

Stefano Berto, Ph.D.

First Name: Stefano
Surname: Berto
Place of Birth: Conegliano, Treviso
Citizenship: Italian
Phone: +1 469 662 6889
Email: stefano.berito@utsouthwestern.edu

CURRENT POSITION

Postdoctoral Fellow
UT Southwestern Medical Center
Advisor: Dr. Genevieve Konopka
2014 - present

CURRENT ADDRESS

Department of Neuroscience
University of Texas Southwestern Medical Center
5323 Harry Hines Blvd., ND4.300
Dallas, TX 75390-9111
Phone: 214-648-5136 (lab)
FAX: 214-648-5138

LANGUAGES

Italian: Native language
English: Advanced

EDUCATION

Ph.D.
Advisor: Dr. Katja Nowick
University of Leipzig, Germany
Computer Science
Final examination: *Magna cum Laude*
Dissertation: "*Transcription factor networks play a key role in human brain evolution and disorders*"

M.Sc.
University of Padova, Italy – Jyvaskyla University, Finland
Evolutionary Biology
Final examination: *100/110*

B.Sc.
University of Padova, Italy
Biology
Final examination: *98/110*

RESEARCH AREA

Brain evolution, evolution of neuropsychiatric disorders
Genomics/Genetics of neuropsychiatric disorders
Single-cell genomics

RESEARCH EXPERIENCE

UT Southwestern Medical Center

Visiting Researcher (2014 – 2016); Postdoctoral Fellow (2016 – Present).

Advisor: Dr. Genevieve Konopka

- Studied the role of neurons and oligodendrocytes in the human brain evolution and neuropsychiatric disorders using comparative genomics.
- Studied the role of transcriptional and alternative splicing regulations in the human brain
- Investigated the link between gene expression and human brain activity based on episodic memory and resting-state functional MRI.

University of Leipzig

Graduate researcher (2012 – 2016)

Advisor: Dr. Katja Nowick

- Studied the role of transcription factors in the human brain evolution and neuropsychiatric disorders
- Studied the role of transcription factors in the human brain

BIOINFORMATIC SKILLS

R: advanced, Bash: advanced, SQL: advanced, Python: intermediate

Excellent skills with NGS technologies (e.g. RNA-seq, ChIP-seq, ATAC-seq, scRNA-seq, scATAC-seq)

Excellent skills with statistics

Excellent skills with genomics/genetics for neuropsychiatric disorders

TEACHING EXPERIENCE

Teaching Assistant/Lecturer at the Programming for Evolutionary Biology Course (Leipzig, 2012-2013; Berlin 2020).

Co-mentoring graduate students at Konopka Lab (2014 – present).

ORGANIZING INTERNATIONAL MEETINGS

SMBE 2018 (Tokyo, Japan): ***Symposia organizer***

POSTER/TALK

SFN 2019 (Chicago, USA): ***Poster session***

EMBO Workshop (Naples, Italy): ***Oral presentation***

NIMH Developmental Origins of Brain Circuit Architecture: ***Oral presentation***

Invited Speaker (Metropolitan Institute; Tokyo, Japan): ***Oral presentation***

SFN 2016 (San Diego, USA): ***Poster session***

UTSW Neuroscience Retreat 2016 (Dallas, USA): ***Poster session***

JSNP/JSBP 2015 (Tokyo, Japan): ***Poster session***

28th TBI Winterseminar 2013 (Bled, Slovenia): ***Oral presentation***

SMBE 2013 (Chicago, USA): ***Oral presentation***

TIBE 2012 (Porto, Portugal): ***Oral presentation***

Herbstseminar Bioinformatik 2011 (Decin, Czech republi): ***Oral presentation***

Leipzig Research Festival 2011 (Leipzig, Germany): ***Poster session***

CURRENT PEER REVIEW ACTIVITIES

Nat Neurosci, Neuron, Cer Cort, MBE, GBE

CURRENT SOCIETY MEMBERSHIPS

SFN, SMBE

AWARDS

Best presentation, 28th TBI Winterseminar (Bled, Slovenia)
Best poster, Neuroscience Meeting 2016 (Dallas, USA)

