GIOELE LA MANNO

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- Date of Birth: 15 July 1990   ■ Place of birth: Palermo, Italy   ■ Nationality: Italian   ■ Languages: Italian, English

EDUCATION AND EMPLOYMENT

EPFL	GROUP LEADED	1st November 2018 – now

- ELSIR Scholar - Head of the Neurodevelopmental Systems Biology lab at EPFL.

Karolinska Institutet	PHD STUDIES	8th January 2014 – 26th October 2018

Thesis: "Lineages and molecular heterogeneity in the developing nervous system" defended 26th October 2018
Surpervisor: Sten Linnarsson, Ernest Arenas, Jussi Taipale - Department of Medical Biochemistry and Biophysics (MBB).

Karolinska Institutet	RESEARCH ASSISTANT	June – December 2013

Project title: "Developing a microfluidic based single cell RNA-seq approach" Sten Linnarsson lab.

Karolinska Institutet	BIOMEDICINE MASTERS PROGRAM (120 ECTS)	August 2011 - June 2013

Highest final grade (VG). Thesis: "Preserving cellular state for single-cell RNA sequencing", Sten Linnarsson, MBB, KI.

University of Palermo	BACHELOR DEGREE IN BIOTECHNOLOGY (180 ECTS)	Autumn 2008 - July 2011

Comprehensive mark: 110/110 with distinction and special mention (equivalent to 'magna cum laude').

APPROVED GRANTS AND RESEARCH PROJECTS

- January 2021 - December 2024 – Swiss National Research Foundation - Ambizione Grant – 900,000 $
- January 2020 - 2022 – Kristian Gerhard Jebsen Grant - "The Lipid Brain Atlas project" - 240,000 $
- February 2020-2021 – SNF Spark – "A novel strategy for optics-free tomography-based spatial molecular profiling of tissues" - 99,300 CHF
- December 2019-2020 – SNF R'equip (coapplicant)- "Fast, automated and high-throughput single-molecule fluorescent in situ hybridization (smFISH) platform" – 203,000 CHF (for the purchase of equipment)
- July 2019-2022 – Chan Zuckerberg Initiative (CZI) Seed Network Grant (coapplicant)– "Oligodendroglia heterogeneity in the human brain" - 400,000 $ (divided among 3 co-applicants)

PRIZES, AWARDS AND FELLOWSHIPS

- September 2019 – SIB Bioinformatics Resource Innovation Award for my tool *velocyto* 10,000 $ for further development
- September 2019 – International Birnstiel Awards: Honourable Mention
- July 2019-2022 (refused) – Swedish research council International Postdoctoral Fellowship – 330,000 $ over 3 years
- August 2019 – Dimitris N. Chorafas Prize for the best PhD thesis of the year - 5,000 $, personal
- December 2018 – Selected publication - ScilifeLab Scientific Medley
- November 2018 – EMPIRIS award for research in brain diseases. 10,000 CHF, personal
- January 2014-2017 – KID Doctoral Fellowship. 270,000 SEK per year, for a total of 4 years
- September 2012/13 - Swedish Institute Scholarship (Bilateral Scholarship Program). 72,000 SEK

SELECTED PUBLICATIONS

Number of publications: **25**   *Citations: 6807*   *h-index:* **17**

Full list at: scholar.google.co.uk/citations?user=lwsjpbMAAAAJ

Molecular architecture of the developing mouse brain.
Nature. Accepted and in Press – preprint available on biorxiv [First and co-corresponding author]
La Manno G*⊠, Siletti K*, Furlan A, Gyllborg D, Vinsland E, Langseth C, Khven I, Johnsson A, Nilsson M, Lonnerberg P, Linnarsson S⊠ ([doi.org/10.1101/2020.07.02.184051](doi.org/10.1101/2020.07.02.184051))

