

- **PERSONAL INFORMATION**

Name: Davide De Pietri Tonelli (male);

- **CURRENT POSITION**

2021-Present Senior Researcher Tenured, Group leader of the “Neurobiology of miRNA lab at Istituto Italiano di Tecnologia (IIT), Via Morego 30, Genoa (Italy).

Lab Web page: <https://www.iit.it/web/neurobiology-of-mirna>

Research interest: centers on fundamental molecular neuroscience and its translational applications. The focus of my fundamental work, using mouse as a model system, is dissecting the roles of noncoding RNAs (ncRNAs) in regulating the fate of neural stem cells (NSCs) and neurogenesis. The core of my translational work is using (small) ncRNAs to address brain pathologies arising from aberrant regulation of NSC fate.

- **PREVIOUS POSITIONS**

2014-2021 Senior Researcher in Tenure Track, PI of the “Neurobiology of miRNA lab at IIT, Genoa

2008-2013 Researcher (*no independence of budget*) at IIT, Genoa

2004-2008 Research fellow at **Max Planck Institute of Molecular Cell Biology & Genetics**, Dresden, Germany (Advisor Prof. Dr. Wieland Huttner, Director)

2006-2007 Collaborator at **Clontech Inc.** (Mountain View, CA, USA, Assay Development *in vivo* miRNA detection)

1999-2003 Research fellow at S. Raffaele inst. Milan, Italy (Advisor F. Grohovaz)

- **EDUCATION**

12/2011 PhD in Neurobiology, Insubria Univ. Varese, Italy, *as external*. **Title:** “An integrated approach for the investigation of microRNAs *in vivo*”

02/1999 MSc Degree “*Laurea Magistrale*” in Molecular and Cellular Biology, Milan, Italy.

- **SUPERVISION OF LAB PERSONNEL**

(Before Arrival at IIT) Co-supervised 1 PhD Student (Ji-Feng Fei) in Huttner Lab. Currently PI at the Institute of Brain Science, South China Normal University; Guangzhou, China.

Dates	PhD students supervised at IIT	Actual position
2008–2012	Yoanne Clovis	Scientist. NemaMetrix Inc. Eugene (OR) USA
2012–2014	Emanuela De Luca	Clinical Trial Monitor, Hippocrates Research, Genoa Italy
2012–2015	Federica Marinaro	Postdoc at UCL., London U.K. (R Livesey lab)
2014–2018	Nadin Hoffman	Postdoc, CRUK inst., Cambridge U.K. (R.J. Gilbertson lab)
2016-2021	Caterina Gasperini	Postdoc at Harvard, Boston MA, USA, (Lee Rubin Lab)
2017-2021	Silvia Rancati	Postdoc at IIT, Genoa, Italy (N. Tirelli lab)
2020-present	Silvia Beatini	2 st year PhD student
2020-present	Kiril Tuntevski	2 st year PhD student
2021-present	Letizia La Rosa	2 st year PhD student
Dates	Postdocs and staff at IIT	Actual position
2011–2013	Francesco Niola	Assistant Prof. Univ. Copenhagen, DK
2013–2017	M. Pons-Espinal	Postdoc, Inst Biomedicine-Barcelona, Spain (A. Consiglio)
2014–2015	Philipp Follert	Project manager, AnimAlliance Germany/France
2013–2019	Olga Barca-Mayo	Ramón y Cajal Fellow–S.de Compostela Univ, Spain
2018-2020	Amanda Lo Van	Associate professor, INSERM, Univ. of Lyon, France.
2018-2020	Rui Pereira	MSCA/AIRC (ICARE) Researcher at the Institute for Bioengineering of Catalonia (Barcelona; Spain; G. Battaglia lab.); currently Visiting Researcher in my lab.

