

Personal data

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Education, Degrees and Qualifications

2017-23 Italian Academic Habilitation, “1 Fascia” (Full Prof.): *Bioengineering* (09/G2)
2017-23 Italian Academic Habilitation, “2 Fascia” (Assoc. Prof.): *Bioengineering* (09/G2)
2017-23 Italian Academic Habilitation, “2 Fascia” (Assoc. Prof.): *Physiology* (05/D1)
2001 Polytechnic of Milan, (I): *PhD in Bioengineering (Computational Neuroscience)*.
1998 Univ. of Genova, (I): *Habil. as Chartered Engineer*, (1st rank – score 110/110).
1997 Univ. of Genova, (I): *Laurea in Electronic Engineering, MEng* equivalent, grade 1st class (score: 110/110 *cum laude*).
1992 – 1997 Univ. of Genova, (I): *Electronic Engineering “Laurea”*, 5-years curriculum of undergraduate studies, *MEng* equivalent, specialised in Biomedical Engineering.
1992 Liceo M. Champagnat, Genova: *Diploma di Maturità Scientifica* (5 years, high-school diploma equivalent) - (score: 57/60).

Current Positions

2019 – Principal Investigator, Researcher, SISSA, Neuroscience Sector (Italy).
2020 – 2023 Scientific Coordinator, EC-H2020 FET-OPEN Project “IN-FET”

Previous Research Experience

2019 1-month “scientific visit” at SISSA, Trieste (I)
2018 4-month “collaboration of excellence” invited Professor at SISSA, Trieste (I)
2017 – 2019 Founder and spokesperson of the Molecular, Cellular, and Network Excitability joint research group, Dept. Biomedical Sciences, Univ. Antwerp (Belgium).
2016 – 2019 Tenured, research-mandate, “Hoogleraar” professorship (Full Professor), Head of the Theoretical Neurobiology and Neuroengineering unit, Dept. Biomedical Sciences, Univ. Antwerp (Belgium).
2016 4-month scientific visit in a SME (QWANE Biosciences, Switzerland)
2013 – 2016 Part-time appointment (20%) at NERF (Flanders Neuroelectronic Institute)
2013 – 2016 Scientific Coordinator, EC-FP7 FET-OPEN Project “BRAINLEAP”
2013 – 2015 research-mandate *Hoofddocent* (Associate Professor), Univ. Antwerp (Belgium)
2011 – 2012 research-mandate *Docent* (Assistant Professor), Univ. Antwerp (Belgium)
2011 Tenured appointment; Univ. Antwerp (Belgium)
2008 – 2010 tenure-track, research-mandate *Docent* (Assistant Professor)
2008 – 2019 Head of the Theoretical Neurobiology & Neuroengineering unit, Dept. Biomedical Sciences, Univ. Antwerp (Belgium).
2008 – 2018 External collaborator at the Brain Mind Institute, EPFL, Lausanne (Switzerland).

- 2010 – 2018** Visiting academic at the Dept. of Computer Science, University of Sheffield (UK).
- 2011 – 2015** Scientific Coordinator, EC-FP7 Marie-Curie Initial Training Network “NAMASEN”.
- 2005 – 2008** Junior group leader, with H. Markram, Brain Mind Institute, EPFL (Switzerland).
- 2001 – 2005** Human Frontiers Science Program Organisation long-term postdoc with HR. Lüscher and S. Fusi, Inst. of Physiology, Univ. of Bern (Switzerland).
- 1999** Visiting PhD with G. Le Masson, Inst. de Neurosci. F. Magendie, Bordeaux (F).
- 1999** Visiting PhD with A. Nistri and E. Cherubini, Biophysics sector, International School for Advanced Studies (SISSA), Trieste (Italy).
- 1997 – 1998** Visiting PhD with R.J. Douglas and K. Martin, Institute of Neuroinformatics, ETH and Univ. of Zürich (Switzerland).
- 1997 – 2001** PhD student with M. Grattarola, NeuroEngineering and BioNanoTech Group, Dept. of Biophysical & Electronic Engineering, Univ. of Genova (Italy).
- 1995 – 1996** Undergraduate student in the Cellular Differentiation Laboratory of Prof. Ranieri Cancedda, Advanced Biotechnology Center, Genova (Italy).

Honours and Awards

- 2009** *Ghent, Belgium:* “Best poster Award”, sponsored by Cochlear (0.5k eur)
- 2008** *Univ. La Sapienza, Rome, Italy:* “Science Award to Young Investigators” (5k eur)
- 2003** *Swiss Physiological Society:* “Asher-Hess Young Investigator Award” (2nd prize)
- 2001 – 2004** *Human Frontier Science Program, France,* Long-term Fellowship
- 1997** *Univ. of Genova,* Dignity of Publication and Highest Honors for MEng Thesis
- 2004** *Italian Society for Neurosci.,* Travel grant for attending the FENS Congress
- 1997 – 1999** *Univ. of Genova,* Travel grants for PhD training activities
- 1998** *Polytechnic of Milan,* Grad School admission natl. exam, 1st rank (score: 114/120)
- 1997** *Univ. of Genova (I),* Grad School admission natl. exam, 1st rank (score:114/120)

Records of Funding as Principal (co)Investigator

- 2020 – 2023** *EC-H2020, FET - Project IN-FET, P.I. and Coordinator (847 Keur)*
- 2018 – 2020** *EC-Flagship, SGA2 - Human Brain Project, P.I. (180 Keur)*
- 2017 – 2019** *Grant G.0F15.17.N, Research Foundation Flanders (FWO), P.I. (330 Keur)*
- 2016 – 2018** *EC-Flagship, SGA1 - Human Brain Project, P.I. (100 Keur)*
- 2015** *Congress Organisation grant, Research Foundation Flanders (FWO), (2.5 Keur)*
- 2015** *Congress Organisation grant, Univ. Antwerp (1.0 Keur)*
- 2012 – 2017** *Belgian Science Policy Office, P.I. (500 Keur)*
- 2013 – 2016** *EC-FP7 ICT FET-OPEN Strep Grant, P.I. and coordinator (605 Keur)*
- 2013** *Development Support Grant, Univ. Antwerp, co-P.I. (50 Keur)*
- 2012** *PhD salary grant, Univ. Antwerp, P.I. (40 Keur)*
- 2012 – 2016** *Grant G.0888.12.N, Research Foundation Flanders (FWO), P.I. (213 Keur)*
- 2012 – 2015** *EC-FP7 ICT FET-OPEN Strep Grant, P.I. (420 Keur)*
- 2012 – 2015** *EC-FP7 NMP Strep Grant, P.I. (400 Keur)*

- 2011 – 2015** *EC-FP7 Marie Curie Initial Training Network, P.I. and coordinator (2900 Keur)*
- 2011 – 2015** *Grant G.0136.11N, Research Foundation Flanders (FWO), co-P.I. (92 Keur)*
- 2011** *Development Support Grant, Univ. Antwerp, P.I. (40 Keur)*
- 2010 – 2013** *Grant “A.C.I.N.”, EC FP-7 “Matera+” / IWT, PI (224 Keur)*
- 2010 – 2012** *“e-GAP2” grant, UK Royal Society, co-P.I. (10 Keur)*
- 2010** *Congress Organization grant, Univ. Antwerp, P.I. (1.4 Keur)*
- 2009 – 2013** *New Research Initiatives grant (BOF/NOI), Univ. Antwerp, P.I. (130 Keur)*
- 2009 – 2011** *Grant G.0836.09, Research Foundation Flanders (FWO) (225 Keur)*
- 2009 – 2010** *Congress Organization grant, “Centro Stefano Franscini”, co-P.I. (16 Keur)*
- 2008 – 2011** *Professorship Mandate, Foundation “Franqui Stichting”, P.I. (134 Keur)*
- 2008 – 2011** *Competitive Start-up grant, Univ. Antwerp, P.I. (98 Keur)*
- 2008 – 2011** *“Stoicescu research grant”, EPFL, co-P.I. (250 Keur)*
- 2006 – 2009** *Grant “NEURONANO”, EC FP-6, co-P.I. (460 Keur)*
- 2005 – 2008** *Research grant, Swiss National Science Foundation, co-P.I. (500 Keur)*
- 2001 – 2004** *Long-term Fellowship award, Human Frontier Science Program, France, P.I.*
- 2000 – 2001** *Research grant for “Young Researchers”, Univ. of Genova, P.I.*

