

Education

PhD, Lomonosov Moscow State University
Faculty of Biology, Bioengineering Department

Oct 2019 – Oct 2023
Moscow, Russia

MSc, Lomonosov Moscow State University
Faculty of Biology, Bioengineering Department
Major: Bioinformatics, Pharmacology
GPA 4.94 (5.0 is max). *Diploma summa cum laude*

Sep 2017 – June 2019
Moscow, Russia

BSc, Lomonosov Moscow State University
Faculty of Biology, Bioengineering Department
Major: Biochemistry, Biophysics, Molecular biology
GPA (5.0 is max). *Diploma summa cum laude*

Sep 2013 – Jun 2017
Moscow, Russia

Research experience

Integrative Biology Group

Bioengineering Department, Faculty of Biology, Moscow State Lomonosov University
Supervisors – Dr. Alexey K. Shaytan, Dr. Grigoriy Armeev

PhD research project: Bioinformatic analysis of physical and chemical properties of chromatin proteins with respect to liquid-liquid phase separation

Oct 2019 - current

Master research project: Construction and analysis of an interactome between nucleosomes and chromatin proteins,
<https://intbio.org/histoneppidb/>

Sep 2017 – May 2019
Moscow, Russia

Bachelor research project: Modeling of the free energy profile of DNA unwrapping from histone octamer

Sep 2015 – May 2017
Moscow, Russia

The laboratory of Computational Systems and Applied Programming Technologies

Research Computer Center Lomonosov Moscow State University
Supervisor – Dr. Vladimir B. Sulimov

Nov 2018 – Mar 2019
Moscow, Russia

Research project: Investigation of enthalpy of Protein-Ligand Complexes using quantum-chemical methods

BostonGene, IT Healthcare

Research Analyst
Predictive biomarker search and analysis. Profound analysis of drugs' mechanism of action. Co-author of the patent #11568959 (Tumor microenvironment-based methods for assessing CAR-T and other immunotherapies)

May 2018 – Oct 2020
Moscow, Russia

Research skills

Bioinformatic skills

Programming languages: Python (pandas, numpy, matplotlib, seaborn, scikit-learn, TensorFlow, Biopython), R (basic, DESeq2)
Simulation: GROMACS, NAMD
Visualization: VMD, Chimera, PyMol, Blender
Other: MM/PBSA, 3DNA, STATISTICA, Clustal W, MEGA, Blast, Psi-Blast, Git/GitHub, IntelliJ IDEA, bash

Laboratory skills	Basic biochemical techniques, gene and protein engineering, biological spectroscopy, confocal microscopy, isolation and identification of microorganisms
Business skills	Project management and planning, customer development

Publications [\[google scholar\]](#)

1. A. E. Bigildeev, V. I. Alekseev, **A. K. Gribkova**, G. S. Timokhin, G. A. Komarova & A. K. Shaytan / The Role of Changes in Structure and Dynamics of Chromatin due to COVID-19 // Russian Journal of Genetics, 2024
2. A. K. Shaytan, R. V. Novikov, R. S. Vinnikov, **A. K. Gribkova**, and G. S. Glukhov / From DNA-protein interactions to genetic circuit design using CRISPR-dCas systems // Frontiers in Molecular Biosciences, 2022
3. G. A. Armeev, **A. K. Gribkova**, A. K. Shaytan / Nucleosomes and their complexes in the cryoEM era: trends and limitations // Frontiers in Molecular Biosciences, 2022
4. Ruth L. Seal, Paul Denny, Elspeth A. Bruford, **Anna K. Gribkova** et al. / A standardised nomenclature for mammalian histone genes // Epigenetics & Chromatin, 2022
5. Daniel Espiritu, **Anna Gribkova**, Shubhangi Gupta, Alexey Shaytan, Anna Panchenko / Molecular mechanisms of oncogenesis through the lens of nucleosomes and histones // The Journal of Physical Chemistry Part B: Biophysics, Biomaterials, Liquids, Soft Matter, 2021
6. R.V. Novikov, **A.K. Gribkova**, J.G. Kacher, P.A. Zaytsev, G.A. Armeev, G.S. Gluhov, A.K. Shaytan/ Design of nucleic acid biosensors based on CRISPR/Cas systems and reporter split-proteins // Vestnik Moskovskogo universiteta, 2021
7. A.V. Sulimov, D.C. Kutov, **A.K. Gribkova** et al. / Search for approaches to supercomputer quantum-chemical docking // 5th Russian Supercomputing Days, RuSCDays. Springer International Publishing Cham, 2019. — P. 363–378.
8. G.A. Armeev, **A.K. Gribkova**, I. Pospelova et al. / Linking chromatin composition and structural dynamics at the nucleosome level // Current Opinion in Structural Biology. — 2019. — Vol. 56. — P. 46–55.
9. **A.K. Gribkova**, G.A. Armeev, A.K. Shaytan / Investigation of histone-DNA binding energy as a function of DNA unwrapping from nucleosome using molecular modeling // Vestnik Moskovskogo universiteta. Seriya 16. Biologiya. — 2017. — T. 72, № 3. — C. 164–168

