# Veronika Romero

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*Mission-driven scientist with 10+ years in biomedical research. Passionate about data analysis and visualization of complex datasets. Curiosity-driven critical thinker picking up new concepts and techniques quickly and excited to learn. Problem-solver who can bridge disciplines, collaborate with colleagues from diverse backgrounds, and optimize workflows.*

## Professional Experience

### University of Utah, Salt Lake City, UT

***Research Scientist / Laboratory Manager*** | *September 2023 – October 2024*

- Studied zebrafish meninges using confocal imaging of transgenic animals and RNA *in situ* hybridizations.
- Analyzed genomic datasets (single-cell and bulk RNA-seq) aimed to establish future research directions.
- Developed R scripts and reporting workflows for reproducible ETL, analysis and visualizations of the data.
- Managed the lab, set up lab spaces and optimized protocols.

***Senior Laboratory Specialist / Laboratory Manager*** | *March 2021 – September 2023*

- Studied activity-dependent transcription factors in rodent hippocampal neurons.
- Built from scratch and managed a neuroscience genomics laboratory.
- Established and implemented diverse workflows for laboratory procedures and data analysis.
- Optimized multiple protocols including preparation, transfection, and live imaging of primary hippocampal neuron cultures, as well as sample preparation for genomic applications (e.g. RNA-, ChIP-, ATAC-seq, etc.).

***Research Associate*** | *July 2018 – June 2020*

- Studied potential mechanisms of rare cases of microcephaly using human induced pluripotent stem cells (hiPSC) and hESC-derived neurons and organoids.
- Collected, analyzed, and presented data.

### Bogomoletz Institute of Physiology, Kyiv, Ukraine

***Junior Research Fellow*** | *November 2015 – August 2018*

- Collaborated with clinical researchers on the projects in the field of cardiology.
- Contributed to experiments, analyzed and visualized data, co-authored 3 shiny apps and 2 publications.

***Graduate Research Fellow / PhD student*** | *August 2011 – November 2015*

- Studied microRNA-1 in experimental cardiac pathology using *in vivo* and in culture rat models.
- Analyzed, visualized, and interpretated data.
- Prepared 5 research papers and presented results at the conferences.

***Laboratory Technician*** | *May 2009 – August 2011*

- Performed DNA genotyping of patients with cardiovascular pathologies to test SNPs associated with increased risk of poor clinical outcomes.
- Evaluated gene expression in cultured primary rat cardiomyocytes and heart tissue after experimental ischemia-reperfusion using qPCR, analyzed data, contributed to multiple projects in the lab.

### BioLabTech Ltd., Kyiv, Ukraine

***Product Manager*** | *December 2016 – June 2017*

- Trained and provided product support to the customers in the field of genomics and medical genetics.

### Bogomolets National Medical University, Kyiv, Ukraine

***University Instructor / Teaching Associate*** | *August 2011 – October 2013*

- Taught pathophysiology seminars and labs to medical students, developed extracurricular materials.

## Education

**PhD analogue in Pathophysiology**
Bogomoletz Institute of Physiology, Kyiv, Ukraine

**Doctor of Medicine in General Medicine**
Bogomolets National Medical University, Kyiv, Ukraine

## Technical Skills

- **Data Analysis Tools:** R (including Quarto markdown, Seurat, DESeq2, enrichR, tidyverse and other packages); Python; basics of Linux/UNIX command line; SQL; SPSS; Excel; Tableau
- **Statistical & Machine Learning Methods:** correlation, linear and logistic regression, Kolmogorov-Smirnov test, t-test, Wilcoxon, Mann-Whitney, Kruskal-Wallis tests, ANOVA, chi-square, Fisher's exact test, Kaplan Meier Analysis, Dimensionality Reduction, Random Forest, Clustering, k-NN, Regression
- **Other Tools:** MS Office, front-end web development, Adobe Photoshop & Illustrator, ImageJ/FIJI

## Model systems

- Mammalian cell culture (human induced pluripotent stem cells (hiPSC) and embryonic stem cell (ESC) derived neurons and organoids; primary neonatal rodent cardiomyocytes and neuronal hippocampal neurons; HEK).
- *In vivo* and *ex vivo*: Rodents (rats, mice), Zebrafish.

## Laboratory Skills

Mammalian cell culture | AAV transductions and transfections | CRISPR/Cas9 | siRNA | sample preparation for genomic applications (bulk and single-cell RNA-seq, ChIP-seq, ATAC-seq) | qPCR | PCR | Western Blot | confocal and Keyence imaging | live cell imaging | fluorescent RNA *in situ* hybridizations (RNAscope, HCR) | ICC | IHC | lab management

## Languages

English (fluent), Ukrainian (native), German (beginner)

## Leadership

- 2016-2018: Established, organized and raised funding for scientific seminars, workshops, and conferences in computational genomics and precision medicine including Integrative Biology & Medicine and single-cell RNABIO
- Taught multiple R and Python intro workshops to diverse audiences. Co-authored a manual on R for Data Analysis (Ukrainian). Contributed to multiple syllabuses of courses teaching data science.
- Mentored and trained students of different levels.

## Volunteer Experience

- 2022: project initiating urgent support for researchers in Ukraine during the war (Chhugani et al., Science, 2022)
- 2014-2017: volunteer at the scientific outreach events
- 2016-2018: end-to-end organization and co-organization of scientific events

## Selected workshops, courses, and conferences attended

- Zebrafish Development and Genetics course at the MBL, Woods Hole, USA. 2024
- Workshops by the DELPHI Data Science Initiative at the University of Utah, Salt Lake City, UT: *Introduction to R Carpentries Workshop* | *Geographical Analysis and Visualization in R Workshop* | *Advanced R* | *Data Cleaning with R* | *Databases and SQL* | *Version Control and Collaboration with Git and GitHub* | *Introduction to Python for Data Analysis* | *Natural Language Processing with Applications to Clinical Data Science*
- (audit) Computational Genomics class (prof. Aaron Quinlan). University of Utah. 2024
- Business Data Analytics Professional Program, Utah Valley University. November 2020
- Summer schools and workshops at BIMSB, Max Delbrück Center, Berlin, Germany:
  - 9th Berlin Summer Meeting: 'Brave New RNA'. 2016,
  - 10th Berlin Summer Meetings: 'Smaller Faster Clearer'. 2017
  - de.NBI Summer School Computational genomics and RNA Biology. 2017
  - Workshop on model systems, organoids and the Human Cell Atlas. 2017
- RECOMB 2018, Research in Computational Molecular Biology, Paris, France. 2018
- The Non-Coding Genome EMBO|EMBL Symposium, Heidelberg, Germany. 2013
- The reciprocal interactions of signalling pathways and non-coding RNA EMBO Workshop, Switzerland. 2012

## Publications

Please see Google Scholar.

## References

Available upon request.