Roman Korol

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CURRENT OCCUPATION

PhD candidate start date: Fall 2018; passed candidacy February 2020
California Institute of technology, California, USA
Specialization: Theoretical Chemistry, Advisor: Thomas F. Miller III

EDUCATION

Honors Bachelor of Science, CGPA: 3.98/4.0 June 2018
Faculty of Arts and Sciences, University of Toronto St. Michael's College, Canada
Specialization: Chemistry, Thesis: Dynamics of Protein Folding, Supervisor: Jeremy Schofield

Honors High School Diploma, 99% average May 2014
M. Kravchuk Gymnasium 21, Lutsk, Ukraine
Specialization: Life sciences

RESEARCH EXPERIENCE

Chemical Physics Theory Group, Prof. D. Segal Summers 2016-2018
Modelling DNA molecular junctions with Landauer-Büttiker probes

Chemical Physics Theory Group, Prof. J. Schofield Fall 2017 – Spring 2018
Senior thesis project, University of Toronto:
Improving Fokker-Plank-based models of Protein folding dynamics

Inorganic Synthetic Laboratory, University Prof. D. Stephan Winter – Spring 2016
Synthesis of Boron-containing air-stable FLP radicals

Organic Materials Laboratory, Prof. B. Rybtchinski Summer 2015
Kupcinet-Getz Summer School, Weizmann Institute of Science, Rehovot, Israel
Self-assembly, fluorescence and non-linear properties of organic PDI nanocrystals

Inorganic Synthetic Laboratory, Associate Prof. U. Fekl Fall 2014 – Spring 2015
Topic: Functionalization of di- and trihalogenated adamantanes

Inorganic materials Laboratory, Dr. O. Yanchuk Summer 2013 – Spring 2014
Junior Academy of Sciences & Eastern European National University, Lutsk, Ukraine

PRESENTATIONS

Contributed talks:

- DNA Molecular Junctions: Tunneling to Hopping Crossover – Chemical Biophysics Symposium–2017 (U of Toronto)
- Probing mechanisms of charge transport in DNA with Landauer-Büttiker formalism – 33rd Symposium on Chemical Physics–2017 (U of Waterloo)

Poster presentations:

- Principles of Charge Transport in DNA: from extensive simulations to neural networkds – Berkeley Statistical Mechanics Meeting–2019 (Berkeley)
- Principles of Charge Transport in DNA: from extensive simulations to neural networkds – CECAM BioMolecular Electronics Conference–2018 (Universidad Autónoma de Madrid)

Conference awards:

- 1st prize at the 45th Southern Ontario Undergraduate Student Chemistry Conference, Computational section (Toronto, 2017)
- 1st poster prize in Physical/Theoretical/Computational Undergraduate section at the 100th Canadian Chemistry Conference (Toronto, 2017)
- Undergraduate Poster Prize at the 28th Canadian Symposium on Theoretical and Computational Chemistry (Windsor, 2018)

AWARDS & HONORS

Research funding:

- Fall 2018 – G. Patricia "Pat" Beckman Graduate Fellowship
- Summer 2018 – University of Toronto Excellence Award
- Summer 2017 – University of Toronto Excellence Award
- Summer 2017 – Center for Quantum Information and Quantum Control Undergraduate Summer Research Studentship
- Summer 2016 – University of Toronto Excellence Award

Academic:

- November 2018 – Ivan Szak Scholarship in Chemistry
- June 2018 – St. Michael's College Silver Medal
- May 2018 – St. Michael's College In-Course Scholarship
- January 2018 – Canadian Society for Chemistry Silver medal
- December 2017 – Ivan Szak Prize in Chemistry
- November 2017 – F. E. Beamish Scholarship in Chemistry
- May 2017 – John Melady Memorial Scholarship
- April 2017 – C. W. Burton In-Course Scholarship
- April 2017 – The Sarah Cusick Gollop And William George Gollop Memorial Undergraduate Scholarship in Chemistry
- 2016-2017 – Dean's List Scholar at the Faculty of Arts and Science, University of Toronto
- 2014-2015 – Honour Roll of the Department of Chemical and Physical Sciences, University of Toronto Mississauga
- September 2014 – Erindale Admission Scholarship
- 2013-2014 – Scholarship of the President of Ukraine
- May 2014 – Student of the year in Lutsk and Volyn Region
- First Prize at Intel-Eco Ukraine 2014, the national stage of Intel ISEF
- Gold medal at the International Ecology Project Olympiad-2013
- First and second prizes won in yearly National competitions in Ukraine: four times at the Chemistry Olympiad, twice at the Ecology Olympiad, thrice at the Biology tournament

Others:

- April 2018 – Ukrainian Credit Union Michael Rebryk Memorial Scholarship
- September 2017 – Buduchnist Credit Union Scholarship
- January 2017 – Michael Both Award "For Outstanding Commitment to Dance & Contribution to the Desna Ukrainian Dance Company"

WORKSHOPS

Telluride School on Theoretical Chemistry at *TSRC* Summer 2019
Statistical Mechanics (Suri Vaikuntanathan), Electronic Structure (Tim Berkelbach), Quantum Dynamics (Ignacio Franco), Biophysics (Michael Feig)

SKILLS

Languages & Software: Python, Matlab, Mathematica, Bash, C++, Git, Fortran
Experimental: Synthesis in glove box, basic purification (HPLC, prep. TLC etc.), analysis (NMR, FTIR, Raman, AAS, AES), fluorescence and absorbance studies, SEM and TEM.

WORK EXPERIENCE

- Ukrainian transcriber and Research assistant working on the Heritage language variation and change (studying Ukrainian) project, supervised by Dr. N. Nagy
  Department of Linguistics, University of Toronto
- Private High school and freshman Chemistry, Physics and Mathematics tutoring

OTHER ACTIVITIES

- Summer 2019 - Organized and taught two week-long Science Summer schools "Knowledge hunt" for High School and Middle School students respectively in my hometown, Lutsk, Ukraine
- Fall 2018 - continuing Ukrainian folk dancing with Chervona Kalyna Los Angeles dance ensemble
- 2018-2019 Volonteer at the Pasadena LEARNs program – science demos at local Elementary schools
- Summer of 2018 Lecturer for the Canadian team training for the 50^{th} International Chemistry Olympiad, IChO-2018
- 2015-2018 member of *We Love UA – Canada*, a volunteer organization promoting Ukrainian culture in Canada
- 2016-2018 Ukrainian folk dancing with Desna Ukrainian Dance Company and Vesnianka Ukrainian Dance Ensemble
- 2015-2018 Chemistry and Maths Tutor at the University of Toronto Peer Tutoring group
- 2015-2016 Board member of the Chemistry Student Union and Chemistry Connections (student Group)
- Summers of 2014-2016 Student coach at M. Kravchuk Gymnasium 21, Lutsk, Ukraine

Member of the:

- American Chemical Society (since 2016)
- Canadian Society of Chemistry (2016-2018)