

GIULIA QUATTROCOLO

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Date of birth: 29 January 1985 Nationality: Italian

Current Position: Group leader

Kavli Institute for Systems Neuroscience, NTNU, Trondheim, Norway.

Education: **Ph.D. in Neuroscience** 2014
Northwestern University, Chicago, IL, USA.
Dissertation title: Integration of Cajal-Retzius cells in the developing hippocampal network

Master of Science in Neurobiology 2009
University of Pavia, Pavia, Italy.
Concentration in neurophysiology; graduated *summa cum laude*

Bachelor of Science in Biological Sciences 2007
University of Pavia, Pavia, Italy.
Concentration in physiology; graduated *summa cum laude*

Bibliography

- Publications:

- Wamsley B*, Jaglin XH*, Favuzzi E*, **Quattrocolo G**, Nigro MJ, Yusef Y, Khodadadi-Jamayran A, Rudy B, Fishell G. (2018). Rbfox1 mediates cell-type-specific splicing in cortical interneurons. *Neuron* 100(4), 946-859.
- Anstötz M*, **Quattrocolo G***, Maccaferri G. (2018). Cajal-Retzius cells and GABAergic interneurons of the developing hippocampus: close electrophysiological encounters of the third kind. *Brain Research* 1697, 124-133.
- **Quattrocolo G**, Isaac M, Zhang Y, Petros TJ. (2018). Homochronic transplantation of interneuron precursors into early postnatal mouse brains. *Journal of Visual Experiments* (136), e57723.
- **Quattrocolo G**, Fishell G, Petros TJ. (2017). Heterotopic transplantations reveal environmental influences on interneuron diversity and maturation. *Cell Reports* 21(3), 721-731.
- **Quattrocolo G**, Maccaferri G. (2014). Optogenetic activation of Cajal-Retzius cells reveals their glutamatergic output and a novel feed-forward circuit in the developing mouse hippocampus. *Journal of Neuroscience* 34, 13018-13032.

(Publications)

- **Quattrocchio G**, Maccaferri G. (2013). Novel GABAergic circuits mediating excitation/inhibition of Cajal-Retzius cells in the developing hippocampus. *Journal of Neuroscience* 33, 5486-5498.
 - Selected from the F1000
- Nigro MJ, **Quattrocchio G**, Magistretti J. (2012). Distinct developmental patterns in the expression of transient, persistent, and resurgent Na⁺ currents in entorhinal cortex layer-II neurons. *Brain Research* 1463, 30-41.

Poster/Abstracts

- **Quattrocchio G**, Montaldo NP, Van Loon B, Moser EI. Early postnatal ablation of Cajal-Retzius cells affects hippocampal circuit development. FENS virtual forum, 2020.
- **Quattrocchio G**, Moser EI. Early postnatal ablation of Cajal-Retzius cells affects hippocampal circuit development. Neuroscience meeting, Chicago, IL, USA, 2019
- **Quattrocchio G**, Moser EI. Studying the role of Cajal-Retzius cells in the maturation of the hippocampal network. FENS forum, Berlin, Germany, 2018
- **Quattrocchio G**, Moser EI. Studying the role of Cajal-Retzius cells in the maturation of the hippocampal network. EMCCS meeting, Berlin, Germany, 2018
- **Quattrocchio G**, Moser EI. Studying the role of Cajal-Retzius cells in the maturation of the hippocampal network. EMBO Workshop on Cortical Interneurons in Health and Disease. Mallorca, Spain, 2018.
- **Quattrocchio G**, Fishell G, Petros TJ. Heterotopic transplantations reveal environmental influences on interneuron diversity and maturation. XVII National Congress of the Italian Neuroscience Society, Ischia, Italy, 2017.
- **Quattrocchio G**, Fishell G, Petros TJ. Challenging interneuron in novel environments reveals roles for both intrinsic and environmental mechanisms that sculpt their maturation. Neuroscience meeting, San Diego, CA, USA, 2016
- Jaglin XH, Wamsley B, **Quattrocchio G**, Gamallo-Lana B, Nigro M, Mar A, Rudy B, Fishell G. (2016). Cortical interneuron integration is mediated by the autism spectrum disorder-associated splicing regulator Rbfox1. Neuroscience meeting, San Diego, CA, USA, 2016.
- Jaglin XH, Wamsley B, **Quattrocchio G**, Gamallo-Lana B, Nigro M, Mar A, Rudy B, Fishell G. (2016). Cortical interneuron integration is mediated by the autism spectrum disorder-associated splicing regulator Rbfox1. Cold Spring Harbor Laboratory meeting on “Axon guidance, synapse formation and regeneration”. Cold Spring Harbor, NY, USA, 2016.
- Jaglin XH, Wamsley B, **Quattrocchio G**, Han X, Rudy B, Fishell G. (2015). The role of alternative splicing in the maturation and integration of cortical interneurons. Gordon Research Conference on “Inhibition”. Bates College, ME, USA, 2015
- Jaglin XH, Wamsley B, **Quattrocchio G**, Fishell G. (2015). The Splicing Factor Rbfox1 mediates the maturation and synaptic integration of cortical interneurons. EMBO Workshop on Cortical Interneurons in Health and Disease. Mallorca, Spain, 2015.

