

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae **cannot exceed 4 pages**. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	Marta		
Family name	Nieto López		
Gender (*)	female	Birth date (dd/mm/yyyy)	03/03/1970
ID number	02631758Y		
e-mail	mnlopez@cnb.csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-8349-8435		

(*) *Mandatory*

A.1. Current position

Position	Investigador Científico CSIC		
Initial date	22/05/2023		
Institution	CSIC		
Department/Center	Molecular & Celular Biology/	Centro Nacional de Biotecnología-CNB	
Country	Spain	Teleph. number	5854837
Key words	Cortex, Neuroscience, Development, Transcription, Neuroplasticity		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
21/07/08 to 22/05/2023	Científico Titular. CSIC
2004– 2008	Ramón y Cajal. CNB-CSIC.
06/2000–2004	Postdoc. Harvard. Med School. Lab C.A. Walsh, M.D.
1999– 06/2000	Postdoc. IGBMC, Strasburgo, France. Lab F. Guillemot.
1993– 1999	Postdoc and Ph.D. Princesa. UAM: Lab F Sanchez-Madrid.

A.3. Education

PhD, Graduate Degree	University/Country	Year
Bachelor-CC Chemistry. Major Biochemistry	U. Complutense of Madrid (UCM)	1993
PhD in Molecular Biology	U. Autónoma of Madrid (UAM)	1998

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Marta Nieto has been a principal investigator scientist at the CSIC since 2004, first as Ramon y Cajal scientist and after with a tenured position obtained in 2008. She has made seminal contributions at all stages of her career, many from the latest stage as a PI at the CNB-CSIC. She has published 47 documents that have been cited more than 5,469 times /Research Gate/ 4464 (Scopus) with an h-index of 31 (Research Gate); 27 (Scopus) as of January 2024. During her Ph.D. under the guidance of Dr. Francisco Sanchez-Madrid, Marta Nieto contributed to the field of lymphocyte migration and chemotaxis publishing numerous articles frequently cited, even nowadays. After her Ph.D., Marta Nieto pursued her passion for Neuroscience and Development and her vocation to work with in vivo mouse models. She was awarded with the most prestigious postdoctoral fellowships (HSFP. Marie Curie. EMBO). During her postdoctoral, first under Prof. F. Guillemot IGBMC (INSERM, France) and secondly, with Prof. C.A. Walsh (Harvard Medical School, USA), she initiated a long trajectory dedicated to understanding neural lineage specification and transcriptional specification in the cerebral cortex. She made seminal contributions describing how early neural specification implies the repression of alternative glial fate (Nieto et al., 2001. Neuron. 29: 401-13) and providing one of the first identifications of neuronal subclass-specific transcription factors in the cerebral cortex (Nieto et al., 2004. J Comp Neurol 479 (2): 168-80).



After her postdoctoral, she initiated an independent career in Spain (CSIC) and has built a reputed line of research that investigates the specification and development of circuits of the cerebral cortex, always using *in vivo* mouse models.

The group has a well-established publication record, including several articles in the most prestigious specialized journals. Much work from the last period (2020-2023) is in preparation or under review for publication, as all projects were severely affected by the Coronavirus pandemic restrictions when the students and postdocs could work only part-time. The group is internationally recognized, specifically for their findings on the role of Cux transcription factors in neuronal specification (**Cubelos et al., *Cer Cortex* 2008; Cubelos et al., *Neuron* 2010; Rodríguez Tornos et al., *Neuron* 2010; Oppermann, Marcos Grañeda, et al., *Eur J Hum Genet.* 2023) and for their investigations on mechanisms of corpus callosum formation (**De León Reyes et al., *Nat Comms* 2019., and *Development* 2020; Martín-Fernández et al., *Elife* 2022). The groups' fundamental research and collaboration with geneticists and clinicians contribute to improving the diagnosis, management, and treatment of neurological diseases and disorders of neurodevelopmental origin such as corpus callosum dysgenesis, autism spectrum disorders (ASD), and other rare syndromes (for example **Wang et al., *Cell Rep.* 2017; Doan et al., *Cell.* 2016). These collaborations imply international collaborative grants (see below) and impact greatly on the training of students.******

She is an elected member of the international research consortium for the corpus callosum and cerebral cortical connectivity (IRC5), a member of the European and Spanish Societies of Neuroscience, and a member of the Spanish Society of Development.

