

## CURRICULUM VITAE

### Personal

Born March 1<sup>st</sup>, 1972 in Paris, France.  
Married, three children born in 2003, 2005 and 2009.

### Present Address

Brain Development and Plasticity Team  
Institut de Biologie de l'Ecole Normale Supérieure  
INSERM U1024, CNRS UMR8197  
Ecole Normale Supérieure - PSL Research University  
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75005 Paris, France

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### Professional Appointments

Oct.2020-  
Jan.2008- Professor at College de France, "Neurobiology and Immunity", Paris (France).  
Group leader "Brain Development and Plasticity" Team (INSERM CR1/DR2/DR1) in the IBENS, Ecole Normale Supérieure, Paris (France).  
Sept.2010- 2017 Associate professor at the Ecole Polytechnique (Palaiseau, France).  
Jan.2003-2007 Independent Young Investigator (INSERM CR2) in Patrick Charnay's laboratory, Ecole Normale Supérieure, Paris (France).  
Nov.1999-Nov.2002 Postdoctoral fellow with John Rubenstein, UCSF, San Francisco, (USA).  
Oct.1994-Oct.1999 Ph.D. with Patrick Charnay, Ecole Normale Supérieure, Paris (France).

### Education

2008 Habilitation to supervise graduate students (HDR), University Paris V, France.  
1999 Ph.D. in Molecular and Cellular Neurobiology, University of Paris VI, France.  
1994 Master in Molecular and Cellular Neurobiology, University of Paris VI, France.  
1994 Engineer of the Institut National Agronomique (AgroParisTech), France.

### Awards and Honors

2020 Fondation NRJ for Neuroscience – Institut de France Award  
2019 Brixham Foundation Prize for Brain Research  
2019 Fondation Schlumberger pour l'Education et la Recherche (FSER) laureate  
2018 Elected member of the EMBO  
2016 Chevalière de l'ordre national du Mérite  
2014 Antoine Lacassagne Prize from the College de France  
2013 ERC consolidator awardee  
2012 EMBO YIP (Young Investigator Program)  
2007 European Young Investigator Award (EURYI)  
2007 Silver medal of the City of Paris  
2005 Career development Award (CDA) from HSFP

**Supervizing activities***Current Team Composition:*

Ludmilla Lokmane - CRCN INSERM- Staff Scientist  
 Morgane Thion - CRCN CNRS- Staff Scientist  
 Alexander Sinclair-Wilson – Post-doctoral fellow  
 Ioana Genescu –PhD student  
 Akinde Lawrence –ENP PhD student  
 Cécile Bridlance – PhD student  
 Hugues Cartonnet – Assistant Engineer  
 Seiki Achiedo – Assistant Engineer  
 Maryama Keita – Technician ENS

*Former PhD students:*

Franck Bielle – MCU-PH Pitié-Salpêtrière Hospital Paris France – Medical Doctor  
 Marie Deck – post-doctoral fellow  
 Guillaume Oller – consultant KPN  
 Andrea Tinterri – parental leave

*Former post-doctoral fellows:*

Morgane Thion – CRCN CNRS - Staff Scientist  
 Cristina Alvarez de Frutos – Assistant Professor Medical University Madrid  
 Paola Squarzonni – consultant in scientific communication  
 Ludmilla Lokmane – CRCN INSERM – Staff Scientist

*Past Engineers:*

Caroline Mailhes-Hamon – Head of the acute transgenesis facility of the IBENS  
 Pauline Grisel – Clinical Research Associate

*Thesis:*

- Cécile Bridlance (since 2019)- Sorbonne University, «*Microglial Colonization: intrinsic factors and neuronal activity*»
- Akinde Lawrence (since 2018)- Ecole des Neurosciences de Paris, PSL University, «*Rôles of microglia and their heterogeneity in the formation of forebrain tracts*»
- Ioana Genescu (since 2016) PSL University, «*Roles of Cajal-Retzius cells in the wiring of layer 1*»
- Andrea Tinterri (2013-2016) Ecole des Neurosciences de Paris, Boehringer Ingelheim Fonds, «*From fate map to circuit specification in the basal ganglia*»
- Guillaume Oller (2012-2015) Paris 6 University, «*Roles of embryonic microglia in the development of the murine forebrain*»
- Marie Deck (2008-2012) Paris 6 University, «*Study of pioneer corticofugal axons pathfinding*»
- Franck Bielle (2007-2010) Paris 6 University, «*Control of thalamo-cortical axons development by a tangential cell migration: atypic roles of Slit 1 and Slit 2*»