Spatial tissue profiling by imaging-free molecular tomography.
Nature Biotechnology. April 2021 [Last author]. ([doi.org/10.1038/s41587-021-00879-7](doi.org/10.1038/s41587-021-00879-7))
Schede HH*, Schneider CG*, Stergiadou J, Borm LE, Ranjak A, Yamawaki TM, David FPA, Lonnerberg P, Laurent G, Tosches MA, Codeluppi S, **La Manno G⊠**

Sphingolipid Control of Fibroblast Heterogeneity Revealed by Single-Cell Lipidomics.
bioRxiv. February 2021 [Co-last author] ([doi.org/10.1101/2021.02.23.432420](doi.org/10.1101/2021.02.23.432420))
Capolupo L, Khven I, Mazzeo L, Glousker G, Russo F, Montoya JP, Ho S, Bhandari DR, Bowman AP, Ellis S, Guiet R, Muthing J, Spengler B, Heeren RMA, Dotto G, **La Manno G⊠**, D'Angelo G⊠

The emergence and promise of single-cell temporal-omics approaches

Current opinion in Biotechnology. 2019 Sep 12. [Review - Senior author]
Lederer A, **La Manno G**. (doi.org/10.1016/j.copbio.2019.12.005)

A cell fitness selection model for neuronal survival during development.
Nature Communications. 2019 Sep 12. [Senior coauthor, analysis and cosupervision]
*Wang Y, Wu H, Fontanet P, Codeluppi S, Akkuratova N, Petitpré C, Xue-Franzén Y, Niederreither K, Sharma A, Da Silva F, Comai G, Agirman G, Palumberi D, Linnarsson S, Adameyko I, Moqrich A, Schedl A, **La Manno G**, Hadjab S*, Lallemend F*.* ([doi.org/10.1038/s41467-019-12119-3](doi.org/10.1038/s41467-019-12119-3))

Single-cell transcriptional logic of cell-fate specification and axon guidance in early-born retinal neurons.
Development. 2019 Sep 1. [Senior coauthor without PhD Supervisor, analysis and cosupervision]
*Lo Giudice Q, Leleu M, **La Manno G**, Fabre PJ.* ([doi.org/10.1242/dev.178103](doi.org/10.1242/dev.178103))

Spatial organization of the somatosensory cortex revealed by cyclic smFISH. ([doi.org/10.1038/s41592-018-0175-z](doi.org/10.1038/s41592-018-0175-z))
Nature Methods. 2018 Oct 30. [Technology relevant for this project, I contributed analyzing the data]
*Codeluppi S, Borm LE, Zeisel A, **La Manno G**, van Lunteren JA, Svensson CI, Linnarsson S*

RNA velocity of single cells. ([doi.org/10.1038/s41586-018-0414-6](doi.org/10.1038/s41586-018-0414-6))
Nature. *2018 Aug 08.*
La Manno G, *Soldatov R, Zeisel A, Braun E, Hochgerner H, Petukhov V, Lidschreiber K, Kastriti M, Lonnerberg P, Furlan A, Fan J, Borm L, Liu Z, van Bruggen D, Guo J, Xialing He, Barker R, Sundstrom E, Castelo-Branco G, Cramer P, Adameyko I, Linnarsson S*, Kharchenko P**

Visceral motor neuron diversity delineates a cellular basis for nipple and pilo-erection muscle control.
Nature Neuroscience *2016 Oct 19.* ([doi.org/10.1038/nn.4376](doi.org/10.1038/nn.4376))
*Furlan A, **La Manno G**, Lübke M, Häring M, Abdo H, Hochgerner H, Kupari J, Usoskin D, Airaksinen MS, Oliver G, Linnarsson S, Ernfors P.*

Molecular Diversity of Midbrain Development in Mouse, Human, and Stem Cells.
Cell. *2016 Oct 6.* (doi.org/10.1016/j.cell.2016.09.027)
La Manno G*, *Gyllborg D*, Codeluppi S, Nishimura K, Salto C, Zeisel A, Borm LE, Stott SR, Toledo EM, Villaescusa JC, Lönnerberg P, Ryge J, Barker RA, Arenas E, Linnarsson S.*

