European Narcolepsy Network (EuNN).

Member of the organizing or scientific committee of scientific meetings:

1) 57th meeting of the Italian Physiological Society (SIF), **Ravenna, Italy**, September 25-27, 2006.

2) 14th meeting of the Italian Sleep Research Society (SIRS), **Bologna, Italy**, November 14-15, 2009.

3) 17th meeting of the Italian Sleep Research Society (SIRS), **Bologna, Italy**, March 17-18, 2012.

4) 16th Meeting of the European Federation of Autonomic Societies (EFAS), **Malaga, Spain**, October 9-11, 2014.

5) 9th Meeting of the International Society of Autonomic Neuroscience (ISAN), **Stresa, Italy**, September 26-29, 2015.

6) 26th Meeting of the Italian Association of Sleep Medicine (AIMS), **Bologna, Italy**, September 12-13, 2016.

7) FEPS2019 joint meeting of the Federation of European Physiological Societies (FEPS) and the Italian Physiological Society (SIF), **Bologna, Italy**, September 10-13, 2019.

8) 29th Meeting of the Italian Association of Sleep Medicine (AIMS), **Genova, Italy**, September 13-15, 2019.

9) 30th Meeting of the Italian Association of Sleep Medicine (AIMS), Web Conference, October 25-27, 2020.

10) First Meeting on Research in Medicine and Surgery, Degree in Medicine and Surgery of the University of Bologna, Ravenna Campus and Ravenna city hospital, **Ravenna, Italy**, October 15, 2021.

11) 31st Meeting of the Italian Association of Sleep Medicine (AIMS), **Rome, Italy**, March 11-12, 2022.

12) 15th International RBD (REM sleep behavior disorder) Study Group meeting, **Ravenna, Italy**, March 17-19, 2022.

13) 32nd Meeting of the Italian Association of Sleep Medicine (AIMS), **Rimini, Italy**, September 15-17, 2022.

14) 33rd Meeting of the Italian Association of Sleep Medicine (AIMS), **Milan, Italy**, November 24-26, 2023.

15) eSleep Europe Virtual Congress of the European Sleep Research Society (ESRS), Web Conference, October 4-6, 2023.

16) Sleep Europe 2024, 27th meeting of the European Sleep Research Society (ESRS), **Sevilla, Spain**, September 24-27, 2024.

17) 34th Meeting of the Italian Association of Sleep Medicine (AIMS), **Tirrenia, Italy**, November 29- December 1, 2024.

18) eSLEEP Europe 2025, Virtual Congress of the European Sleep Research Society (ESRS), Basic Animal Research track, December 11, 2025.

19) Sleep Europe 2026, 28th meeting of the European Sleep Research Society (ESRS), **Maastricht, The Netherlands**, October 20-23, 2026.

#### Participation in scientific working groups

2018-2022: member of the task force on animal models of the Restless Legs Syndrome (RLS) of the International RLS Study Group (IRLSSG), with co-coordinator role from 2018 to 2020 (joint first author of paper: *Mov Disord.* 2021;36:558-69; co-author of paper: *Dis Model Mech.* 2022;15(8):dmm049615; first author of paper: *Neurotherapeutics.* 2023;20:154-78).

2021: member of the Sleep Disorders Working Group of the Italian Society of Hypertension on the effects of insomnia and the restless legs syndrome on arterial blood pressure (last and corresponding author of paper: *Sleep Med Rev.* 2021;59:101497).

2022-2025: member of the World Sleep Forum - 6<sup>th</sup> Think Tank 2022 on Hypersomnolence and Excessive Daytime Sleepiness (EDS) (first and corresponding author of paper: *Sleep Med.* 2025;133:106607).

2024-2025: Participation in the European Society of Hypertension Task Force on “Nocturnal blood pressure: pathophysiology, measurement and clinical implications” (co-author of paper: *J Hypertens.* 2025;43:1296-318).

2025-2026: Participation in the Task Force of the European Sleep Research Society (ESRS) on “Rodent Sleep Scoring Rules”.

#### **Invited lectures and talks**

2002 (1): Dept of Human and General Physiology, **Bologna, Italy**, seminar title (translated): “*Dynamics of cerebral perfusion parameters during sleep in newborn lambs*”.

2002 (2): Cyclotron Research Centre, University of **Liege, Belgium**, seminar title: “*Spontaneous fluctuations in cerebral blood flow during sleep and wakefulness in newborn lambs*”.

2002 (3): Seventh meeting of the Italian Sleep Research Society (SIRS), **Padova, Italy**, symposium talk, title (translated): “*Dynamics of cerebral perfusion parameters during sleep in newborn lambs*”.

2002 (4): Twelfth meeting of the Italian Association of Sleep Medicine (AIMS), **Perugia, Italy**, symposium title (translated): “*Control of heart rhythm during sleep after acoustic stimulation*”.

2003 (5): Ritchie Centre for Baby Health Research, Monash University, **Melbourne, Australia**, seminar title: “*Sleep-related changes in the regulation of cerebral blood flow in newborn lambs*”.

2003 (6): Eight meeting of the Italian Sleep Research Society (SIRS), **Pisa, Italy**, symposium talk, title (translated): “*Regulation of brain glucose availability during active sleep*”.

2004 (7): Ninth meeting of the Italian Sleep Research Society (SIRS), **Naples, Italy**, symposium talk, title (translated): “*Phasic events and discontinuities in the regulation of heart rhythm during sleep*”.

2006 (8): Sixteenth meeting of the Italian Association of Sleep Medicine (AIMS), **Milan, Italy**, symposium talk, title (translated): “*Sleep changes the central integration of cardiovascular control*”.

2007 (9): Dept of Neurological Sciences, University of **Bologna, Italy**, seminar title (translated): “*Sleep changes the central integration of cardiovascular control*”.

2007 (10): Fifth World Congress of the World Federation of Sleep Research and Sleep Medicine Societies (WFSRS), **Cairns, Australia**, symposium talk, title: “*Control of heart rhythm during sleep in physiology and cardiovascular disease*”.

2009 (11): Academy of Sciences of the University of **Bologna, Italy**, conference title (translated): “*Sleep and the integration of cardiovascular control*”.

2009 (12): Nineteenth meeting of the Italian Association of Sleep Medicine (AIMS), **Bologna, Italy**, symposium talk, title (translated): “*Sleep and cardiovascular functional genomics in animal models of human diseases*”.

2010 (13): Dept of Neurological Sciences, University of **Bologna, Italy**, seminar title (translated): *Sleep and cardiovascular functional genomics in mouse models of human diseases*”.

2010 (14): Fifteenth meeting of the Italian Sleep Research Society (SIRS), **Rome, Italy**, symposium talk, title (translated): “*Present and future of basic sleep research*”.

