

# DANAI GEORGIA TOPOUZA

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## EDUCATION

### **Master of Science Candidate in Experimental Medicine** **2017-Present**

Department of Biomedical and Molecular Sciences

Queen's University, Kingston, Canada

Thesis: Biological networks and genomic variants modulating chemotherapy response in ovarian cancer

Supervisor: Dr. Qingling Duan

### **Bachelor of Science Honours in Biology (Major), Computer Science (Minor)** **2013 – 2017**

Queen's University, Kingston, Canada

Thesis: Copper induced stress response and programmed cell death in *Saccharomyces cerevisiae*

Supervisor: Dr. Paul G. Young

## RESEARCH EXPERIENCE

### **MSc Candidate** **May 2017 - Present**

Queen's University, Kingston, Canada

- Supervisor: Dr. Q.L. Duan
- Identification of gene networks and variants involved in drug response
- RNA-Seq data processing, transcriptome and genomic variant analysis in a computational genomics laboratory

### **Undergraduate Research Thesis** **Sept. 2016 – Apr. 2017**

Queen's University, Kingston, Canada

- Supervisor: Dr. P.G. Young
- Undergraduate thesis studying programmed cell death in *S. cerevisiae*
- Transcriptome analysis using bioinformatics techniques
- Thesis submitted to BIOL 537 research course (select students only)

### **Queen's International Genetically Engineered Machine (iGEM)** **May 2016 – Oct. 2016**

#### **Team Executive**

Queen's University, Kingston, Canada

- Head of the Dry Lab research team in the Queen's iGEM team for 2016
- Summer research project studying non-ribosomal peptide synthesis
- Molecular dynamics and modeling of protein interactions, machine learning algorithms and energy optimisation
- Part of QGEM's 2016 research project for participation at the International Genetically Engineered Machine competition.

**Research Assistant****Oct. 2015 – July 2016**

Queen's University, Kingston, Canada

- Supervisor: Dr. T. Babak
- Collaborated with Dr. B. DeVeale from University of California, San Francisco
- Statistical analysis and visualization of data for a genome-wide association study on schizophrenia

**Lab Assistant Internship****June 2015 - July 2015**

IVF facility, Interbalkan Medical Center, Thessaloniki, Greece

- Supervisor: Dr. I. Tzifetas, MD
- Assisted in laboratory organisation and maintenance in a professional setting, became familiar with proper handling of human embryonic cells.

**Lab Volunteer****Jan. 2015 – Oct. 2015**

Queen's University, Kingston, Canada

- Supervisor: Dr. S.C. Loughheed
- Tissue sampling and preservation of native Ontario snakes to investigate species distribution
- Genetic analysis (PCR, gel electrophoresis) of collected samples and participation in field work

**TEACHING EXPERIENCE****Teaching Assistant****Sept. 2018 – Dec. 2018**

Queen's Department of Biomedical and Molecular Sciences, Queen's University, Kingston, Canada

- Instructor: Dr. Q. Duan
- BMED 370: Genetics and Genomics
- Participated in assignment and rubric design, assisted students in online course, marked student assignments

**Teaching Assistant****Jan. 2018 – April 2018**

Queen's Department of Biomedical and Molecular Sciences, Queen's University, Kingston, Canada

- Instructor: Dr. Q. Duan
- BMED 370: Genetics and Genomics
- Assisted students in online course, marked student assignments

**Lab Teaching Assistant****Sept. 2017 – Dec. 2017**

Queen's Biology Department, Queen's University, Kingston, Canada

- Instructor: Dr. R. Snetsinger
- BIOL 102: Introductory Biology of Cells
- Oversaw and marked laboratory sections of the course

**Teaching Assistant****Sept. 2016 – Dec. 2016**

Queen's School of Computing, Queen's University, Kingston, Canada

- Instructor: Dr. W. Powley
- CISC 101: Elements of Computer Science, the Python version of the introductory programming course
- Marked assignments and exams, held lab office hours for course help, presented a guest lecture on programming exercises

