ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO
selezione pubblica per n.1 posto/i di Ricercatore a tempo determinato ai sensi dell'art.24, comma 3, lettera b) della Legge 240/2010 per il settore concorsuale 02/D1 - FISICA APPLICATA, DIDATTICA E STORIA DELLA FISICA , settore scientifico-disciplinare FIS/07 - FISICA APPLICATA (A BENI CULTURALI, AMBIENTALI, BIOLOGIA E MEDICINA) presso il Dipartimento di Scienze Farmacologiche e Biomolecolari, (avviso bando pubblicato sulla G.U. n. 85 del 25/10/2022) Codice concorso 5129

[Thierry Nieus]
CURRICULUM VITAE

INFORMAZIONI PERSONALI

COGNOME	**NIEUS**
NOME	**THIERRY**
DATA DI NASCITA	04/02/1973
NAZIONALITA	Lussemburghese

TITOLI

TITOLO DI STUDIO

Laurea in Fisica conseguita presso l'Università di Pavia il 10/5/1999

TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO

Dottorato di ricerca in Matematica Applicata conseguito presso l'Università degli Studi di Milano 23/2/2004

CONTRATTI DI RICERCA, ASSEGNI DI RICERCA O EQUIVALENTI

Università degli Studi di Milano, dal 1/8/2020 al 31/7/2021
Università degli Studi di Milano, dal 1/4/2018 al 31/3/2020
Università degli Studi di Milano, dal 1/9/2016 al 31/3/2018

Istituto Italiano di Tecnologia, dal 1/3/2016 al 31/8/2016
Istituto Italiano di Tecnologia, dal 1/3/2013 al 28/2/2016
Istituto Italiano di Tecnologia, dal 1/12/2006 al 28/2/2013

Politecnico di Milano, dal 1/12/2005 al 31/11/2006
Università degli Studi di Parma, dal 1/12/2003 al 31/11/2005
Università degli Studi di Milano, dal 1/12/2001 al 31/11/2003

ATTIVITÀ DIDATTICA A LIVELLO UNIVERSITARIO IN ITALIA O ALL'ESTERO

2020-2021 Università degli Studi di Milano, Dipartimento di Economia (DEMM). University of Milan (Italy), Crash Course of Mathematics (in lingua inglese) 40 ore

2020-2021 Università degli Studi di Milano, Dipartimento di Scienze e Politiche Ambientali , Crash Course of Statistics (in lingua inglese) 24 ore

2019-2020 Università degli Studi di Pavia. Corso per studenti di dottorato in area Scienze Biomediche. Fundamentals of Data Analysis. 6 ore.

2019-2020 Università degli Studi di Milano, Dipartimento di Economia (DEMM). University of Milan (Italy), Crash Course of Mathematics (in lingua inglese) 40 ore

2019-2020 Università degli Studi di Milano, Dipartimento di Economia (DEMM). University of Milan (Italy), Crash Course of Statistics (in lingua inglese) 30 ore

2016-2020 (4 anni consecutivi) Università degli Studi di Milano, Matematica, Laboratorio di modellistica ~30 ore/anno

2014-2015 Istituto Italiano di Tecnologia, Genoa (Italy), Single cell recordings: from fundamentals of electrical circuits, signal processing to patch clamping techniques. 6 ore

2013-2015 (2 anni consecutivi) Istituto Italiano di Tecnologia, Genoa (Italy), Single cell recordings: from fundamentals of electrical circuits, signal processing to patch clamping techniques. 6 ore/anno

2011-2015 (4 anni consecutivi) Istituto Italiano di Tecnologia, Genoa (Italy), Introduction to Computer Programming. 8 ore/anno

2007-2019 (2 anni consecutivi) Istituto Italiano di Tecnologia, Genoa (Italy), Introduction to Computational Neuroscience. 6 ore/anno

2006-2007 Politecnico di Milano, sede di Lecco (Italia), Ricerca operativa. 20 ore

2004-2005 Università dell’Insubria, Varese (Italia), Laboratorio di Fisica 2. ~10 ore

2001-2002 Politecnico di Milano. Laboratorio di Statistica ~20 ore

2001-2002 Università Bicocca (Milano). Master in Matematica Applicata. Corso di programmazione linguaggio C. ~30 ore

2000-2001 Politecnico di Milano. Laboratorio di Statistica ~20 ore

1998-1999 Università degli Studi di Pavia. Dipartimento di Fisica. Esercitazioni di fisica ~50 ore.