**Major Research funding**

2020-2023	FRM Team (Fondation pour la Recherche Medicale), PI, 380 k€ for 3 years.
2020-2022	Prize Fondation NRJ – Institut de France, 150 k€.
2019-2022	ANR (Agence Nationale pour la Recherche), PI & co-PI, 470 k€ for 3 years.
2020-2021	Schlumberger Foundation Prize (FSER), 100k€.
2014-2019	ERC Consolidator grant, 2 000 k€ over 5 years.
2015-2019	ANR (Agence Nationale pour la Recherche), co-PI, 60 k€ for 4 years.
2013-2015	ANR (Agence Nationale pour la Recherche), PI, 330 k€ over 3 years.
2011-2013	Fondation Pierre Gille de Gennes (FPGG), co-PI, 180 k€.
2008-2013	European Young Investigator Award (EURYI), 900 k€ over 5 years.
2008-2010	AVENIR Program from INSERM, 300 k€ over 3 years.
2007-2010	Start-up Program of the City of Paris, 280 k€ over 4 years.
2005-2007	Career Developmental Award from HSFP, 120k€ over 3 years.
2006	Subvention FRC (Federation pour la Recherche sur le Cerveau), 50k€.
2004	Subvention ARC (Agence pour la Recherche sur le Cancer), 50k€.

## Scientific Review

### *Editorial Board member:*

2019-           Glia  
 2019-           eLife  
 2018-           Life Science Alliance  
 2012-2016     Journal of Comparative Neurology

### *Peer-reviewing activity:*

Biological Psychiatry, Cerebral Cortex, Development, eLife, Glia, Immunity, Journal of Comparative Neurology, Journal of Neuroscience, Molecular Psychiatry, Nature, Nature Communications, Nature Neuroscience, Neuron, PNAS, Science.

ANR, ERC, EMBO fellowships, FRC, Fyssen Foundation, Horizon 2020, NSF, ISF, PSL.

## National and international instances

- Member of the host committee for FENS Forum 2022 in Paris
- ERC Consolidator panel member LS5 (since 2019)
- EMBO member (since 2018)
- Member of the scientific council of the Fyssen Foundation (since 2012)
- Member of the COMESP (Pasteur Institute Evaluation Committee)
- Member of the INMED SAB (Institut des Neurosciences de la Méditerranée, Luminy, France)
- Member of the scientific council of the French Society for Neuroscience (2016-2019)
- Member of the Conseil de la Recherche PSL Université Paris (2015-2019)
- Member of the scientific council of FRC (Federation pour la Recherche sur le Cerveau (2014-2017))
- Member of the Bureau of the "Neural Network Development" Club (2005-2013)

## Outreach activities

- Participation to Declics days organized by FSER to meet with highschool students and their teachers – « what is research and what is a scientific fact », every year since 2017
  - Participation to the program « Research apprentice »
- Host in the laboratory one Wednesday afternoon per month of a highschool/junior student- "introduction to experimental research in biology", since 2014
- Member of the IBENS committee for Women in Science (X2Y committee), since 2019

## Teaching and Meeting organization

### *Teaching*

2010-2017       Associate Professor at the Ecole Polytechnique, Palaiseau, France (70h per year)  
 Master classes in Neurobiology, Developmental Biology and Cell Biology  
 2007-           Master courses at ENS, CogMaster, PSL, Sorbonne university (10h per year)