CURRICULUM VITAE DAVIDE DE PIETRI TONELLI

2020-2021	Francesca Macchi	Research Fellow at CNR Pisa (M. Caleo lab)
2018-2021	Matilde Ghibaudi	Technician at Univ of Barcelona, Spain (G. Battaglia lab)
2018-2022	Virginia Fernández	Researcher Univ of Alicante, Spain (V. Borrell lab)
2014-present	Roberta Pelizzoli	Senior Technician
2022-present	Stefania Sgroi	Senior Postdoc (AIRC)
2022-present	Lidia Giantomasi	Postdoc

• TEACHING ACTIVITIES

- 2018-present Contract Professor of “**Developmental Neurobiology with laboratory**”, Master degree in Medical-Pharmaceutical biotechnology, University of Genova, Italy (16 hours/year, 20 students on average).
- 2017-present Italian **Habilitation as Associate Professor** in “**Molecular Biology**”; “**Applied Biology**” and “**Comparative Anatomy and Cytology**”.
- 2008-present Lecturer of “**Stem cells and noncoding RNA biology**”, IIT-Univ of Genoa joint doctoral school (8 hours/year, 30 students on average)
- 2008-2010 Contract **Professor** of “**Neural stem cell differentiation**” for the Master degree in Molecular and Cell Biology, at University of Genova, Italy (24 hours year; 10 students on average)

• ORGANISATION OF SCIENTIFIC MEETINGS

- 2022 **Co-Organizer/lecturer** College de France-Italian institute of technology collaborative meeting. 2022, July 7-9 Paris (France) (~100 attendees)
- 2017 **Co-organizer/Chair/lecturer**, *Workshop “Emerging complexity and functions of miRNAs dependent regulation in neuroscience”*, **12th German Neuroscience Society meeting**, Göttingen, Germany. www.nwg-goettingen.de/2017 (~200 attendees)
- 2016 **Organizer**, *IIT-Merck-Sigma-Aldrich collaboration meeting*, Aug 23rd IIT Genoa (~20 attendees)
- 2014 **Organizer**, *1st IIT-Promega collaboration meeting*, Oct 27th, IIT Genoa (~50 attendees)
- Co-organizer/Lecturer** *Symposium on microRNAs in brain development ad function*, **9th FENS forum**, Milan, Italy, <http://fens2014.neurosciences.asso.fr/> (~300 attendees)
- 2012 **Chairman/lecturer**, *7th International MicroRNAs Meeting Europe. Symposium “MicroRNAs in Development”*. Nov. 1 - 2. University of Cambridge, UK. (~200 attendees)

• INSTITUTIONAL RESPONSIBILITIES

- 2013– Life Science Category Specialist (*Scientific advisor for IIT Central Purchase Office*).
- 2022– Coordinator of the Neuroscience facility (Coordination of wet lab facilities and purchases for the neuroscience dept, including management of a staff of 11 technicians)
- 2014– Contribution to the IIT Scientific Plan 2015-2017; update and 2023-2030
- 2010–2012 **Management** of shared **animal colonies** for the neuroscience dept and following
- 2008–2010 Kick start of **IIT wet labs** (*completed 2009*) and **Animal facility** (*completed 2010*)

• REVIEWING ACTIVITIES

For Grants: “IIT-SEED” projects (2010); Singapore Medical Research Council (2011); Royal Society Wellcome-Trust, UK (2017); Swiss National Research Foundation, CH (2015; 2018).

As PhD committee Panelist: Amsterdam Univ, The Netherlands (2017); Univ. of Geneva, Switzerland (2018); Scuola Internazionale Superiore di Studi Avanzati (SISSA) Trieste (Italy) (2020).

For international Journals (*several reviews per year, listed in alphabetical order*): Biol. Psych.; Brain Plast.; Cell. Mol. Life Sci.; **Development**; Developmental Biol.; E-life; **EMBO. Rep**; Front. Neurosci; Front.Genetics; Heliyon; **Human Mol. Gen.**; J. Mol. Neurosci.; **J. Neurosci.**; Mol. Neurobiol.; **Mol. Psychiatry**; **Nature Comm.**; Neurogenesis; **Neuron**; **Nucl. Acids Res.**; **PNAS**; Prog. Neurobiol., **RNA Biol.**; **RNA**; Sci. Reports; Stem Cells Dev.; **Stem Cell. Rep.**; Trend. Biotech.

