



【校級神經醫學研究中心 110 年 1 月份月會】

會議紀錄

時 間：110年1月27日(星期三) 12:10-13:30
地 點：現場會議-醫綜後棟15樓第一會議室
同步視訊會議-Google Meet
主 席：蔣永孝 主任 (藍亭副主任代理)
講 者：陳示國 副教授(國立台灣大學生命科學系)

TMU Neuroscience Research Center Monthly Meeting Record for January, 2021

Chair: Vice Director Tim Lane

Recorded by: Professor J. Y. Wang,

Speaker: Dr. Shih Kuo Chen (from NTU)

Secretary C. N. Huang

Time: 2021/1/27 (Wednesday) 12:10-13:30

Place: 1st Conference room at 15th Floor, United Medical Building (Back Building), Taipei Medical University (and net meeting via Google Meet held simultaneously).

Meeting Agenda (議程):

1. Opening by Vice Director Tim Lane
2. “Ganglion photoreceptors modulate social sexual behavior through supraoptic nucleus” by Dr. Shih Kuo Chen

1. Opening

Prof. Lane first welcomed Dr. Chen came to Taipei Medical University and attended our NRC meeting. Then, Prof. Cheng, the leader of the Retinopathy Team, introduced Dr. Chen. Dr. Chen finished his Ph.D. in Boston University and was a post doctor in John Hopkins from 2009 to 2012. Now he is an Associate Professor at the Department of Life Science in National Taiwan University. Today Dr. Chen will give us a very special topic, Ganglion photoreceptors modulate social sexual behavior through supraoptic nucleus.

藍亭副主任首先歡迎陳示國老師來到台北醫學大學並且參加我們的月會，然後請視網膜病變團隊的召集人鄭幼文老師介紹今天的講者，陳示國老師。陳示國老師於美國休士頓大學取得博士學位，2009 至 2012 年在約翰霍普金斯大學擔任博士後研究員，目前任職於國立台灣大學生命科學系。今天陳老師將介紹神經節細胞與社會性行為的研究。

2. Forum

1) Introduction

The summary of Dr. Chen’s speech:

Retinal ganglion cells (RGCs) in the retina receive input from classical photoreceptor rod and cone through bipolar cells and lateral processing from horizontal cells and amacrine cells. Using parallel pathways, different types of RGCs transmit distinct features such as color, contrast information, the

direction of moving light to the brain for pattern vision. Therefore, classic photoreceptor rods and cones are essential photon detectors located at the outer retina for image forming function. However, recent studies showed that a small population of intrinsically photosensitive retinal ganglion cells (ipRGCs) located at the inner retina using photopigment melanopsin to detect light directly. There are many subtypes of ipRGCs that innervate many brain regions and provide environmental luminance signals for circadian photoentrainment, pupillary light reflex. However, whether ipRGCs are involved in other non-clock functions



Ganglion photoreceptors modulate social sexual behavior through supraoptic nucleus by Dr. Shih Kuo Chen. (1/27)

remains unclear. Using the genetic labeling method, we showed that a single ipRGC could send collateral axons to multiple brain regions for various physiological functions. For example, light exposure could reduce the release of neurohormone oxytocin and subsequently reduce sociosexual behavior. Furthermore, elimination of M1 ipRGC or Brn3b positive ipRGC could block the light-dependent modulation. Together, our studies showed that the M1 ipRGC that innervates the supraoptic nucleus may project environmental input to modulate the social behavior of the mice.

2) Discussion

Prof. Lane mentioned that Dr. Jihwan Myung is also researching circadian neuroscience and discussed the connection between the two lab studies with Dr. Chen. Prof. Hu asked about the circadian gene expressions and the light intensity effect in Dr. Chen's model and the Huntington disease model. Prof. Cheng and Prof. Hsiao also discussed the experimental techniques with Dr. Chen.

藍亭教授提到明智煥老師也在進行生理時鐘的實驗，並與陳老師討論兩邊實驗的關聯。胡朝榮教授則有詢問生理時鐘的相關基因表現或是以不同光強度所造成的影響。鄭幼文教授及蕭哲志教授則與陳老師討論實驗上的操作技巧。



Members discussed with Dr. Chen. (1/27)



NRC January monthly meeting. (1/27, 2021)

3. NRC Future Directions Meeting

At the December meeting, we announced that the future direction meeting should be held on May 8. But now the meeting will be held with the Taipei Neuroscience Institute and the date will be changed to Mar 6, 2021, and the rehearsal will be held on Feb 27. Please reserve your time for the meeting. Also, we will make the NRC-Specific “polo-shirt” for the meeting. Because the time is very tight now, please fill out the questionnaire (<https://forms.gle/e9GX2Ck2pPH72Y3b8>) as soon as possible.

本中心共識營原預定於5月8日舉辦，但因校方指示共識營將與台北神經醫學中心共同舉辦，因此將更改於3月6日假舉辦，並於2月27日進行預講，請各位成員踴躍參與。本次共識營會製作中心專屬上衣，煩請尚未填寫出席問卷(<https://forms.gle/e9GX2Ck2pPH72Y3b8>)的成員盡快填寫，以利進行統計。

NRC Future Directions Meeting 神經醫學研究中心共識營

Date 日期: 2021/03/06

Time 時間: 12:30~18:00 (registration from 12:00 開始報到)

Location 地點: Grand View Resort Beitou (No. 30, Youya Road, Beitou District, Taipei City)
北投麗禧溫泉酒店 (台北市北投區幽雅路30號)

Dinner party 晚宴: 18:30~20:00

4. 大學社會責任：

因應校方推動實踐大學社會責任，定期調查各團隊相關研究進度：

視網膜病變團隊：目前正在進行產學合作，協助廠商測試其藥劑的機制探討。

大腦與意識團隊：以新型方式監測大腦中血流等指標判斷藥劑對於植物人病患的影響，目前正在進行人體實驗。

會議結束時間為 13:20。