### *Meeting Organization*

- EMBO workshop « Microglia 2020 » rescheduled to 2021, EMBL, Heidelberg, Germany
- Fyssen Foundation Symposium 2018 «New insights into neuroglial communication », Paris
- EMBO workshop « Microglia 2018 », EMBL, Heidelberg, Germany
- Meeting of the French Society for Neuroscience, Bordeaux, 2017
- Meeting « Neural Network Development » Club, Lyon, 2013
- Meeting « Neural Network Development » Club, ENS, Paris, 2012
- Meeting « Neural Network Development » Club, IBDML, Luminy, 2011
- Meeting « Neural Network Development » Club, Bordeaux, 2009
- Meeting « Neural Network Development » Club, Institut du Fer à Moulin, Paris, 2008
- Meeting « Neural Network Development » Club, Montpellier, 2007
- Meeting « Neural Network Development » Club, Pitié Salpêtrière, Paris, 2006

**Selected Recent Invited Oral Presentations in Meeting**

- 2020 FENS Forum, Meeting of the European Society for Neuroscience, Plenary Lecture, virtual
- 2020 World Wide Forum, Developmental Neuroscience, virtual
- 2020 Gordon Research Conference “Thalamocortical interactions”, Ventura, CA, USA
- 2019 100 years of Microglia International Symposium, UNIL, Lausanne, Switzerland
- 2019 BraYn Meeting of young Investigator, Milano Italy
- 2019 Basel Life EMBO meeting, Basel, Switzerland
- 2019 EMBO practical course in Developmental Neuroscience, King’s College, London, UK
- 2019 Minds Moods and Microbes, Amsterdam, Netherlands
- 2018 Cold Spring Harbor Meeting, “Molecular mechanisms of neuronal circuits”, CSHL, USA
- 2018 “Imaging the Immune System” Meeting, Pasteur Institute, Paris, France
- 2018 FENS Forum, Meeting of the European Society for Neuroscience, Berlin, Germany
- 2018 ISDN meeting, Nara, Japan
- 2018 EMBO Workshop “Microglia”, EMBL, Heidelberg, Germany
- 2018 Gordon Research Conference “Basal Ganglia”, Ventura, CA, USA
- 2017 Cell Symposium “Neuroimmune axis”, Sitges, Spain
- 2017 Keystone Conference “Neuroinflammation”, Keystone, CO, USA
- 2017 Conference Jacques Monod “Glial cells at the crossroads”, Roscoff, France
- 2017 ENCODS meeting, Keynote speaker, Benidorm, Alicante, Spain
- 2017 IBAGS 2017 “International Society for Basal Ganglia”, Merida, Mexico
- 2017 Gordon Research Conference “Glial Biology”, Ventura, CA, USA
- 2017 Swiss Society for Neuroscience Meeting, Basel, Switzerland
- 2016 Keystone Conference “Microglia in the brain”, Keystone, CO, USA
- 2016 Neurocenter, Geneva, Switzerland
- 2015 Axon, European Conference on Axon Guidance, IST, Austria
- 2014 Society For Neuroscience Meeting, Washington, USA
- 2014 Gordon Research Conference “Neural Development”, Salve Regina University, Newport, USA
- 2014 EMBO Workshop “Cortical Development in Health and Disease”, Weizmann Institute, Israël
- 2014 EMBO Workshop “Microglia in the Brain”, Heidelberg, Germany
- 2014 FENS Forum, Meeting of the European Society for Neuroscience, Milan, Italy