(Poster/ Abstracts)

- **Quattrocolo G, Maccaferri G.** (2014). Postsynaptic effects of Cajal-Retzius cells onto interneurons and pyramidal cells of the hippocampal formation. Neuroscience Day, Brain Research Foundation, Chicago, IL, USA, 2014.
- **Quattrocolo G, Maccaferri G.** (2013). Postsynaptic effects of Cajal-Retzius cells onto interneurons and pyramidal cells of the hippocampal formation. Neuroscience meeting, San Diego, CA, USA, 2013.
- **Quattrocolo G, Maccaferri G.** (2012). Distinct cellular sources of GABAergic inputs to Cajal-Retzius cells of the postnatal CA1 hippocampus. Neuroscience meeting, New Orleans, LA, USA, 2012.
- **Quattrocolo G, Maccaferri G.** (2012). Distinct cellular sources of GABAergic inputs to Cajal-Retzius cells of the postnatal CA1 hippocampus. Gordon Research Conference “Neural Development”, Newport, RI, USA, 2012.
- **Quattrocolo G, Maccaferri G.** (2012). Local sources of GABAergic input to hippocampal Cajal-Retzius cells of stratum lacunosum-moleculare. Neuroscience Day, Brain Research Foundation, Chicago, IL, USA, 2012.
- **Quattrocolo G, Maccaferri G.** (2011). Local sources of GABAergic input to hippocampal Cajal-Retzius cells of stratum lacunosum-moleculare. Neuroscience meeting, Washington, DC, USA, 2011.
- Nigro MJ, **Quattrocolo G, Magistretti J.** (2010). Development of multiple functional components of voltage-dependent sodium current in entorhinal cortex layer II neurons. FENS Meeting, Amsterdam, Netherlands, 2010.
- Nigro MJ, **Quattrocolo G, Magistretti J.** (2009). Resurgent sodium current in medial entorhinal cortex layer-II neurons: interactions with fast and slow sodium-channel inactivation and postnatal developmental pattern. Congresso della Società Italiana di Neuroscienze, Milano, Italy, 2009.

Research Experience:

- May 2017-December 2020: Postdoctoral fellow, Prof. Edvard Moser, Kavli Insitute, NTNU, Trondheim, Norway
- July 2014-April 2017: Postdoctoral fellow, Prof. Gord Fishell, Department of Neuroscience, NYU, New York City, USA
- Fall 2009; Fall 2010-Spring 2014: Graduate student, Prof. Gianmaria Maccaferri. Department of Physiology, Northwestern University, Chicago, USA.
- Spring-Summer 2010: Laboratory rotation student, Prof. Enrico Mugnaini, Department of Cellular and Molecular Biology, Northwestern University, Chicago, USA.
- Winter 2010: Laboratory rotation student, Prof. Catherine S. Woolley, Department of Neurobiology and Physiology, Northwestern University, Chicago, USA.
- Winter 2008-Spring 2009: Master student, Prof. Jacopo Magistretti, Department of Physiology, University of Pavia, Pavia, Italy.
- Spring 2006-Summer 2007: Undergraduate student, Prof. Mauro Toselli, Department of Physiology, University of Pavia, Pavia, Italy.

