

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 with High Distinction* 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:

- Cayley modification for strongly stable path-integral molecular dynamics – Berkeley Statistical Mechanics [Meeting](#)–2020 (Berkeley)
- Principles of Charge Transport in DNA: from extensive simulations to neural networks – Berkeley Statistical Mechanics [Meeting](#)–2019 (Berkeley)
- Principles of Charge Transport in DNA: from extensive simulations to neural networks – 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

[Condensed Phase Dynamics Virtual Workshop at TSRC](#)

Summer 2020

[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

- Spring 2020 - Running [online help sessions](#) for high school Math and Science students as part of the [CAUSE tutoring](#) nonprofit
- 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 Volunteer at the [Pasadena LEARNs](#) program – science demos at local Elementary schools
- Summer of 2018 Lecturer for the Canadian team training for the 50th 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)