BIOGRAPHICAL SKETCH

NAME: Jabaudon, Denis

POSITION TITLE: Full Professor

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
La Tour de Peilz, Switzerland	Scientific Baccalauréat	06/1989	Sciences
Medical School, University of Lausanne, Switzerland	Medical Degree	07/1995	Medicine
Dept. Physiology, University of Lausanne, Switzerland	Masters	07/1996	Molecular Biology, Neuroscience
Brain Research Institute, University of Zurich, Switzerland	MD, PhD	07/2000	Neuroscience

A. Personal Statement

I obtained my MD-PhD degree at the Universities of Lausanne and Zurich in Switzerland, where I studied mechanisms controlling synaptic transmission in the laboratory of Prof. Beat Gähwiler. After a neurology residency at Geneva University Hospital, I completed a post-doctoral fellowship at Harvard University, in the laboratory of Prof. J. Macklis, where I began investigating the genetic mechanisms controlling cortical development.

I am currently a professor at the University of Geneva, Switzerland, since 2009, where I have my independent research group, and the Director of the Department of Basic Neurosciences, since 2017. I also practice as a clinical neurologist at Geneva University Hospital. I also have several teaching responsibilities and mentored many graduate students and postdoctoral fellows that have earned prestigious grants and prices and are pursuing an academic career. I have several reviewing activities and I am member of different scientific societies such as Neuro-MIG and SYNAPSY.
My research has focused at understanding how genetic and input-dependent mechanisms interact to control neuronal circuit assembly during development. Over the past almost fifteen years, within the frame of this research program, my laboratory has used multiple approaches to interrogate and challenge the succession of dynamic cellular states which characterize brain development, typically through targeted manipulation of gene expression or manipulation of synaptic input and neuronal activity. My laboratory developed a novel technology, called FlashTag, allowing to isolate and visualize neurons at the very moment they are born, and has identified sequential transcriptional programs allowing cortical neuron differentiation. My work is currently funded by the Swiss National Science Foundation and the European Research Council (Advanced grants).

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2023	Faculty advisor, Human Cellular Neuroscience Plateform, FCBG, Geneva
2023	Board member, Synapsy Center for Neuroscience and Mental Health Research
2022 - Present	Scientific advisory board member of the URPP Adaptive Brain Circuits in Development and Learning (AdaBD) Zurich
2022	HCERES reviewing committees for five institutions in Marseille and Strasbourg 2021 - Present Scientific Committee Member, Brain Conferences
2021 - Present	Scientific Advisory Board Member, Synapsis
2022 - Present	Wellcome Trust Grant Evaluation Panel Member

2019 - Present	Program Committee Member, Society for Neuroscience 2019 - Present Section Editor, EJN
2018 - Present	Director, Dpt. of Basic Neurosciences, Faculty of Medicine, University of Geneva, Switzerland
2018 - 2022	Member of the PRIMA Commission of the Swiss National Science Foundation
2018 - Present	Swiss National Science Foundation (SNF) Research Council Member, Division IV
2018 - 2021	Council Member, Cantonal Commission on Animal Experimentation
2017	President of the HCERES evaluation committee, Institut du Fer à Moulin, Paris
2017	Member of the HCERES evaluation committee, Institut du Cerveau et de la Moelle Epinière, Paris
2017 - 2022	Director, Geneva University Neurocenter, University of Geneva
2015 - Present	Full Professor, Dpt. of Basic Neurosciences, Faculty of Medicine, University of Geneva
2015 - Present	Member of the Scientific Board, Pfizer Forschungspreis
2014 - 2017	Board Member, FENS Kavli Scholar of Excellence (Communications officer)
2014 - Present	Member of the Scientific Advisory Board of Swiss Foundation for Research on Muscle Diseases
2013 - Present	Scientific Review Associate, European Journal of Neuroscience
2009 – Present	Attending Physician (Médecin Hospitalo-Universitaire) as board-certified neurologist, Dept. of Clinical Neurosciences, Geneva University Hospital (HUG)
2009 - 2015	Assistant Professor, Dpt. Basic Neurosciences, Faculty of Medicine, University of Geneva, Switzerland
2008 - Present	External Reviewer, Nature, Science, Neuron, Nature Communications, Current Biology, J. Neurosci, Nat. Neurosci, EJN
2008 - Present	Reviewer, Swiss National Science Foundation (SNF), Agence Nationale pour la Recherche (ANR), European Research Council (ERC)
2008 - 2009	Chief Resident, Department of Neurology, Geneva University Hospital (HUG)
2008 - 2009	Junior Group Leader (“Chef de Clinique Scientifique”), Faculty of Medicine, University of Geneva

Honors

2024	Roger de Spoelberch Prize
2022	Krieg Cortical Discoverer Award
2022	Joseph Altman Award in Developmental Neuroscience
2020	ERC Advanced Grant
2017	Max Cloëtta Prize
2014	FENS Kavli Scholar of Excellence
2014	Freedman Award from the Brain and Behavior Foundation (NARSAD) for “Exceptional Basic Research in Neuroscience”
2014	Robert Bing Prize from the Swiss Academy of Medical Sciences
2014	Pfizer Research Prize, Basic Neuroscience, with co-authors Andres De La Rossa and Camilla Bellone

C. Contributions to Science

My research interest is in the input-dependent and genetic mechanisms that control the developmental assembly of forebrain neurons into circuits. Specifically, my work focuses on identifying the gene expression programs that enable distinct subtypes of neocortical and thalamic neurons to assemble into specific

functional circuits, and understanding how sensory experience regulates these differentiation programs during development.