Teaching and mentoring experience:

- January 2020- *present*: supervisor of one Master student
- Fall 2019: Sensory and Motor Neuroscience NEVR3002, lecture on development of neuronal network.
- Fall 2010: Fundamental Neuroscience, NUIN 401-1, with Prof. C.J. Heckman.
- Spring 2010: Neurobiology of Learning and Memory, Biol-Sci 326, with Prof. C.S.Woolley.

Invited Presentations:*Scheduled*

- JANUBET “Cell types and circuits of the mammalian telencephalon” meeting. Athens, Greece. April 19-24, 2021
- NTNU, Neuroscience Symposia for Young Scientist (NeuroSYS). (Original date May 2020, postponed due to COVID-19, new date TBD)
- Kavli Institutes in Neuroscience Forum, Yale University, New Haven, CT, USA (Original date April 2020, postponed due to COVID-19, new date TBD)

Past

- University of Bristol, UK. November 19, 2020
- Center of Excellence for Neural Plasticity and Brain Disorders BRAINCITY, Warsaw, Poland. BRAINCITY Symposium. 9-10 June 2020 (Virtual symposium).
- University of Pavia, Italy. “Career Day” for the Neurobiology Master. December 20, 2019
- University of Oslo, Oslo, Norway. August 20, 2019
- Instituto de Neurociencias, Alicante, Spain. Christmas Meeting, 19-20 December 2018
- University of Pavia, Italy. “Career Day” for the Neurobiology Master. December 19, 2017
- University of Pavia, Italy. December 22, 2011

Grants and Awards:

- 2020-*present*: Marie Skłodowska-Curie Action Individual Fellowship (awarded February 2019)
- May 2020: FENS-IBRO/PERC grant award, to attend the FENS Virtual Forum 2020 (11-15 July 2020)
- November 2019: IBRO International Travel Grants award, to attend the Cortical Development Conference, in Milazzo, Italy, between 18-22 May 2020 (postponed due to COVID-19 to 20-24 September 2021)
- May 2018-December 2019: NTNU-Faculty of Medicine Internal Postdoctoral fellowship-MCSA seal of excellence
- July 2018: Travel grant to attend the 2018 FENS meeting in Berlin, Germany, awarded from the Italian Society for Neuroscience (SINS)
- October 2017: Best Poster Award at the XVII National Congress of the Italian Society for Neuroscience (SINS)

(Grants and Awards)

- Fall 2013-Spring 2014: affiliate trainee of the Neurobiology of Information Storage Training Program (NIH T32MH067564 Principle Investigator: Aryeh Routtenberg, Ph.D.)

Organization of scientific meetings:

- 2019- Kavli Institutes in Neuroscience Forum, Yale University, New Haven, CT, USA, (planned for April 2020, postponed due to COVID-19, new date TBD), co-organizer and chair of the Program Committee
- 2017- “Career Day” for the Neurobiology Master, University of Pavia, Italy, co-organizer

Participation in institutional activities:

- 2019- 2020 President (member since 2017, secretary in 2018) of the YROCK (Young Researcher Organization of the Neural Computation and the Kavli Institute for Systems Neuroscience)
 - In 2019 launched NeuroSYS (Neuroscience Symposia for Young Scientist), an interdepartmental event sponsored also by the Norwegian Research School in Neuroscience
- 2010-2012: Member of the Student-Hosted Seminar Series committee of NUIN

Reviewing activities:

- Topic Editors for the Research Topic “Biogeography of the cortex: Cell-Type diversity across cortical regions and its functional implications” for *Frontiers in Neural Circuits* (launched September 2020)
- Hippocampus
- Italian Minister of Health

Memberships:

- 2017- Federation of European Neuroscience Societies
- 2017- Italian Society of Neuroscience
- 2013- Cajal Club
- 2009- Society for Neuroscience

Outreach activities:

- 2019: Scientific image selected for the exhibition on Neurology and Artificial Intelligence at the Ars Electronica Center, Linz, Austria
- 2011-2013: Volunteer in the organization of the Annual Brain Awareness Fair with Nettelhorst Elementary School, Chicago, USA