DOCUMENTATA ATTIVITÀ DI FORMAZIONE O DI RICERCA PRESSO QUALIFICATI ISTITUTI ITALIANI O STRANIERI;

Assegni di ricerca, Università degli Studi di Milano, 2016-2021.

Contratti a progetto. Istituto Italiano di Tecnologia, 2006-2016.

Assegno di ricerca. Politecnico di Milano, 2005-2006.

Borsa di post-dottorato. Università degli Studi di Pavia e Università degli Studi di Parma, 2003-2005.

Dottorato di ricerca in Matematica Applicata conseguito presso l'Università degli Studi di Milano conseguito il 23/2/2004.

EU Advanced Course in Computational Neuroscience. International Centre for Theoretical Physics, Trieste, Italy. August 2000 (durata: 1 mese).

REALIZZAZIONE DI ATTIVITÀ PROGETTUALE

Progetti di ricerca (risorse di calcolo)

Influence of cell variability and network topology on population coding. Standard HPC Grant. Computer resources (100000 hours) at the High Performance Computing center CASPUR (Rome, Italy). www.caspur.it Principal Investigator, 2012.

Computational reconstruction of cerebellar circuit activities in cellular and MEG recordings. PRACE. Computer resources (1000000 hours). http://www.prace-project.eu Partner, 2012

From realistic striatal network modelling to the computations underlying behavioural relevant tasks. Standard HPC Grant. Computer resources (100000 hours) at the High Performance Computing center CASPUR (Rome, Italy). Principal Investigator, 2011.

Toward a comprehensive investigation of information transmission and processing in the Cerebellum. Standard HPC Grant. Computer resources (40000 hours) at the High Performance Computing center CASPUR (Rome, Italy). Principal Investigator, 2010.

Computation at the input stage of the Cerebellum Standard HPC Grant. Computer resources (80000 hours) at the High Performance Computing center CASPUR (Rome, Italy). Principal Investigator, 2009.

ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI, O PARTECIPAZIONE AGLI STESSI

Partecipazione a progetti di ricerca

HUMAN BRAIN PROJECT: 2016-2021 (assegnista di ricerca di tipo B, prof. Marcello Massimini, Università degli Studi di Milano), 2021-2022 (sostegno parziale a posizione tecnico)

SI-CODE: (contratto a progetto, PI Luca Berdondini) https://sicode.eu/ FET-Open FP7-284553

BRAINBOW: (contratto a progetto, PI Michela Chiappalone) https://www.brainbowproject.eu/ ICT-FET FP7-284772

SENSOPAC: (postdoc, prof. Egidio D'Angelo, Università degli Studi di Pavia) https://www.sensopac.org/ IST-2005–028056

SPIKEFORCE: (dottorato/postdoc, prof. Egidio D'Angelo, Università degli Studi di Pavia) https://cordis.europa.eu/project/id/IST-2001-35271 IST-2001-35271

CEREBELLUM: (dottorato, prof. Egidio D'Angelo, Università degli Studi di Pavia) QLG3-CT-2001-02256

Organizzazione di eventi scientifici

Organizzatore del workshop: Multi-Scale Brain Function India-Italy Network of Excellence (MSBFIINE), Villa Monastero, Varenna, Italy Dicembre 9, 2022 [BUDGET DEL PROGETTO PER 3 ANNI, 240000 Euro]

Organizzatore della scuola: Neural circuit complexity: Neuroscience, Models and Robotics (BrainCosmos) https://lakecomoschool.org/schools/2021schools/
August 30 - September 3 2021. [BUDGET 15000 Euro]

Organizzatore del workshop: NeuroMath,Mathematical and Computational Neuroscience: cell, network and data analysis. Istituto Nazionale di Alta Matematica (INDAM). http://www.mat.unimi.it/users/naldi/NeuroMath/ Ottobre 2016. [BUDGET 15000 Euro]

Organizzatore del workshop NeuroMAT III, Settembre 2004.