2011 (15): INSERM U628, University Claude Bernard, **Lyon, France**, seminar title: “*Sleep-dependent cardiovascular control in mouse models of obesity and narcolepsy*”.

2011 (16): Twenty-first meeting of the Italian Association of Sleep Medicine (AIMS), **Pavia, Italy**, symposium talk, title (translated): “*Cardiovascular control during sleep in mouse models of narcolepsy*”.

2012 (17): Third meeting of the European Narcolepsy Network (Eu-NN) and European Narcolepsy Day, **Bologna, Italy**, lecture title: “*Cardiovascular function in experimental and human narcolepsy*”.

2012 (18): Twenty-second meeting of the Italian Association of Sleep Medicine (AIMS), **Parma, Italy**, symposium talk, title (translated): “*Sleep and autonomic functions: an experimental genetic approach to integrative pathophysiology*”.

2012 (19): Sleep and Epilepsy center, Neurocenter of Southern Switzerland, **Lugano, Switzerland**, seminar title: “*Sleep and the integration of cardiovascular control*”.

2013 (20): DSI European Telemetry User Group Meeting, **Berlin, Germany**, lecture title: “*Telemetry and cardiorespiratory phenotyping during sleep and wakefulness in mice*”.

2013 (21): Institute of Molecular Medicine, University of **Lisbon, Portugal**, seminar title: “*Central autonomic control of cardiovascular function during sleep*”.

2013 (22): Astrid Lingren Childrens’ Hospital, Karolinska Institutet, **Stockholm, Sweden**, seminar title: “*Autonomic manifestations in pediatric narcolepsy: open questions*”.

2013 (23): Molecular Sleep Laboratory, Glostrup University Hospital, Glostrup, **Copenhagen, Denmark**, seminar title: “*Central control of cardiorespiratory function during sleep*”.

2013 (24): Twenty-third meeting of the Italian Association of Sleep Medicine (AIMS), **Rome, Italy**, symposium talk, title (translated): “*Cardiovascular control during sleep in histamine-deficient knock-out mice*”.

2014 (25): Sleep and Epilepsy center, Neurocenter of Southern Switzerland, **Lugano, Switzerland**, seminar title: “*The orexin-hypocretin system in physiology and disease*”.

2014 (26): Fifth meeting of the European Narcolepsy Network (Eu-NN) and European Narcolepsy Day, **Copenhagen, Denmark**, lecture title: “*Sleep and cardiovascular studies in narcoleptic mice*”.

2014 (27): INSERM U628, University Claude Bernard, **Lyon, France**, seminar title: “*Sleep and cardiorespiratory control in histamine-deficient mice*”.

2015 (28): Université de Picardie Jules Verne, **Amiens, France**, seminar title: “*Central autonomic control of cardiovascular function during sleep*”

2015 (29): Meeting of the Italian Association of Patients with Narcolepsy or Hypersomnia (AIN), **Bologna, Italy**, seminar title (translated); “*Animal models in narcolepsy research*”.

2015 (30): ISAN2015 Meeting of the International Society of Autonomic Neuroscience (ISAN), **Stresa, Italy**, symposium talk, title: “*Orexin deficiency alters cardiovascular control during sleep: of mice and men*”.

2015 (31): Twenty-fifth meeting of the Italian Association of Sleep Medicine (AIMS), **Cagliari, Italy**, symposium talk, title (translated): “*Analysis of muscle tone during REM sleep in human subjects, rats, and mice: toward translational models of RSWA e RBD*”.

2015 (32): Scientific meeting entitled (translation) “*Diagnosis and multidisciplinary treatment of narcolepsy*”, IRCCS Bologna Institute of Neurological Sciences, **Bologna, Italy**, seminar title (translated): “*Animal models of narcolepsy*”.

2016 (33): Twenty-sixth meeting of the Italian Association of Sleep Medicine (AIMS), **Bologna, Italy**, symposium talk, title (translated): “*Arterial pressure and molecular clocks: a physiological perspective on the cardiovascular risk associated with sleep disorders*”.

2016 (34): Twenty-third congress of the European Sleep Research Society (ESRS2016), **Bologna, Italy**, round table talk, title: “*Central neural mechanisms of cardiovascular control during sleep: of mice and men*”.

2017 (35): EFAS2017 Meeting of the European Federation of Autonomic Societies (EFAS), **Innsbruck, Austria**, lecture title: “*Narcolepsy: translational evidence*”.

2017 (36): Hospital Clinic of **Barcelona, Spain**, seminar title: “*Mouse polysomnography for translational research on neurological disorders*”.

2017 (37): Meeting of the Italian Association of Patients with Narcolepsy or Hypersomnia (AIN), **Bologna, Italy**, seminar title (translated): “*Validation of innovative approaches to the therapy of narcolepsy*”

2017 (38): Twenty-seventh meeting of the Italian Association of Sleep Medicine (AIMS), **Bolzano, Italy**, symposium talk, title (translated): “*Narcolepsy with cataplexy, beyond orexins: a role for histamine transmission*”.

2017 (39): Thirty-fourth meeting of the Italian Society for the study of Arterial Hypertension (SIIA), **Milan, Italy**, symposium talk, title (translated): “*Sleep deprivation and alterations of circadian rhythms*”.

2017 (40): Sleep and Epilepsy center, Neurocenter of Southern Switzerland, **Lugano, Switzerland**, seminar title (translated): “*Physiology of the wake-sleep cycle*”.

2017 (41): Scientific meeting entitled (translation) “*Diagnosis and multidisciplinary treatment of narcolepsy*”, IRCCS Bologna Institute of Neurological Sciences, **Bologna, Italy**, seminar title (translated): “*Animal models for novel therapies*”.

2018 (42): Meeting of the Italian Association of Patients with Narcolepsy or Hypersomnia (AIN), **Bologna, Italy**, seminar title (translated): “*The search for novel therapies of narcolepsy based on etiology: an update*”

2018 (43): Seventh International Symposium on Narcolepsy, **Beverly, MA, USA**: talk entitled: “*The link between narcolepsy and autonomic dysfunction: a translational perspective*”.

2018 (44): 24th Congress of the European Sleep Research Society (ESRS2018), **Basel, Switzerland**: symposium talk: “*Autonomic background of multisystem oscillations: from humans to model organisms*”.

2018 (45): Twenty-eighth meeting of the Italian Association of Sleep Medicine (AIMS), **Taormina, Italy**, symposium talk, title (translated): “*Chronobiology of sleep disorders: insights from basic research*”.

2018 (46): Forty-ninth meeting of the Italian Neurological Society (SIN), **Rome, Italy**, symposium talk, title (translated): “*Physiological bases of the interaction between the sympathetic and cardiovascular systems*”.