Marta Nieto dedicates efforts to disseminate her research nationally and internationally and imparts numerous conferences and invited talks (see below). She is a former elected member of the SENC program committee and of the FENS Forum 20018-2019 program Committee. Some of the most relevant recently are listed below in the contribution subheading. She is actively involved in the organization of scientific congresses (FENS and SENC Workshops, CNB-Workshops, Ramón-Areces), and also active in dissemination to the general public, such as school talks for the International Day of Women in Science (2023 and other editions), talks for patients with agenesis of the Corpus Callosum (CNB-2023) and talks on the "Night of Researchers".

She participates in the evaluation and management of Science. She collaborates with national and international evaluation agencies (ANEP, ANR (FR), MRC (UK), FMR (FR), and FNRS (BE)) and evaluates academic records for Universities and research Institutions. She is an ad-hoc reviewer for various general and specialized journals (*Cerebral Cortex*, *Cell Reports*, *Nat. Neurosci*, *Nat Comms*, *PNAS*, *Science*, and others). She was Head of the department Molecular and Cellular Biology CNB. 2015-2016.

Finally, Marta Nieto is committed to training young scientists with an emphasis on providing them with international profiles and transferable competencies. The group has a solid and consistent capacity to attract talent (Several FPI and FPU fellowships, 3 LaCaixa Inphinit Incoming); 2 Juan de la Cierva postdoctorals (JCI 2012-14147 and FJC2021-047621-I) and 1 Marie Curie H2020-MSCA-Individual Fellowships- (2019. Ref. 897719). In total 6 PhD thesis defended and 4 ongoing. Two former lab members received Ramón y Cajal Awards: B. Cubelos 2010, currently research assistant at UAM, and J.García-Marqués, currently Científico Titular-Cajal Institute-CSIC). All alumni have published their work in peer-reviewed journals and followed successful careers in biomedical-related fields, including as academics in research institutions and universities, governmental health-related institutions, and private industry.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions) 10 max throughout the overall trajectory relevant to the project. *Clave: A –article, R –review, IF: impact factor. Citations (Scopus/Google Scholar)*