Towards this aim, we have been able to genetically re-engineer specific neuronal circuits by reprogramming postmitotic cortical neurons *in vivo* (De La Rossa et al., Nature Neuroscience 2013). Conversely, we have shown that external stimuli determine neuronal diversity in select visual circuits (Golding et al., Neuron 2014), and that thalamocortical input acts to instruct the identity of their postsynaptic cortical partners during development (Pouchelon et al., Nature 2014). Likewise, descending input onto thalamocortical neurons instruct their genetic identity (Frangeul et al., Nature 2016). Genetic and input-dependent processes are thus tightly intertwined during circuit assembly. We have recently been able to isolate specific subtypes of neuron as they are being born and identify their developmental transcriptional programs (Telley et al., Science 2016; Telley et al. Science 2019). This latter work revealed a dynamic developmental transcriptional matrix onto which input- dependent factors can act to determine final neuronal identity. Recently we have shown that beyond strictly genetic programs, bioelectrical parameters are critical to define the fate of progenitors of the neocortex, further emphasizing the cross-talk between extrinsic and intrinsic factors at play during development (Vitali et al., Cell 2018). Likewise, dynamic differences in the expression levels of a largely generic set of genes, rather than fundamental differences in the identity of developmental genetic programs, may account for the emergence of intra-type diversity in cortical neurons (Klingler et al., Nature 2021). Finally, we have shown that apical progenitors are temporally plastic and can re-enter past molecular, electrophysiological and neurogenic states when exposed to an earlier-stage environment by sensing dynamic changes in extracellular Wnt (Oberst et al., Nature 2019). Together, these findings have enabled us to understand how input-dependent and cell-intrinsic factors interact during circuit assembly in the mammalian neocortex.

1. De La Rossa A, Bellone C, Golding B, Moss J, Toni N, Lüscher C, **Jabaudon D**. *In vivo* reprogramming of circuit connectivity in postmitotic neocortical neurons. Nature Neurosci 2013; 16(2): 193-200. https://doi.org/10.1038/nn.3299
2. Golding B, Pouchelon G, Bellone C, Di Nardo A, Lüscher C, Shimogori T, Dayer A, **Jabaudon D**. Retinal activity directs the recruitment of inhibitory interneurons into thalamic visual circuits. Neuron 2014; 81(5): 1057-69. https://doi.org/10.1016/j.neuron.2014.01.032.
3. Pouchelon G, Golding B, Bellone C, Gambino F, Lüscher C, Holtmaat A, **Jabaudon D**. Modality-specific thalamocortical inputs instruct the identity of postsynaptic L4 neurons. Nature 2014, 511(7510): 471-474. https://doi.org/10.1038/nature13390.
4. Telley* L, Govindan* S, Stevant I, Prados J, Dermitzakis E, Nef S, Dayer A, **Jabaudon D**. Sequential transcriptional waves direct early neuronal differentiation in the mouse neocortex. Science 2016; 351(6280):1443-6. https://doi.org/10.1126/science.aad8361. *equal contributors.
5. Frangeul* L, Pouchelon* G, Telley* L, Lefort S, Luscher C, **Jabaudon D**. A cross-modal genetic framework for the development and plasticity of sensory pathways. Nature 2016, 538: 96-98. https://doi.org/10.1038/nature19770. *equal contributors.
6. Vitali I*, Fièvre S*, Telley L, Oberst P, Bariselli S, Frangeul L, Baumann N, McMahon JJ, Klingler E, Bocchi R, Kiss JZ, Bellone C, Silver DL, **Jabaudon D**. Progenitor hyperpolarization regulates the sequential generation of neuronal subtypes in the developing neocortex. Cell 2018, 174(5), pp.1264–1276.e15. https://doi.org/10.1016/j.cell.2018.06.036 *equal contributors.
7. Telley* L, Agirman* G, Prados J, Amberg N, Fièvre S, Oberst P, Bartolini G, Vitali I, Cadilhac C, Hippenmeyer S, Nguyen L, Dayer A, **Jabaudon D.** Temporal patterning of apical progenitors and their daughter neurons in the developing neocortex. Science 2019, 364(6440). https://doi.org/10.1126/science.aav2522. *equal contributors.
8. Oberst P, Fièvre S, Baumann N, Concetti C, Bartolini G, **Jabaudon D**. Temporal plasticity of apical progenitors in the developing mouse neocortex. Nature 2019, 573: 370-74. https://doi.org/10.1038/s41586- 019-1515-6.
9. Klingler E, Tomasello* U, Prados* J, Kebschull JM, Contestabile A, Galiñanes GL, Fièvre S, Santinha A, Platt R, Huber D, Dayer A, Bellone C, **Jabaudon D**. Temporal controls over inter-areal cortical projection neuron fate diversity. Nature 2021. https://doi.org/10.1038/s41586-021-04048-3. *equal contributors.

Complete List of Published Work:

https://goo.gl/hq7u1j or http://orcid.org/0000-0003-2438-4769