2018 (47): Scientific meeting entitled (translation) “*Diagnosis and multidisciplinary treatment of narcolepsy*”, IRCCS Bologna Institute of Neurological Sciences, **Bologna, Italy**, seminar title (translated): “*Novel therapeutic developments*”.

2019 (48): FEPS2019, joint meeting of the Federation of European Physiological Societies (FEPS) and the Italian Physiological Society (SIF), **Bologna, Italy**, symposium talk, title: “*The hypocretin/orexin neurons as part of the central autonomic network: implications for cardiovascular control during wakefulness and sleep*”.

2019 (49): Fiftieth meeting of the Italian Neurological Society (SIN), **Bologna, Italy**, symposium talk, title (translated): “*Circadian physiology*”.

2020 (50): Thirtieth meeting of the Italian Association of Sleep Medicine (AIMS), Web Conference, symposium talk, title (translated): “*The histaminergic pathway in sleep medicine*”.

2020 (51): Thirtieth meeting of the Italian Association of Sleep Medicine (AIMS), Web Conference, symposium talk, title (translated): “*Sleep and the seven pillars of ageing*”.

2020 (52): Le Congrès du Sommeil 2020, meeting of the French Society for Sleep Medicine and Sleep Research (SFRMS), Web Conference, symposium talk, title (translated): “*Autonomic nervous system pathophysiology and dysregulation in sleep disorders: insights from animal models*”.



2020 (53): Scientific meeting entitled (translation) “*Diagnosis and multidisciplinary treatment of narcolepsy*”, Web Conference, seminar title (translated): “*Animal models in narcolepsy research*”.

2021 (54): SLEEP2021 meeting, Web Conference, symposium talk, title “*Brain control of movement from NREM to REM sleep: a translational perspective*”.

2021 (55): 71<sup>st</sup> National Meeting of the Italian Society of Physiology (SIF), Web Conference, symposium talk, title “*Recent advances in cardiovascular and motor control during sleep: a translational perspective*”.

2021 (56): Scientific meeting entitled (translation) “*Biomarkers for the diagnosis and therapy of central nervous system hypersomnias*”, Department of Biomedical and Neuromotor Sciences, University of Bologna, **Bologna, Italy**, seminar title (translated): “*Biomarkers*”.

2022 (57): 31st meeting of the Italian Association of Sleep Medicine (AIMS), **Rome, Italy**, symposium talk, title “*Update on experimental data in narcolepsy*”.

2022 (58): WorldSleep2022 Meeting of the World Sleep Society, **Rome, Italy**, symposium talk, title “*Cardiovascular function and dysfunction during sleep: a translational perspective*”.

2022 (59): SSP/SSTS-SSSSC Joint Annual Conference 2022, Swiss Society for Sleep Research, Sleep Medicine and Chronobiology, **Luzern, Switzerland**, symposium talk, title “*Construct and face validity for animal model of RLS*”.

2022 (60): 32nd meeting of the Italian Association of Sleep Medicine (AIMS), **Rimini, Italy**, symposium talk (translated): “*Orexin receptors: from physiology to clinics*”.

2022 (61): 26th Congress of the European Sleep Research Society (ESRS2020), **Athens, Greece**: symposium talk: “*How can animal models accelerate RLS research?*”.

2022 (62): 14<sup>th</sup> meeting of the European Narcolepsy Network (EU-NN), **Bologna, Italy**, symposium talk: “*A year in review – basic research*”.

2023 (63): CoastPredict and Decade Collaborative Center for Coastal Resilience Joint Workshop for Stakeholders and Partners, **Bologna, Italy**, talk entitled “*Environmental challenges to sleep health in coastal communities*”.

2023 (64): Annual meeting of the Italian Association of patients with Narcolepsy or Hypersomnias, **Bologna, Italy**, talk with title (translated) “*Orexin receptors from physiology to the clinic*”.

2023 (65): 32<sup>nd</sup> European Meeting on Hypertension and Cardiovascular Protection, investigator-initiated satellite symposium on “*Nocturnal blood pressure: methodological aspects, pathophysiological mechanisms, and clinical implications*”, **Milan, Italy**; symposium talk “*Role of sleep and circadian rhythms: preclinical evidence*”.

2023 (66): 53rd Meeting of the Italian society of Neurology (SIN), **Naples, Italy**, symposium talk entitled: “*The role of orexins in the control of wakefulness and in neurological comorbidity*” (translated).

2023 (67): Meeting “*Italia Sonno*” (translated as “*Sleep in Italy*”), 10th edition, **Rome, Italy**, talk entitled “*Why do we sleep?*” (translated).

2024 (68): ICAMPAM 2024 meeting, The International Society for the Measurement of Physical Behaviour, **Rennes, France**, symposium talk entitled “*Measuring physical activity, sleep, and heart rate to improve prediction of incident falls in older subjects: the DARE-FALLSPREDICT projects*”.

2024 (69): 11th Seminar on “*Diagnosis and multidisciplinary treatment of narcolepsy: the Italian narcolepsy network*”, **Bologna, Italy**, lecture entitled “*Synergies and translation between clinical and basic science: narcolepsy as a model disease*” (translated).

2024 (70): Workshop “*New methods for the study of sleep and dreams*” (translated), satellite to the annual meeting of the Italian Academy of Sleep Medicine (AIMS), **Lucca, Italy**, talk “entitled “*Automatic analysis of electrophysiological data during sleep*”.

2025 (71): Workshop “*Mobex 2025 Bologna*”, **Bologna, Italy**, lecture entitled “*DARE-FALLSPREDICT: A multivariable model beyond the state of the art for predicting incident falls in community dwelling older subjects*”.

2025 (72): WorldSleep 2025 Meeting of the World Sleep Society, **Singapore**, symposium talk entitled “*An integrated approach to sleep-cardiovascular physiology: Utilizing multi-sensor and multi-device data*”.

2025 (73): European Narcolepsy Days 2025, European Narcolepsy Network, Istanbul, Turkey, lecture on “*Animal models of narcolepsy*”.

2025 (74) 12th Multidisciplinary Seminar on the Diagnosis and Therapy of Narcolepsy”, **Bologna, Italy**, lecture entitled “*New insights from basic research*” (translated).

2026 (75) Seminar “Sleep: an essential need” (translated), **Catania, Italy**, lecture entitled “*Arousal, hyperarousal and insomnia*” (translated; scheduled).

2026 (76) Seminar “Sleep: our fourth vital element” (translated), **Udine, Italy**, lecture entitled “*Anatomical, neurobiological, and physiological bases of the wake-sleep cycle*” (translated; scheduled).

