

BAO-CHAU DUONG

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EDUCATION

PhD Student in Human Genetics

Kyoto-McGill Joint PhD Program in Genomic Medicine

Quebec, Canada

August 2025 – Present

Bachelor of Science in Biotechnology

International University - Vietnam National University of Ho Chi Minh City

Ho Chi Minh City, Vietnam

September 2016 – December 2021

GPA: 81.9/100.0

Fundamental knowledge in Bioinformatics, Microbiology, Genetics, Molecular Biotechnology, Medical Genetics, and Immunology.

AWARDS

Certificate of Excellent Academic Achievements as a Female Graduate awarded by International University - Vietnam National University of Ho Chi Minh City, Ho Chi Minh City, Vietnam (2021)

PUBLICATIONS

Nguyen, H A; **Duong, B C**; Le, T A T; Le, C A; Huynh, T Q; Tran, V N; Nguyen, P T; Nguyen, T T H et al. (2025). Factors influencing Stress, Anxiety, and Depression in Students regarding The Thesis Process. *Journal of Mental Health and Clinical Psychology*. (1): 30-41. doi:10.29245/2578-2959/2025/1.1339.

Surana, P., Muffato, M., Qi, G., Chafin, T., **Duong, C.**, & Babirye, S. (2024) 'sanger-tol/readmapping: 1.3.0 - Antipodean Opaleye (1.3.0)', Zenodo. doi: [10.5281/zenodo.13364243](https://doi.org/10.5281/zenodo.13364243).

Duong, C.B. et al. (2023) 'Impacts of Covid-19 crisis and some related factors on the mental health of 37150 Vietnamese students: A cross-sectional online study', *BMC Public Health*, 23(1). doi:[10.1186/s12889-023-15317-3](https://doi.org/10.1186/s12889-023-15317-3).

Nguyen, T.Q.N., **Duong, B.C.**, Le, T.P.T. & Nguyen, T.T.H., 2022. Isolating endophytic *Streptomyces* spp. from the root of *Houttuynia cordata* and evaluating their antimicrobial activities. Vietnam National Biotechnology Conference 2022.

Duong, B.C. et al. (2021) 'Evaluation of a protein-depletion kit for enriching low abundant proteins from human sera', *IFMBE Proceedings*, pp. 539–552. doi:[10.1007/978-3-030-75506-5_46](https://doi.org/10.1007/978-3-030-75506-5_46).

RESEARCH EXPERIENCE

PhD Student

Bourque's Lab, McGill Genome Center

Quebec, Canada

August 2025 - Present

Led by Prof. Guillaume Bourque, the lab specialises in computational genomics, with a strong focus on regulatory genomics, transposable elements, and large-scale multi-omics data integration to understand genome function, evolution, and host–disease interactions.

- Working on host–virus interactions and the regulatory roles of transposable elements and endogenous retroviruses in shaping immune responses, using large-scale genomic and transcriptomic data from the Biobanque québécoise de la COVID-19 (BQC19) cohort.

Research Member

Medical Microbiology Research Group, IU-VNU-HCMC

Ho Chi Minh City, Vietnam

March 2019 – December 2022

Led by Assoc. Prof. Dr. Nguyen Thi Thu Hoai, focuses on studying bacterial pathogens, specifically in proteomic analysis, developing rapid diagnostic tests for infections and antimicrobial resistance, and investigating alternative therapies to antibiotics.

- Participated in a project focused on Hepatocellular carcinoma, employed techniques such as high-abundance protein depletion, relative quantification via Bradford Assay and SDS-PAGE, and confirmed biomarker expression using indirect ELISA.
- Successfully isolated endophytic *Streptomyces* spp. from Vietnamese herbs and extracted secondary metabolites to examine their antimicrobial activity toward *Staphylococcus aureus*, contributing to the exploration of natural antimicrobial agents.

WORK EXPERIENCE

Bioinformatics Technician

Pacific Informatics, Biological Sciences Group

Ho Chi Minh City, Vietnam

January 2024 – August 2025

Spearheaded bioinformatics solutions for ZYMO Research, focusing on advancing bioinformatics analysis for clinical medicine and the agro-industrial sector in Vietnam.

- Developed new bioinformatics pipelines for variant calling and haplotype phasing of viral metagenomics in wastewater samples, focusing on SARS-CoV2.
- Implemented features for taxonomy classification into the existing pipeline for quality control.
- Utilized Nextflow and Docker to streamline bioinformatics workflows and analyze RNASeq data to detect Human papillomavirus integration events.

Collaborator, Mentee

Remote

Wellcome Sanger Institute, Tree of Life Infrastructure Team

May 2024 – November 2024

A world-leading genomics research center focused on understanding the role of genetics in health and disease.

- Participated in the Genome After Party project: a suite of pipelines designed using Nextflow to perform a set of standardised analyses on assembled genomes, contributing to the public data portal.
- Maintained and developed new features for the sanger-tol/readmapping pipeline, applying MapReduce and parallelisation to align Illumina, HiC, PacBio, and Nanopore reads.
- Collaborated with bioinformaticians to troubleshoot pipeline execution failures and optimize runtime.

Research Intern

Ho Chi Minh City, Vietnam

Ho Chi Minh City Pasteur Institute, Molecular Biology Laboratory

June 2019 – August 2019

- Hands-on experience in culturing and isolating Enterovirus 71 from culture mediums.
- Proficiency in Western blot and RT-PCR techniques for antigen confirmation and qualification.

EXTRACURRICULAR ACTIVITIES

Mentee, Future Innovators Mentorships Programme

Hybrid

Wellcome Sanger Institute, the BioDev Network

May 2024 – present

- Presented the poster “sanger-tol/readmapping: Automated best-practice read mapping for Illumina, HiC, PacBio, and Nanopore technologies in Nextflow” at the Genomes Informatics 2024 Conference.
- Engaged in career development and presentation skills training to enhance networking, collaboration, and communication in the professional environment.
- Participated in the “Just Good Science” series, exploring effective engagement with computational professionals across emerging countries.

Member, project: “Mental Health of students and doing thesis”

Ho Chi Minh City, Vietnam

Viet Nam National University of Ho Chi Minh City (VNU-HCM)

October 2022 – present

- Contributed to manuscript writing.

Participant, The Fourth Scientific Conference for Students 2023

Ho Chi Minh City, Vietnam

Viet Nam National University of Ho Chi Minh City (VNU-HCMC)

November 2023

- Contributed to the Streptomyces research proposal

Member, Media Team

Ho Chi Minh City, Vietnam

IU Medical Microbiology Newsletter

July 2021 – October 2023

- Achieved a Facebook page with over 1,000 likes and 7 issues that have been publicized, which aims at spreading knowledge of infectious disease and immunology to the community.

Member, project: “Impacts of COVID-19 on the Mental Health of Students”

Ho Chi Minh City, Vietnam

Viet Nam National University of Ho Chi Minh City (VNU-HCMC)

October 2021 – March 2023

- Contributed to data collection, analysis, and manuscript writing for the survey project, resulting in a publication in BMC Public Health journal.

LANGUAGES

Vietnamese

English

REFEREES

Guillaume Bourque, PhD

Professor – McGill University

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Nguyen Viet Tuan, PhD

Research Scientist - Agriculture Victoria

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Tyler K. Chafin, PhD

Senior Bioinformatician - Wellcome

Sanger Institute

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