Courses, Certifications, and Scientific Training

- 2005** selected participant, *School of Dendrites*, 13th Jerusalem School in Life Sciences.
- 2005** Laboratory Animal Science - Fed. Swiss Cant. Veterinary Off. (FELASA-Cat. C)
- 2004** Laboratory Animal Science - Fed. Swiss Cant. Veterinary Off. (FELASA-Cat. B)
- 2002** selected participant, *MicroElectrode-Array (MEA) course*, Reutlingen (D).
- 2001** selected participant to the *Intl. School on Biophysics of Ion Channels & Channelopathies*, Venice (I), (Italian Society for Pure and Applied Biophysics).
- 2000** selected participant, *Workshop on Neuromorphic Engineering*, Telluride (USA).
- 1999** selected participant to the *Intl. Summer School of the IEEE Engineering in Medicine and Biology Society*, Siena (Italy).
- 1999** selected participant, *EC Course in Computational Neuroscience*, Crete (Greece).
- 1997 – 2001** Polytechnic of Milan (I), PhD in Bioengineering: winter schools on bioengineering.
- 1997 – 1998** semester courses at the ETH, Zürich: “Computation in Neuromorphic Analog VLSI Systems” (Prof. Giacomo Indiveri) and “Biophysics of Neural Computation: Introduction to Neuroinformatics” (Prof. Kevan Martin and Prof. Rodney Douglas).

Invited Talks and Seminars

- 2019** Dipartimento di Bioingegneria, Politecnico di Milano (I)
- 2019** Consiglio Nazionale delle Ricerche, Palermo (I)
- 2019** Department of Computer Science, The University of Sheffield (UK)
- 2019** Spring School Faculty, European Institute for Theoretical Neurosci., Paris (F)
- 2019** International School of Advanced Studies, SISSA (Italy)

- 2019** Workshop, European Institute for Theoretical Neuroscience, Paris (France)
- 2018** School of Science and Technology, University of Nottingham Trent (UK)
- 2018** Workshop, European Institute for Theoretical Neuroscience, Paris (France)
- 2018** Workshop, University of Verona (Italy)
- 2018** OCNC: OIST Computational Neuroscience Course, OIST, Okinawa (Japan)
- 2018** Workshop, ICM Institut du Cerveau et de la Moelle épinière, Paris (F)
- 2018** “Neurotechnologies and computational methods” school, Univ. Genova (I)
- 2018** Workshop, I3S Instituto de Investigação e Inovação em Saúde, Porto (Portugal)
- 2018** Lecture on “Physics of the Brain”, University of Ghent (Be)
- 2018** Research Club, UZA, University Hospital of Antwerp (Be)
- 2017** Department of Life Sciences, University of Trieste (Italy)
- 2017** ICANN 2017 - The 26th International Conference on Artificial Neural Networks, Alghero (Italy), invited keynote speaker
- 2017** FisMat 2017, Italian National Conference on the Physics of Matter, International Centre for Theoretical Physics and SISSA, Trieste (Italy)
- 2017** Workshop on “Theory in the Human Brain Project”, OCSN International Comp Neurosci Conference, Antwerp (Belgium)
- 2017** VII Neuron Technology Summer School: from Electrophysiology to Imaging & Bionanotechnology, SISSA, Trieste (Italy)
- 2017** WiBrain Conference, ICM Institute for Brain and Spinal Cord, Paris (France)
- 2017** The Cognitive Neuromorphic Engineering Workshop, Capocaccia (Italy)
- 2017** Epilepsy Genetic Network Meeting, Edegem (Belgium)
- 2016** Italian Institute of Technology, Genoa (Italy)
- 2016** NeuroMath: Theoretical & Computational Neuroscience, Cortona (Italy)
- 2016** Interuniversity Initiative on Optogenetics, KULeuven, Leuven (Belgium)
- 2016** Laboratory of Computational Neuroscience, BMI, EPFL Lausanne (Switzerland)
- 2016** Opto- & other genetic approaches in systems neuroscience, Nijmegen (NL)
- 2016** University of Padua (Italy), Neurotechniques School
- 2015** 2nd Belgian Neuroinformatics Congress, Leuven (B)
- 2015** *In vitro Microelectrode Array Recording Techniques* Symposium, satellite to the Annual Conference of the American Society for Neuroscience, Chicago (US)
- 2015** Neurosurgery. Clinical research at the University Hospital Antwerp (B).
- 2015** 37th Annual Conference of the IEEE Eng. in Medicine & Biology Soc., Milan (I)
- 2015** “Spike initiation: models and experiments” CNS2015 Workshop, Prague (CZ)
- 2015** B-Debate: “A Dialogue with the Cerebral Cortex: Function & Interfacing” (Spain)
- 2015** University of Padua (Italy), Neurotechniques School
- 2015** Donders Centre for Neuroscience, Nijmegen (The Netherlands)
- 2015** BENEFRI Neuroscience Workshop, Univ. Bern (Switzerland)
- 2015** NETT Winter School on Neural Engineering, Imperial College London (UK)
- 2015** University of Padua (Italy), Neurotechniques School
- 2014** BRAIN-FETs: Clustering Workshop on Future Emerging Neurotechnologies (Italy)

- 2014** Neuroinformatics 2014 Workshop, Leiden (The Netherlands)
- 2014** Laboratory of Computational Neuroscience, BMI, EPFL Lausanne (Switzerland)
- 2014** NERF Neurotechnology Symposium, Leuven (Belgium)
- 2013** Dept. Bioengineering, Imperial College London (UK)
- 2013** Congress of the Italian Society for Neuroscience (Italy)
- 2013** NAMASEN Marie Curie Training Network Workshop, University of Sheffield (UK)
- 2013** Russian Acad. Sci. - Inst. of Physics: Topical problems of Biophotonics (Russia)
- 2013** “Network Neurosciences: structure and dynamics” CNS2013 Workshop (France)
- 2013** NETT Marie Curie Training Network Workshop, University of Nottingham (UK)
- 2013** “Guru Lecture series” in Neuroscience, The University of Sheffield (UK)
- 2013** Department of Computer Science, The University of Sheffield (UK)
- 2013** Institute of Neuroinformatics Colloquium, ETHZ/University of Zürich (Switzerland)
- 2012** 60 Years of the Hodgkin-Huxley Model, Trinity College, Cambridge UK, speaker
- 2012** European School of Neuroengineering “Massimo Grattarola”, Genova (I), faculty
- 2012** Belgian Physical Society Congress, Brussels (Belgium)
- 2012** VIB - KULeuven, Leuven (Belgium)
- 2011** Univ. Bruxelles, Leuven (Belgium)
- 2011** IMEC, invited speaker, Leuven (Belgium)
- 2011** Polish Neuroscience Society, Lodz, (Poland)
- 2011** Max Planck Institute for Biol. Cybernetics, Tübingen (Germany)
- 2011** CNRS-Laboratory of Neurophysics and Physiology in Paris (France)
- 2011** University of Sheffield (UK), Dept. Computer Science
- 2011** University of Padua (Italy), Neurotechniques School
- 2011** The Israeli Institute of Technology (Technion), Haifa (Israel)
- 2010** Session Opening Lecture, NanoMed 2010, Berlin (Germany)
- 2010** Keynote speaker, Intel European Res. & Innovation Conference, Dublin (Ireland)
- 2010** European Brain Research Institute, Rome (Italy)
- 2010** Anniversary lecture - 20 years IMO-IMOMECEC, Univ. Hasselt (Belgium)
- 2010** University of Mons, Materia Nova, Mons (Belgium)
- 2009** 7th fall course on Comp. Neurosci., Max-Planck-Institut, Göttingen (D)
- 2009** EuroNanoForum 2009, Prague (Czech Republic)
- 2009** School on Neuroelectronic Hybrid Systems, Institute for Advanced Studies, Hebrew University of Jerusalem (Israel)
- 2009** Univ. of Liege, Centre de Recherches du Cyclotron, Liege (Belgium)
- 2009** Univ. of Leuven, Dept. of Neuroscience, Leuven (Belgium)
- 2009** Johnson & Johnson (Janssen Pharmaceutica), CNS Discovery
- 2008** Department of Physics, University of Antwerp, Antwerp (Belgium)
- 2008** INCF National Node Workshop (Varenna, Italy)
- 2008** Workshop on Bioelectronics, IMEC, Leuven (Belgium)
- 2008** Computation in Cortical Circuits, Monte Verita’, Ascona (Switzerland)