ATTIVITÀ DI RELATORE A CONGRESSI E CONVEGNI NAZIONALI E INTERNAZIONALI

NeuronSchool 2022. Link: https://www.neuronschool.org/. Talk 1: A multi-class logistic regression algorithm to reliably infer network connectivity from cell membrane potentials. Talk 2: Tutorial about implementing neural networks using the software NEURON, September 12-16, 2022

itaDATA The first Italian Conference on Big Data and Data Science. Link: www.itadata.it .Title of the talk: What is the shape of a neural circuit? Data, featured network and neurons, September 20, 2022

EBRAINS Workshop. Brain Activity across Scales and Species: Analysis of Experiments and Simulations (BASSES). Link: humanbrainproject.eu/en/education/ebrains-workshops/basses. Title of the talk: A multi-class logistic regression algorithm to reliably infer network connectivity from cell membrane potentials, June 15, 2022.

Summit meeting of the Human Brain Project (HBP). Athenes (Greece). Perturbational-based measures of complexity and the bridge to applications in human, February 5, 2020.

Hackathon CEREBELLUM MODELLING. Detailed synapse models of the cerebellum. Pavia (Italy), January 13 2020.

Neural Coding meeting (13th), Turin (Italy). PCIe: a novel data robust perturbational complexity index to assess consciousness in human subjects, September 11 2018.

Computational Neuroscience Meeting (CNS). Paris (France). Workshop: Computations in the cerebellar circuit: advances on the modeling front. Title of the talk: Information transmission at the cerebellar granule cell, July 18, 2013.

FisMAT meeting Milan (Italy). Title of the talk: Investigating the interplay between intrinsic and evoked activities in cultured neuronal networks by dimensional reduction techniques, September 9, 2013.

News on cerebellar mechanisms and function - Modelling cerebellar neurons and circuits. Department of Physiology, Pavia (Italy). March 7, 2008.

8th International Work-Conference on Artificial Neural Networks, IWANN 2005. Computational Intelligence and Bioinspired Systems. Vilanova i la Geltrú (Barcelona, Spain). Title of the talk: Modeling synaptic transmission and quantifying information transfer in the granular layer of the cerebellum, July 2005

ATTIVITÀ DI RELATORE A CONGRESSI E CONVEGNI NAZIONALI E INTERNAZIONALI - POSTER

Lonardoni D., Berdondini L., **Nieus T.** A computational model of hippocampal neuronal networks: the role of connectivity in the appearance of synchronized bursting events. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Nieus T., Maccione A., Berdondini L. Investigating the interplay between intrinsic and evoked activities in cultured neuronal networks by dimensional reduction techniques and high-density MEAs. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Mapelli L., **Nieus T.**, D'Angelo E. Computational modeling predicts the impact of inhibitory mechanisms on spike patterns and calcium influx in cerebellar granule cells. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Amin H., Maccione A., **Nieus T.**, Berdondini L. Alzheimer's disease (AD) in-vitro model: a novel drug screening approach on 4096-microelectrode recording arrays. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Di Marco S., Maccione A., **Nieus T.**, Hennig M., Pirmoradian S., Hilgen G., Sernagor E., Berdondini L. A high-resolution experimental platform for large-scale recording of light-evoked responses in the retinal ganglion cell layer. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Simi A., Maccione A., **Nieus T.**, De Pietri Tonelli D., Berdondini L. Differentiation and functional integration of adult-born hippocampal neurons: a study on high-resolution microelectrode arrays (MEA). In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Thalhammer A., Ermolyuk Y., **Nieus T.**, Ng T., Volynski K., Soong T., Goda Y., Cingolani L. Ca v2.1 EF-hand splice isoforms differentially affect neurotransmitter release and short-term synaptic plasticity. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Maggi S., Lassi G., Espinoza S., **Nieus T.**, Gainetdinov R., Nolan P., Tucci V. Cognitive and electrophysiological endophenotypes in the after-hours circadian mouse model. In Forum of European Neuroscience Abstracts, Milan, Italy 2014

Nieus T., Das S. , Petrini E., Barberis A. Role of intracellular chloride concentration in the efficacy of GABAergic transmission. In Society for Neuroscience Abstracts, New Orleans, USA. 2012

Maccione A., **Nieus T.**, Simi A., Amin H., Berdondini L. Multi-site electrical stimulation integrated to high density micro electrode arrays (MEAs) reveals the effective connectivity

of dissociated neuronal cultures. In Society for Neuroscience Abstracts, New Orleans, USA. 2012

