Hsu-Ting Kuo

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Education

National Taiwan University (NTU) **Sep. 2020 – Present**
B.S. in Biomedical Engineering (BME)

National Taiwan University (NTU) **Feb. 2020 – Jun. 2020**
Visiting student, The Special Visiting Student Program for Hong Kong Students

The Chinese University of Hong Kong (CUHK) **Sep. 2018 – Jan. 2020**
BEng. in Biomedical Engineering (BME)

Research Experience

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**
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**: ImageJ Macro, OpenCV, Scikit-image
- **Programming Language**: Python, C/C++, MATLAB
- **3D CAD Modeling**: SolidWorks
- **Wet Lab**: Cell and tissue culture, Mammalian cell culture, Prepare media, Fluorescent staining techniques

Conference Presentations

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**