MINH DUC (DANIEL) PHAM

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EDUCATION

University of California, Davis Davis, CA, USA

Doctoral degree in Biochemistry, Molecular, Cellular, and Developmental Biology (BMCDB) Sep 2023 ~

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, KR

Master of Science degree in Bio and Brain Engineering Mar 2021 – Aug 2022

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, KR

Bachelor of Science degree in Biological Sciences with Individually Designed Major Sep 2016 – Feb 2021

Summa cum laude, Honor program, Dean's List.

RESEARCH EXPERIENCE

UC Davis, Department of Microbiology and Molecular Genetics Davis, CA, USA

Graduate Student Researcher (PI: Dr. Chang-il Hwang) Apr 2023 ~

- Elucidating the potential role of PFAS in lipid metabolism and tumor promotion in pancreatic cancer.
- Investigating the epigenetic landscape of distinctive cancer-associated fibroblast subtypes in pancreatic cancer.
- Evaluating the potential role of Pdzrn3 in promoting metastasis of pancreatic cancer.

KAIST, Department of Bio and Brain Engineering, Cancer Engineering Laboratory Daejeon, KR

Master of Science Candidate (PI: Dr. Pilnam Kim) Sep 2020 – Jul 2022

- Examined the effects of local physical constraint on fibroblast phenotype and extracellular matrix remodeling under the stimulation of cancer secretome.
- Investigated and evaluated the potential role of HAPLN1 link protein in modulating tumor microenvironment to promote cancer progression and metastasis.

KAIST, Graduate School of Medical Science and Engineering, Brain-RNA Laboratory Daejeon, KR

Undergraduate Research Assistant (PI: Dr. Jinju Han) Apr – Aug 2020

- Cloned CRISPR-Cas9 system for the introduction of the altered X-linked gene CLCN4 to elucidate its association with the establishment of brain disorders, including intellectual disability and epilepsy.

KAIST, Department of Biological Sciences, Molecular Genetics of Aging Laboratory Daejeon, KR

Undergraduate Research Assistant (PI: Dr. Seung-jae V. Lee) Sep 2019 – Jan 2020

- Conducted a knockout assay of mel32 gene and confirmed its significant role in regulating metabolite homeostasis and sustaining the lifespan of *Caenorhabditis elegans.*

Massachusetts General Hospital, The Wellman Center for Photomedicine Boston, MA, USA

Intern (PI: Dr. Hensin Tsao) Jun – Aug 2019

- Identified a novel combination therapy targeting different kinases to improve treatment of KIT-driven melanomas.
- Discovered Chk1/ATR as a potentially vulnerable kinase target for KIT-mutated melanoma subtype via a drug screening assay of over 500 kinase inhibitors.

KAIST, Department of Biological Sciences, Nucleic Acid Biochemistry Laboratory Daejeon, KR

Undergraduate Research Assistant (PI: Dr. Yeon-Soo Seo) Mar 2017 – Jan 2019

- Constructed, purified, and characterized various truncated versions of the Pso2 exonuclease enzyme to investigate the functional role of its N-terminal domain in regulating the catalytic activity in DNA repair of *Saccharomyces cerevisiae.*

WORKING EXPERIENCE

University of California, Davis Davis, CA, USA

Research Mentor for Undergraduate Students July 2023 ~

- Mentored an undergraduate student working on a small research project in the Hwang lab.
- Trained the student on laboratory techniques: cell culture, colony formation assay, cell proliferation assay, RNA isolation, qRT-PCR, Western blot, and immunofluorescence staining.
- Helped the student understand the literature and craft good presentations for their required journal club and progress report at lab meetings.
- Provided necessary guidance on both scientific and technological aspects for all other undergraduates in the lab.

Teaching Assistant (MCB120L – Instructor: Dr. Enoch Baldwin) Sep – Dec 2023

- Explained theoretical concepts, experimental purposes, and experimental designs for students.
- Instructed students in using equipment/machines and assisted students in performing experiments.
- Assisted instructors in grading weekly lab reports and examinations.
- Assisted lab coordinators in setting up experiments and rearranging machines after lab sessions.

Freelance Remote

Personal Mentor for College/Graduate Schools Dec 2021 ~

- Successfully mentored and supported application preparation for students of STEM majors to get accepted to college and graduate schools in the US, South Korea, and Netherlands (total of 6 offer letters)
- Worked as an ambassador and an invited speaker for different studying-abroad seminars of IAE Global Vietnam, an international educational consultant agency since 2022.
- Worked as a head of graduate school application division of Scholarships Exploring with Mentors (SEM), an educational agency focusing on providing support in scholarship application of Asian universities since 2023.