1. Bragg-Gonzalo[§] L, Aguilera[§] A, C. González-Arias C, De León Reyes N. S., Sánchez-Cruz A, Carballeira P, Leroy F, Perea G, **Nieto* M**. Early Cortical GABAergic interneurons determine the projection patterns of L4 excitatory neurons. [§] equal first author. **Sci Adv**. 2024. 10 May 2024. Vol 10, Issue 19. DOI: 10.1126/sciadv.adj99 IF:14.957. Spotlight in Javier-Torrent. Trends Neurosci. 2024 Aug 13:S0166-2236(24)00145-0.
2. Oppermann[§] H, Marcos-Grañeda[§], et al E, **Nieto* M**, Tümer* Z, Platzer* K. CUX1-related neurodevelopmental disorder: deep insights into phenotype-genotype spectrum and underlying pathology. **Eur J Hum Genet**. 2023 Aug 30. doi: 10.1038/s41431-023-01445-2. Epub ahead of print. PMID: 37644171.\$ equal first author, * **co-corresponding**. A. IF:5,2. Citations:2 (Scopus).2 (Google Scholar)
3. Martín-Fernández F, Bermejo-Santos A, Bragg-Gonzalo L, Briz CG, Serrano-Saiz E, **Nieto* M**. Role of Nrp1 in controlling cortical inter-hemispheric circuits. **Elife**. 2022 Mar 1;11:e69776. doi: 10.7554/eLife.69776. A. IF: 8,14. Cites: 2 (Scopus). 4 (Google Scholar).
4. De León Reyes NS, Bragg-Gonzalo L, **Nieto* M**. Development and plasticity of the corpus callosum. **Development**. 2020 Sep 28;147(18):dev189738. doi: 10.1242/dev.189738. R. IF:6,86. Cites 34 (Scopus), 47 (Google Scholar). Review of the state of the art and changing views.
5. De León Reyes NS, Mederos S, Varela I, Weiss LA, Perea G, Galazo MJ, **Nieto* M**. Transient callosal projections of L4 neurons are eliminated for the acquisition of local connectivity. **Nat Commun**. (2019) Oct 7;10(1):4549. doi: 10.1038/s41467-019-12495-w. A. IF: 14, 9. Cites: 28 (Scopus). 49 (Google Scholar). This article is in the 94th percentile (ranked 20,432nd) of the 351,741 tracked articles of a similar age in all journals and the 70th percentile (ranked 422nd) of the 1,450 tracked articles of a similar age in Nature Communications.
6. Velona T, Altounian M, Roque M, Hocine M, Bellon A, Briz CG, Salin P, **Nieto* M**, Chauvet S, Mann F. PlexinD1 and Sema3E determine laminar positioning of heterotopically projecting callosal neurons. *Mol Cell Neurosci*. (2019) Aug 24;100:103397. doi: 10.1016/j.mcn.2019.103397. A. IF: 4, 53. Cites: 6 (Scopus). 9 (Google Scholar)
7. Wang CF, Hsing HW, Zhuang ZH, Wen MH, Chang WJ, Briz CG, **Nieto M**, Shyu BC, and Chou SJ. Lhx2 expression in postmitotic neurons initiates the assembly of the thalamocortical somatosensory circuit. *Cell Rep*. 2017 Jan 24;18(4):849-856. doi: 10.1016/j.celrep.2017.01.001. A. IF: 9,63. Cites: 30 (Scopus)
8. Doan RN, Bae B, Johnson MB, Cubelos B, Chang C, Hossain AA, Al-Saad S, Mukaddes NM, Oner O, Al-Saffar M. The Homozygosity Mapping Consortium for Autism, **Nieto M**, Walsh CA. Mutations in Human Accelerated Regions Disrupt Cognition and Social Behavior. (2016) **Cell**. Oct 6;167(2):341-354.e12. doi: 10.1016/j.cell.2016.08.071. IF: 32.8. A. Cites 188 (Scopus)
9. Rodríguez-Tornos FM*, Briz CG*, Weiss LA, Sebastián-Serrano A, Ares S, Navarrete M, Frangeul L, Galazo M, Jabaudon D, Esteban JA and **Nieto M**. *Equal Contribution. Cux1 enables inter-hemispheric connections of layer II-III neurons by regulating Kv1-dependent firing. **Neuron** (2016), 89, (3), 494-506. Doi. 1016/j.neuron.2015.12.020. IF: 15,4. KEY: A. IF: 15,4. Cites: 51 (Scopus). 72 (Google Scholar).
10. B. Cubelos, A. Sebastián-Serrano, E. Cisneros, L. Beccari, S. Kim, A. Dopazo, P. Bovolenta, J.M. Redondo, C.A. Walsh, and M. Nieto. Cux1 and Cux2 regulate dendritic branching, spine morphology, and synapse formation of the upper layer neurons of the cortex. **Neuron**. May 27;66(4):523-35. (2010). Doi 10.1016/j.neuron.2010.04.038. A. IF: 14,9 Cites 203 (Scopus).

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1. Author: **Marta Nieto**. Title: Development and plasticity of callosally projecting neurons. A model of complex wiring. **Invited Conference**. Institut de Neurobiologie de la Méditerranée (Inmed)Inserm/AMU. Marseille, France. 28th January 2023
2. Author: **Marta Nieto**. **Invited Conference**. Title: Development and plasticity of callosally projecting neurons.EMBO Practical Course. Developmental neurobiology: From stem cells to circuits. | London, United Kingdom. 16 – 29 July 2023.
3. Author: **Marta Nieto**. **Plenary Lecturer**. Exuberance underlies circuit diversity in the developing brain. FENS Regional meeting. Algarve, Portugal 3-5 May 2023. 21rs July 2023.
4. Author: **Marta Nieto**. **Invited conference**. Title: Reprogramming callosal Connective. IMFR Multisensory Congress. Brussels. BE. June 27-30, 2023.