- 2008** Italian Institute of Technology, Genoa (Italy)
- 2008** Max-Planck-Institut, Göttingen (Germany)
- 2008** “FlandersBio: Neuro Café”, Mechelen (Belgium), keynote
- 2008** Brain Research Institute, University of Zürich (Switzerland)
- 2008** Faculty of Medicine and Biology, University of Lausanne (Switzerland)
- 2007** Institute of Neuroinformatics Colloquium, ETHZ/University of Zürich (Switzerland)
- 2007** Institute of Molecular Biology and Biotechnology, Heraklion (Crete)
- 2006** European Brain Research Institute, Rome (Italy)
- 2006** Okinawa Computational Neuroscience Course, Okinawa (Japan), invited tutor
- 2006** European School of Neuro-IT and Neuroengineering Genova (Italy)
- 2005** Congress of the Italian Society for Neurosciences Ischia (Italy)
- 2005** QinetiQ UK Workshop “Demo & analysis of learning neuronal networks”
- 2005** Complex Systems Unit, Dept. Tech. & Health, Italian Natl Inst Health, Rome (I)
- 2004** Laboratory of Computational Neuroscience, BMI, EPFL Lausanne (Switzerland)
- 2004** Neurobiology and Biophysics Group, Institut für Biologie III, Albert-Ludwigs Universität, Freiburg (Germany)
- 2003** Neural Microcircuitry Laboratory, BMI, EPFL Lausanne (Switzerland)
- 2001 – 2002** NeuroEngineering Workshop & Advanced School, Univ. Genova (Italy)
- 2001** Symposium at the Congress of Italian Society for Neurosciences, Torino (Italy)
- 2000** Dept. Communication, Computer and System Sciences, Univ. of Genova (Italy)

Administrative and other scientific duties (organised by topic)

- 2020 – 2023** Scientific Coordinator, EC-H2020 FET-OPEN Project “IN-FET”
- 2017 – 2019** Founder + spokesperson of the Molecular, Cellular & Network Excitability lab
- 2017 – 2019** Steering committee member of the Institute Born Bunge, Antwerpen (Belgium)
- 2015 – 18** “*Organization for Computational Neurosciences (OCNS)*”: Board of Directors
- 2013 – 16** Part-time visiting scientist programme fellow, NERF-IMEC, Leuven (Belgium)
- 2013 -16** Coordinator, BRAINLEAP EC-FP7-FET STREP project
- 2011 -15** Coordinator, NAMASEN EC-FP7-PEOPLE International Training Network
- 2012 -15** Deputy Coordinator, MERIDIAN EC-FP7-NMP STREP project
- 2014 - 2015** Voting member of the Governing Council of the FENS
- 2014 - 2015** President of the Belgian Society for Neuroscience (2 years mandate)
- 2012 - 2013** Secretary of the Belgian Society for Neuroscience (2 years mandate)
- 2008 – 2019** Director of the Theoretical Neurobiology and Neuroengineering Lab, Antwerpen
- 2008 - 2013** Head of Belgian Node, INCF:International Neuroinformatics Coordinating Facility.
- 2010 - 2014** Member of the advisory board of the Center for Health Technologies (Centrum voor ZorgTechnologie, CZT), at the University of Antwerpen (Belgium).
- 2009 - 2019** Member of the scientific board of the Belgian Society for Neuroscience.
- 2008 - 2012** Member of the advisory board of the American “InnerSpace Foundation”.

- 2005 –2008** Junior Group Leader, “Cortical Nanoelectrophysiology Group”: 2 PhD students, 1 undergrad. student, 1 lab technician; MG designed research projects, gathered EC funding and managed resources for equipment and running expenses.
- 2005 – 2008** Certified authorised person for both Leading and Carrying out Animal Experimentation, by submitting, obtaining, and running three legal licenses for animal experimentation from the Swiss Cantonal Veterinary Institution.
- 2020 –** Associate Editor for “*Frontiers in Cellular Neuroscience - section on Cellular Neurophysiology*” (open access)
- 2019 –** Assistant Specialty Chief Editor for “*Frontiers in Neuroscience*” (*Neural Tech.*)
- 2018** Guest Editor for “*PLoS Computational Biology*” (open access)
- 2016** Guest Editor for a special issue “*Frontiers in Neuroscience*” (open access)
- 2012 –** Associate Editor for “*PeerJ*” (open access)
- 2011 –** Associate Editor for “*PLoS ONE*” (open access)
- 2016 – 2019** Associate Editor for “*Frontiers in Neuroscience - section on Neural Technology*” (open access)
- 2008 – 2016** Associate Editor for “*Frontiers in Neuroengineering*” (open access)
- 2008 –** Review Editor for “*Frontiers in Cellular Neuroscience*” (open access)
- 2019** Remote reviewer, Fondation Voir et Entendre (FVE), Paris, France.
- 2015** Remote reviewer, U.S.-Israel Binational Science Foundation.
- 2012 – 2014** Remote reviewer, MIUR - “Italian Ministry for Education University & Research”.
- 2011 – 2020** Remote reviewer, ANR - France “Agence Nationale de la Recherche” .
- 2009 – 2014** Remote reviewer, Invited Expert, Panel Evaluator for European Commission FP7
- 2004 – 2006** Reviewer for the Swiss National Science Foundation.
- 2000 – 2014** Ad hoc reviewer for the following journals: *Nature Nanotechnology*, *Nature Communications*, *PNAS*, *PLoS Comp Biology*, *PLoS ONE*, *Cerebral Cortex*, *European Journal of Neuroscience*, *Journal of Neurophysiology*, *Neural Computation*, *Journal of Computational Neuroscience*, *International Journal of Neural Systems*, *Medical and Biological Engineering and Computing*, *IEEE Trans. on Neural Networks*, *IEEE Trans. on Biomed Eng*, *Frontiers in Neuroinformatics*, *Frontiers in Neuroengineering*, *Frontiers in Cellular Neuroscience*.
- 2017** Co-organiser of a Workshop on “Theory in the Human Brain Project”, at OCNS International Comp Neurosci Conference, Antwerp (Belgium)
- 2017** local organiser, OCNS International Comp Neurosci Conference, Antwerp (~500 participants; 6 days conference; tutorial sessions; satellite workshops)
- 2017** Program Co-chair, 9th IEEE International Conference on Brain-Inspired Cognitive Systems (BICS2017), Padova
- 2016** member of the Scientific Programme Committee of the 11th International Meeting on Substrate-Integrated Microelectrode Arrays, Reutlingen (Germany).
- 2015** co-organizer of a symposia on “Spike initiation” at the 2015 International Computational Neuroscience Conference, Prague (Czech Rep).
- 2015** Mons (Belgium), 11th Congress of the Belgian Society for Neurosci. organizer.