**Selected Recent Invited Seminars**

- 2019 Humanitas University, Milano, Italy
- 2019 VIB, Leuven, Belgium
- 2019 Pasteur Institute, Paris, France
- 2019 Institut de Génomique Fonctionnelle de Lyon (IGFL), Lyon, France
- 2018 Institut de Génétique Fonctionnelle (IGF), Montpellier, France
- 2018 Centre d’Immunologie- Purpan, Toulouse, France
- 2018 Institut des Neurosciences d’Alicante, Spain
- 2018 Institut Cochin, Journées Microbiome, Paris, France
- 2018 MIRCen, CEA, Fontenay ayx Roses, France
- 2018 Institut Neuromyogène (INMG), Lyon, France
- 2018 Mainz University, FTN Seminar Series, Mainz, Germany
- 2017 IRIBHM Université Libre de Bruxelles, Belgium
- 2016 Department de Neurosciences Fondamentales, Université de Lausanne (UNIL), Switzerland
- 2016 Bordeaux Neurocampus, Seminar NBA, Bordeaux, France
- 2016 Neurocenter, Université de Genève, Switzerland
- 2016 Centre for Developmental Neurobiology, King’s College, London, UK
- 2015 Department of Physiology, Development and Neuroscience, Cambridge University, UK
- 2015 Institut de Biologie Paris Seine (IBPS), Jussieu, Paris, France
- 2014 Friedrich Miescher Institute for Biomedical Research (FMI), Basel, Switzerland
- 2014 Giga Neurosciences, Université de Liège, Belgique

## Selected Publications

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Riva\* M, Genescu\* I, Habermacher\* C, Orduz D, Ledonne F, Rijli FM, Lopez-Bendito G, Coppola E, Garel° S, Angulo° MC and Pierani° A (2019) Activity-dependent death of transient Cajal-Retzius neurons is required for functional cortical wiring. *eLife*, 8:e50503.

Thion\* MS, Mosser\* CA, Ferezou I, Grisel P, Baptista S, Low, D, Ginhoux F, Garel° S and Audinat° E (2019) Biphasic impact of prenatal inflammation and macrophage depletion on the wiring of neocortical inhibitory circuits. *Cell Reports*, 28:1119-1126.

Thion MS, Ginhoux F and Garel S (2018). Microglia and early brain development: an intimate journey. *Science*, 362:185-189. Review.

Tinterri A, Menardy F, Diana M, Lokmane L, Keita M, Coulpier F, Lemoine S, Mailhes C, Mathieu B, Merchan-Sala P, Campbell K, Gyory I, Grosschedl R, Popa D and Garel S (2018) Active intermixing of indirect and direct neurons builds the striatal mosaic. *Nature Commun.*, 9:4725.

Thion\* MS, Low\* D, Silvin A, Chen J, Grisel P, Schulte-Schrepping J, Blecher R, Ulas T, Squarzoni P, Hoeffel G, Coulpier F, Siopi E, David FS, Scholz C, Shishui F, Lum J, Amoyo AA, Larbi A, Poidinger M, Buttgerit A, Lledo PM, Greter M, Kok Yen Chan J, Amit I, Beyer M, Schultze JL, Schlitzer A, Pettersson S, Ginhoux° F and Garel° S (2018) Microbiome influences prenatal and adult microglia in a sex-specific manner. *Cell*, 72:500-516.

De Frutos CA, Bouvier G, Arai Y, Thion MS, Lokmane L, Keita M, Garcia-Dominguez M, Charnay P, Hirata T, Riethmacher D, Grove EA, Tissir F, Casado M, Pierani A and Garel S (2016) Reallocation of olfactory Cajal-Retzius cells shape neocortex architecture. *Neuron*, 92:435-448.

Squarzoni P, Oller G, Hoeffel G, Pont-Lezica L, Rostaing P, Low D, Bessis° A, Ginhoux° F, Garel° S (2014) Microglia modulate wiring of the embryonic forebrain. *Cell Reports*, 8: 1271-9.

Lokmane L, Proville R, Narboux-Nême N, Györy I, Keita M, Mailhes C, Léna C, Gaspar P, Grosschedl R and Garel S (2013) Sensory map transfer to the neocortex relies on pre-target ordering of thalamic axons. *Current Biology*, 23:810-6.

Deck M, Lokmane L, Chauvet S, Mailhes C, Keita M, Niquille M, Lebrand C, Yoshida M, Yoshida Y, Mann F, Grove E, Garel S (2013) Pathfinding of corticothalamic axons relies on a rendezvous with thalamic projections. *Neuron* 77 :472-84.