### **Chair, scientific sessions**

2011 (1): Sixteenth Annual Meeting of the Italian Sleep Research Society (SIRS), **l’Aquila, Italy**, session title “*Oral communications IP*” (translated).

2014 (2): Fifth meeting of the European Narcolepsy Network (Eu-NN) and European Narcolepsy Day, **Copenhagen, Denmark**, session title “*Autonomic function, sleep regulation and narcolepsy*”.

2014 (3): Sixteenth Meeting of the European Federation of Autonomic Societies (EFAS), **Malaga, Spain**, session title “*Sleep and the autonomic nervous system*”.

2014 (4): Twenty-fourth Meeting of the Italian Association of Sleep Medicine (AIMS); **Pisa, Italy**, session title “*Oral communications*” (translated).

2016 (5): Twenty-third Congress of the European Sleep Research Society (ESRS2016), **Bologna, Italy**, session title: “*Cardiovascular control during sleep: from basic research to clinical implications across the lifespan*”.

2017 (6): Twenty-seventh Meeting of the Italian Association of Sleep Medicine (AIMS); **Bolzano, Italy**, session title “*Oral communications IP*” (translated).

2019 (7-8): Twenty-ninth Meeting of the Italian Association of Sleep Medicine (AIMS); **Genova, Italy**, session titles “*Oral communications I*” and “*Sleep and Neurodegeneration*” (translated).

2020 (9): 25th Congress of the European Sleep Research Society (ESRS2020), Web Conference, symposium title: “*Hypocretins/orexins and cardiovascular disease risk: narcolepsy type 1 and beyond*”.

2020 (10): Virtual meeting of the European Restless Legs Syndrome Study Group (EURLSSG), Web Conference, session title: “*Anima models*”.

2021 (11): 71<sup>st</sup> National Meeting of the Italian Society of Physiology (SIF), Web Conference, symposium title “*Sleep as a phenomenon of the integral organism: recent advances on an old theme*”.

2022 (12): WorldSleep2022 Meeting of the World Sleep Society, **Rome, Italy**, symposium: “*Sleep disorders and cardiovascular dysfunction: beyond sleep-disordered breathing*”.

2022 (13): WorldSleep2022 Meeting of the World Sleep Society, **Rome, Italy**, oral communication session “*Basic sleep research*”.

2022 (14): 15th International RBD Study Group meeting, **Ravenna, Italy**, session on “*Basic Science*”.

2022 (15): 32nd meeting of the Italian Association of Sleep Medicine (AIMS), **Rimini, Italy**, oral communications section of the *Neuroscience Track*.

2023 (16): 73rd National Meeting of the Italian Society of Physiology (SIF), **Pisa, Italy**, oral communications session on *Neurobiology and Neurophysiology*.

2023 (17): 20th European Narcolepsy Master Class, the European Narcolepsy Network (Eu-NN), **Leiden, The Netherlands**, session on *Pathophysiology*.

2023 (18): 33rd National Meeting of the Italian Association of Sleep Medicine (AIMS), **Milan, Italy**, *Hot Topic Update Session 1* “*New Frontiers in Narcolepsy*”.

2023 (19): 33rd National Meeting of the Italian Association of Sleep Medicine (AIMS), **Milan, Italy**, Round Table “*Sleep Research Projects in Italy: Synergies*”.

2024 (20): International Meeting “Clinical update sleep (Auxo-Sleep)”, **Milan, Italy**, session “*Insomnia: different phenotypes = different treatments?*”.

2024 (21): DARE – Digital Lifelong Prevention Spoke 2 – Community-based digital primary prevention – Scientific Annual Meeting, **Palermo, Italy**; session “*Digital tools for Primary Prevention*”.

2024 (22): Pisa Sleep Award 2024, XVI Edition, **Pisa, Italy**, session “*Sleep, memory and cognition*”.

2024 (23): 27th meeting of the European Sleep Research Society (ESRS), **Sevilla, Spain**, Symposium “*From ions to sleep*”.

2024 (24): Workshop “New methods for the study of sleep and dreams” (translated), satellite to the annual meeting of the Italian Academy of Sleep Medicine (AIMS), Lucca, Italy, session entitled “*Automatic analysis of electrophysiological data during sleep*”.

2024 (25): 34th National Meeting of the Italian Academy of Sleep Medicine (AIMS), **Tirrenia, Italy**, *Young Scientists Symposium*.

2025 (26): WorldSleep 2025 Meeting of the World Sleep Society, symposium “*Harnessing sensors and big data to decipher the link between sleep health and cardiovascular risk: Innovations and applications*”.

2025 (27): Online Meeting “eSleep Europe 2025 Basic Animal track”, European Sleep Research Society (ESRS), session “*Year in Review*”.

### Lecturer in scientific courses and schools

2006 (1): Second Institute of Human Physiology, University of **Milan, Italy**, elective course lecture with title (translated): “*Sleep changes the central integration of cardiovascular control*”.

2012 (2): Course title (translated) “*Application and limits of the study of heart rate variability*”, Italian Society of the Study of the Autonomic Nervous System (AINV), **Bologna, Italy**, lecture title (translated): “*Anatomic and physiological bases of heart rate variability*”.

2012 (3-4): European Federation of Autonomic Societies (EFAS) School 2012, **Lisbon, Portugal**, lectures (2) entitled: “*Primer on cardiovascular control*” e “*Primer on sleep physiology*”.

2013 (5): Seventeenth Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, lecture title (translated): “*Cardiovascular autonomic control during sleep*”.

2014 (6): European Federation of Autonomic Societies (EFAS) School 2014, **Malaga, Spain**, lecture title: “*Central autonomic control of cardiovascular function during sleep*”.

2014 (7): Scientific meeting entitled (translation) “*Diagnosis and multidisciplinary treatment of narcolepsy*”, IRCCS Bologna Institute of Neurological Sciences, **Bologna, Italy**, tutor of workshop 1 on cardiovascular pathophysiology.

2015 (8): Nineteenth Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, lecture title (translated): “*Physiology of sleep and circadian rhythms*”.

2016 (9): Twenty-seventh course entitled (translation) “*Ataxias in clinical rehabilitation*”, **Riccione, Italy**, lecture title (translated): “*Functional anatomy of balance and movement*”.

2017 (10): Seventh Advanced Course entitled (translation) “*Up to date in respiratory disorders during sleep*”, Italian Association of Hospital Pneumologists (AIPO), **Forlì, Italy**, lecture title (translated): “*The regulation of ventilation during REM sleep and non-REM sleep*”.

2018 (11-13): Twenty-second Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, 3 lectures entitled (translation): “*Physiology and pathophysiology of cardiovascular control during sleep*”, “*Potential and limitations of noninvasive techniques for the assessment of cardiovascular control during sleep: a physiological perspective*”; “*DORAs (Dual Acting Orexin Receptor Antagonists) and new melatonin receptor agonists*”.