Selected conference presentations

Conference: MATHEMATICS. COMPUTER. EDUCATION

Oral (in Russian): Using artificial intelligence to search for viral proteins that mimic human histones

Jan, 2024
Dubna, Russia

EMBL Conference: Chromatin and epigenetics (awarded EMBL Conference fellowship)

Poster: Comparative analysis of human nuclear proteome and chromatome composition from different experiments, databases and prediction algorithms

May, 2023
Heidelberg, Germany

Conference: Genetic technologies in fundamental and practical research.

Oral (in Russian): Bioinformatic approaches to design guide RNA for set of detecting CRISPR/Cas systems

Dec 2020,
Moscow, Russia

THE FEBS CONGRESS 2019

Poster: Construction and analysis of an interactome between nucleosomes and chromatin proteins

Jun 2019
Krakow, Poland

Awards and Honors

Grant support for young scientists without a degree (postgraduate students) by Non-commercial Foundation for the Advancement of Science and Education INTELLECT	2022-2023
Scholarship of the Government of the Russian Federation in priority areas	2021-2022
Special scholarship on course Application of neural networks in research	2021
Increased State Academic Scholarship for noteworthy academic, research and athletic achievement. (was awarded 9 times)	Jan 2014 –July 2019
E.N. Kondratieva Scholarship for excellent students (was awarded 2 times)	Sept 2015 – May 2016

Teaching experience

Instructor, "Introduction to epigenetics and Chromatin" Developed course materials and taught 1-week course for master students, Sirius University of Science and Technology	Apr 2023, 2024 Sirius, Russia
Instructor, "Python for Biologists", Developed course materials and taught 2-week course for master students, Sirius University of Science and Technology	Nov 2021, 2022, 2023 Sirius, Russia
TA at Molecular Modeling course (Master's Program "Structural Biology and Biotechnology"), Lomonosov MSU	Feb - May 2021
TA at workshop on synthetic biology for bachelor students, Lomonosov MSU	Sep 2019

Extracurricular activities

IGEM 2020 Gold Medal , <i>Instructor of Team Moscow 2020</i> <i>Project</i> : HaploSense - biosensor for identification hepatitis C virus using CRISP/Cas System	Nov 2020 Boston, USA (online)
iGEM 2019 Member of Team Moscow 2019 : Bioinformatics, Human Practice <i>Project</i> : LymeExpress - biosensor for identification tick-borne diseases using CRISP/Cas System	Nov 2019 Boston, USA
BIOHACK 2019 <i>Project</i> : Development of a unified algorithm to search genomic rearrangements in the given structures. First prize	Mar 2019 St.Petersburg, Russia
Ultimate frisbee The winner of Russian Mixed Championship, personal award - most valuable player	2017
Spirit Captain in Lomonosov Moscow State ultimate frisbee team	2014-2018
Member of National junior ultimate frisbee team	2015