Bielle° F, Marcos-Mondejar° P, Leyva-Diaz° E, Lokmane° L, Mire E, Mailhes C, Keita M, Gracia N, Tessier-Lavigne M, Garel\* S, Lopez-Bendito\* G (2011) Emergent growth cone responses to combinations of Slit1 and Netrin 1 in thalamic axon topography. *Current Biology*, 21:1748-55.

Bielle F, Marcos-Mondejar P, Keita M, Mailhes C, Verney C, Nguyen Ba-Charvet K, Tessier-Lavigne M, Lopez-Bendito G, Garel S (2011) Slit2 activity in the migration of Guidepost neurons shapes thalamic projections during development and evolution. *Neuron*, 69:1085-1098.

Lopez-Bendito\* G, Cautinat\* A, Sanchez JA, Bielle F, Flames N, Garrat AN, Talmage D, Role LW, Charnay P, Marin° O, Garel° S (2006) Tangential neuronal migration controls axon guidance: a role for neuregulin-1 in thalamocortical axon navigation. *Cell*, 125:127-42.

## Research Articles

1. Utz S, See P, Mildenerger W, Thion MS, Silvin A, Lutz M, Ingelfinger F, Rayan NA, Lelios I, Buttgereit A, Asano K, Prabhakar S, Garel S, Becher B, Ginhoux F and Greter M (2020) Early Fate Defines Microglia and Non-parenchymal Brain Macrophage Development. **Cell**, 18:557-573
2. Riva\* M, Genescu\* I, Habermacher\* C, Orduz D, Ledonne F, Rijli FM, Lopez-Bendito G, Coppola E, Garel° S, Angulo° MC and Pierani° A (2019) Activity-dependent death of transient Cajal-Retzius neurons is required for functional cortical wiring. **eLife**, 8:e50503.
3. Thion\* MS, Mosser\* CA, Ferezou I, Grisel P, Baptista S, Low, D, Ginhoux F, Garel° S and Audinat° E (2019) Biphasic impact of prenatal inflammation and macrophage depletion on the wiring of neocortical inhibitory circuits. **Cell Reports**, 28:1119-1126.
4. Tinterri A, Menardy F, Diana M, Lokmane L, Keita M, Coulpier F, Lemoine S, Mailhes C, Mathieu B, Merchan-Sala P, Campbell K, Gyory I, Grosschedl R, Popa D and Garel S (2018) Active intermixing of indirect and direct neurons builds the striatal mosaic. **Nat. Commun.**, 9:4725.
5. Backer° S, Lokmane° L, Landragin C, Deck M, Garel S and Bloch-Gallego E (2018) Trio GEF mediates RhoA activation downstream of Slit2 and coordinates telencephalic wiring. **Development** 145. pii: dev153692.
6. Thion° MS, Low° D, Silvin A, Chen J, Grisel P, Schulte-Schrepping J, Blecher R, Ulas T, Squarzone P, Hoeffel G, Coulpier F, Siopi E, David FS, Scholz C, Shihui F, Lum J, Amoyo AA, Larbi A, Poidinger M, Buttgereit A, Lledo PM, Greter M, Chan JKY, Amit I, Beyer M, Schultze JL, Schlitzer A, Pettersson S, Ginhoux\* F, Garel\* S (2018) Microbiome influences prenatal and adult microglia in a sex-specific manner. **Cell**, 172: 500-516.