2019 (14-16): Twenty-third Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, 3 lectures entitled (translation): “*Regulation of circadian rhythms*”, “*Physiology of integrated cardiorespiratory control during sleep*”; “*Pathophysiology of chemoreflex responses to hypoxia mediated by carotid bodies in patients with sleep-disordered breathing*”.

2019 (17): Sleep Medicine Summer School, **Lugano, Switzerland**: member of the scientific committee and lecture on *“Sleep as a phenomenon of the integral organism”*.

2019 (18): Course entitled *“Hypersomnias of central origin”* (translated), lecture entitled *“Narcolepsy, sleep fragmentation, and cardiovascular risk: the role of orexins”* (translated), University of **Parma, Italy**.

2020 (19): Seminar on *“Animal models in sleep research”* (translated), University of **Cagliari, Italy**.

2021 (20): Focus Course on *“Excessive Daytime Sleepiness (EDS)”* (translated), lecture entitled *“Physiological bases”* (translated), Italian Association of Sleep Medicine (AIMS), online webinar.

2021 (21): Course on *“Insomnia between sleep medicine and psychiatry”* (translated), lecture entitled *“Sleep physiology”* (translated), Italian Association of Sleep Medicine (AIMS), online webinar.

2021 (22): Course on *“Insomnia in childhood and adolescence”* (translated), lecture entitled *“Sleep functions and control mechanisms during development”* (translated), Italian Association of Sleep Medicine (AIMS), online webinar.

2021 (23): Course on *“Sleep and Dementia”* (translated), Neurocenter of Southern Switzerland, **Lugano, Switzerland**, lecture entitled *“Anatomy and physiology of the glymphatic system”* (translated), online webinar.

2021 (24): Course on *“Sleep disorders during childhood and adolescence”* (translated), lecture entitled *“Sleep regulatory mechanisms”* (translated), Italian Association of Sleep Medicine (AIMS), online webinar.

2022 (25): Fourth Sleep Science Winter School, European Sleep Foundation, lecture entitled *“Animal models of RLS/PLMS”* online webinar.

2022 (26): Focus Course on *“Excessive Daytime Sleepiness (EDS)”* (translated), lecture entitled *“Physiological bases”* (translated), Italian Association of Sleep Medicine (AIMS), online webinar.

2022 (27): Web Course *“All you need is sleep -insomnia web talk”*, lecture entitled (translated): *“Insomnia: comorbidity and impact on cardiovascular and mental health”*.

2023 (28): Course: *“Daridorexant: a new asset against insomnia”* (translated), Idorsia, lecture entitled *“Orexin signaling as a new therapeutic target in insomnia”* (translated), **Venice, Italy**.

2023 (29): SEEG Course *“SEEG and the Autonomic System”*, lecture *“The autonomic system”*, **Venice, Italy**.

2023 (30): Twenty-seventh Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, lecture *“Sleep chronobiology”* (translated).

2023 (31): SEEG Course *“SEEG and the Autonomic System”*, lecture *“The autonomic system”*, Campus de Cely, **France** (lecture given with remote connection).

2023 (32): Seminars in Neuropsychiatry and Neuroscience, Giannina Gaslini Institute IRCCS, **Genoa, Italy**, seminar *“Orexins: from physiology to pharmacology”* (translated).

2023 (33): Third Sleep Medicine Summer School, European Sleep Foundation (ESF), **Lugano, Switzerland**, lecture *“Sleep, the brain, and the body”* (10 luglio, Lugano, Svizzera).

2023 (34): Third Sleep Medicine Summer School, European Sleep Foundation (ESF), **Lugano, Switzerland**, lecture *“The glymphatic system and its relationship to sleep”*.

2023 (35): Web Conference *“All you need is sleep – in practice 2023”*, lecture *“Orexin neurons and sleep”* (translated).

2024 (36): Advanced Training Seminar on the Treatment of Headache Disorders, Module 1, San Raffaele University in Rome and ASC Associazione per una Scuola delle Cefalee, **Rome, Italy**, (with remote connection) lecture *“Orexin receptors: a bridge between sleep and migraine?”* (translated).

2024 (37): Twenty-eighth Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, lecture *“Sleep physiology”* (translated).

2024 (38): Twenty-first European Narcolepsy Master Class, European Narcolepsy Network, **Montpellier, France**, lecture *“Preclinical experience with orexin-receptor agonists”*.

2024 (39): 27th meeting of the European Sleep Research Society (ESRS), **Sevilla, Spain**, Masterclass on *“Wearable sensors and artificial intelligence for sleep medicine and sleep research: a primer for clinicians and biomedical scientists”*, lecture entitled *“State of the science and recommendations for using wearable technology in sleep and circadian research”*.

2024 (40): Masterclass on “Sleep Medicine and Sleep Research”, Collegio Superiore of the University of Bologna, **Bertinoro, Italy**, lecture entitled “*Sleep as a phenomenon of the integral organism*”.

2025 (41): WorldSleep 2025 Meeting of the World Sleep Society, Singapore, course “Sleep-related movement disorders”, lecture entitled: “*Pathophysiological substrates of RLS: Insights from animal models*”.

2025 (42): WorldSleep 2025 Meeting of the World Sleep Society, Singapore, course “Understanding narcolepsy: a comprehensive clinical update”, lecture entitled: “*Mechanisms of disease: the orexin system*”.

2026 (43): Thirtieth Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, lecture “*Physiology Pills: The Control of Movement*” (translated).

2026 (44): Thirtieth Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**, lecture “*Physiology Pills: The Neurophysiology of Arousal*” (translated).

### **Organization of scientific courses and schools:**

2018 (1): Organization of the advanced course entitled (translation): “*Management of sleep disorders in patients with cardiovascular diseases*” within the Twenty-second Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**,

2019 (2): Organization of the advanced course entitled (translation): “*Management of sleep-related breathing disorders in patients with cardiovascular diseases*” within the Twenty-third Sleep Medicine Course, Italian Association of Sleep Medicine (AIMS), **Bertinoro, Italy**.

2019 (3): Member of the organizing committee of the Sleep Medicine Summer School, **Lugano, Switzerland**.

2021 (4): Chair of the organizing committee, SIF YRP2021 Annual Meeting of Young Researchers in Physiology, Italian Physiological Society (SIF), **Bertinoro, Italy**.

2022 (5): Chair of the organizing committee, SIF YRP2022 Annual Meeting of Young Researchers in Physiology, Italian Physiological Society (SIF), **Bertinoro, Italy**.

2023 (6): Chair of the organizing committee, SIF YRP2023 Annual Meeting of Young Researchers in Physiology, Italian Physiological Society (SIF), **Bertinoro, Italy**.

