

Victor Yuan

PhD Student

Genome Sciences and Technology, UBC, Vancouver, Canada

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Education

PhD, Genome Sciences and Technology

UNIVERSITY OF BRITISH COLUMBIA

2016 – Present

Bachelor of Science (Honours), Cell and Molecular Biology

CONCORDIA UNIVERSITY

2011 – 2016

Research

PhD Student

ROBINSON LAB, UNIVERSITY OF BRITISH COLUMBIA

2016 – Present

- Characterized the epigenomic landscape in the human placenta across gestation
- Applied machine learning to develop epigenomic-based research tools
- Conducted epigenome- and transcriptome- wide association studies using public and private data
- Creating open-source research tools and databases for placental epigenomic research

Molecular Biodiversity Lab Assistant

MARTONE LAB, UNIVERSITY OF BRITISH COLUMBIA

2016 – 2017

- Characterized the impact of weather changes on keystone species lost among the coast of northern BC
- Processed and identified over 300 algal DNA specimens using modern genomic alignment tools

Undergraduate Honours Thesis

WHITEWAY LAB, CONCORDIA UNIVERSITY

2011 – 2016

- Developed a CRISPR gene-fusion-insertion protocol in the unicellular fungal species *c. albicans*

Teaching

Graduate Teaching Assistant

STAT545: EXPLORATORY DATA ANALYSIS, UNIVERSITY OF BRITISH COLUMBIA

2020/9 – 2020/12

2019/9-2020/10

- Developed course content: lectures, assignments, workshops, and projects
- Assisted in-class lectures
- Hosted Office hours
- Marked assignments and projects

Workshop Host, Trainee Omics Group

1-hour workshops hosted @ BC CHILDREN'S RESEARCH INSTITUTE

How to write a lay abstract (Science communication)

2020/12

Intro to ggplot2 (R programming)

2020/7

Intro to tidyverse (R programming)

2019/10

Intro to ggplot2 (R programming)

2019/7

R Programming Help Session Host

BC CHILDREN'S HOSPITAL RESEARCH INSTITUTE

2017 – 2018

- Hosted a monthly 1-hour help session for onsite staff and trainees to address data analysis and programming needs

High School Tutor

BC CHILDREN'S HOSPITAL RESEARCH INSTITUTE

2017 – 2018

- Tutored grades 10-12 in Math, English, Chemistry, Biology and general science

Student mentoring

Jiyoung Han, MSc GSAT Student

UNIVERSITY OF BRITISH COLUMBIA

2020/9 – Present

- Designed and supervised thesis project on analysis of sex differences in placental cell-specific DNA methylation in the human placenta. Teaching of R data analysis skills, including cleaning and manipulating DNA methylation data, conducting statistical tests, and data visualization.

Almas, MSc Bioinformatics Student

UNIVERSITY OF BRITISH COLUMBIA

2019/9 – Present

Nikita, PhD MEDG Student

UNIVERSITY OF BRITISH COLUMBIA

2019/9 – Present

Yifan Yin, MSc GSAT Rotation Student

UNIVERSITY OF BRITISH COLUMBIA

2019/9 – 2019/11

- Designed and supervised 8-week rotation project on placental microRNA analysis in the human placenta. Teaching of advanced data visualization tools in R, and how to make shiny applications with genomic data.

Yifan Yin, Undergraduate Honours Student

UNIVERSITY OF BRITISH COLUMBIA

2019/1 – 2019/5

- Designed and supervised a 4-month undergraduate thesis project on genome-wide identification of DNA methylation -regulated microRNAs in the human placenta. Teaching of R data analysis skills, including cleaning and manipulating DNA methylation data, conducting statistical tests, and data visualization.

Ziqi Liu, Undergraduate Student, Summer Scholars Program

UNIVERSITY OF BRITISH COLUMBIA

2018/4 – 2018/8

- Supervised a second-year undergraduate student at the BC Children's Hospital Research Institute's Summer Scholars program during his 3-month internship in the Robinson lab. The project investigated how to combine large DNA methylation datasets across several cohorts for analysis in R. Teaching of R data analysis skills, including cleaning and manipulating DNA methylation data, conducting statistical tests, and data visualization.

Awards, Recognitions

2021 (\$500 CAD) Best Poster for PhD category, Healthy Starts Research Day

2020 – 2022 (\$105,000 CAD) Frederick Banting and Charles Best Canada Graduate Scholarships-Doctoral

2020 – 2022 UBC Four Year Doctoral Fellowship

2019 (\$1500 CAD) Travel Award for Canadian Conference on Epigenetics Annual Meeting

2019 (\$750 CAD) Top 3 Talk for PhD category, Healthy Starts Research Day

2018 (\$500 USD) Y.W. (Charlie) Loke Award for Early Career Researchers, International Federations of Placenta Association

2018 (\$750 CAD) Best Poster for Master's category, Healthy Starts Research Day
2018 (\$50 CAD) Top 3 Talk for Masters category, Healthy Starts Research Day
2016 (\$17500 CAD, DECLINED) NSERC Canada Graduate Scholarships-Master's Program, Concordia University
2016 (\$17500 CAD, DECLINED) NSERC Canada Graduate Scholarships-Master's Program, University of Victoria
2016 (\$6000 CAD, DECLINED) Concordia University Special Entrance Award, Concordia University
2015 – 2016 Dean's list (GPA > 3.75 / 4.25), Concordia University
2015 (\$5625 CAD) Concordia Undergraduate Summer Research Award, Concordia University
2014 – 2015 Dean's list (GPA > 3.75 / 4.25), Concordia University
2013 – 2014 Dean's list (GPA > 3.75 / 4.25), Concordia University