- 2015** Gdansk (Poland), 2-days scientific EC-ITN workshop organizer.
- 2014** Organizer of the BRAINFET 1st Clustering Workshop on Future Emerging NeuroTechnologies, 16-17 Oct 2014, Italian Institute of Technology, Genova (I).
- 2014** member of the Scientific Programme Committee of the 9th International Meeting on Substrate-Integrated Microelectrode Arrays, Reutlingen (Germany).
- 2014** Program Committee Member for NIPS 2014: Neural Information Processing Systems Foundation, Montreal, Quebec (Canada).
- 2014** Program Committee Member for Living Machines 2014: The 3rd International Conference on Biomimetics and Neurotechnology, Milan (Italy).
- 2014** member of the Scientific Programme Committee of the International Congress on Neurotechnology, Electronics & Informatics” - NEUROTECHNIX, Rome (Italy).
- 2014** member of the Scientific Programme Committee of the 24th International Conference on Artificial Neural Networks (ICANN), Hamburg (Germany).
- 2013** member of the Scientific Programme Committee of the International Congress on Neurotechnology, Electronics and Informatics” - NEUROTECHNIX, Algarve (Portugal).
- 2013** member of the Scientific Programme Committee of the 23rd International Conference on Artificial Neural Networks (ICANN), Sofia (Bulgaria).
- 2013** co-organizer of a symposia on “Network Neuroscience” at the 2013 International Computational Neuroscience Conference, Paris (France).
- 2013** Program Committee Member for Living Machines 2013: The International Conference on Biomimetics and Neurotechnology, London (UK).
- 2013** member of the Scientific Programme Committee of the 11th International Conf. on Adaptive and Natural Computing Algorithms, Lausanne (Switzerland).
- 2012** co-organizer and member the Scientific Programme Committee of the 6th European Summer School of Neuroengineering, Genova (Italy).
- 2012** member of the Scientific Programme Committee of the 22nd International Conference on Artificial Neural Networks (ICANN), Lausanne (Switzerland).
- 2012** member of the Scientific Programme Committee of the 1st International Conference on Biomimetics and Bio-hybrid Systems, Barcelona (Spain).
- 2012** member of the Scientific Programme Committee of the 8th International Meeting on Substrate-Integrated Microelectrode Arrays, Reutlingen (Germany).
- 2011** co-organizer and member of the Scientific Programme Committee of the 1st Belgian Neuroinformatics Congress, Antwerp (Belgium).
- 2011** Antwerpen (Belgium), 3-days scientific EC-ITN workshop organizer.
- 2010** member of the scientific board of the 7th International Meeting on Substrate-Integrated Microelectrode Arrays, Reutlingen (Germany).
- 2010** member of the scientific board for the “2010 Belgian Brain Congress”.
- 2010** Monte Verita’ (Ascona, Switzerland), 5-days scientific workshop organizer
- 2009** Workshop organizer & chairman at the Italian Society for Neuroscience Congress
- 2005** Congress of the Italian Society for Neurosciences, Ischia (Italy), mini-symposium organizer.
- 2005** “BeNeFri” PhD Programme in Neuroscience, Universities of Bern, Fribourg and Neuchatel: block-course organizing committee.
- 2001** “*Neuroengineering intensive course*”, Univ. Genova, organizing committee.

- 1999** Workshop “*Neuroscienze in vitro: contributi della Bioingegneria*”, University of Genova / Center for Advanced Biotechnology, organizing committee.
- 2019** Chair of the jury PhD defense, Dr. Jan Van Erum, Univ. Antwerp (Be).
- 2019** Int. jury member of PhD defense, Dr. N. Secomandi, SISSA, Trieste (I).
- 2019** Int. jury member of PhD defense, Dr. T. Sorbo, SISSA, Trieste (I).
- 2019** Ext. jury member of PhD defense, Dr. E. Geminiani, Politecnico di Milano (I).
- 2018** Int. jury member of PhD defense, Dr. C. Somers, Univ. Antwerp (Be).
- 2018** Ext. jury member of PhD defense, Dr. D. Ciliberti, KULeuven, Leuven (Be).
- 2018** Ext. jury member of PhD defense, Dr. D. Pozzi, SISSA, Trieste (I).
- 2018** Ext. jury member of PhD defense, Dr. M. McDonald, Univ. Hasselt (Be).
- 2018** Ext. jury member of PhD defense, Dr. A. Soloperto, IIT, Genova (I).
- 2018** Ext. jury member of PhD defense, Dr. D. Lonardoni, IIT, Genova (I).
- 2017** Ext. jury member of PhD defense, Dr. E. Losiouk, Univ. Pavia (I).
- 2017** Chair of the jury PhD defense, Dr. P. Hung Nguyen, Univ. Antwerp (Be).
- 2017** Ext. jury member of PhD defense, Dr. S. Usmani, SISSA, Trieste (I).
- 2017** Ext. jury member of PhD defense, Dr. N. Pampaloni, SISSA, Trieste (I).
- 2017** Chair of the jury PhD defense, Dr. L. Van Ruijssevelt, Univ. Antwerp (Be).
- 2017** Ext. jury member of PhD defense, S. Vreysen, K. Univ. Leuven (B).
- 2017** Ext. jury member of PhD defense, N. Barros Zulaica, Univ. Lausanne + Madrid.
- 2017** Chair of the jury PhD defense, Dr. C. Bigot, Univ. Antwerp (Be).
- 2017** Ext. jury member of PhD defense, Dr. P. Warnaar, Univ. Rotterdam (NL).
- 2017** Internal jury member of PhD defense, Dr. J. Stas, Univ. Antwerp (Be).
- 2016** Ext. jury member of PhD defense, Dr. M. Martens, Univ. Nijmegen (NL).
- 2016** Ext. jury member of PhD defense, Dr. F. Vadipuur, Univ. Hasselt (Belgium).
- 2016** Internal jury member of PhD defense, Dr. S.K. Sudhakar, Univ. Antwerp (Be).
- 2015** Chair of the jury PhD defense, Dr. C. Van Cauwenberghe, Univ. Antwerp (Be).
- 2015** Ext. jury member PhD defense, Dr. A. Tomkins, Univ. Sheffield (UK).
- 2015** Chair of the jury PhD defense, Dr. D. Roose, Univ. Antwerp (Belgium).
- 2015** Ext. jury member of PhD defense, Dr. A. Van der Kant, Univ. Leiden (NL).
- 2014** Chair of the jury PhD defense, Dr. I. Raikov, Univ. Antwerp (Belgium).
- 2014** Ext. jury member PhD defense, Dr. T. Ness, Norwegian Univ. Life Sci. (Norway).
- 2014** Ext. jury member of PhD defense, Dr. S. Mensi, EPFL (Switzerland).
- 2014** Internal jury member of PhD defense, Dr. A. Anwar, Univ. Antwerp (Belgium).
- 2014** Internal jury member of PhD defense, Dr. H. Nedelescu, Univ. Antwerp (Belgium).
- 2014** Ext. jury member of PhD defense, Dr. O. Lilach Bareket, Tel Aviv Univ., Israel.
- 2014** Ext. jury member of PhD defense, Dr. O. Avella Gonzalez, Vrije Univ. Amsterdam.
- 2013** Internal jury member of PhD defense, Dr. P. Verstralen, Univ. Antwerp (Belgium).
- 2013** External jury member of PhD defense, Dr. L. Micholt, KULeuven (Belgium).
- 2013** Internal jury member of PhD defense, Dr. E. Jonckers, Univ. Antwerp (Belgium).
- 2013** Ext. jury member of PhD defense, Dr. V. Delattre, EPFL (Switzerland).
- 2013** Ext. jury member of PhD defense, Dr. G. Testa Silva, Vrije Univ. Amsterdam (NL).