Personal Instructor Jul – Dec 2020

- Taught 2 high school students to study and prepare for an SAT Subject Test – Biology. Results of students: 780+/800
- Developed curriculum, explained key topics, designed quizzes, set goals, and advised test-taking strategy for each student.

KAIST, School of Freshmen Daejeon, KR

Tutor Sep – Dec 2017

- Privately tutored two freshmen for General Chemistry course weekly. Result of tutees: A (4.0/4.3)
- Reviewed key concepts, helped with homework, and guided with extra advanced problems.

VOLUNTEER & LEADERSHIP

UC Davis Comprehensive Cancer Center Davis, CA, USA

Graduate Student Host Sep 2023

- Volunteered to host a group of 15 students from Esparto high school.
- Offered one demo session of qRT-PCR technique with hands-on pipetting skills for students.
- Explained the analysis and application of qRT-PCR in COVID-19 detection for students through a Zoom presentation session.

KAIST, Vietnamese Student Association Daejeon, KR

Member of Executive Committee Sep 2021 – Sep 2022

- Hosted a series of VN.KAIST Alumni Virtual Talk in which alumni were invited to share education stories, give advice for postgraduate plans, and provide valuable network connections.
- Led the media and design team to promote internal events such as VN.KAIST Sport Day, International Food Festival, and VN.KAIST Alumni Virtual Talk on Facebook group and Instagram.

KAIST, BizWorld Daejeon, KR

Division Mentor Feb – Dec 2019

- Supervised and advised the Event Division of the entrepreneurship organization BizWorld in event idea, organization, speaker contact and event marketing to increase the number of participants by 20% per event.

Youth Thalassemia Operation (YTO) Hanoi, VN

Co-founder Feb – Dec 2016

- Co-founded the YTO, an organization to raise Vietnamese people's awareness and knowledge about the genetically inherited disease Thalassemia, encourage young couples to take Thalassemia tests, and provide consultants with professionals for parents in need.
- Conducted a survey of over 1,000 young people from 5+ biggest universities in Hanoi and managed to open an information booth and spread Thalassemia infographics to over 3,000 people during the "Blood Donation Event" in Hanoi, Vietnam.

PUBLICATIONS

C. Njauw*, Z. Ji*, **D. M. Pham**, A. Simonea, R. Kumar, K. Flaherty, L. Zou, H. Tsao. "Oncogenic KIT Induces Replication stress and Confers Cell Cycle Checkpoint Vulnerability in Melanoma", *J Invest Dermatol*., (2021).

H. J. Lee, S. Mun, **D. M. Pham**, P. Kim. "Extracellular matrix-based hydrogels to tailoring tumor organoids", *ACS Biomater. Sci. Eng.*, (2021, 03)

D. M. Pham, S. Guhan, H. Tsao. "KIT and Melanoma: Biological Insights and Clinical Implications", *Yonsei Med J.*, (2020, 07)

SKILLS AND INTERESTS

Language: Vietnamese, *native*; English, *fluent*; Korean, *intermediate*

Software: Galaxy, GSEA, IGV, ImageJ, R studio, GraphPad Prism, Mendeley, Rosetta, PyMOL, Microsoft Office.

Laboratory Technique: DNA/RNA extraction, molecular cloning/sub-cloning, agarose/polyacrylamide gel electrophoresis, protein purification, enzyme activity characterization, mammalian cell culture, drug screening assay, 3D spheroid, *C. elegans* life span assay, Western Blot, Matrigel/hydrogel technique, tissue decellularization, organoid culture, qRT-PCR, Rheology, Confocal microscopy.

Laboratory Models: Escherichia coli, Saccharomyces cerevisiae, Caenorhabditis elegans, mammalian cell lines (melanoma, colorectal cancer, gastric cancer, lung cancer, pancreatic cancer, fibroblast), organoids

Interests: travel, environment, working out, and badminton.

HONORS & AWARDS

Dean's Distinguished Graduate Fellowship (2022-2023)

Huyndai Motor Chung Mong-Koo Global Full Scholarship for ASEAN students (2021-2022)

Full scholarship for Master Program in Bio and Brain Engineering, KAIST, Daejeon, KR (2021-2022)

Charmvit Scholarship for Vietnamese students in Korea (2019)

Best Poster Presentation, Harvard-MIT Summer Institute Internship for Biomedical Optics – Recipient of the Yao Su Student Research Prize (2019)

Excellent Award, Winter/Spring Undergraduate Research Participation Program at KAIST (2018)

Full scholarship for Bachelor Program in Biological Sciences, KAIST, Daejeon, KR (2016-2020)

Winter Global Outreach Program Scholarship at KAIST (2016)

Top 20 "Village to Raise a Child" competition by Harvard College Social Innovation Collaborative (2016) – Project: "Youth Thalassemia Operation."

Bronze medals, 24th and 25th International Biology Olympiad (2014, 2015)