

HONGYU (Dennis) FENG

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INTEREST: Lipid Nanoparticles drug delivery, mRNA delivery, and Blood-brain barrier delivery

EDUCATION

JOHNS HOPKINS UNIVERSITY, Baltimore, MD

Master of Science Degree in Chemical & Biomolecular Engineering: Expected graduation May, 2024 **GPA:** 3.93 / 4.00

- Departmental fellowship Fall 2023-2024.

CHINESE UNIVERSITY OF HONG KONG, SHENZHEN, Shenzhen, CHINA

Bachelor of Biomedical Engineering Degree: July, 2022

Dean's List: School of Medicine 2021-2022; **Master List Award** of Muse College 2019-2020; **Bowen Scholarship (merit-based scholarship)**

Coursework: Systems Bioengineering; Neural Systems; Anatomy/Physiology; Genetic Engineering; Linear Algebra & Computational Programming; Advanced Thermodynamics; Advanced Transport Phenomena; Supramolecular Materials & Nanomedicine; Interfacial Science Applications; Nanoscale Systems

SPECIALIZED SKILLS

- RiboGreen Assay; Luciferase Assay; BCA Assay; Zetasizer Operation; Cell Culture; Plasmid Construction; Protein Expression; Western Blot; HPLC; LNP Formulation; Microfluidics; Gel Electrophoresis; PCR;
- Python (including basic machine learning); MS-Excel; MS-PowerPoint; Training in MATLAB & COMSOL
- English (fluent); Cantonese (native); Mandarin (native); German(elementary).

RESEARCH EXPERIENCE

JOHNS HOPKINS MEDICINE, CENTER FOR NANO-MEDICINE, Baltimore, MD

Lipid Nanoparticle Student Research Assistant December 2022 – Present

- Formulate lipid nanoparticles (LNPs); characterized LNPs for size, zeta-potential, and encapsulation efficiency.
- Analyze LNPs penetration capability in human vaginal mucus samples via multiple-particle-tracking-analysis.
- Perform luciferase and BCA protein assays for homogenized animal tissues; and evaluate mRNA-LNPs delivery efficiency *in vivo*.
- Perform IVIS imaging on mice to obtain the drug distribution in the brain by fluorescence signal.

JOHNS HOPKINS UNIVERSITY, CENTER FOR LANGUAGE AND SPEECH PROCESSING, Baltimore, MD

NIST Project Student Research Assistant June 2023 – August 2023

- Invent topics for performance evaluation of Chinese-English cross-language information retrieval project.
- Evaluate search engine performance on technical terminology and provide feedback.

CHINESE UNIVERSITY OF HONG KONG, SHENZHEN, Shenzhen, Guangdong, CHINA

Cas Protein Expression Student Research Assistant September 2021 - May 2022

- Led expression and purification research of Cas12a in nucleic acid testing, utilizing Cas12a.
- Prepared experimental consumables and designed Cas12a expression vectors and primers.
- Executed plasmid vector construction, protein expression, purification, and concentration. Optimized Cas12a expression and purification.

Protein Expression Student Research Assistant July 2019 - March 2021

- Used the Bacmid baculovirus protein expression or *E.coli* expression system to express the target protein.
- Purifies and evaluates products at each experimental stage and obtain purified protein for cryo-EM analysis.
- Participated in the expression and purification research of transferrin receptors (TfR2 & TfR3).

PUBLICATIONS

Lian, K., **Feng, H.**, Liu, S., Wang, K., Liu, Q., Deng, L., Wang, G., Chen, Y., & Liu, G. (2022). Insulin quantification towards early diagnosis of prediabetes/diabetes. *Biosensors & Bioelectronics*, 203, 114029.

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WORK EXPERIENCE

SHENZHEN CORE MEDICAL TECHNOLOGY CO., Shenzhen, Guangdong

R&D Engineer Intern

June 2021 - August 2021

- Conducted battery charging/discharging system testing of left ventricular assist device (LVAD); screened samples that failed to meet standards and detected causes of errors.
- Designed test sequences and scenarios, performed usability tests of LVAD system, and simulated operations from the customer perspective; observed/recorded working conditions of the system.
- Simulated LVAD implantation surgery and executed usability tests of LVAD surgical instruments.

LEADERSHIP

CHINESE UNIVERSITY OF HONG KONG, SHENZHEN, Shenzhen, Guangdong, CHINA

Student Organization Assistant

July 2020 - August 2022

- Co-organized group activities and festivals; managed college inventories.
- Provided consultation for students and participated in group discussions on planning activities.

University Student Organization (Dance Club) Broad Member

September 2018- December 2020

- Organize facilities, equipment, schedules, and additional on-site materials for dance club performances.
- Act as the treasurer of the organization, manage income and outcome of the organization and seek funding.
- Communicate with the university to arrange public performances and organize weekly dance classes that are open to all university affiliates.

TEACHING EXPERIENCE

CHINESE UNIVERSITY OF HONG KONG, SHENZHEN, Shenzhen, Guangdong, CHINA

Undergraduate Student Teaching Fellow

September - December 2021

- Led a tutorial session and office hour in the course "Biomedical Modeling and Design I" and assisted in solving homework problems and grading homework.
- Prepare presentations and introduced various research areas in biomedical engineering for sophomore or junior students and organized review material for exams.

Cantonese Course Lecturer

September 2018- May 2022

- Taught complimentary Cantonese courses to interested students and affiliates in the university.
- Organized weekly discussion materials including topics, materials, presentations, and discussion questions to introduce Cantonese language and culture.