Veronika Romero

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Professional Summary

Mission-driven scientist with over 15 years of experience with strong background in life sciences, biomedical research, and healthcare. Proficient in diverse laboratory techniques in neuroscience and pathophysiology with cell culture being my technical gem. Passionate about analysis, visualization, and interpretation of complex data. Curiosity-driven critical thinker able to pick up new concepts and techniques quickly. A problem-solver who can bridge multiple disciplines, communicate effectively with colleagues from different backgrounds, and optimize workflows.

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

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

Laboratory techniques

- Mammalian cell culture
- Transduction and transfection of cultured cells with CRISPR/Cas9 constructs and siRNA
- Single nuclei isolation from dissected mouse hippocampi
- qPCR, PCR, Western Blot
- fluorescent RNA *in situ* hybridizations (RNAscope, HCR)
- ICC, IHC
- confocal imaging
- sample preparation for genomic applications (RNA-seq, single-cell RNA-seq, ChIP-seq, ATAC-seq)

Education

PhD analogue in Pathophysiology

Bogomoletz Institute of Physiology, Kyiv, Ukraine — 2011-2015

Relevant projects: Role of microRNA-1 in experimental pathology of the heart **|** Genetic factors increasing risks of cardiovascular pathology **|** Cardiac microRNAs in the blood as predictors for the heart attack outcomes

Doctor of Medicine in General Medicine

Bogomolets National Medical University, Kyiv, Ukraine — 2005-2011

Relevant coursework: Biostatistics | Medical informatics | Epidemiology | Social medicine, healthcare organization and economics

Professional Experience

University of Utah, Salt Lake City, UT

Research Scientist / Laboratory Manager

September 2023 – October 2024

- Performed research activities to study meningeal cells in zebrafish using confocal imaging of transgenic animals, RNA *in situ* hybridizations, and single-cell RNA-seq.
- Analyzed high-dimensional genomic datasets (single-cell and bulk RNA-seq), helping to establish future directions for the future research.
- Developed and maintained well documented R scripts and reporting workflows to ensure the reproducibility of ETL, analysis, and visualizations of the data.
- Managed the laboratory.

Senior Laboratory Specialist / Laboratory Manager

March 2021 – September 2023

- Built from scratch and managed a neuroscience genomics laboratory.
- Assisted in establishing and implementing the workflows for laboratory procedures and data analysis.
- Optimized and troubleshooted multiple protocols. Set up and optimized primary hippocampal neuron culture, transductions and transfections of cultured neurons, live imaging, and sample preparation for genomic applications (RNA-seq, ChIP-seq, ATAC-seq, etc.).
- Contributed to creating the tightly knit community within the lab.
- Collaborated with researchers across the campus, helped to multiple groups to optimize cell culture and other protocols.

Research Fellow

July 2018 – June 2020

- Used induced pluripotent stem cells (iPSC) and iPSC-derived neurons and brain organoids to study a rare case of microcephaly.
- Collected, analyzed, and presented data on the project.
- Managed and restocked tissue culture lab.
- Closely worked with stem cell core facility to establish and maintain 12 iPSC lines.

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 experimental designs, analyzed and visualized data, prepared reports.
- Co-authored an internally used manual on R for Data Analysis (in Ukrainian) and contributed to multiple data syllabuses for graduate and undergraduate researchers.
- Collaborated on 3 shiny applications 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 of ischemia-reperfusion and heart failure.
- Analyzed, visualized, and interpretated data.
- Presented results at the meetings and conferences
- Prepared 5 research papers, multiple abstracts, and presentations.
- Received a young investigator award from the National Academy of Sciences of Ukraine.

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
- Represented a product portfolio of BioLabTech Ltd. in the field of genomics and medical genetics.
- Trained and provided product support to the customers.
- 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 explanatory and extracurricular materials.
- Acquired experience explaining complex concepts at different levels of depth.

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

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
    - Version Control and Collaboration with Git and GitHub
    - Databases and SQL
    - Introduction to Python for Data Analysis
    - Natural Language Processing with Applications to Clinical Data Science
    - Geographical Analysis and Visualization in R Workshop
    - Data Cleaning with R
    - Advanced R. 2023-2024
- (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, Ascona, Switzerland. 2012

Leadership
- 2016-2018: Established and organized scientific seminars, workshops, and conferences in the field of computational biology and precision medicine. It involved dozens of speakers and hundreds of participants who acquired and advanced their knowledge in the field, found collaborators and mentors including 8 seminars 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.
- Mentored and trained students of different levels.

Additional Information

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

Volunteer Experience:
- 2014-2017: volunteer at the scientific outreach events in Ukraine
- 2016-2018 – on volunteer bases, end-to-end organization of scientific events in Ukraine
- 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. One of publications: Chhugani et al., Science, 2022.

References

Available upon request.