Publications

1. **Yuan V**, Hui D, Yin Y, Peñaherrera MS, Beristain AG, Robinson WP. Cell-specific characterization of the placental methylome. *BMC Genomics*. 2021 Jan 6;22(1):6.
2. Treissman J, **Yuan V**, Baltayeva J, Le HT, Castellana B, Robinson WP, et al. Low oxygen enhances trophoblast column growth by potentiating differentiation of the extravillous lineage and promoting LOX activity. *Development*. 2020 Jan 15;147(2).
3. Konwar C, Del Gobbo G, **Yuan V**, Robinson WP. Considerations when processing and interpreting genomics data of the placenta. *Placenta*. 2019 Sep 1;84:57–62.
4. **Yuan V**, Price EM, Del Gobbo G, Mostafavi S, Cox B, Binder AM, et al. Accurate ethnicity prediction from placental DNA methylation data. *Epigenetics & Chromatin*. 2019 Aug 9;12(1):51.
5. Lee Y, Choufani S, Weksberg R, Wilson SL, **Yuan V**, Burt A, et al. Placental epigenetic clocks: estimating gestational age using placental DNA methylation levels. *Aging (Albany NY)*. 2019 Jun 24;11(12):4238–53.
6. Acharya G, Bartolomei M, Carter AM, Chamley L, Cotton CF, Hasegawa J, et al. IFPA meeting 2018 workshop report I: Reproduction and placentation among ocean-living species; placental imaging; epigenetics and extracellular vesicles in pregnancy. *Placenta*. 2019 Feb 10.
7. Robinson WP, Peñaherrera MS, Konwar C, **Yuan V**, Wilson SL. Epigenetic Modifications in the Human Placenta. *Human Reproductive and Prenatal Genetics*. 2019 Jan;293–311.

Presentations and conferences

V Yuan, WP Robinson. Assessing maternal contamination in Placental DNA methylation studies. *Healthy Starts Research Day*. Vancouver, Canada. February 2021. [Poster]

V Yuan, D Hui, Y Yin, M Penaherrera, AG Beristain, WP Robinson. Genome-wide Characterization of DNA Methylation in Human Placental Cell Types. *Medical Genetics Research Day*. Vancouver, Canada. November 2019. [Poster]

V Yuan, D Hui, Y Yin, M Penaherrera, AG Beristain, WP Robinson. Genome-wide Characterization of DNA Methylation in Human Placental Cell Types. *The 6th Annual Canadian Conference of Epigenetics (CEEHRC)*. Vancouver, Canada. November 2019. [Poster]

V Yuan, EM Price, GF Del Gobbo, S Mostafavi, AM Binder, KB. Michels, B Cox, CJ Marsit, WP Robinson. Accurate ethnicity prediction from placental DNA methylation data. *BIG18 Research Day*. Vancouver, Canada. Mar 14th, 2019. [Poster]

V Yuan, EM Price, GF Del Gobbo, S Mostafavi, AM Binder, KB. Michels, B Cox, CJ Marsit, WP Robinson. Accurate ethnicity prediction from placental DNA methylation data. *Healthy Starts Research Day*. Vancouver, Canada. Feb 6th, 2019. [Talk]

V Yuan, C Konwar. Population-specific DNA methylation differences and their implications in placental pathologies. *International Federation of Placenta Associations Annual Meeting*. Tokyo, Japan. Sept 21-24, 2018. [Talk]

V Yuan, EM Price, GF Del Gobbo, AM Binder, KB Michels, B Cox, CJ Marsit, WP Robinson. Accounting for population structure in placental DNA methylation studies: a novel method for inferring ethnicity from DNA methylation microarray data. *International Federation of Placenta Associations Annual Meeting*. Tokyo, Japan. Sept 21-24, 2018. [Poster]

V Yuan, EM Price, GF Del Gobbo, AM Binder, KB. Michels, B Cox, CJ Marsit, WP Robinson. Accounting for ancestry in placental DNA methylation studies: a novel method for predicting ethnicity from DNA methylation microarray data. *BIG18 Research Day*. Vancouver, Canada. Mar 9th, 2018. [Poster & Talk]

V Yuan, EM Price, GF Del Gobbo, AM Binder, KB. Michels, B Cox, CJ Marsit, WP Robinson. Accounting for ancestry in placental DNA methylation studies: a novel method for predicting ethnicity from DNA methylation microarray data. *Faculty of Medicine Research Trainee Day & Lecture Series*. Vancouver, Canada. Feb 16th, 2018. [Poster]

V Yuan, EM Price, GF Del Gobbo, AM Binder, KB. Michels, B Cox, CJ Marsit, WP Robinson. Accounting for ancestry in placental DNA methylation studies. *Healthy Starts Research Day*. Vancouver, Canada. Feb 7th, 2018 [Poster & Talk]

V Yuan, M Wan, M Yuen, N Thatra, A Zhang, EM Price, WP Robinson. DNA methylation ethnicity predictor of placental tissue. *Faculty of Medicine Graduate Student Research Day: From Cells to Societies*. Vancouver, Canada. April 21st 2017. [Poster]

V Yuan, LR Rodríguez-Ortiz, M Whiteway. CRISPR: a novel method of editing DNA in *Candida albicans*. *Concordia Undergraduate Research Showcase*. Montreal, Canada. Oct 16th, 2015. [Poster]