2023 (7): member of the organizing committee and co-chair of the first school day, Sleep Medicine Summer School, **Lugano, Switzerland**.

2024 (8): Co-chair of the Master Class “Wearable sensors and artificial intelligence for sleep medicine and sleep research: a primer for clinicians and biomedical scientists”, Sleep Europe 2024 ESRS meeting, **Sevilla, Spain**.

2024 (9): Chair of the Master Class “Sleep Medicine and Sleep Research”, Collegio Superiore of the University of Bologna, **Bertinoro, Italy**.

### **Visiting scientist**

2001: Institut für Physiologie und Pathophysiologie, University of **Heidelberg, Germany** (c/o Prof. Wolfgang Kuschinsky).

2002: Cyclotron Research Centre, University of **Liege, Belgium** (c/o Prof. Pierre Maquet).

2003: Ritchie Centre for Baby Health Research, Monash University, **Melbourne, Australia** (c/o Prof. Adrian M. Walker).

2007: INSERM U652 Physiologie et Pharmacologie vasculaire et rénale, Medical School René Descartes, **Paris, France** (c/o Prof. Jean-Luc Elghozi).

2011 and 2014: INSERM U628 Physiologie intégrée du système d'éveil, University Claude Bernard, **Lyon, France** (c/o Dr. Karine Spiegel and Dr. Jian-Sheng Lin).

2013: Astrid Lingren Childrens' Hospital, Karolinska Institutet, **Stockholm, Sweden** (c/o Prof. Hugo Lagercrantz and Dr. Gary Cohen)

2014: Neurocenter of Southern Switzerland, **Lugano, Switzerland** (c/o Dr. Mauro Manconi)

2015: PériTox, Périnatalité et Risques Toxiques, UMR-I 01 Unité mixte INERIS, UFR de Médecine, University of Picardie Jules Verne, **Amiens, France** (c/o Prof. Véronique Bach)

## **International activities at the University of Bologna, Italy**

2011: Associate Fellow of the Institute of Advanced Studies (ISA) in association with the Visiting Fellowship of Prof. R Dampney (Dept. of Physiology, University of Sidney, Australia).

2013-2015: in charge of ERASMUS student exchanges with the University of Lisbon, Portugal.

2016-2021: Scientific Manager of the Framework Cooperation Agreement between the Department of Biomedical and Neuromotor Sciences of the University of Bologna and the Williams College, Williamstown, MA, USA.

2016-2021: Scientific Manager of the Framework Cooperation Agreement between the Department of Biomedical and Neuromotor Sciences of the University of Bologna and the Neurocenter of Southern Switzerland, Lugano, Switzerland.

2017: Scientific Project Head of the First Specific Agreement between the Department of Biomedical and Neuromotor Sciences of the University of Bologna and the Williams College, Williamstown, MA, USA.

2017-2021: Scientific Manager of the Second Specific Agreement between the Department of Biomedical and Neuromotor Sciences of the University of Bologna and the Williams College, Williamstown, MA, USA.

2017-2020: Scientific Project Head, Agreement between the Department of Biomedical and Neuromotor Sciences of the University of Bologna and the Institut d'Investigacions Biomèdiques August Pi i Sunyer, Barcelona, Spain.

2018-2020: project manager, project entitled (translated) "Sleep, hibernation and metabolism: international cooperation for innovative teaching activities" in collaboration between the Department of Biomedical and Neuromotor Sciences of the University of Bologna and the Williams College, Williamstown, MA, USA.

2019: Associate Fellow of the Institute of Advanced Studies (ISA) in association with the Visiting Fellowship of Prof. SJ Swoap (Williams College, Williamstown, MA, USA).

2021-2022: tutor of the study period abroad of the student Ms. Caterina Crisoliti, Master Degree in Medical Biotechnology, to perform research at the Helmholtz Zentrum München – Deutsches Forschungszentrum für Gesundheit und Umwelt, Munich (Germany), project "*Alterations of lipid droplets in a Drosophila model of mitochondrial membrane protein associated neurodegeneration*" (German supervisor: prof. A. Iuso).

From 2022: person in charge of the Erasmus+ exchange agreement between the Degree course in Medicine and Surgery of the University of Bologna, Ravenna Campus, and the University of Barcelona, Spain.

From 2023: person in charge of the Erasmus+ exchange agreement between the Degree course in Medicine and Surgery of the University of Bologna, Ravenna Campus, and the Universities of Lisbon (Universidade del Lisboa, Portugal), Coimbra (Portugal), Bruxelles (Université Libre de Bruxelles, Belgium), Lausanne (Switzerland), Wien (Medizinische Universitaet Wien, Austria).

## **Publications**

### Research papers and reviews

- 1) Effects of acoustic stimulation on cardiovascular regulation during sleep. Silvani A, Bojic T, Cianci T, Franzini C, Lodi CA, Predieri S, Zoccoli G, Lenzi P. **Sleep** 2003;26:201-5.
- 2) Brain capillary perfusion in the spontaneously hypertensive rat during the wake-sleep cycle. Silvani A, Bojic T, Cianci T, Franzini C, Lenzi P, Lucchi ML, Zoccoli G. **Exp Brain Res** 2004;154:44-9.
- 3) Sleep-related changes in the regulation of cerebral blood flow in newborn lambs. Silvani A, Bojic T, Franzini C, Lenzi P, Walker AM, Grant DA, Wild J, Zoccoli G. **Sleep** 2004;27:36-41.
- 4) Sleep-dependent changes in the coupling between heart period and arterial pressure in newborn lambs. Silvani A, Asti V, Bojic T, Ferrari V, Franzini C, Lenzi P, Grant DA, Walker AM, Zoccoli G. **Pediatr Res** 2005;57:108-14.

