Hsu-Ting Kuo

b08508028@ntu.edu.tw

Education

National Taiwan University (NTU) **Sep. 2020 – Present**

B.S. in Biomedical Engineering (BME)

- GPA: 4.14/4.30

National Taiwan University (NTU) **Feb. 2020 – Jun. 2020**

Visiting student at the Department of Biomedical Engineering (BME)

The Chinese University of Hong Kong (CUHK) **Sep. 2018 – Jan. 2020**

BEng. in Biomedical Engineering (BME)

- GPA: 3.69/4.00
- Honor: **Dean's List Award(2018-2019)**

Research Experiences

Biomedical System Engineering Lab, NTU, *Mentor: Prof. An-Chi Wei* **Dec. 2019 – Present**

Undergraduate Researcher *Taipei, Taiwan*

- Research on project **"Confocal-based toxicity screening platform to quantify dose-response changes in mitochondrial morphology and functions"**
- Establish a protocol which covers cell culture, sample preparation, confocal microscopy imaging, imaging preprocessing and data analysis for the platform
- Collect multi-channel confocal image data
- Establish a pipeline to analyze mitochondrial membrane potential using ImageJ
- Perform cell culture of Human Cardiomyocyte Cell Line (AC16)

Physical Cell Biology Lab, Institute of Physics, Academia Sinica, *Mentor: Dr. Keng-Hui Lin* **Dec. 2019 – Present**

Part-time Undergraduate Research Assistant *Taipei, Taiwan*

- Collect confocal image data of MDCK cells
- Calculate the MDCK cell volume using ImageJ
- Optimized the protocol of making 3D microwell through looking for the suitable chemicals to passivate the surface of cell culture platform
- Performed cell culture of Madin-Darby Canine Kidney (MDCK) Cells

The Neuroscience Summer Internship Program, Academia Sinica, *Mentor: Dr. Keng-Hui Lin* **Jul. 2019 – Aug. 2019**

Summer Intern *Taipei, Taiwan*

- Researched on project **"Spherical Microwell Arrays for Mesenchymal Stem Cell Cultures"**
- Simplified the protocol of making 3D cell culture platform
- Observed the change in self-renewal ability of mesenchymal stem cells under 3D confinement
- Performed cell culture of Human mesenchymal stem cells (hMSCs) and REF52 cells

Biophotonics Laboratory, CUHK, *Mentor: Prof. HO, Ho Pui Aaron* **Nov. 2018 – Dec. 2019**

Undergraduate Research Intern *Hong Kong*

- Read and comprehend research papers to identify unique advantages of centrifugal microfluidics
- Reviewed past competition contents and analyse the strength of winning teams
- Collaborated with research students in the project team

Technical Skills

- **Microscopy**: Fluorescent/laser confocal microscopy (Zeiss LSM800, ZEN Blue)
- **Image Processing**: OpenCV, ImageJ Macro, Scikit-image
- **Programming Language**: Python, C/C++, MATLAB
- **3D CAD Modeling**: SolidWorks
- **Cell culture**: REF52 cells, Human mesenchymal stem cells (hMSCs), Madin-Darby Canine Kidney (MDCK) Cells and Human Cardiomyocyte Cell Line (AC16)

Presentation

1. **Hsu-Ting Kuo**, Yi-Ju Lee, Chan-Min Hsu, Ching-Hsiang Chu, An-Chi Wei. "Confocal-based Platform for Screening Mitochondrial Morphological and Functional Changes in the AC16 Cardiac Cell Line". *Accepted to the 14th Meeting of the Asia Pacific Federation of Pharmacologists(APFP 2021)*

Honors & Awards

Professor Charles K. Kao Student Creativity Awards 2019, CUHK **May. 2019**

- Championship
- Special Awards in Mathematics and Physics/ Mechanics and Control Systems

The 5th Hong Kong University Student Innovation and Entrepreneurship Competition, Hong Kong **May. 2019**

- Merit prize of Mathematics and Physics/ Mechanics and Control Systems

Dean List's Award 2018-2019 **Sep. 2018 – Jun. 2019**

Extracellular Activities

Art and Design Manager, NTU, The Society of Hong Kong Studies **Aug. 2020 – Jan. 2021**

Information Officer, CUHK, Taiwanese Student Association **Mar. 2019 – Jun. 2020**

Student Ambassador, CUHK, Department of Biomedical Engineering **Nov. 2019 – Dec. 2019**

International Student Ambassador, CUHK **Sep. 2018 – Jun. 2019**

Selected Projects

Automated Detection of Mitochondria in Normal and Drug-treated Cells using U-net **Dec. 2021**

Course Final Project of "Fundamentals of Biomedical Image Processing"

-
-

Language

- **English**, TOEFL iBT: 105/120
- **Chinese**, Native
- **French**, Beginner