Valeriya Malysheva

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Education

2012–2016 **PhD**, Molecular Biology, *IGBMC*, University of Strasbourg.

- *Supervisor:* Prof. Hinrich Gronemeyer

2007–2012 **Specialist Diploma**, Biophysics and Bioengineering, *Department of Biophysics*, Moscow State University.

- BSc+MSc equivalent
- Distinction and Gold medal

Professional Experience

2022–Present **Group Leader**, *Computational Neurobiology Lab*, VIB Center for Molecular Neurology, University of Antwerp, Belgium.

2019–Present **Postdoctoral research scientist**, *MRC London Institute of Medical Sciences*, Imperial College London, UK.

- *PI:* Dr Mikhail Spivakov

2017–Present **Postdoctoral research associate**, *Trinity Hall*, University of Cambridge, UK.

2017–2019 **Postdoctoral research scientist**, *Nuclear Dyanmics ISP*, Babraham Institute, Cambridge, UK.

- *PI:* Dr Mikhail Spivakov
- Funded by commercialisation KEC grant

Academic teaching

2020–Present **Lecturer**, Systems Biology Part III (Masters), *University of Cambridge*.
(30 students per year, 3 hours per year)

2019–Present **Tutor**, Mathematical Biology Part IA (Undergraduate), *University of Cambridge*.
(6 students per year, 72 hours per year)

Awards

2021 UKRI 2020 End of Year Special Award

2017 "Seal of Excellence" Marie Skłodowska-Curie actions (MSCA) in Horizon 2020

2017 Roche Continents laureate

2016 Education travel grant of Boehringer Ingelheim Fonds

2016 Education Grant of 'Canceropole du Grand-Est'

2007 Winner Diploma. Moscow State University Mathematics Competition

2005 Winner Diploma. Moscow State University Physics Competition, Moscow, Russia

Languages

English (Fluent), French (Fluent), Russian (Native)

Selected scientific output

Paula Freire-Pritchett, Helen Ray-Jones, Monica Della Rosa, Chris Q. Eijsbouts, William R. Orchard, Steven W. Wingett, Chris Wallace, Jonathan Cairns, Mikhail Spivakov* and **Valeriya Malysheva***. Detecting chromosomal interactions in Capture Hi-C data with CHiCAGO and companion tools. ***Nature Protocols*** (2021) 16, 4144–4176. (*joint corresponding authors)

Jonathan Cairns*, William R. Orchard*, **Valeriya Malysheva***, Mikhail Spivakov, Chicdiff: a computational pipeline for detecting differential chromosomal interactions in Capture Hi-C data, ***Bioinformatics*** (2019) Volume 35, Issue 22, 4764–4766 (*joint first authors)

Valeriya Malysheva, Stefan Schoenfelder, Mikhail Spivakov, Takashi Nagano and Peter Fraser. Patent. Novel method for studying chromatin organization from rare cell types. Reference number WO2021064430A1.

Valeriya Malysheva, Carmen Petitjean, Helen Ray-Jones, Monica Della-Rosa, William Orchard, David Ohayon, Michiel Thiecke, Frances Burden, Mattia Frontini, Stephen Waggonner, Emily Miraldi, Takashi Nagano, Stefan Schoenfelder, Peter Fraser and Mikhail Spivakov. High resolution promoter interaction analysis in innate lymphoid cells provides insights into common disease mechanisms (submission of a paper pending embargo)

Jessica Sook Yuin Ho, Bobo Wing-Yee Mok, Laura Campisi, Tristan Jordan, Soner Yildiz, Sreeja Parameswaran, Joseph A Wayman, Natasha N Gaudreault, David A Meekins, Sabarish V. Indran, Igor Morozov, Jessie D Trujillo, Yesai S Fstkchyan, Raveen Rathnasinghe, Zeyu Zhu, Simin Zheng, Nan Zhao, Kris White, Helen Ray-Jones, **Valeriya Malysheva**, Michiel J Thiecke, Siu-Ying Lau, Honglian Liu, Anna Junxia Zhang, Andrew Chak-Yiu Lee, Wen-Chun Liu, Teresa Aydillo, Betsaida Salom Melo, Ernesto Guccione, Robert Sebra, Elaine Shum, Jan Bakker, David A. Kaufman, Andre L. Moreira, Mariano Carossino, Udeni B R Balasuriya, Minji Byun, Emily R Miraldi, Randy A Albrecht, Michael Schotsaert, Adolfo Garcia-Sastre, Sumit K Chanda, Anand D Jeyasekharan, Benjamin R TenOever, Mikhail Spivakov, Matthew T Weirauch, Sven Heinz, Honglin Chen, Christopher Benner, Juergen A Richt, Ivan Marazzi. Topoisomerase 1 inhibition therapy protects against SARS-CoV-2-induced inflammation and death in animal models. ***Cell***, (2021) 184, 2618–2632.

Michiel J. Thiecke, Gordana Wutz, Matthias Muhar, Wen Tang, Stephen Bevan, **Valeriya Malysheva**, Roman Stocsits, Tobias Neumann, Johannes Zuber, Peter Fraser, Stefan Schoenfelder, Jan-Michael Peters, Mikhail Spivakov. Cohesin-Dependent and -Independent Mechanisms Mediate Chromosomal Contacts between Promoters and Enhancer. ***Cell Reports***, (2020) 32:3.

Matthias Blum, Pierre-Etienne Cholley, **Valeriya Malysheva**, Samuel Nicaise, Julien Moehlin, Hinrich Gronemeyer, Marco Antonio Mendoza-Parra. A comprehensive resource for retrieving, visualizing, and integrating functional genomics data. ***Life Science Alliance***, (2019) 3:1

Valeriya Malysheva, Marco Antonio Mendoza-Parra, Matthias Blum, Mikhail Spivakov and Hinrich Gronemeyer. Gene regulatory network reconstruction incorporating 3D chromosomal architecture reveals key transcription factors and DNA elements driving neural lineage commitment. (in revision for ***Genome Research***; preprint available at https://doi.org/10.1101/303842)

Valeriya Malysheva, Marco-Antonio Mendoza-Parra, Mohamed-Ashick M. Saleem and Hinrich Gronemeyer. Reconstruction of gene regulatory networks reveals chromatin remodelers and key transcription factors in tumorigenesis. ***Genome Medicine***, (2016) 8:57.

Marco-Antonio Mendoza-Parra, **Valeriya Malysheva**, Mohamed-Ashick M. Saleem and Hinrich Gronemeyer. Reconstructing divergent retinoid-induced cell fate-regulatory programs in stem cells. ***Genome Research***, (2016) 26:1-15

Marco Antonio Mendoza-Parra; Matthias Blum; **Valeriya Malysheva**; Pierre-Etienne Cholley; Hinrich Gronemeyer. LOGIQA: A database dedicated to Long-range Genome Interactions Quality Assessment. ***BMC Genomics***, (2016) 17:355