- 5) Sleep-related brain activation does not increase the permeability of the blood-brain barrier to glucose. Silvani A, Asti V, Berteotti C, Bojic T, Cianci T, Ferrari V, Franzini C, Lenzi P, Zoccoli G. **J Cereb Blood Flow Metab** 2005;25:990-7.
- 6) Sleep-dependent changes in cerebral oxygen consumption in newborn lambs. Silvani A, Asti V, Berteotti C, Ferrari V, Franzini C, Lenzi P, Wild J, Grant DA, Walker AM, Zoccoli G. **J Sleep Res** 2006;15:206-11.
- 7) Central and baroreflex control of heart period during the wake-sleep cycle in spontaneously hypertensive rats. Berteotti C, Asti V, Ferrari V, Franzini C, Lenzi P, Zoccoli G, Silvani A. **Am J Physiol Regul Integr Comp Physiol** 2007;293:R293-8.
- 8) Surges of arterial pressure during rapid-eye-movement sleep in spontaneously hypertensive rats. Berteotti C, Franzini C, Lenzi P, Zoccoli G, Silvani A. **Sleep** 2008;31:111-7.
- 9) The baroreflex contribution to spontaneous heart rhythm assessed with a mathematical model in rats. Berteotti C, Franzini C, Lenzi P, Magosso E, Ursino M, Zoccoli G, Silvani A. **Auton Neurosci** 2008;138:24-30.
- 10) Sleep-dependent changes in the coupling between heart period and blood pressure in human subjects. Silvani A, Grimaldi D, Vandi S, Barletta G, Vetrugno R, Provini F, Pierangeli G, Berteotti C, Montagna P, Zoccoli G, Cortelli P. **Am J Physiol** 2008;294:R1686-92.
- 11) Physiological sleep-dependent changes in arterial blood pressure: central autonomic commands and baroreflex control. Silvani A. **Clin Exp Pharmacol Physiol** 2008;35:987-94.
- 12) Sleep modulates hypertension in leptin-deficient obese mice. Silvani A, Bastianini S, Berteotti C, Franzini C, Lenzi P, Lo Martire V, Zoccoli G. **Hypertension** 2009;53:251-5.
- 13) Dysregulation of heart rhythm during sleep in leptin-deficient obese mice. Silvani A, Bastianini S, Berteotti C, Franzini C, Lenzi P, Lo Martire V, Zoccoli G. **Sleep**, 2010;33:355-61.
- 14) Central and baroreflex control of heart period during the wake-sleep cycle in consomic rats with different genetic susceptibility to hypertension. Silvani A, Bastianini S, Berteotti C, Franzini C, Lenzi P, Lo Martire V, Zoccoli G. **Clin Exp Pharmacol Physiol** 2010;37:322-7.
- 15) Sleep-related changes in blood pressure in hypocretin-deficient narcoleptic mice. Bastianini S\*, Silvani A\*, Berteotti C, Elghozi JL, Franzini C, Lenzi P, Lo Martire V, Zoccoli G. (\*, these authors contributed equally to this work). **Sleep**, 2011;34:213-8.
- 16) Mathematical modeling of cardiovascular coupling: central autonomic commands and baroreflex control. Silvani A, Magosso E, Bastianini S, Lenzi P, Ursino M. **Auton Neurosci** 2011;162:66-71.
- 17) High-amplitude theta wave bursts during REM sleep and cataplexy in hypocretin-deficient narcoleptic mice. Bastianini S\*, Silvani A\*, Berteotti C, Lo Martire V, Zoccoli G. (\*, these authors contributed equally to this work) **J Sleep Res**, 2012;21:185-18.
- 18) Mice show circadian rhythms of blood pressure during each wake-sleep state. Bastianini S\*, Silvani A\*, Berteotti C, Lo Martire V, Zoccoli G. (\*, these authors contributed equally to this work) **Chronobiol Int**, 2012;29:82-86.
- 19) Control of cardiovascular variability during undisturbed wake-sleep behavior in hypocretin-deficient mice. Silvani A, Bastianini S, Berteotti C, Lo Martire V, Zoccoli G. **Am J Physiol Regul Integr Comp Physiol** 2012;302:R958-64.
- 20) Effects of ambient temperature on sleep and cardiovascular regulation in mice: the role of hypocretin neurons. Lo Martire V\*, Silvani A\*, Bastianini S, Berteotti C, Zoccoli G. (\*, these authors contributed equally to this work). **PLoS ONE**, 2012;7:e47032
- 21) Cardiovascular variability as a function of the wake-sleep behavior in narcolepsy with cataplexy. Silvani A\*, Grimaldi D\*, Barletta G, Bastianini S, Vandi S, Pierangeli G, Plazzi G, Cortelli P. (\*, these authors contributed equally to this work) **J Sleep Res**, 2013;22:178-84.
- 22) Central control of cardiovascular function during sleep. Silvani A, Dampney RAL. **Am J Physiol Heart Circ Physiol** 2013;305:H1683-92.

- 23) Sleep and cardiovascular phenotype in middle-aged hypocretin-deficient narcoleptic mice. Silvani A, Bastianini S, Berteotti C, Cenacchi G, Leone O, Lo Martire V, Papa V, Zoccoli G. **J Sleep Res**, 2014; 23: 98-106.
- 24) Orexin/hypocretin system and autonomic control: new insights and clinical correlations. Grimaldi D\*, Silvani A\*, Benarroch E, Cortelli P. (\*, *these authors contributed equally to this work*). **Neurology**, 2014; 82: 271-278.
- 25) A critical role of hypocretin deficiency in pregnancy. Bastianini S, Berteotti C, Lo Martire V, Silvani A, Zoccoli G. **J Sleep Res**, 2014; 23: 186-188.
- 26) Multiple sleep alterations in mice lacking cannabinoid type 1 receptors. Silvani A\*, Berteotti C\*, Bastianini S, Lo Martire V, Mazza R, Pagotto U, Quarta C, Zoccoli G. (\*, *these authors contributed equally to this work*) **PLoS ONE**, 2014; 9: e89432.
- 27) Cardiorespiratory anomalies in mice lacking CB1 cannabinoid receptors. Silvani A\*, Berteotti C\*, Bastianini S, Cohen G, Lo Martire V, Mazza R, Pagotto U, Quarta C, Zoccoli G. (\*, *these authors contributed equally to this work*). **PLoS ONE**, 2014; 9: e100536.
- 28) The low frequency power of heart rate variability is neither a measure of cardiac sympathetic tone nor of baroreflex sensitivity. Martelli D\*, Silvani A\*, McAllen RM, May CN, Ramchandra R. (\*, *these authors contributed equally to this work*). **Am J Physiol Heart Circ Physiol** 2014;307:H1005-H1012.
- 29) SCOPRISM: a new algorithm for automatic sleep scoring in mice. Bastianini S, Berteotti C, Gabrielli A, Del Vecchio F, Amici R, Alexandre C, Scammell TE, Gazea M, Kimura M, Lo Martire V, Silvani A, Zoccoli G. **J Neurosci Meth**, 2014; 235:277-284.
- 30) Sleep and bodily functions: the physiological interplay between body homeostasis and sleep homeostasis. Amici R, Bastianini S, Berteotti C, Cerri M, Del Vecchio F, Lo Martire V, Luppi M, Perez E, Silvani A, Zamboni G, Zoccoli G. **Arch Ital Biol**, 2014; 152:66-78.
- 31) Bidirectional interactions between the baroreceptor reflex and arousal: an update. Silvani A, Calandra-Buonaura G, Benarroch EE, Dampney RAL, Cortelli P. **Sleep Med**, 2015;16:210-216.
- 32) Histamine transmission modulates the phenotype of murine narcolepsy caused by orexin neuron deficiency. Bastianini S\*, Silvani A\*, Berteotti C; Lo Martire V; Cohen G, Ohtsu H, Lin J-S, Zoccoli G. (\*, *these authors contributed equally to this work*). **PLoS ONE**, 2015;10:e0140520.
- 33) Physiological time structure of the tibialis anterior motor activity during sleep in mice, rats, and humans. Silvani A, Lo Martire V, Salvadè A, Bastianini S, Ferri R, Berteotti C, Baracchi F, Pace M, Bassetti CL, Zoccoli G, Manconi M. **J Sleep Res**, 2015;24:695-701.
- 34) Recent developments of automatic scoring of rodent sleep. Bastianini S, Berteotti C, Gabrielli A, Lo Martire V, Silvani A, Zoccoli G. **Arch Ital Biol**, 2015;153:58-66.
- 35) High amplitude theta wave bursts: a novel electroencephalographic feature of rem sleep and cataplexy. Lo Martire V, Bastianini S, Berteotti C, Silvani A, Zoccoli G. **Arch Ital Biol**, 2015;153:77-86.
- 36) Brain-heart interactions: physiology and clinical implications. Silvani A, Calandra-Buonaura G, Dampney RAL, Cortelli P. **Philos Trans Royal Soc A**, 2016;374:20150181.
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## Editorials