Oligodendrocyte heterogeneity in the mouse juvenile and adult central nervous system.
Science. *2016 June 10.* (doi.org/10.1126/science.aaf6463) *[I modeled the dynamics of olygodendrocytes differentiation]*
*Marques S, Zeisel A, Codeluppi S, van Bruggen D, Mendanha Falcão A, Xiao L, Li H, Häring M, Hochgerner H, Romanov RA, Gyllborg D, Muñoz- Manchado AB, **La Manno G**, Lönnerberg P, Floriddia EM, Rezayee F, Ernfors P, Arenas E, Hjerling-Leffler J, Harkany T, Richardson WD, Linnarsson S, Castelo-Branco G.*

Cell types in the mouse cortex and hippocampus revealed by single-cell RNA-seq.
Science *2015 March 6. [Setup of the single-cell sequencing protocol used, including automation]*
*Zeisel A, Muñoz-Manchado AB, Codeluppi S, Lönnerberg P, **La Manno G**, Juréus A, Marques S, Munguba H, He L, Betsholtz C, Rolny C, Castelo- Branco G, Hjerling-Leffler J, Linnarsson S.* (doi.org/10.1126/science.aaa1934)

Quantitative single-cell RNA-seq with unique molecular identifiers.
Nature Methods *2014 February. [Optimization and automation of the protocol]*
*Islam S, Zeisel A, Joost S, **La Manno G**, Zajac P, Kasper M, Lönnerberg P, Linnarsson S.* (doi.org/10.1038/nmeth.2772)

PATENTS AND LICENCES
- "*Method that allows pooling down from chip to the 96 well device*" [WAFER-34667/US-1 62/256,968]
- "*Method for dual end barcoding chemistry*" [WAFER-34667/US-2]
- "*Method for capturing and encoding nucleic acid from a plurality of single cells*" [PCT/EP2014/070824].

ORAL CONTRIBUTIONS *(only last 3 years)*   *27 contributions in the last 3 years*

INVITED TALKS AT CONFERENCES (8 over 6 countries)
- Single Cell Symposium, Berlin - IZKF symposium, Erlangen - Heidelberg Forum Young Scientists - WCHR, Sitges
- SFN virtual conference   - Single-cell symposium, Helsinki   - ESHG Copenhagen - Comp&Mol Methods, Turku

INVITED SEMINARS AND LECTURES (11 over 6 countries)
- ETH D-BSSE, Basel   - Life Science seminar, Milan   - Unistem, Milan   - MPI-MG, Berlin
- Medical Biotech, Palermo   - Python bootcamp, Lausanne   - Single-cell RNAseq course, Stockholm
- RIKEN/KI 7th and 8th course, Stockholm/Yokohama   - Single-cell Data Analysis, Helsinki - EMBnet, Uppsala

ABSTRACTS SELECTED FOR A TALK AND OTHER CONTRIBUTIONS *(8 over 7 countries)*
- Single Cell Genomics, Stockholm - Single Cell Genomics, Cambridge MA - Single Cell Analysis, Cold Spring Harbor.

OPEN SOURCE SOFTWARE AND OTHER RESOURCES
I contributed to the implementations and maintenance of the following software and resources:
- *velocyto   - cytograph   - loompy   - py-fitsne   - ceftools   - BackSPIN   - cmdstan-py   - nbregression*
- *linnarssonlab.org/ventralmidbrain   - linnarssonlab.org/sympathetic*

SUPERVISION
- I am the thesis supervisor of PhD Students:- Alex Lederer, Irina Khven, Hannah Halima Schede and Christian Schneider.
- I am the postdoctoral advisor of: Dr. Antonio Herrera and Dr. Leila Alieh