• MEMBERSHIPS EDITORIAL BOARDS AND SCIENTIFIC SOCIETIES

- 2018 – Present Editorial board member, Frontiers in Neuroscience – Neural Technology
- 2013 – Present Editorial board member, Frontiers in Molecular Neuroscience as Review editor
- 2008 – Present Full Member of the RNA Society <https://www.rnasociety.org/>;

CURRICULUM VITAE DAVIDE DE PIETRI TONELLI

2010 – Present Member of the International Society for Stem Cells Research <http://www.isscr.org/>;

2015 – Present Associate Member of the Japan Neuroscience Society <http://www.jnss.org/en/> / **Ongoing and submitted grants and funding of the PI (Funding ID#)**

Since at IIT total Research funds (current and past) accounts for about ~1,3M Euros.

<i>Project Title</i>	<i>Funding source</i>	<i>Amount (Euros)</i>	<i>Period</i>	<i>Role of the PI (Status)</i>
Differentiation therapy for GBM through synergic action of 11 miRNAs/drugs delivered via polymeric nanoparticles	“AIRC - Associazione Italiana per la Ricerca sul Cancro”. (Italian Charity for Cancer research) Investigator Grant 2017 Grant #20106	596,600 €	2018-2023	PI (Active)
<i>Role of the astrocyte-mediated circadian clock in neurodegeneration and brain aging</i>	CARIPLO Foundation (Private Bank Foundation) Grant #2015-0590	350,000 €	2016-2020	Co-PI (concluded)
<i>Astrocyte regulation of circadian behavior “Astroclock”</i>	FP7-EU- People IEF Grant #629867	241,567 €	2014 –2016	Coordinator (concluded)
<i>Stimuli-Responsive Nanoparticles for eradicating different subsets of cancer cells within tumors</i>	AIRC - Associazione Italiana per la Ricerca sul Cancro. Grant #14527	269,999 € (32,000 to my lab)	2014 –2017	Collaborator (concluded)
<i>Neurogenesis in 22Q11.2 deletion syndrome: role of microRNAs “MIRNAS/22Q11DS”</i>	FP7-EU People IRG Grant #268298	Awarded 100,000 € (50.000 allocated: the MSCA fellow accepted a position as Assistant Prof. in Copenhagen, DK)	2011-2013	Coordinator (concluded)

• PUBLICATIONS

Citations (Google scholar June 2022) 2094; H index= 23 (7 papers with > 100 citations, 5 papers with >50 citations; i10 index = 27). Full publication list: <http://orcid.org/0000-0001-9537-8900>

Selected Publications (out of 32 in PubMed)

Original Articles (*last or corresponding author):

1. Gasperini C, [...] and **De Pietri Tonelli D***. The piRNA pathway sustains adult neurogenesis by repressing protein synthesis. **BiorXiv. 2020**; <https://doi.org/10.1101/2020.09.15.297739> and Submitted.