- 2013** Internal jury member of PhD defense, Dr. Ivan Kopjar, Univ. Antwerp (Belgium).
2012 Ext. jury member of PhD defense, Dr. I. Heuelens, Univ. Antwerpen (Belgium).
2011 Internal jury member of PhD defense, Dr. J. Dom, Univ. Antwerpen (Belgium).
2011 External jury member of PhD defense, Dr. S. Musa, KULeuven (Belgium).
2011 External jury member of PhD defense, Dr. D. Linaro, Univ. Genova (Italy).
2011 External jury member of PhD defense, Dr. H. Kasi, EPFL (Switzerland).
2010 Internal jury member of PhD defense, Dr. E. Bocksteins, Univ. Antwerp (Belg).
2009 External jury member of PhD defense, Dr. Jan Stegenga (Univ. Twente, NL).
2003 External jury member of Master defense, Mr Kilian Imfeld, Univ. Neuchatel (Swit).
- 2017** Reviewer of an academic promotion, Fac. of Medicine, Technion, Haifa (Israel).
2013 Reviewer, Bernstein Center, Germany, for Junior Academic Appointments search.
2013 Member of the selection committee for an academic appointment candidature, Faculty of Science, University of Antwerp (Belgium).
2011 Reviewer of an academic appointment, Fac. of Medicine, Technion, Haifa (Israel).
2010 Reviewer of an academic appointment candidature, Faculty of Engineering, Swiss Federal Institute of Technology of Lausanne (Switzerland).

Memberships to Research and Scientific Societies

- 2008 – 2019** Belgian Society for Neuroscience.
2005 – Italian National Group of Bioengineering (GNB).
2004 – American Physiological Society (APS).
2003 – 08 Swiss Physiological Society (SPS).
2002 – 08 Swiss Society for Neuroscience (SSN); Italian Association of Medical and Biological Engineering (AIIMB).
2002 – American Soc. for Neuroscience (SfN).
2000 – Italian Soc. for Neuroscience (SIN) and Federation of European Neurosci. Soc.

Languages

- 2013** ITACE.be Flemish Univ. Consortium (B) – Academic English certification level C1.
2009 Linguapolis, Antwerp (B) – elements of Dutch.
2005 Media Center of the EPFL, Lausanne (CH) – elements of French.
2001 – 2003 Volkhochschule, Bern (CH) – elements of German.
1996 T.O.E.F.L. (Test for English as a Foreign Language), score: 620.
1995 Abon Language School, Bristol (UK): 3 weeks, intensive English course.

I am Italian native speaker, extremely fluent in English and with excellent written skills in technical/scientific English. My knowledge of oral / written German, French and Dutch is basic.

Scientific interests

- Our research activity is focused on the study of **neuronal ensembles (dynamic) properties and their emergence from single-neuron response properties, characterised by cellular electrophysiology, mathematical models and (super)computer simulations**. This involves the design and use of novel **experimental protocols, inspired by theoretical frameworks (e.g. mean-field descriptions of networks of spiking model neurons)**. I am daily supervising both experimental and theoretical investigations, involving **multi-site electrode arrays and whole-cell patch-clamp recordings in both acute cortical rat brain slices and dissociated cell cultures**. Stationary and dynamical electrical response properties of neurons are investigated by a novel approach, which is mimicking the *in vivo*-like conditions cortical neurons experience in the intact cortex of behaving mammals (**current-clamp / dynamic-clamp / reactive-clamp**). Complementing technological tools for such research consist in the coupling of *in vitro* neuronal networks (i.e. both slices and cell cultures) to **arrays of microfabricated microelectrodes (MEAs) for non-invasive extracellular electrical stimulation and long-term recording**, combined to whole-cell patch-clamp recording. I have been also devoting some time to the prototypical development of an **innovative integrated photo-activation device** for selective spatio-temporal uncaging, channel-rhodopsin photo-activation and targeted cell-populations bleaching, employing Digital MicroMirrors Devices, the same components at the core of beam projectors.
- Another area of interest is **Neuroscience Nanotechnologies** in investigating properties and consequences, at the single-cell and population-level, of **coupling cortical neuronal networks to carbon-based nanoparticle, materials and conductive substrates (e.g., nanotubes, CNTs, cristalline nanodiamond)**. In the context of a EC-project consortium “NEURONANO”, we showed interesting properties of the interaction between these nanomaterials and neurons, potentially relevant for **smart materials of future neuroprosthetics**.

Detailed overview on the previous scientific experiences and interests

2005 – 2008: I was **junior group leader** at the Laboratory of Neural Microcircuitry at the Brain Mind Institute, with Prof. H. Markram and I supervised a small research group (2 PhD students, a Master student and a technician).

2001 – 2005: I was Postdoctoral fellow at the Institute of Physiology, University of Bern, Switzerland, head by Prof. Hans-Rudolf Lüscher. My main research activity involved **combining whole-cell patch-clamp *in vitro* electrophysiology and microelectrode substrate arrays**, with the aim of studying and experimentally characterizing **network-level cortical electrophysiology**. I further focused my efforts to the **theoretical study** of the collective properties of networks of spiking neurons, using the “statistical mean-field theory”, designing **novel electrophysiological paradigms**. I **fully developed the electronic hardware and the acquisition software to perform my electrophysiological experiments and all the analysis tools employed in the research**.

1997 – 2001: I worked as a Predoctoral fellow at the Department of Biophysical and Electronic Engineering of the University of Genova, under the supervision of Prof. Massimo Grattarola My research activities and interests included **theoretical neurobiology and NeuroEngineering**, the **mathematical modeling and computer simulations of short-term and long-term synaptic plasticity phenomena**, as well as of the collective electrophysiological activity of *in vitro* network of dissociated neurons, at the biophysical and circuit level.

1999: I was visiting doctoral student at the Laboratoire de physiopathologie des réseaux médullaire, INSERM EPI 9914, Institut de Neurosciences F. Magendie, Bordeaux (France). I studied the cellular basis of nociceptive integration of the spinal cord, and of **the relaying of sensory inputs towards supraspinal central nervous system**. Under the supervision of Dr. Gwendal LeMasson, I applied the **spike-train analysis information theoretical tools**, for the analysis of the available experimental neurobiological data.

1999: I was visiting doctoral student at the Biophysics Sector of SISSA, International School for Advanced Studies, Trieste (I), under the supervision of Dr. Andrea Nistri, where I studied the *in vitro* pattern generation of locomotor rhythms of the spinal cord. I assisted in a few experiments of intracellular and extracellular recording of activity of neurons from intact neonatal rat spinal cord explants, focusing on a **mathematical model for dissecting the cellular and subcellular basis of the “fictive locomotion”** and the disinhibited rhythm generation.

1997 –1998: During the period from October 1997 to June 1998, I was visiting student at the Institute of Neuroinformatics, ETH/University of Zürich (CH), working on a **“Neuromorphic” electronic aVLSI hardware project** under the supervision of Prof. Rodney J. Douglas and Dr. Giacomo Indiveri. During my stay, I participated to **experiments of intracellular and whole-cell patch-clamp recordings** of the electrical activity of rat hippocampal/cortical acute slices.