Nieus T., Marconi E., Maccione A., Panzeri S., Berdondini L. Engineering biological networks to investigate computational principles in real neural networks. In Forum of European Neuroscience Abstracts, Barcelone, Spain 2012

Simi A., Bosca A., Maccione A., **Nieus T.**, Brandi F., Dante S., Berdondini L. Structured neuronal networks investigated by high-resolution MEAs. In Forum of European Neuroscience Abstracts, Barcelone, Spain 2012

Ferrea E., Medrihan L., Maccione A., **Nieus T.**, Baldelli P., Benfenati F., Berdondini L. Electrophysiological imaging of epileptic brain slices reveals pharmacologically confined functional changes. In Forum of European Neuroscience Abstracts, Barcelone, Spain 2012

Lassi G., Maggi S., **Nieus T.**, Tucci V. Loss of genomic imprinting affects sleep, cognition and thermogenesis in mice. In Forum of European Neuroscience Abstracts, Barcelone, Spain 2012

Maggi S., Lassi G., **Nieus T.**, Balci F., Nolan P. M., Tucci V. Abnormal temporal decision making in a novel circadian mouse model, the After-hours mice. In Forum of European Neuroscience Abstracts, Barcelone, Spain 2012

Russo G., Maggi S., **Nieus T.**, Taverna S. Gap Junctions Mediate Inhibition of Action Potential Firing in Striatal Fast-Spiking Interneurons. In Forum of European Neuroscience Abstracts, Barcelone, Spain 2012

Nieus T., Bologna L., Martinoia S., Complex dynamics in neural growth. Cosyne Meeting, Salt Lake City, USA 2011

Nieus T., Baldelli P., Benfenati F. A mathematical model of synaptic pool dynamic accounts for altered release of synapsin I deficient mice. In Forum of European Neuroscience Abstracts, Amsterdam, Holland 2010

Marconi E., Maccione A., **Nieus T.**, Benfenati F., Berdondini L. Relationship between controlled and geometrically organized neuronal assemblies and functional properties of the network, a step forward. Frontiers in Neuroengineering, 3(0):5. 2010

Solinas S., **Nieus T.**, D'Angelo E. Large-scale realistic modeling of the cerebellar circuit: focus on the granular layer. Frontiers in Neuroscience, 4(0):5. 2010

Garofalo M., Pasquale V., **Nieus T.**, Maccione A., Berdondini L., Martinoia S. Functional connectivity of in vitro cortical networks and neuronal avalanches: Linking network topology to network dynamics In Society for Neuroscience Abstracts, Chicago , USA. 2009

Bologna L.L., **Nieus T.**, Martinoia S. A mixed excitatory/inhibitory model of neural growth reproduces cortical cultures' activity during development. In Renaud, S. and Saighi, S., editors, Proceedings of the Conference NeuroComp, vol. 4, pages 4, 2009.

Bezzi M., Arleo A., **Nieus T.**, D'Angelo E., Coenen O. Quantitative characterization of information transmission in a single neuron. In: F. Alexandre, Y. Boniface, B. Girau, N. Rougier (eds.), Proceedings of NeuroComp Conference, pp. 134-136. 2006

Coenen O. J.M., Bezzi M., Arleo A., **Nieus T.**, D'Errico A., D'Angelo E. Quantitative characterization of information transmission in a single neuron. In Society for Neuroscience Abstracts, Washington, DC, USA. 2005

Bezzi M., **Nieus T.**, Arleo A., D'Angelo E., Coenen O. J.M. Reti neuronali impulsive per il controllo di robot: il progetto SpikeForce. In Atti del Convegno Nazionale ANIPLA-BIOSYS 2005, pages 226-235, Milan, Italy 2005

Bezzi M., **Nieus T.**, Arleo A., D'Angelo E., Coenen O.J.M. Information transfer at the mossy fiber-granule cell synapse of the cerebellum. In Society for Neuroscience Abstracts, No. 827.5, San Diego, USA. 2004

Coenen O.J.M., Boucheny C., Bezzi M., Marchal D., Arnold M.P., Ros E., Carillo R., Ortigosa E.M., Agis R., Barbour B., Arleo A., **Nieus T.**, D'Angelo E. Adaptive spiking cerebellar models and real-time simulations. In Society for Neuroscience Abstracts, No. 827.4, San Diego, USA 2004

Nieus T., D'Angelo E. Experimental and modelling investigation of synaptic dynamics in cerebellar granule cells. In Forum of European Neuroscience Abstracts, Lisbon, Portugal 2004.

