

## EDUCATION

### University of California San Francisco

Neuroscience PhD Student. Thesis advisor: Professor Jeanne Paz. CGA: 4.000/4.000

2021 –

Present

### Hong Kong University of Science and Technology

2017 – 2021

B.S. in Biochemistry and Cell Biology with a minor in Information Technology. CGA: 3.881/4.300

## PUBLICATION

### Dissociable Roles of Pallidal Neuron Subtypes in Regulating Motor Patterns

2021

Cui, Q.\*; Cherian, S.\*; Pamukcu, A.\*; **Chang, I. Y. M.\***; Berceau, B., Xenias, H., . . . Chan, C. S. (2021). Dissociable Roles of Pallidal Neuron Subtypes in Regulating Motor Patterns. *Journal of Neuroscience* 17 March 2021, JN-RM-2210-20; DOI: 10.1523/JNEUROSCI.2210-20.2021

### Striatal Direct Pathway Targets Npas1+ Pallidal Neurons

2021

Cui, Q., Du, X., **Chang, I. Y. M.**, Pamukcu, A., Lilascharoen, V., Berceau, B. L., . . . Chan, C. S. (2021). Striatal Direct Pathway Targets Npas1+ Pallidal Neurons. *Journal of Neuroscience* 17 March 2021, JN-RM-2306-20; DOI: <https://doi.org/10.1523/JNEUROSCI.2306-20.2021>

## RESEARCH EXPERIENCE

### Professor Kevin Bender at the University of California San Francisco

2022

Exploring the effects of mu-opioid receptor activation in synaptic depression and short-term plasticity in inhibitory synapses in the prefrontal cortex

- Performed ex vivo patch-clamp recordings on layer 5 pyramidal cells and characterized responses evoked by optical and electrical stimulation under bath application of mu-opioid-receptor agonist.

### Professor Jeanne Paz at the University of California San Francisco

2021

Investigating changes in the basal-ganglia network activity after motor cortex stroke

- Designed and built custom recording devices to measure activity changes in the striatum and motor thalamus after photothrombotic stroke in the motor cortex

### Professor Alexandra Nelson at the University of California San Francisco

2021

Measuring changes in synaptic strength of pallidostriatal connections in levodopa-induced dyskinesia

- Measured the strength of inhibitory postsynaptic currents in medium spiny neurons evoked by optical stimulation of axons from pallidal neurons in parkinsonian mice chronically treated with levodopa

### Professor Savio Chan at Northwestern University

2020

Dissecting the electrophysiological properties of pallidal neurons in the external globus pallidus and their functional roles in regulating motor patterns

- Performed ex vivo patch-clamp recordings on pallidal neuron subtypes and determined the relationships of electrophysiological attributes using partial correlation network analysis
- Established a machine learning pipeline to extract behavioral patterns of mice in an open field using DeepLabCut and SimBA, and analyzed the correlated changes when neuron subtypes were stimulated

### Professor Kai Liu at the Hong Kong University of Science and Technology

2019 – 2021

Elucidating a novel signalling pathway regulating axon regeneration in the adult mammalian central nervous system

- Performed loss-of-function studies using single hairpin RNA knockdown and chemical inhibitors in dorsal root ganglion neuron cultures
- Designed single guide RNA targeting different cytoskeletal proteins to screen for components indispensable in neurite outgrowth

### Professor Karl Herrup at the Hong Kong University of Science and Technology

2018

Using yeast as a model system to investigate the roles of ATM and ATR in vesicle trafficking

- Conducted dye uptake assays to measure the rate of endocytosis of ATM and ATR yeast knockout mutants
- Tested the efficacy of mammalian ATM and ATR inhibitors in wildtype yeasts and spheroplasts

## AWARDS AND SCHOLARSHIPS

### Croucher Scholarship for Doctoral Studies

2022 –  
Present

Hong Kong-based scholarship for promising young Hong Kong scientists to pursue research overseas

*Maintenance allowance of USD30,300 per annum, tuition fees and college fees, academic development allowance USD2,000 per annum and other supporting funds*

### D. H. Chen Foundation Scholarship

2017 – 2021

Hong Kong-based scholarship that aims to nurture future leaders that bring about positive social change through their intellect, motivation, and compassion

*Full university tuition, overseas exchange allowance of HKD 80,000, and living allowance of HKD 38,000 per annum*

## ON-CAMPUS WORK AND INVOLVEMENT

### Producer and Executive committee member, Carry The One Radio

2022 –  
Present

#### Featured episodes:

- *Young Scientist Spotlight: Dr. Roshmi Sarma (5/17/22)*
- *Young Scientist Spotlight: Dr. Arun Richard Chandrasekeran (6/21/22)*

### Recruitment committee member, the University of California, San Francisco

2022 –  
Present

### Orientation committee member, the University of California, San Francisco

2022 –  
Present

### Promotion Secretary, the Executive Committee of the International Research Enrichment Students' Society, HKUSTSU, Session 2018-2019

2018 – 2019

### Senior Undergraduate Mentor, HKUST UG Hall II

2018 – 2019

## PROFESSIONAL EXPERIENCES

### D H. Chen Foundation 50th Anniversary Booklet Editorial Board Member

2019

- *Interviewed members of the foundation and its affiliated institutions*
- *Drafted articles for the booklet*

### Time Auction Impact Research Team Member

2019

- *Interviewed active participants of Time Auction events to showcase their volunteering experiences*
- *Published blog posts on medium: <https://timeauction.medium.com>*

## PROGRAMMING SKILLS

C++ (intermediate)

Python (intermediate)

## LANGUAGES

Cantonese (Native)

Mandarin (Native)

English (Native)