1995: I worked at the Cellular Differentiation Laboratory of the Advanced Biotechnology Center, Genova (I), as an undergraduate student, under the supervision of Prof. Ranieri Cancedda and Dr. Ivan Martin. I greatly benefited from such an experience as I gained hands-on experience on digital microscopy and dissociated cell-cultures techniques, tissue engineering (i.e. mesenchymal stem cells culture protocols), and on investigating **effects of exposure to electromagnetic fields on the differentiation of stem cells.**

Teaching Experience

Graduate level

- 2007** Ecole Polytechnique Fédérale de Lausanne: contributing lecturer to the course entitled “Neural Intelligence” (6 hours). I have been introducing several concepts of dynamical states and properties, emerging at the level of networks of interacting neurons, as a consequence of single-neuron features.
- 2006** Okinawa Computational Neuroscience Course, Okinawa (Japan), tutoring of practical projects, with regards to modeling synaptic short-term plasticities and biophysical description of slow-cumulative inactivation of Na channels.
- 2001,02,06** European School of Neuro-IT and Neuroengineering, Genova (I), teaching basics of Cellular Electrophysiology, Neurophysiology, Biophysics and Computational Neuroscience. I have been introducing general topics of computational neurosciences, with emphasis on network simulations and on theoretical approaches.
- 2005** “BeNeFri” PhD Programme in Neuroscience, Universities of Bern, Fribourg and Neuchatel: teaching basics of Cellular Electrophysiology and Neurophysiology. I have been revising the emerging patterned activity in *in vitro* preparations and discussed the mathematical tools for the prediction of network phenomena upon experimental characterization of single-neuron and synaptic properties.
- 2003** Univ. of Genova: invited reader for a semester (“Professore a Contratto”) at the Faculty of Engineering, Genova (Italy)
- 2000** Cycle on Neuroinformatics and Computational Neuroscience, Univ. of Genova (I), teaching Computational Neuroscience. I have been introducing basic concepts of computational neuroscience, with emphasis on different levels of descriptions: from multi-compartmental models to population descriptions.

Undergraduate level

- 2020 –** Univ. La Sapienza, Rome: guest lectures in doctoral school courses (2 hours/yr).
- 2019 –** Univ. Trieste: guest lectures in the “Neuroscience master” curriculum (6 hours/yr).
- 2019 –** SISSA: lecturer in the graduate course “Theoretical Neurobiology” (15 hours/yr).

- 2013 – 2019** Univ. Antwerp: co-titularis of “State-of-the-Art-Lectures in Biomedicine” (4h/year).
- 2013 – 2018** University of Antwerp: contributor to the practical course “Bachelor Thesis”.
- 2008 – 2019** University of Antwerp: titularis of course “Computational Neuroscience” (40h/yr)
- 2008 – 2019** Univ. of Antwerp: co-titularis of “System Neuroscience” (6 hours/yr).
- 2006 – 2007** Ecole Polytechnique Fédérale de Lausanne, “Sciences tech. vivant”: lecturer in a course on “Intracellular Recording Techniques” (6 hours/yr)
- 2006 – 2007** Ecole Polytechnique Fédérale de Lausanne, “Sciences tech. vivant”: contributing lecturer to the Master course entitled “Topics in Molecular and Cellular Neuroscience” (12h/yr).
- 2001 – 2005** University of Bern, Faculty of Medicine: Teaching assistant and Lecturer for practical laboratory courses in Physiology.
- 2003** University of Genova, Faculty of Biomedical Engineering: Invited Lecturer for a semester (“Professore a Contratto”), course title “Advanced Mathematical Modeling of Neuronal Networks”.
- 1997 – 2002** University of Genova, Faculties of Electronic and Biomedical Engineering: Teaching assistant and Lecturer for the courses “Bioelectrochemistry and Biomedical Technologies”, “Bioelectronics”; supervision of monographic semester practical projects and of several master theses projects on Computational Neuroscience.
- 1998** European Centre for University Exams Training, Genova (I): Part-time private consulting activity on teaching “Control Theory and Optimization”.

Direction of theses and students supervision

- 2019 –** Design/supervision of the PhD thesis by Mr A. Hosseini (SISSA)
- 2019 –** Design/supervision of the PhD thesis by Mr M. Manzati (SISSA)
- 2018 –** Design/supervision of the PhD thesis by Mr A. Stacchetti (U. Antwerp + SISSA)
- 2018 –** Design/supervision of the PhD thesis by Mrs E. Gjorgievska (U Antwerp + SISSA)
- 2018 –** Design and supervision of master thesis projects of ~1-2 undergraduate students every year (SISSA/Univ. Trieste: M. Manzati, J. Giorgi, G. Franco)
- 2016 – 2020** Design/supervision of the PhD defended by Mr. C Verbist (Univ. Antwerpen)
- 2014 – 2020** Design/supervision of the PhD defended by Mr. S Vandevijver (Univ. Antwerpen)
- 2012 – 2016** Cosupervision of the PhD defended by Dr. Farnoosh Vahidpour (Univ. Hasselt)
- 2010 – 2019** Design and supervision of semester and (master and bachelor) thesis projects of ~1-2 undergraduate students every year (Univ. Antwerpen: R. De Schepper, A. Hosseini, N. Farah, S. Borda Bossana, S. Salvade’, K. El Abdellati, E. Boven, ...)
- 2010 – 2014** Design/supervision of the PhD defended by Dr. Istvan Biro (Univ. Antwerpen)
- 2010 – 2015** Design/supervision of the PhD defended by Dr. Joao Couto (Univ. Antwerpen)
- 2012 – 2016** Design/supervision of the PhD defended by Dr. Rocco Pulizzi (Univ. Antwerpen)
- 2005 – 2010** Design/cosupervision of the PhD defended by Dr. Luca Gambazzi (EPFL)
- 2003 – 2007** Design/cosupervision of the PhD defended by Dr. Maura Arsiero (Univ. Bern)
- 2003 – 2007** Design/cosupervision of the PhD defended by Dr. Harold Köndgen (Univ. Bern)
- 2005 – 2008** Design/supervision of semester and (master) thesis projects of seven undergraduate students (V. Delattre, O. Gschwend, J. Lowell, R. Jain, P. Marcacci, I. Riachi, C. Cali’).

1998 – 2003 Design/supervision of the (master) thesis projects in Electronic and Biomedical Engineering of five undergrad. students (M. Arsiero, C. Carmeli, L. Badino, G. Iarossi, I. Bernardi), and 20+ monographic projects (Univ. Genova).

Teaching interests

Beyond my specialisation in Computational Neuroscience, I contributed to teaching conventional subjects such as Neurobiology and Cellular Biophysics. As a result of my heterogeneous background and academic training, I can contribute to introductory courses such as basic calculus, probability theory, statistics, electrical circuit theory, control theory, signal processing, computer science and programming, as well as to conventional biological subjects such as Cellular and System Neuroscience, and also to more interdisciplinary courses in the field of Biosensors, Bioelectronics and Neuroengineering. I also have experience teaching hands-on courses that employ the computer as a teaching aid (i.e. employing MATLAB, Neuron, etc.). I am always welcoming the opportunity of mentoring undergraduate research and inspiring young people in their academic trajectory.

