Veronika Romero

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LinkedIn | GitHub | Google Scholar | Website

Professional Summary

Mission-driven scientist with 15+ years in biomedical research. Proficient with different laboratory techniques as well as data analysis and visualization. Curiosity-driven critical thinker picking up new concepts and techniques quickly. Problem-solver who can bridge disciplines, engage with colleagues from diverse backgrounds, and optimize workflows.

Education

PhD analogue in Pathophysiology
Bogomoletz Institute of Physiology, Kyiv, Ukraine — 2011-2015

Doctor of Medicine in General Medicine
Bogomolets National Medical University, Kyiv, Ukraine — 2005-2011
Biostatistics | *Medical informatics* | *Epidemiology*

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.

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 Fellow
July 2018 – June 2020

- Studied rare cases of microcephaly using induced pluripotent stem cells (iPSC)-derived 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 cardiovascular diseases.
- 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 at the conferences.

Laboratory Technician
May 2009 – August 2011

- Performed DNA genotyping and evaluated gene expression using qPCR, analyzed data.
- Contributed to multiple projects resulting in 6 research papers and multiple abstracts.

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.
- Presented to the audiences of different backgrounds ranging from 1-on-1 to hundreds of participants.

Bogomolets National Medical University, Kyiv, Ukraine

Teaching Associate

August 2011 – October 2013

- Was teaching pathophysiology seminars and labs to year 3 medical students and year 2 dentistry students.
- Developed extracurricular materials, explained complex concepts at different depth levels.

Technical Skills

- **Data Wrangling and Analysis Tools:** R, Python, SQL, SPSS, Excel
- **Data Visualization:** R (ggplot2, shiny), Python (Matplotlib, Seaborn), Tableau
- **Statistical 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, etc
- **Machine Learning:** Dimensionality Reduction, Random Forest, Clustering, k-NN, Regression
- **Other Tools:** Quarto, MS Office, front-end web development, Adobe Photoshop & Illustrator

Model systems

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

Laboratory techniques

Mammalian cell culture | Transduction and transfection | CRISPR/Cas9 | siRNA | sample preparation for genomic applications RNA-seq | single-cell RNA-seq | ChIP-seq | ATAC-seq | qPCR | PCR | Western Blot | live imaging | fluorescent RNA *in situ* hybridizations (RNAscope, HCR) | ICC | IHC | confocal imaging | ImageJ/FIJI

Languages

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

Certification

- **Business Data Analytics** professional program from Utah Valley University — November 2020

Leadership

- 2016-2018: Established and organized scientific seminars, workshops, and conferences in computational biology and precision medicine. It involved dozens of speakers, hundreds of participants, dozens of sponsors, thousands of raised dollars, as well as end-to-end logistics of 8 smaller and two major events:

  Integrative Biology & Medicine & **single-cell RNABIO & organoids**
- 2008-2013: Led a pathophysiology interest group at the Bogomolets National Medical University first as a student and then as a member of the teaching faculty.
- 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.
- Received a young investigator award from the National Academy of Sciences of Ukraine.

Volunteer Experience

- 2022 – joined a team initiating the urgent support and remote opportunities for researchers in Ukraine upon the beginning of full-scale war. It resulted in new policies and programs (Chhugani et al., Science, 2022).
- 2014-2017: volunteer at the scientific outreach events in Ukraine
- 2016-2018 – on volunteer bases, end-to-end organization of scientific events in Ukraine

Selected workshops and conferences

- 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
- Neuroscience Program Snowbird Symposium, Snowbird, UT, USA. [2018, 2019, 2022]
- 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

Selected publications

- *W. Wolfsberger et al.* Scientists without borders: lessons from Ukraine. GigaScience, 2023
- *K. Chhugani et al.* Remote opportunities for scholars in Ukraine. Science, 2022
- *K. Chhugani et al.* Effective and feasible mechanisms to support Ukrainian researchers and students at risk: opportunities, challenges and pitfalls. OSF Preprints, 2022
- *T. Drevytska et al.* shRNA-induced knockdown of a bioinformatically predicted target IL10 influences functional parameters in spontaneously hypertensive rats with asthma. Journal of integrative bioinformatics, 2018
- * *V. Gurianova et al.* Stress response factors as hub-regulators of microRNA biogenesis: implication to the diseased heart. Cell biochemistry and function, 2015 (review)
- * *V. Gurianova et al.* Does proteasome regulate the level of microRNA-1 in cardiomyocytes? Application to anoxia-reoxygenation. Molecular and Cellular Biochemistry, 2015
- *T. Drevytska et al.* Silencing of TERT decreases levels of miR-1, miR-21, miR-29a and miR-208a in cardiomyocytes. Cell Biochemistry and Function, 2014.
- * *S. Goncharov, V. Gurianova, et al.* Genetic predisposition to essential hypertension in children: analysis of 17 single nucleotide polymorphisms. International Journal of Physiology and Pathophysiology, 2014
- V*. Kyrychenko et al.* Knockdown of PSMB7 induces autophagy in cardiomyocyte cultures: possible role in endoplasmic reticulum stress. Pathobiology, 2013
- * *V. Dosenko, V. Gurianova, et al.* Mature and immature microRNA ratios in cultured rat cardiomyocytes during anoxia-reoxygenation. Experimental & Clinical Cardiology, 2012
- * *V. Garbuzova, V. Gurianova et al.* Association of matrix Gla protein gene allelic polymorphisms (G− 7→ A, T− 138→ C and Thr83→ Ala) with acute coronary syndrome in the Ukrainian population. Experimental & Clinical Cardiology, 2012
- *D. Pashevin et al.* Antiatherogenic effect of quercetin is mediated by proteasome inhibition in the aorta and circulating leukocytes. Pharmacological Reports, 2011

(See Google Scholar for more details)

References

Available upon request.