CURRICULUM VITAE DAVIDE DE PIETRI TONELLI

- Schouten M, [...] **De Pietri Tonelli D**, Toni N, Mira H, Encinas JM, Fitzsimons CP*. Circadian glucocorticoid oscillations preserve a population of adult hippocampal neural stem cells in the aging brain. **Mol Psychiatry**. 2020, Jul;25(7):1382-1405.
- Pons-Espinal M., Gasperini C., Marzi MJ., Braccia C., Armirotti A., Pöttsch A., Walker TL., Fabel K., Nicassio F., Kempermann G. and **De Pietri Tonelli D***. MiR-135a-5p is critical for exercise-induced proliferation in adult neurogenesis. **Stem Cell Rep**. 2019, 12(6):1298-1312.
- Amin H, Marinaro F, **De Pietri Tonelli D*** and Luca Berdondini* (*joint last authors). “Developmental excitatory-to-inhibitory GABA-polarity switch is disrupted in 22q11.2 deletion syndrome: a potential target for clinical therapeutics” **Sci. Rep**. 2017, Nov. 16 (7), 15752. doi:10.1038/s41598-017-15793-9.
- Pons-Espinal M.; de Luca, M.; Marzi MJ; Beckervordersandforth R; Armirotti A, Nicassio F; Fabel K; Kempermann G. and **De Pietri Tonelli, D***. “Synergic functions of miRNAs determine neuronal fate of adult neural stem cells”. **Stem Cell Rep** 2017 Mar 10. pii: S2213-6711(17)30079-6. doi: 10.1016/j.stemcr.2017.02.012.
- Marinaro F, Marzi MJ, Hoffmann N, Amin H, Pelizzoli R, Niola F, Nicassio F and **De Pietri Tonelli D*** “MicroRNA-independent functions of DGCR8 are essential for neocortical development and TBR1 expression”. **EMBO Rep** 2017; Apr;18(4):603-618. doi: 10.15252/embr.201642800.
- Barca-Mayo O, Pons-Espinal, M., Follert, P., Armirotti, A., Berdondini, L. and **De Pietri Tonelli D*** “Astrocyte deletion of Bmal1 alters daily locomotor activity and cognitive functions via GABA signaling”. **Nature Comm**. 2017; 8, 14336 doi: 10.1038/ncomms14336
- Clovis, Y.M.; Enard, W.; Marinaro, F.; Huttner, W.B. and **De Pietri Tonelli D***. “Convergent repression of Foxp2 3’UTR by miR-9 and miR-132 in embryonic mouse neocortex: implications for radial migration of neurons” **Development**, 2012, 139, 3332-3342.
- De Pietri Tonelli D***, Pulvers J.N., Haffner C., Murchison E. P., Hannon G. J., and Huttner W.B*. “miRNAs are essential for survival and differentiation of newborn neurons but not for expansion of neural progenitors during early neurogenesis in the mouse embryonic neocortex”. **Development**, 2008 135(23): 3911-3921.
- De Pietri Tonelli D**, Mihailovich M, Di Cesare A, Codazzi F, Grohovaz F, Zacchetti D. Translational regulation of BACE-1 expression in neuronal and non-neuronal cells. **Nucleic Acids Res**. 2004 Mar 19;32(5):1808-17.

Books and reviews

- Essentials of Noncoding RNA in Neuroscience: Ontogenetics, Plasticity of the Vertebrate Brain. Pag 1-316. ISBN: 9780128044025, 2017 (Elsevier); De Pietri Tonelli D., Ed.
- Penning A., Tosoni G. Abiega O., Bielefeld P., Gasperini G., De Pietri Tonelli D, Fitzsimons C.P., Salta E. Adult Neural Stem Cell Regulation by Small Non-coding RNAs: Physiological Significance and Pathological Implications. 2022 *Frontiers in Cellular Neuroscience* 15, 781434.
- Barca-Mayo O and De Pietri Tonelli D*. Convergent microRNA actions coordinate neocortical development. *Cell Mol Life Sci*. 2014;71(16):2975-95. Citations: 48 (Scopus, Sept.20th, 2020).

• PATENTS

- “Process and device for the determination of alterations in neuronal connectivity and/or morphology”; 201502-19 | patent PAT: US 20150051109 A1
- “miRNA pharmaceutical composition and therapeutic uses thereof”. Submission date 2016-09-19; Rif IIT PT160330; n. 102016000093825, International patent application WO2018051293 (A1), date 2018-03-22.