Teaching philosophy

I try to pass along my enthusiasm for the Brain Sciences and my passion for its quantitative theoretical, computational and technological approaches. This is not always an easy task, especially with non-science majors. I use a variety of techniques to keep high the interest of my student and to involve them in intuitive as well as formal explorations of simple models, as tools to understand neurobiological and electrophysiological phenomena. In more details, I consider

- **interactive demos:** wherever possible, I provide insights and practical demonstrations either computer-based and on the blackboard, trying to develop the intuitive understanding of the topic, to be later refined. I also promote practical sessions in the laboratory or simple in class demonstrations.
- **students ability:** I encourage students to **actively participate** so that those classmates who are less prone to participate see that concepts are being easily grasped by their peers. I have been recently exploring **blended learning** for the mathematical parts of my courses, and have been rewarded by good feedback from students with less technical background, quickly catching up in elementary computer programming for data visualisation, analysis, and numerical simulations. In the long term, the performance of every student is increased. Such a strategy is particularly effective in undergraduate courses, where students come with different mathematical backgrounds. In fact, students like to learn from their peers, but only when the global environment is open and creative, not intimidating.
- **quizzes:** I prepare periodic 10 minute quizzes for the class, as a control mechanism to see how much the class is assimilating and to slow down my pace if needed. It also prompts the students to follow the actual presentation rhythm on a regular basis.
- **extra points:** I propose extra problems or difficult stimulating questions to prompt the advanced students to go the extra mile of learning a little bit more or simply to raise their curiosity and appreciation for a subject, while keeping them motivated.
- **mini projects and assignments:** for a small number of interested students, I organise mini research projects, which I supervise directly. Home assignments are defined precisely but the format of the written report is left to the student as his/her own personal exploration: I value the process and the efforts, beyond the success in delivering the correct solution.

The experience of teaching has been so far a unique learning experience for me, something I enjoyed and which I would like to continue pursuing: passing my passions to the students.

I have a contract with Garland Science as a leading coauthor of an introductory book on Computational Neuroscience, aimed at undergraduates with nontechnical background.

List of Publications

(reprints available online at <http://www.giugliano.info/lab>)

Papers published on peer-reviewed journals (◆=MG is first/corresponding/last author)

1. ◆Manzati M, Sorbo T, Giugliano M, Ballerini L (2020) Foetal neural progenitors contribute to postnatal circuits formation *ex vivo*: an electrophysiological investigation, **Molecular Brain**, in press. <https://rdcu.be/b4ibv>
2. ◆Borda Bossana S, Verbist C, Giugliano M (2020) Homogeneous and narrow bandwidth of spike initiation in rat L1 cortical interneurons, **Frontiers in Cellular Neuroscience (section Neurobiology)**, in press.
3. ◆Jones PJ, Moskalyuk A, Barthold C, Gutöhrlein K, Heusel G, Schröppel B, Samba R, Giugliano M (2020) Low-impedance 3D PEDOT:PSS ultramicroelectrode, **Frontiers in Neuroscience (sec. Neural Technology)**, in press.
4. Lourenço J, De Stasi AM, Deleuze C, Bigot M, Pazienti A, Aguirre A, Giugliano M, Ostojic S, Bacci A (2019) Modulation of coordinated activity across cortical layers by plasticity of inhibitory synapses, **Cell Reports**, in press.
5. ◆Linaro D, Ocker GK, Doiron B, Giugliano M (2019) Correlation transfer by layer 5 cortical neurons under recreated synaptic inputs *in vitro*, **J Neuroscience**, 39 (39) 7648-7663, <https://doi.org/10.1523/JNEUROSCI.3169-18.2019>
6. ◆Moskalyuk A, Van De Vijver S, Verstraelen P, De Dos WH, Kooy RF, Giugliano M (2019) Single-cell and neuronal network alterations in an *in vitro* model of Fragile X syndrome, **Cerebral Cortex**, in press, <https://doi.org/10.1093/cercor/bhz068>
7. ◆Van De Vijver S, Missault S, Van Soom J, Van Der Veken P, Augustyns K, Joossens J, Dedeurwaerdere S, Giugliano M (2019) The effect of pharmacological inhibition of Serine Proteases on neuronal networks *in vitro*. **PeerJ** 7:e6796 <https://doi.org/10.7717/peerj.6796>
8. Goriounova NA, Heyer DB, Wilbers R, Verhoog MB, Giugliano M, Verbist C, Obermayer J, Kerkhofs A, Smeding H, Verberne M, Idema S, Baayen JC, Pieneman AW, de Kock CPJ, Klein M, Mansvelder HD (2018) Large and fast human pyramidal neurons associate with intelligence, **eLife** 7:e41714, <https://doi.org/10.7554/eLife.41714>
9. Cagatay A, Couto J, Giugliano M, Farrow K, Bonin V (2018) Locomotion modulates specific functional cell types in the mouse visual thalamus, **Nature Communications** 9: 4882, <https://doi.org/10.1038/s41467-018-06780-3>
10. Pampaloni NP, Lottner M, Giugliano M, Matruglio A, D'Amico F, Prato M, Garrido JA, Ballerini L, Scaini D (2018) Single-layer graphene modulates neuronal communication and membrane ion channels expression via its cation- π interactions, **Nature Nanotechnology**, 13:755–64, <https://doi.org/10.1038/s41565-018-0163-6>
11. Espuny-Camacho I, Michelsen KA, Linaro D, Bilheu A, Acosta-Verdugo S, Herpoel A, Giugliano M, Gaillard A, Vanderhaeghen P (2018) Human pluripotent stem cell-derived cortical neurons integrate functionally into the lesioned adult murine visual cortex in an area-specific way, **Cell Reports** 23(9):2732-43, <https://doi.org/10.1016/j.celrep.2018.04.094>
12. ◆Linaro D, Biró I, Giugliano M (2018) Dynamical response properties of neocortical neurons to conductance-driven time-varying inputs, **European Journal of Neuroscience** 47(1):17–32, <https://doi.org/10.1111/ejn.13761>
13. McDonald M, Monaco A, Vahidpour F, Haenen K, Giugliano M, Nesladek M (2017) Diamond microelectrode arrays for *in-vitro* neuronal recordings, **MRS Communications** 7(3):683-90, <https://doi.org/10.1557/mrc.2017.62>
14. Singam SKR, Motylewski J, Monaco A, Gjorgievska E, Bourgeois E, Nesládek M, Giugliano M, Goovaerts E (2016) Contrast Induced by a Static Magnetic Field for Improved Detection in Nanodiamond Fluorescence Microscopy, **Phys. Rev. Applied** 6, 064013, <https://doi.org/10.1103/PhysRevApplied.6.064013>
15. Bifari F, Decimo I, Pino A, Llorens-Bobadilla E, Zhao S, Lange C, Panuccio G, Boeckx B, Thienpont B, Vinckier S, Wyns S, Bouché A, Lambrechts D, Giugliano M, Dewerchin M, Martin-Villalba A, Carmeliet P. (2016) Neurogenic Radial Glia-like Cells in Meninges Migrate and Differentiate into Functionally Integrated Neurons in the Neonatal Cortex. **Cell Stem Cell**. pii: S1934-5909(16)30395-2. <http://dx.doi.org/10.1016/j.stem.2016.10.020>.