7. Tinterri A, Deck M, Keita M, Mailhes C, Rubin, AN, Kessarar N, Lokmane L, Bielle F, Garel S (2018) Tangential migration of corridor guidepost neurons contributes to anxiety circuits, **J Comp Neurol**, 526: 397-411.
8. Takata° K, Kozaki° T, Lee\* CZW, Thion\* MS, Otsuka M, Lim S, Utami KH, Fidan K, Park DS, Malleret B, Chakarov S, See P, Low D, Low G, Garcia-Miralles M, Zeng R, Zhang J, Goh CC, Gul A, Hubert S, Lee B, Chen J, Low I, Shadan NB, Lum J, Wei TS, Mok E, Kawanishi S, Kitamura Y, Larbi A, Poidinger M, Renia L, Ng LG, Wolf Y, Jung S, Önder T, Newell E, Huber T, Ashihara E, Garel S, Pouladi MA et Ginhoux F (2017) Induced-Pluripotent-Stem-Cell-Derived Primitive Macrophages Provide a Platform for Modeling Tissue-Resident Macrophages Differentiation and Function. **Immunity**, 47:183-198.
9. Decourtye L, Mire E, Clemessy M, Heurtier V, Ledent T, Robinson IC, Mollard P, Epelbaum J, Meaney MJ, Garel S, Le Bouc Y and Kappeler L (2017) IGF-1 induces GHRH neuronal axon elongation during early postnatal life in mice. **PLoS One**, 12: e0170083
10. De Frutos CA, Bouvier G, Arai Y, Thion MS, Lokmane L, Keita M, Garcia-Dominguez M, Charnay P, Hirata T, Riethmacher D, Grove EA, Tissir F, Casado M, Pierani A, Garel S (2016) Reallocation of olfactory Cajal-Retzius cells shapes neocortex architecture. **Neuron**, 92:435-448.
11. Diodato A, Ruinat de Brimont M, Yim YS, Derian N, Perrin S, Pouch J, Klatzmann D, Garel S, Choi GB and Fleischmann A (2016) Molecular signatures of neural connectivity in the olfactory cortex. **Nature Commun**, 7:12238.
12. Dupin I, Lokmane L, Dahan M, Garel S, Studer V (2015) Subrepellent doses of Slit1 promote Netrin-1 chemotactic responses in subsets of axons. **Neural Dev**, 10:5.
13. Squarzone P, Oller G, Hoeffel G, Pont-Lezica L, Rostaing P, Low D, Bessis° A, Ginhoux° F, Garel° S (2014) Microglia modulate wiring of the embryonic forebrain. **Cell Reports**, 8:1271-9.
14. Machicoane M, de Frutos CA, Fink J, Rocancourt M, Lombardi Y, Garel S, Piel M, Echard A (2014) SLK-dependent activation of ERMs controls LGN-NuMA localization and spindle orientation. **J Cell Biol**, 205:791-9.
15. Lokmane L, Proville R, Narboux-Nême N, Györy I, Keita M, Mailhes C, Léna C, Gaspar P, Grosschedl R and Garel S (2013) Sensory map transfer to the neocortex relies on pretarget ordering of thalamic axons. **Current Biology**, 23:810-6.

