# 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 programed 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 Fransisco
- 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. Tziafetas, 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. Lougheed
- 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** **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

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|---|---|
| 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

**Toronto RNA Enthusiast's Day** **31 July 2018**
SickKids Peter Gilgan Centre for Research and Learning, Toronto, Canada

- Poster presentation:
  Gene expression 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

**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