16. ♦Pulizzi R, Musumeci G, Van den Haute C, Van De Vijver S, Baekelandt V, Giugliano M (2016) Brief wide-field photostimuli evoke and modulate oscillatory reverberating activity in cortical networks, **Scientific Reports** vol. 6:24701. <http://dx.doi.org/10.1038/srep24701>
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18. ♦Monaco A, Moskalyuk A, Motylewski J, Vahidpour F, Ng AMH, Loh KP, Nesládek M, Giugliano M (2015) Coupling (reduced) graphene oxide to mammalian primary cortical neurons in vitro. **AIMS materials science** 2372-0484-2:217-29. <http://dx.doi.org/10.3934/matricsci.2015.3.217>
19. ♦Biró I, Giugliano M. (2015) A Reconfigurable Visual-Programming Library for Real-time Closed-loop Cellular Electrophysiology. **Frontiers in Neuroinformatics** 9:17. <http://dx.doi.org/10.3389/fninf.2015.00017>
20. Peelaerts W, Bousset L, Van der Perren A, Moskalyuk A, Pulizzi R, Giugliano M, Van den Haute C, Melki R, Baekelandt V. (2015) α -Synuclein strains cause distinct synucleinopathies after local and systemic administration. **Nature** 522(7556):340-4. <http://dx.doi.org/10.1038/nature14547>
21. Warnaar, P., Couto, J., Negrello, M., Juncker, M., Smilgin, A., Ignashchenkova A., Giugliano, M., Thier, P., De Schutter, E. (2015) Duration of Purkinje cell complex spikes increases with their firing frequency. **Frontiers in Cellular Neuroscience** 9:122. <http://dx.doi.org/10.3389/fncel.2015.00122>
22. ♦Couto, J., Linaro, D., De Schutter, E., Giugliano, M. (2015) On the Firing Rate Dependency of the Phase Response Curve of Rat Purkinje Neurons In Vitro. **PLoS Comp Biology** 11(3):e1004112, <http://dx.doi.org/10.1371/journal.pcbi.1004112>
23. ♦Linaro, D., Couto, J., Giugliano, M. (2015) Real-time electrophysiology: using closed-loop protocols to probe neuronal dynamics and beyond. **J. Vis. Exp.** (100), e52320, <http://dx.doi.org/10.3791/52320>.
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27. Esposito, U., Giugliano, M., Van Rossum, M., Vasilaki, E. (2014) Measuring Symmetry, Asymmetry and Randomness in Neural Network Connectivity. **PLoS ONE** 9(7): e100805. <http://dx.plos.org/10.1371/journal.pone.0100805>
28. Curtis DJ, Sood A, Phillips TJ, Leinster VHL, Nishiguchi A, Coyle C, Lacharme-Lora L, Beaumont O, Kemp H, Goodall R, Cornes L, Giugliano M, Barone RA, Matsusaki M, Akashi M, Tanaka HY, Kano M, McGarvey J, Halemani ND, Simon K, Keehan R, Ind W, Masters T, Grant S, Athwal S, Collett G, Tannetta D, Sargent IL, Scull-Brown E, Liu X, Aquilina K, Cohen N, Lane JF, Thoresen M, Hanley J, Randall A, Case CP (2014) Secretions from placenta, after hypoxia/reoxygenation, can damage developing neurones of brain under experimental conditions, (in press) **Experimental Neurology**, <http://dx.doi.org/10.1016/j.expneurol.2014.05.003>
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31. ♦Vasilaki, E., Giugliano, M. (2014) Emergence of Connectivity Motifs in Networks of Model Neurons with Short- and Long-term Plastic Synapses, **PLoS ONE** 9(1): e84626. <http://dx.plos.org/10.1371/journal.pone.0084626>
32. S. Sekar, E. Jonckers, M. Verhoye, R. Willems, J. Veraart, J. Van Audekerke, J. Couto, M. Giugliano, K. Wuyts, S. Dedeurwaerdere, J. Sijbers, C. Mackie, L. Ver Donck, T. Steckler, A. Van der Linden (2013) Subchronic memantine induced concurrent functional disconnectivity and altered ultra-structural tissue integrity in the rodent brain: revealed by multimodal MRI, **Psychopharmacology**, in press; <http://dx.doi.org/10.1007/s00213-013-2966-3>
33. Espuny-Camacho I., Michelsen K.A., Gall D., Linaro, D., Hasche A., Bonnefont J., Bali C., Orduz D., Bilheu A., Herpoel, A., Lambert N., Potier D., Aerts S., Gaspard N., Péron S, Schiffmann S.N., Giugliano, M., Gaillard A., Vanderhaeghen P. (2013) Corticogenesis from Human Pluripotent Stem Cells Leads to the Generation of Pyramidal Neurons with Diverse and Complex Hodological Properties; **Neuron** 77(3):440–56, <http://dx.doi.org/10.1016/j.neuron.2012.12.011>
34. Testa-Silva, G., Loebel, A., Giugliano, M., de Kock, C.P.J., Mansvelder, H.D., Meredith, R.M., (2012) Hyperconnectivity and Slow Synapses during Early Development of Medial Prefrontal Cortex in a Mouse Model for Mental Retardation and Autism; **Cereb Cortex**. 22(6):1333-42, <http://dx.doi.org/10.1093/cercor/bhr224>
35. Moroni, M., Biro, I., Giugliano, M., Vijayan, R., Biggin, P.C., Beato, M., Sivilotti, L.G. (2011) Chloride ions in the pore of glycine and GABA channels shape the time course and voltage dependence of agonist currents. **Journal of Neuroscience** 31(40):14095-106, <http://dx.doi.org/10.1523/JNEUROSCI.1985-11.2011>
36. Richmond, P., Buesing, L., Giugliano, M., Vasilaki, E. (2011) Democratic population decisions result in robust policy-gradient learning: a parametric study with GPU simulation; **PLoS ONE** 6(5):e18539, <http://dx.doi.org/10.1371/journal.pone.0018539>
37. ♦Linaro, D., Storace, M., Giugliano, M. (2011) Accurate and fast simulation of channel noise in conductance-based model neurons by diffusion approximation **PLoS Computational Biology** 7(3):e1001102, <http://dx.doi.org/10.1371/journal.pcbi.1001102>
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E – Contributed Book Chapters

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H – Media, Press and Scientific Divulcation

(audio/video feeds available at <http://www.uantwerpen.be/michele-giugliano>)

- H1.** “Pint of Science, Belgium”, May 2018, organiser and speaker.
- H2.** “RADAR. Segnali dalla scienza, dalla cultura, dalla società”, RAI Radio 3, Italian State Broadcasting Company, Jul 3rd 2018, with Daniela Picoi.
- H3.** “Festa di Scienza e Filosofia 2018”, “Neuroscienze in silico: matematica e computer per studiare il cervello”, Foligno (Italy).
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- H5.** FERRAINA, S., GIUGLIANO, M. (2014) “Le Neuroprotesi del futuro”, **Mente e Cervello**, Ottobre 2016.

- H6.** "Festa di Scienza e Filosofia 2014", "Il futuro delle neuroprotesi artificiali", 11/4/2014, Foligno (Italy).
- H7.** "Festa di Scienza e Filosofia 2016", "Neuroscienze in silico: matematica e computer per studiare il cervello", 15/4/2014, Foligno (Italy).
- H8.** "Festa di Scienza e Filosofia 2016", "Veloce come il pensiero", Foligno (Italy).
- H9.** "**Nature Podcast - Neuropod**", "Think fast", November 2014.
- H10.** "**Nature Podcast - Neuropod**", "Nanotubes and Neurons", November 2008.
- H11.** "**Nanowerk.com SpotLight**", "Nanotechnology coming to a brain near you", 5/7/2007.
- H12.** "Radio 3 Scienza", RAI Radio 3, **Italian State Broadcasting Company**, Dec 21st 2005, "Nanocervelli pret-a-porter", with Drs. Fabio Pagan and Laura Ballerini.
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- H14.** BOVE, M., GIUGLIANO, M., GRATTAROLA, M., AND MARTINOIA, S. (2000) Reti Bioartificiali di Neuroni, **Le Scienze**, 375:64-70, Italian Edition of **Scientific American**.

J – Theses

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Modeling the electrophysiological properties of *in vitro* neurobiological systems: communication in neuronal networks and collective electrophysiological activity. **PhD Thesis**, Polytechnic Milan.

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K – Patents

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Hobbies

Scuba diving (PADI - rescue level); HAM radio (QRP, Morse code).

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