Nieus T., D'Angelo E. Mathematical modeling of neurotransmission and excitability at the cerebellar mossy fiber-granule cell relay. In Forum of European Neuroscience Abstracts, Paris, France. 2002.

CONSEGUIMENTO DI PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA

Abilitazione Scientifica Nazionale Professore. Seconda Fascia Settore Concorsuale 02/D1. Fisica Applicata, Didattica e Storia della Fisica valido dal 10 Settembre, 2018 al 12 Settembre, 2024.

PRODUZIONE SCIENTIFICA

PUBBLICAZIONI SCIENTIFICHE

Nieus T. , Borgonovo, D., Diwakar, S., Aletti, G., and Naldi, G. A multi-class logistic regression algorithm to reliably infer network connectivity from cell membrane potentials. Front. Appl. Math. Stat. 8, 1023310. DOI: 10.3389/fams.2022.1023310.

Colombi I.*, **Nieus T.***, Massimini M., Chiappalone M. (* cofirst authorship). Spontaneous and Perturbational Complexity in Cortical Cultures. *Brain Sciences* 11, 1453. 2021. DOI: 10.3390/brainsci11111453

Polenghi, A., **Nieus, T.**, Guazzi, S., Gorostiza, P., Petrini, E. M., and Barberis, A. Kainate Receptor Activation Shapes Short-Term Synaptic Plasticity by Controlling Receptor Lateral Mobility at Glutamatergic Synapses. Cell Reports 31, 107735. 2020. DOI: 10.1016/j.celrep.2020.107735.

Nieus T. , D'Andrea V., Amin H., Di Marco S., Safaai H., Maccione A., Berdondini L., Panzeri S. State-dependent representation of stimulus-evoked activity in high-density recordings of neural cultures. Nature Scientific Report, Nature Research, April 3, 2018. DOI: 10.1038/s41598-018-23853-x

Valente P., Romei A., Fadda M., Sterlini B., Lonardoni D., Fruscione F., Castroflori E., Michetti C., Valtorta F., Tsai J., Zara F., **Nieus T.**, Corradi A., Fassio A., Baldelli P. Benfenati F., Constitutive inactivation of the PRRT2 gene alters short-term synaptic plasticity and promotes network hyperexcitability in hippocampal neurons. Cereb Cortex. 2018 Apr 18. doi: 10.1093/cercor/bhy079.

Fruscione F., Valente P., Sterlini B. , Romei A. , Baldassari S. , Fadda M. , Prestigio C. , Giansante G. , Sartorelli J. , Rossi P. , Rubio A. , Gambardella A. , **Nieus T.**, Broccoli V., Fassio A., Baldelli P., Corradi A. , Zara F., Benfenati F. PRRT2 is a negative modulator of sodium channel function and neuronal excitability: a study in human and mouse PRRT2 knockout neurons. Brain 2018 Apr 1;141(4):1000-1016. doi: 10.1093/brain/awy051.

Maggi S., Balzani E., Lassi G., Garcia-Garcia C., Plano A., Espinoza S., Mus L., Tinarelli F., Nolan P., Gainetdinov R., Balci F., **Nieus T.**, Tucci V., The after-hours circadian mutant has reduced phenotypic plasticity in, behaviors at multiple timescales and in sleep homeostasis. Sci Rep. 2017 Dec 19;7(1):17765. doi: 10.1038/s41598-017-18130-2.

Amin H., **Nieus T.**, Lonardoni D., Maccione A., Berdondini L., High-resolution bioelectrical imaging of Aβ-induced network dysfunction on CMOS-MEAs for neurotoxicity and rescue studies. Sci Rep. 2017 May 26;7(1):2460. doi: 10.1038/s41598-017-02635-x.