## Teaching Assistant

Sept. 2015 – Dec. 2015

Queen's School of Computing, Queen's University, Kingston, Canada

- Instructor: Dr. D. Skillicorn
- CISC 101: Elements of Computer Science, the Matlab version of the introductory programming course, with an emphasis on data mining techniques
- Oversaw and marked the laboratory component of the course, managed a class of 40 students and improved their understanding of data analysis and statistics methods

## LANGUAGES

Greek	Native
English	Fluent, Cambridge Proficiency in English (May 2011), University of Michigan Proficiency in English (May 2011), TOEFL iBT (September 2012)
French	Moderate, DELF B1 Certification (May 2011)

## PRACTICAL SKILLS

- Programming languages: Java, Python, R, Matlab, C, Unix, Haskell, Prolog.
- Bioinformatics techniques: transcriptome and expression analysis and relevant software (SAMtools, Tuxedo suite), molecular dynamics software (PyMOL, PyRosetta).
- Data mining techniques: classification, clustering, prediction algorithms.
- Molecular techniques including agarose gel electrophoresis, PCR, DNA extraction and recombination, protein spectrophotometry and assays.

## POSTERS AND PRESENTATIONS

### **American Society of Human Genetics (ASHG) 2018 Meeting**

16-20 Oct. 2018

San Diego, USA

- Poster presentation #685:  
Gene expression networks modulating chemotherapy response in ovarian cancer

### **Toronto RNA Enthusiast's Day**

31 July 2018

SickKids Peter Gilgan Centre for Research and Learning, Toronto, Canada

- Poster presentation:  
Biological networks modulating chemotherapy response in ovarian cancer

### **The Twenty-First Annual Scientific Meeting for Health Science Research Trainees**

13 June 2018

Queen's University, Faculty of Health Sciences, Kingston, Canada

- Poster presentation:  
Biological networks modulating chemotherapy response in ovarian cancer

### **Masters Student Symposium Seminar Presentation**

24 April 2018

Queen's University, Department of Biomedical and Molecular Sciences, Kingston, Canada

- Oral presentation in series:  
A pharmacogenomics analysis of biological networks regulating chemotherapy response among ovarian cancer patients

### **Undergraduate Thesis Poster Presentation**

10 Mar. 2017

Queen's University, Department of Biology, Kingston, Canada

- Poster presentation about thesis:  
Programmed cell death in the unicellular eukaryote *Saccharomyces cerevisiae*

- Undergraduate Thesis Seminar Presentation** **11 Nov. 2016**  
 Queen's University, Department of Biology, Kingston, Canada
- Oral presentation in seminar series:  
 Programmed cell death in the unicellular eukaryote *Saccharomyces cerevisiae*
- International Genetically Engineered Machine Competition** **27-31 Oct. 2016**  
 Boston, USA
- Bronze medal standing with QGEM in the iGEM 2016 Competition
  - Poster presentation on summer research project:  
 Pharming the Blues: Improving biosynthesis of natural products
- Scinapse Undergraduate Science Case Competition (Finalist)** **Feb. 2016**  
 Western University, London, Canada
- Project presentation on science case proposal:  
 The role of mycorrhizal community assemblages in agricultural productivity

## **AWARDS**

- Conference Travel Award (CTA)** **2017-2018**  
 Queen's University, Kingston, Canada
- Awarded to select graduate students in the Department of Biomedical and Molecular Sciences
  - Funded travel to the American Society of Human Genetics 2018 Meeting
  - Funds awarded: \$ 250
- International Tuition Award (ITA)** **2017-2018**  
 Queen's University, Kingston, Canada
- Scholarship awarded to select international graduate students
  - Funds awarded: \$ 5,000
- Principal's Scholarship** **2013**  
 Queen's University, Kingston, Canada
- Scholarship awarded to students whose high school average is greater than 95%
  - Funds awarded: \$ 6,000