

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

## EDUCATION

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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

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- 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

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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).

# HONGYU (Dennis) FENG

## PUBLICATIONS

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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.

## WORK EXPERIENCE

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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

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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

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JOHNS HOPKINS UNIVERSITY, Baltimore, MD

### Graduate student grader

June 2023 – August 2023

- Grade assignments for the course “Software Carpentry” and provide detailed feedback for each of the assignments.
- Weekly meet with the lecturer to discuss any problems reflected in the assignment and support lab sessions.

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.