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- 2) Autonomic nervous system dysfunction in narcolepsy type 1: time to move forward to the next level? [Silvani A](#). **Clin Auton Res**, 2020 Dec;30(6):501-502. doi: 10.1007/s10286-020-00742-w.
- 3) Editorial: The integrative physiology of metabolic downstates. [Silvani A](#). **Front Physiol**, 2021 Sep 13;12:758972. doi: 10.3389/fphys.2021.758972

4) Narcolepsy and risk of cardiovascular outcomes: Getting to the heart of the matter. Silvani A. **Sleep**, 2025 Aug 18;zsaf244. doi: 10.1093/sleep/zsaf244.

#### Letters and commentaries

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- 4) Letter to the editor: The iron-deficient rat as a model of Restless Legs Syndrome: was anything lost in translation? Silvani A., Manconi M, Ferri R. **Mov Disord**, 2018;33:181.

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- 2) The hypothalamus and its functions. Zoccoli G, Amici R, Silvani A. In: **Narcolepsy: pathophysiology, diagnosis, and treatment** (Baumann CR, Bassetti CL, Scammell TE, editors), Springer, 2011. ISBN 978-1-4419-8390-9. Pages 191-203.
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- 7) The parasympathetic nervous system. Silvani A., Zoccoli G. In: **The Sage Encyclopedia of Abnormal and Clinical Psychology** (Wenzel A, editor), Sage, 2017. ISBN 9781483365831. Pages 2468-2470.
- 8) Night, darkness, sleep, and cardiovascular activity. Silvani A. In: **Brain and Heart Dynamics** (Govoni S, Politi P, Vanoli E, editors), Springer, 2019. ISBN 978-3-319-90305-7. Pages 1-14.
- 9) Brain-heart interaction: cardiovascular reflexes. Silvani A. In: **Autonomic Nervous System and Sleep** (Chokroverty S and Cortelli P, editors), Springer, 2021. ISBN 978-3-319-90305-7, doi 10.1007/978-3-030-62263-3\_6, pages 51-62.
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- 11) The effects of orexins on tumors. Silvani A. In: **Sleep and Cancer: A New Frontier of Precision Medicine** (MP Mogavero, G Lanza, L Ferini-Strambi, R Ferri, editors), Elsevier 2025, ISBN: 9780443289385.
- 12) Autonomic blood pressure control. Cortelli P, Calandra-Buonaura G and Silvani A. **Handbook of Clinical Neurology**, Elsevier, in press.

#### **Chapters of University textbooks**

1) Thermoregulation (translated). Silvani A. In: **Fisiologia Medica** (F. Conti, editor), Edi Ermes 2025, 4th ed., 2 volumes, ISBN 978887051867-2 and 978887051868-9.

#### Scientific translations:

Italian translation of 23 chapters from University textbooks of physiology in English (Physiology: an integrated approach, Silverthorn DU; Ganong Review of Medical Physiology; Boron Medical Physiology)

### **Summary of teaching and supervision activity**

#### University of Bologna, Italy

Since 2002, in different years, responsibility of University teaching courses of Physiology, Applied Cardiovascular Physiology, Sleep Physiology, Neurophysiology, Chronobiology, and Experimental Scientific Methodology for students in Bioengineering, Medical Biotechnology, Physiotherapy, Radiology, Laboratory Biology, and Medicine and Surgery, for residents in Neurology and Psychiatry, and in master courses in Sleep Medicine, Sleep Dentistry, and Physical Therapy.

Member of the scientific committees of the Master Courses in Sleep Medicine (from 2018) and Sleep Dentistry (from 2019).

Member of the faculty of the PhD course in Health and Technology (from 2023).

Supervision of 27 bachelor and master theses in Physiology (in 8 cases, shared supervision) and of 1 PhD thesis in Applied Physiology and Pathophysiology.

Contribution to training of 11 PhD students (co-supervision for 2 students).

Supervision of 12 post-doctoral research fellowships.

#### Neurocenter of Southern Switzerland, Lugano, Switzerland

2016-17: visiting professorship of Neurophysiology

#### University of Southern Switzerland, Lugano, Switzerland, and University of Bern, Switzerland

2017-18: member of the operational committee for postgraduate advanced courses on sleep, consciousness, and related disorders

2019: supervisor of CAS (certificate of advanced studies), Academy of Sleep and Consciousness, title «Central sleep apnea and stroke », student Dr. Katja Pavšič.

### **Summary of management and administration activity**

#### University of Bologna, Italy

2015-2018: member of the Executive Committee of the Department of Biomedical and Neuromotor Sciences

2015-2018: member of the Executive Committee of the School of Medicine and Surgery

From 2020: vice-coordinator, Degree in Medicine and Surgery, Ravenna Campus

From 2020: chair of the Quality Assurance Aommittee, Degree in Medicine and Surgery, Ravenna Campus

2021: member of the Quality Assurance Committee, Master Degree in Medical Biotechnology

From 2022: vice-chair of the joint committee for student transfer processes, degree courses in Medicine and Surgery of Bologna, the Ravenna Campus, and the Forlì Campus.

From 2024: President of the Student-Faculty Joint Commission (Commissione Paritetica) of the Dept of Biomedical and Neuromotor Sciences.

From 2024: Member of the Ravenna Campus Committee.

From 2024: Member of the Quality Assurance Committee of the Dept of Biomedical and Neuromotor Sciences