Lonardoni D., Amin H., Di Marco S., Maccione A., Berdondini L., **Nieus T.** Recurrently connected and localized neuronal communities initiate coordinated spontaneous activity in neuronal networks. PLoS Computational Biology, PLOS, July 27, 2017. DOI: 10.1371/journal.pcbi.1005672

Palazzolo G., Moroni M., Soloperto A., Aletti G., Naldi G., Vassalli M., **Nieus T.***, Difato F.* (* colast authorship) Fast wide-volume functional imaging of engineered in vitro brain tissues. Nature Scientific Report, Nature Research, August 17, 2017. DOI: 10.1038/s41598-017-08979-8

de Luca E., Ravasenga T., Petrini E.M., Polenghi A., **Nieus T.**, Guazzi S., Barberis A. Inter-Synaptic Lateral Diffusion of GABAA Receptors Shapes Inhibitory Synaptic Currents. Neuron, Cell Press, July 5, 2017. DOI: 10.1016/j.neuron.2017.06.022

Pennacchietti F.*, Vascon S.*, **Nieus T.** *, Rosillo C., Das S., Tyagarajan S., Diaspro A., del Bue A., Petrini E.M., Barberis A., Cella Zanacchi F. (* cofirst authorship). Nanoscale molecular reorganization of the inhibitory postsynaptic density is a determinant of GABAergic synaptic potentiation. Journal of Neuroscience, Society for Neuroscience (United States), Feb 15, 2017. DOI: 10.1523/JNEUROSCI.0514-16.2016

Amin H., Maccione A., Marinaro F., Zordan S., **Nieus T.**, and Berdondini L., Electrical responses and spontaneous activity of human iPS-derived neuronal networks characterized for three-month culture with 4096-electrode arrays. Front Neurosci. 2016 Mar 30;10:121. doi: 10.3389/fnins.2016.00121

Abbate E., Porro M., **Nieus T.**, Sacco R., Hierarchical Electrochemical Modeling and Simulation of Bio-Hybrid Interfaces. Computer Methods in Applied Mechanics and Engineering. Volume 300, 1 March 2016, Pages 561-592

Maccione A., Gandolfo M., Zordan S., Hayder A., Di Marco M., **Nieus T.**, Angotzi G.N., Berdondini L. Microelectronics, bioinformatics and neurocomputation for massive neuronal recordings in brain circuits with large scale multielectrode array probes. Brain Research Bulletin. Volume 119, Part B, Pages 118-126

Breschi G.L.* , Ciliberto C.*, Nieus T.*, Rosasco L., Taverna S., Chiappalone M., Pasquale V. (* cofirst authorship) Characterizing the input-output function of the olfactory-limbic pathway in the guinea pig. Computational International Neuroscience. Volume 2015 (2015), Article ID 359590 (* equal contribution) DOI: 10.1155/2015/359590

Cesca F., Mohanty A., Ferrea E., **Nieus T.**, Benfenati F., Scholz-Starke J. Functional interaction between the scaffold protein Kidins 220/ARMS and neuronal voltage-gated Na + channels. Journal of Biological Chemistry 2015 Jul 17;290(29):18045-18055. doi: 10.1074/jbc.M115.654699

Bosi S., Rauti R., Laishram J., Turco A., Lonardoni D., **Nieus T.**, Prato M., Scaini D. and

Ballerini L. From 2D to 3D: novel nanostructured scaffolds to investigate signalling in reconstructed neuronal networks. Nature Scientific Report, Nature Research, April 24, 2015. DOI: 10.1038/srep09562

Tucci V. ... **Nieus T.** ... Nolan P. [numerous co-authors] Dominant β-catenin mutations cause intellectual disability with recognizable syndromic features. The Journal of Clinical Investigation. April 2014, Volume 124, Number 4. DOI: 10.1172/JCI70372

Nieus T., Mapelli L., D'Angelo E. Regulation of output spike patterns by phasic inhibition in cerebellar granule cells. Frontiers Cellular Neuroscience, Frontiers, August 25, 2014. DOI: 10.3389/fncel.2014.00246

Ullo S., **Nieus T.**, Sona D., Maccione A., Berdondini L., Murino V. Functional connectivity estimation over large networks at cellular resolution based on electrophysiological recordings and structural prior. Frontiers in Neuroanatomy. November 2014, Volume 8, doi: 10.3389/fnana.2014.00137

Maggi S., Garbugino L., Heise I., **Nieus T.**, Balci F., Wells S., Tocchini-Valentini G.P., Mandillo S., Nolan P.M. and Tucci V. A Cross-Laboratory Investigation of Timing Endophenotypes in Mouse Behavior. Timing & Time Perception. Volume 2 Issue 1. DOI: 10.1163/22134468-00002007

