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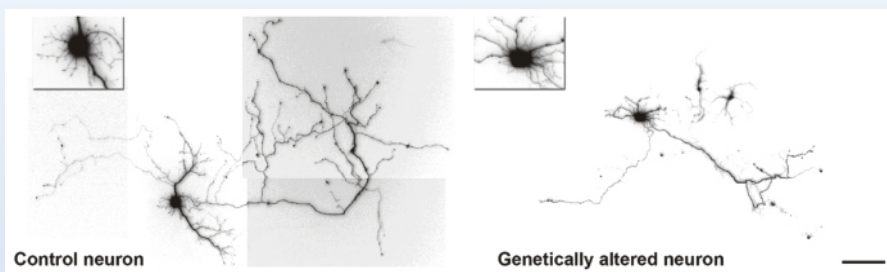


## 黃兆祺 副教授

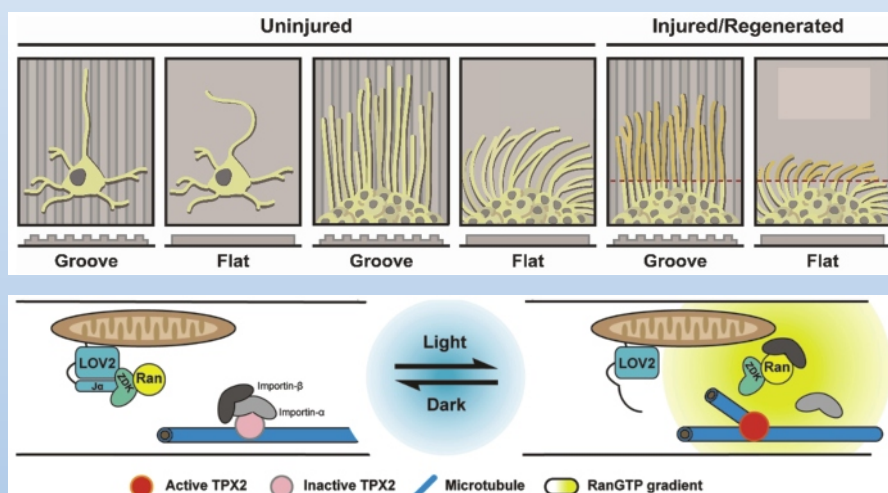
### 研究興趣

我的實驗室的研究興趣是神經元發育，不論是正常或病理狀況下的變化。我們實驗室對微管細胞骨架特別感興趣，因其在神經元發育中扮演至關重要的角色。我實驗室的主要研究主題包含：

- 研究正常或病理發展過程中神經元的行為改變（例如平腦症或小腦症）。我們與神經內科的醫生合作，從人類患者中尋找及研究導致發育障礙的基因。



- 研究造成神經退化性疾病肌萎縮性脊髓側索硬化症（又稱漸凍人症）的細胞機制。
- 開發可幫助中樞或周邊神經受損後再生之新穎治療技術。
- 利用可見光（光遺傳學技術）控制微管細胞骨架之動態，並進而操控神經元之生長。



本實驗室使用多種技術來研究上述生物醫學問題，包括光遺傳學、生物化學、生物資訊、生物物理、細胞生物學、分子生物學、材料科學。

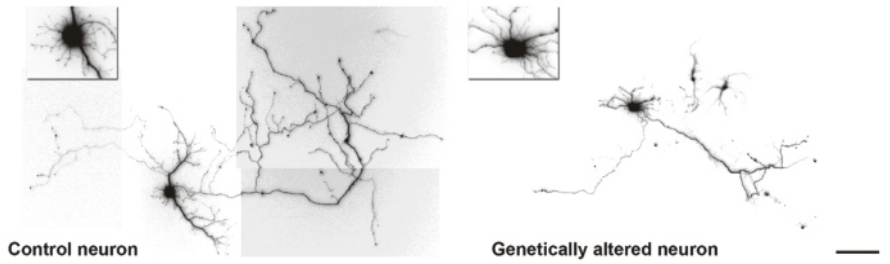
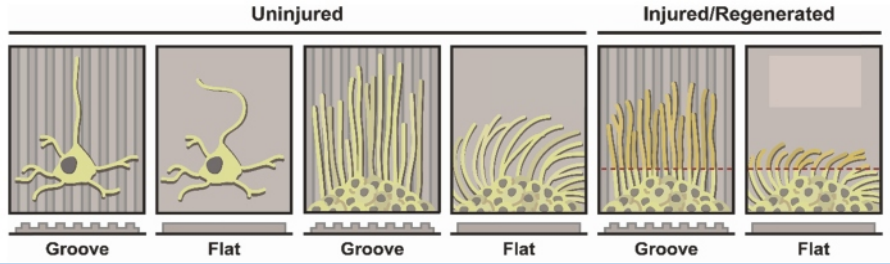
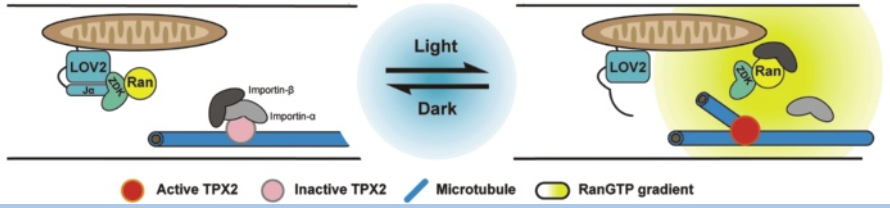


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**Eric Hwang, Ph.D.**

## Research Interests

My lab is interested in studying neuronal development, through which the shape and the behavior of neurons are established and adjusted to adapt to normal or pathological changes. I have a particular passion for microtubule cytoskeleton, a dynamic cylindrical biopolymer at the heart of the aforementioned changes. The main research topics of my lab are:

- Studying the behavior of individual neurons during normal or pathological development (such as lissencephaly or microcephaly). We are collaborating with medical doctors in the Department of Neurology to identify genes that can lead to developmental disorders from human patients.
 
- Understanding the cellular mechanism that leads to the pathogenesis of the neurodegenerative disorder amyotrophic lateral sclerosis (ALS).
- Developing novel therapeutic approaches to enhance post-injury nerve regeneration in CNS and PNS.
 
- Utilizing optogenetic tools to control the dynamics of the microtubule cytoskeleton and to manipulate the morphogenetic process in neurons.
 

My lab uses a variety of techniques, including optogenetics, biochemistry, bioinformatics, biophysics, cell biology, molecular biology, as well as material science to study these biomedical questions.