5. Author: **Marta Nieto. Invited conference.** Title: Development and plasticity of callosally projecting neurons EMBO Workshop. Neural stem cells: From basic understanding to translational applications. Kyllini, Greece. 5-9 June 2022—
6. Author: **Marta Nieto. Workshop conference speaker** (and organizer). Title: Development and plasticity of callosally projecting neurons FENS Development and Evolution of Bilateral Sensory Circuits 11 July. 2022. Marta Nieto.
7. Author: **Marta Nieto. Invited conference.** Title: Exuberance and plasticity during the wiring of the corpus callosum. Views to understand the diversity of cortical circuits Department of Neuroscience | UConn School of Medicine. CT USA. 16 Dic 2021.
8. Author: **Marta Nieto. Workshop session invited speaker.** Title: Early Callosal Fate of Most Cortical Neurons. Minisymposium Molecular Mechanisms of Cortical Development in Health and Disease. Society for Neuroscience-Sfn (EEUU). virtual 9 Nov 2021. Chicago. USA
9. Author: **Marta Nieto. Invited conference.** Title: exuberance and plasticity during the formation of the corpus callosum. Views to understand the diversity of cortical circuits Cibersam biannual meeting 16 Nov 2020.
10. Author: **Marta Nieto. Invited conference.** Title: exuberance and plasticity during the formation of the corpus callosum. Views to understand the diversity of cortical circuits. Kings College London 12 Nov 2020.

C.3. Research projects, indicating your personal contribution. **PI:** principal investigator

1. Ref: PID2020-112831GB-I00. *Mechanisms of development and plasticity of the corpus callosum.* FINANCING ENTITY: MICIN: *Genetic and pharmacological interventions to repair circuits.* **PI: Marta Nieto López.** Grant Amount: 270.000 € (direct cost). From 01.09.2021 to 31.08.2024.
2. Ref: Grant Agreement n°: 897719. *NEURORIGINS. Role of cell lineage in the generation of neuronal diversity in the mouse cerebral cortex.* FINANCING ENTITY: H2020-MSCA-Individual Fellowships-2019. Training investigator: J. García Marques. Host **PI: Marta Nieto López.** Grant Amount: 160.932 € From. 01.06.2020 to 31.05.2022. (covers mainly salary of JGM)
3. Ref: Flag-Era JTC 2019. PCI2019-11872-2. *SoundSight. The sight of sound: how vision shapes the development of auditory inputs to the occipital cortex.* Coordinator: C.A. Levelt. (NL) FINANCING ENTITY: Flag-Era JTC 2019. Transnational call. MICIU. **PI: Marta Nieto López.** Grant amount for Marta Nieto group: 150.000 € 1.04.2020 to 31.03.2023.
4. Ref: RED2022-134100-T. *ReDevNeural4.0. Una aproximación integrativa hacia el entendimiento de la logica del desarrollo neuronal.* FINANCING ENTITY: MICIU. Plan Nacional de I+D+i. **Participant PI: Marta Nieto López. Network project.** Coordinator: Paola Bovolenta. From 01.06.2023 to 31.05.2024 grant amount: 22.000 € for all groups.
5. Ref: SAF-2017-83117-R. *Mecanismos de formación de las redes neuronales de las láminas superiores de la corteza. Investigando la plasticidad del desarrollo para la reparación del cerebro.* FINANCING ENTITY: Ministerio de Economía Industria y Competitividad. Plan Nacional de I+D+i. 01.12.2017- 31.12. 2020. 250.000€ (direct cost). **PI: Marta Nieto López.**
6. Ref: NEURON8-815-091 Eranet PCIN-2015-176-C02-02. *Understanding and reprogramming developmental visual disorders: from anophthalmia to cortical impairments. ImprovVision.* FINANCING ENTITY: Era-net Neuron. DE/A: 01.12.2015-30.11.2018. Coordinator: Paola Bovolenta. **Network project. Participant PI: Marta Nieto López.** Grant amount for the group of Marta Nieto: 101.000 €.
7. Ref: SAF2014-52119-R *Mecanismos de plasticidad en las neuronas de las láminas superiores de la corteza cerebral durante el desarrollo. Estrategias para el tratamiento del cerebro.* FINANCING ENTITY: MICINN. Plan Nacional de I+D+i. From: 01/01/2015 to 31/12/2017. Grant amount: 150.000 € (direct cost). **PI: Marta Nieto López**
8. *Agenesia del cuerpo calloso. Mecanismos básicos y tratamiento.* From 07/04/2015 to 06/04/2018 *Proyectos de Investigación Fundación Ramón Areces.* Grant amount: 116.288 € (direct cost). **PI: Marta Nieto López**

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.)

None