Russo G., **Nieus T.** , Maggi S. and Taverna S. Dynamics of action potential firing in electrically connected striatal fast-spiking interneurons. Frontiers in Cellular Neuroscience November 2013, Volume 7, doi: 10.3389/fncel.2013.00209

Ferrea E., Maccione A., Medrihan L., **Nieus T.**, Ghezzi D., Baldelli P., Benfenati F. and Berdondini L. Electrophysiological imaging in brain slices with large-scale high-density electrode arrays. Frontiers in Neural Circuits November 2012 Volume 6 doi: 10.3389/fncir.2012.00080

Lassi G., Ball S.T., Maggi S., Colonna G., **Nieus T.**, Cero C., Bartolomucci A., Peters J., Tucci V. Loss of Gnas Imprinting Differentially Affects REM/NREM Sleep and Cognition in Mice. Plos Genetics 8(5):e1002706. Epub 2012 May 10 DOI:10.1371/journal.pgen.1002706

Marconi E., **Nieus T.**, Maccione A., Valente P., Simi A., Messa M., Dante S., Baldelli P., Berdondini L. Benfenati F. Emergent functional properties of neuronal networks with controlled topology. PLoS One, PLOS, April 6, 2012. DOI: 10.1371/journal.pone.0034648

Valente P., Casagrande S., **Nieus T.**, Verstegen A.M.J., Valtorta F., Benfenati F. & Baldelli P. Site-specific synapsin I phosphorylation participates in the expression of post-tetanic potentiation and its enhancement by BDNF. J Neurosci Apr 25;32(17):5868-79. DOI:10.1523/JNEUROSCI.5275-11.2012

Farisello P., Boido D., **Nieus T.**, Medrihan L., Cesca F., Valtorta F., Baldelli P. & Benfenati F. Synaptic and Extrasynaptic Origin of the Excitation/Inhibition Imbalance in the Hippocampus of Synapsin I/II/III Knockout Mice. Cereb Cortex Feb 24 DOI: 10.1093/cercor/bhs041

Petrini E. M., **Nieus T.**, Ravasenga T., Succol F., Guazzi S., Benfenati F., and Barberis A. Influence of GABA-A R monoliganded states on GABAergic responses. Journal of Neuroscience. Society for Neuroscience (United States). February 2, 2011. DOI: 10.1523/JNEUROSCI.1453-10.2011

Maccione A., Garofalo M., **Nieus T.**, Tedesco M., Berdondini L. & Martinoia, S. Multiscale functional connectivity estimation on low-density neuronal cultures recorded by high-density CMOS Micro Electrode Arrays. J Neurosci Methods Jun 15;207(2):161-71. DOI: 10.1016/j.jneumeth.2012.04.002

Arleo A.*, **Nieus T.*** , Bezzi M.*, D'Errico A., D'Angelo E., and Coenen O. J.M.D. (* cofirst authorship). How synaptic release probability shapes neuronal transmission: information-theoretic analysis in a cerebellar granule cell. Neural Computation, MIT PRESS, August 22, 2010. DOI: 10.1162/NECO_a_00006-Arleo

Solinas S., **Nieus T.**, and D'Angelo, E. A realistic large-scale model of the cerebellum granular layer predicts circuit spatio-temporal filtering properties. Front Cell Neurosci, May 14;4:12. 2010 DOI: 10.3389/fncel.2010.00012

Bologna L.L., **Nieus T.**, Tedesco M., Chiappalone M., Benfenati F. and Martinoia S. Low-frequency stimulation enhances burst activity in cortical cultures during development. Neurosc., Feb 3;165(3):692-704. 2009. DOI: 10.1016/j.neuroscience.2009.11.018

Mapelli L., Rossi P., **Nieus T.**, D'Angelo E., Tonic activation of GABA-B receptors reduces release probability at inhibitory connections in the cerebellar glomerulus. J.Neurophys. Jun;101(6):3089-99. DOI:10.1152/jn.91190.2008

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Editor

Mathematical and Theoretical Neuroscience, Published by Springer, Cham, January 2017, DOI 10.1007/978-3-319-68297-6, ISBNs 978-3-31-968296-9, 978-3-31-968297-6, Editors: Giovanni Naldi and **Thierry Nieus**

Data 24-11-2022 Luogo MILANO