• SPEAKER AT INTERNATIONAL CONFERENCES (Selected out of 13)

- 2020 **Glial cells-neuron crosstalk in CNS health and disease**. (Febr.2020; Postponed to October due to COVID). University of Turin (Italy) <http://www.nico.ottolenghi.unito.it/agenda/glial-cells-neuron-crosstalk-in-cnshealth-and-disease> (~200 attendees)
- 2019 NEXT Summit: “Artificial vs Human Intelligence”. June 28th Nanjing, Jiangsu, China. (~300 attendees)
- 2017 **EMBO Conference – Gene regulatory mechanisms in neural fate decisions**. 2017 Sept 7-10. Alicante, Spain. <http://meetings.embo.org/event/17-neural-fate> (~300 attendees)
-“Non-coding RNAs in Nervous System Development, Plasticity and Disease”. 2017 June 21-24, Marburg, Germany <http://marburg2017.spp1738.de/> (~100 attendees)
- Keynote speaker** at 2nd Italian Mass Spectrometry Network. IIT, Genoa 2017 May 10-12 <http://www.imass.it/?q=node/59> (~100 attendees)
- 2016 **15th Anniv. Symposium of Max-Planck inst of cell biology and genetics**, Oct. 27-29, Dresden, Germany <https://indico.mpi-cbg.de/event/21/program> (~200 attendees)
- 21st Meeting of the International Society for Developmental Neuroscience, “The role of microRNAs in neurogenesis”. 2016, 11 – 14 May | Juan les Pins, France (~400 attendees)
- 2012 Tohoku Univ., **International Neuroscience Workshop**. Sendai (Japan), March 10th (~100 attendees)
- 2011 **Keystone symposium: "Mechanism and Biology of Silencing (C7)"**. Monterey, CA, USA, March. 20-25th, <http://www.keystonesymposia.org/11C7> (~800 attendees)

CURRICULUM VITAE DAVIDE DE PIETRI TONELLI

- **INVITED LECTURES** (*Selected out of over 50 invited lectures*)

At Academic Inst. (Selected out of 31 institutional seminars)

2022 **College de France**, Paris, France (Host Dr. A. Prochiantz, Director *Emeritus*)

2019 **IFOM-IEO** Campus, Milano, Italy (Host Dr. G. Testa)

Korea University College of Medicine, Seoul, (Host. Dr. Kyung Lee)

ETH-Zürich, Universitäts Spital, Institut für Neuropathologie (Host A. Aguzzi)

2018 **RIKEN** Center for Integrative Medical Sciences, Yokohama, Japan (Host Dr. P Carninci, Director)

2017 **Amsterdam Univ.**, ASILS CNS (Hosts Prof. P.Lucassen and C. Fitzimons), The Netherland

2016 National Council of Res. (CNR), **Istituto Neuroscienze**, Milan, Italy (Host Dr. P. Rosa)

2015 **RIKEN**, Kobe, Japan (Host Prof F. Matsuzaki, Director)

2012: **UCL**, London, UK. (Host Prof. P. Ferretti, PI Developmental Biology Unit)

2011 **Marburg University**, Germany (host Prof. Gerhard Schratt, Director)

2010 **Center for Regenerative Therapy Dresden** (CRTD) Germany (host Dr. Gerd Kempermann, Director)

2008 **S. Raffaele Sci. Inst.** Milan, Italy (Host Prof. Gianvito Martino, Director)

At Courses/Schools

2012 XII Course in Neuroimmunology "The genome and beyond: epigenetics and neuroimmunological disorders"
Bergamo (Italy) March 21-24. (Organizers Prof. G. Martino; G. Comi; A. Uccelli).

2011 "Molecular Mechanisms in Neurosciences", Accademia Nazionale dei Lincei. Rome, Italy. Oct 3-4.

2009 PhD school in Genetics and Molecular Biology "Molecular basis of nervous system differentiation and related pathologies", July 6-7, Univ. La Sapienza, Rome Italy (Organizer Prof. I. Bozzoni).

- **AWARDS**

2011 "**Best Speaker**" award, Conference: "*Molecular Mechanisms in Neurosciences*", Accademia Nazionale dei Lincei, Rome Italy. Oct 3-4 2011