16. Deck M, Mailhes C, Chauvet S, Keita M, Niquille M, Lebrand C, Yoshida M, Yoshida Y, Mann F, Grove E, Garel S (2013) Pathfinding of corticothalamic axons relies on a rendezvous with thalamic projections. **Neuron**, 77: 472-84.
17. Mire E, Mezzera C, Leyva-Diaz E, Paternain AV, Squarzone P, Bluy L, Castillo-Paterna M, Lopez MJ, Peregrin S, Tessier-Lavigne M, Garel S, Galceran J, Lerma J, Lopez-Bendito G (2012) Spontaneous activity regulates Robo1 transcription to mediate a switch in thalamocortical axon growth. **Nature Neurosci**, 15:1134-43.
18. Zylbersztein K, Petkovic M, Burgo A, Deck M, Garel S, Marcos S, Bloch-Gallego E, Nothias F, Serini G, Bagnard D, Binz T, Galli T (2012) The vesicular SNARE Synaptobrevin is required for Semaphorin 3A axonal repulsion. **J Cell Biol**, 196:37-46.
19. Bielle<sup>o</sup> F, Marcos-Mondejar<sup>o</sup> P, Leyva-Diaz<sup>o</sup> E, Lokmane<sup>o</sup> L, Mire E, Mailhes C, Keita M, Gracia N, Tessier-Lavigne M, Garel<sup>\*</sup> S, Lopez-Bendito<sup>\*</sup> G (2011) Emergent growth cone responses to combinations of Slit1 and Netrin 1 in thalamic axon topography. **Current Biology**, 21:1748-55.
20. Bielle F, Marcos-Mondejar P, Keita M, Mailhes C, Verney C, Nguyen Ba-Charvet K, Tessier-Lavigne M, Lopez-Bendito G, Garel S (2011) Slit2 activity in the migration of Guidepost neurons shapes thalamic projections during development and evolution. **Neuron**, 69:1085-1098.
21. Zimmer C, Lee J, Griveau A, Arber S, Pierani A, Garel S, Guillemot F. (2010) Role of Fgf8 signalling in the specification of rostral Cajal-Retzius cells. **Development**, 137:293-302.
22. Niquille<sup>\*</sup> M, Garel<sup>\*</sup> S, Mann<sup>\*</sup> F, Hornung JP, Otsmane B, Chevalley S, Parras C, Guillemot F, Gaspar P, Yanagawa Y, Lebrand C. (2009) Transient neuronal populations are required to guide callosal axons: a role for semaphorin 3C. **PLoS Biol**. 710:e1000230.
23. Long JE, Garel S, Alvarez-Dolado M, Yoshikawa K, Osumi N, Alvarez-Buylla A, Rubenstein JL (2007) Dlx-dependent and -independent regulation of olfactory bulb interneuron differentiation. **J Neurosci** 27:3230-43.
24. Lopez-Bendito<sup>\*</sup> G, Cautinat<sup>\*</sup> A, Sanchez JA, Bielle F, Flames N, Garrat AN, Talmage D, Role LW, Charnay P, Marin<sup>o</sup> O, Garel<sup>o</sup> S (2006) Tangential neuronal migration controls axon guidance: a role for neuregulin-1 in thalamocortical axon navigation. **Cell**, 125:127-42.
25. Storm<sup>\*</sup> EE, Garel<sup>\*</sup> S, Borello<sup>\*</sup> U, Hebert JM, Martinez S, McConnell SK, Martin GR, Rubenstein JLR (2006) Dosage dependent functions of Fgf8 in regulating telencephalic patterning centers. **Development** 133:1831-44.
26. Huffman KJ, Garel S, Rubenstein JLR (2004) Fgf8 regulates the development of intra-neocortical projections. **J Neurosci** 24:8917-8923.
27. Yun K, Mantani A, Garel S, Rubenstein JL, Israel MA (2004) Id4 regulates neural progenitor proliferation and differentiation in vivo. **Development** 131:5441-5448.
28. Garel S, Huffman KJ, Rubenstein JLR (2003) Molecular regionalization of the neocortex is disrupted in Fgf8 hypomorphic mutants. **Development** 130:1903-1914.
29. Yun K, Garel S, Fischman S, Rubenstein JLR (2003) Patterning of the lateral ganglionic eminence by the Gsh1 and Gsh2 homeobox genes regulates striatal and olfactory bulb histogenesis and the growth of axons through the basal ganglia. **J Comp Neurol** 461:151-165.
30. Bishop K, Garel S, Rubenstein JLR, O'Leary DD (2003) Emx1 and Emx2 cooperate to regulate cortical size, lamination, neuronal differentiation, development of cortical efferents, and thalamocortical pathfinding. **J Comp Neurol** 457:345-360.
31. Long<sup>\*</sup> JE, Garel<sup>\*</sup> S, Depew<sup>\*</sup> MJ, Tobet S, Rubenstein JLR (2003) DLX5 Regulates Development of Peripheral and Central Components of the Olfactory System. **J Neurosci**, 23:568-578.
32. Garel S, Yun K, Grosschedl R, Rubenstein JLR (2002) The early topography of thalamocortical projections is shifted in Ebf1 and Dlx1/2 mutant mice. **Development** 129:5621-5634.
33. Garcia-Dominguez M, Poquet C, Garel S, Charnay P (2003) Ebf gene function is required for coupling neuronal differentiation and cell cycle exit. **Development** 130:6013-6025.
34. Jones M, Errington M, French P, Wills T, Fine A, Bliss T, Garel S, Charnay P, Bozon B, Laroche S, Davis S (2001) A requirement for the early gene Zif268 in the expression of late LTP and the consolidation of long-term memories. **Nat Neurosci** 4:289-296.