HOME PAGES

<https://github.com/StefanoBertoUTSW>

<https://github.com/konopkalab>

LIST OF PUBLICATIONS

1. **Berto S***, Mendizabal I*, Usui N, Toriumi K, Chatterjee P, Douglas C, et al. Accelerated evolution of oligodendrocytes in the human brain. *Proc Natl Acad Sci U S A*. 2019. * Equal Contribution
2. Mendizabal I*, **Berto S***, Usui N, Toriumi K, Chatterjee P, Douglas C, et al. Cell type-specific epigenetic links to schizophrenia risk in the brain. *Genome Biol*. 2019;20(1):135.
3. Hickey S, **Berto S**, Konopka G. Chromatin decondensation by FOXP2 promotes human neuron maturation and expression of neurodevelopmental disease genes. *Cell Rep*. 2019;27(6):1699-711.
4. Comazzetto S, Murphy MM, **Berto S**, Jeffery E, Zhao Z, Morrison SJ. Restricted Hematopoietic Progenitors and Erythropoiesis Require SCF from Leptin Receptor+ Niche Cells in the Bone Marrow. *Cell Stem Cell*. 2019;24(3):477-86 e6.
5. **Berto S**, Wang GZ, Germi J, Lega BC, Konopka G. Human Genomic Signatures of Brain Oscillations During Memory Encoding. *Cereb Cortex*. 2018;28(5):1733-48.
6. **Berto S**, Nowick K. Species-Specific Changes in a Primate Transcription Factor Network Provide Insights into the Molecular Evolution of the Primate Prefrontal Cortex. *Genome Biol Evol*. 2018;10(8):2023-36.
7. Fontenot MR, **Berto S**, Liu Y, Werthmann G, Douglas C, Usui N, et al. Novel transcriptional networks regulated by CLOCK in human neurons. *Genes Dev*. 2017;31(21):2121-35.
8. Harrington AJ, Raissi A, Rajkovich K, **Berto S**, Kumar J, Molinaro G, et al. MEF2C regulates cortical inhibitory and excitatory synapses and behaviors relevant to neurodevelopmental disorders. *Elife*. 2016;5.
9. **Berto S**, Usui N, Konopka G, Fogel BL. ELAVL2-regulated transcriptional and splicing networks in human neurons link neurodevelopment and autism. *Hum Mol Genet*. 2016;25(12):2451-64.
10. **Berto S**, Perdomo-Sabogal A, Gerighausen D, Qin J, Nowick K. A Consensus Network of Gene Regulatory Factors in the Human Frontal Lobe. *Front Genet*. 2016;7:31.
11. Wang GZ, Belgard TG, Mao D, Chen L, **Berto S**, Preuss TM, et al. Correspondence between Resting-State Activity and Brain Gene Expression. *Neuron*. 2015;88(4):659-66.
12. Araujo DJ, Anderson AG, **Berto S**, Runnels W, Harper M, Ammanuel S, et al. FoxP1 orchestration of ASD-relevant signaling pathways in the striatum. *Genes Dev*. 2015;29(20):2081-96.

13. Boratynski Z, Melo-Ferreira J, Alves PC, **Berto S**, Koskela E, Pentikainen OT, et al. Molecular and ecological signs of mitochondrial adaptation: consequences for introgression? *Heredity (Edinb)*. 2014;113(4):277-86.
14. Boratynski Z, Alves PC, **Berto S**, Koskela E, Mappes T, Melo-Ferreira J. Introgression of mitochondrial DNA among *Myodes voles*: consequences for energetics? *BMC Evol Biol*. 2011;11:355.

MANUSCRIPTS IN PREPARATION/SUBMITTED

1. **Berto S**, Fontenot M, Seger S, Ayhan F, Kulkarni A, Douglas C, Lega B and Konopka G. *The genomic underpinnings of oscillatory biomarkers supports successful memory encoding in humans*. *Nature Neuroscience*, under review (2019).
2. **Berto S***, Treacher A*, Caglayan E*, Haney J, Gandal MJ, Montillo A and Konopka G. *Association between resting-state functional connectivity and gene expression is altered in autism spectrum disorder*. In prep. * *Equal contribution*
3. Perez, J, **Berto S**, Gleason K, Ghose S, Chunfeng T, Kim T, Konopka G and Tamminga CA. *Hippocampal Subfield Transcriptome Analysis in Schizophrenia Psychosis*. *Mol Psy*, under review (2019).
4. Li, Y, Shan Y, Desai R, Kilaru G, **Berto S**, Wang GZ, Yo SH, Konopka G, Weingberger L and Takahashi J. *Circadian Period is a Signature of Noise-driven Cellular Heterogeneity*. *Nature Communication*, under review (2019).
5. Harrington AJ, Bridges CM, Blankenship K, **Berto S**, Assali A, Moore HW, Cho YJ, Tsvetkov E, Everman DB, Konopka G, Skinner SA and Cowan CW. *Neuroimmune and neuronal dysfunction underlies autism-related behaviors in a mouse model of MEF2C haploinsufficiency syndrome*. In prep.
6. Xu P, **Berto S**, Kulkarni A, Cox KH, Kim T, Konopka G and Takahashi JS. *Genome-wide transcriptional profiling of suprachiasmatic nucleus neurons in response to photic input*. In prep.

REFERENCES

Genevieve Konopka, Ph.D.

Associate Professor
Neuroscience Department
UT Southwestern Medical Center
Genevieve.Konopka@utsouthwestern.edu
Current Postdoctoral Mentor

Joseph Takahashi, Ph.D.

Professor & Chair
Neuroscience Department
UT Southwestern Medical Center
Joseph.Takahashi@UTSouthwestern.edu
Collaborator

Soojin Yi, Ph.D.

Professor
School of Biological Sciences
Georgia Tech
soojin.yi@biology.gatech.edu
Collaborator

Katja Nowick, Ph.D.

Professor
Institute of Biology – Zoology
Freie Universität Berlin
katja.nowick@fu-berlin.de
Graduate Mentor