35. Garel S, Garcia-Dominguez M, Charnay P (2000) Control of the migratory pathway of facial branchiomotor neurones. *Development* 127: 5297-5307.
36. Mechta-Grigoriou F, Garel S, Charnay P (2000) Nab proteins mediate a negative feedback loop controlling Krox-20 activity in the developing hindbrain. *Development* 127:119-128.
37. Garel S, Marin F, Grosschedl R, Charnay P (1999) Ebf1 controls early cell differentiation in the embryonic striatum. *Development* 126: 5285-5294.
38. Garel S, Marin F, Mattei M-G, Vesque C, Vincent A, Charnay P (1997) Family of Ebf/Olf-1-related genes potentially involved in neuronal differentiation and regional specification in the central nervous system. *Dev Dyn* 210:191-205.

#### Review articles, book chapters and editorials

1. Genescu I and Garel S (2020) Being superficial: a Developmental Perspective on Layer 1 wiring. *Curr Opin Neurobiol*, in press.
2. Thion MS and Garel S (2020) Microglial ontogeny, diversity and neurodevelopmental functions. *Curr Opin Genes and Dev*, in press.
3. Bielle F and Garel S (2019) Neuronal Migration of guidepost cells (Elsevier) *Developmental Neuroscience: Comprehensive Reference, 2<sup>nd</sup> edition*, chapter 37.
4. Thion MS, Ginhoux F and Garel S (2018). Microglia and early brain development: an intimate journey. *Science*; 362: 185-189.
5. Thion MS and Garel S (2018) (Microbiome and microglia: prenatal and postnatal interactions diverge according to sex). *Med Sci (Paris)*, 34:527-529.
6. Ginhoux F and Garel S (2018) The mysterious origin of microglia. *Nat Neurosci.*, 21:897-899.
7. Thion MS and Garel S (2018) Microglia under the spotlight: activity and complement-dependent engulfment of synapses. *Trends Neurosci.*, 41:332-334.
8. Thion MS and Garel S (2017) On place and time: microglia in embryonic and perinatal brain development. *Curr Opin Neurobiol*, 47: 121-130.
9. Squarzoni P, Thion MS and Garel S (2015) Neuronal and microglial regulators of cortical wiring: usual and novel guideposts. *Front Neurosci*, 9:248.
10. Hoeffel G, Squarzoni P, Garel S and Ginhoux F. Microglial ontogeny and functional perspectives in shaping brain development: implications for CNS diseases. (2014) Chapter in: *Macrophages: Biology and Role in the Pathology of Diseases*, (Springer Press).
11. Lokmane L and Garel S (2014) Map transfer from the thalamus to the neocortex: inputs from the barrel field. *Semin Cell Dev Biol*, 35:147-55.
12. Garel S and López-Bendito G (2014) Inputs from the thalamocortical system on axon pathfinding mechanisms. *Curr Opin Neurobiol.*, 27:143-50.
13. Bielle F and Garel S (2013) Neuronal Migration of guidepost cells (Elsevier) *Developmental Neuroscience: Comprehensive Reference*, chapter 37
14. Bielle F and Garel S (2011) The occasion makes the connection: cellular migration in the neocortex evolution. *Med Sci (Paris)*, 27: 802-804.
15. Molnár Z, Garel S, López-Bendito G, Maness P, Price DJ (2012) Mechanisms controlling the guidance of thalamocortical axons through embryonic forebrain. *Eur J Neurosci*, 35:1573-85.
16. Poirier R, Cheval H, Mailhes C, Garel S, Charnay P, Davis S, Laroche S (2008) Distinct functions of egr gene family members in cognitive processes. *Front Neurosci*, 2:47-55.
17. Garel, S. and Rubenstein, J.L.R. (2005). Patterning of the cerebral cortex. *The Cognitive Neuroscience III*, (Gazzaniga MS, ed). Cambridge: MA, MIT Press.
19. Garel S and Rubenstein JL (2004) Intermediate targets in the formation of topographic projections: inputs from the thalamocortical system. *Trends Neurosci.*, 27:533-9.