



高雄醫學大學

KAOHSIUNG MEDICAL UNIVERSITY

未來高醫 引領未來

Integrity(誠信)、Internationalization(國際化)

Innovation(創新)、Intelligence(智慧)

Integration(整合)、Impact(影響力)

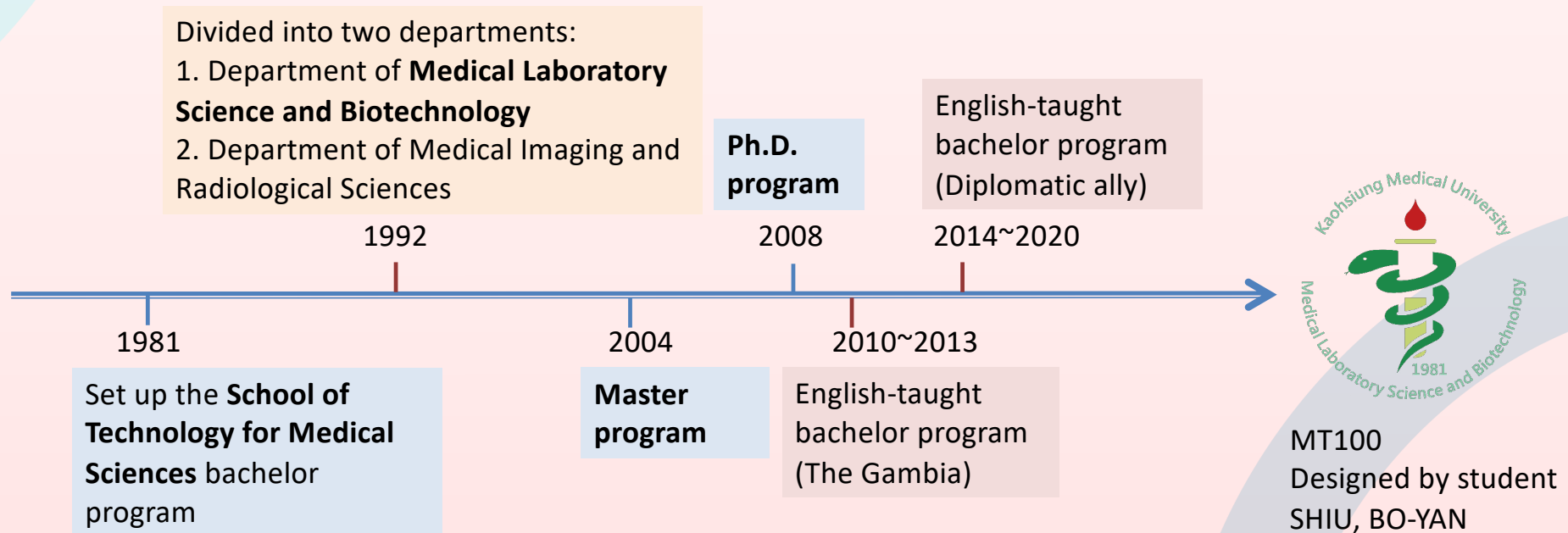
# Medical Laboratory Science and Biotechnology, College of Health Sciences

Liang-Yin Ke, Ph.D.





# Brief History of MLSB





# Faculty Members of MLSB

Lipid  
Metabolims



Professor  
Liang-Yin Ke

Analytical  
Chemistry



Professor  
Yeou-Lih Huang

Skin Immune



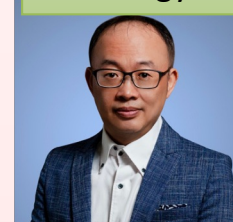
Professor  
Ching-Shuang Wu

Cancer Drugs



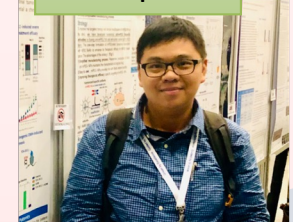
Associate Professor  
Wan-Chi Tsai

Physiology &  
Pathology



Associate Professor  
Shyh-Jong Wu

Target  
Therapies



Associate Professor  
Chih-Hung Chuang



Professor  
Pei-Yu Chu



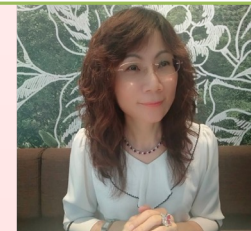
Professor  
Sung-Pin Tseng



Professor  
Sheng-Fan Wang



Assistant Professor  
I-Lin Lin



Assistant Professor  
Li-Wen Huang



Associate Professor  
Shu-Chi Wang

Viral  
Evolution

Antimicrobial  
Resistance

Viral mAbs &  
Immune

Blood bank

Hematology

Noncommunicable  
diseases



KAOHSIUNG MEDICAL UNIVERSITY

大學

未來高醫 引領未來

KMU





**柯良胤 (Liang-Yin Ke), Ph.D.**

Web of Science Researcher ID: A-2778-2009

Research Gate: <https://www.researchgate.net/profile/Liang-Yin-Ke>

Publons: <https://publons.com/researcher/1499009/liang-yin-ke/>

ORCID: <https://orcid.org/0000-0002-2547-0987>

- Lipid Metabolism and Diseases
- Lysophosphatidylcholine (LPC)
- Platelet-activating factor (PAF)
- Ceramide (CER)





Yeou-Lih Huang, Professor (Tiger)

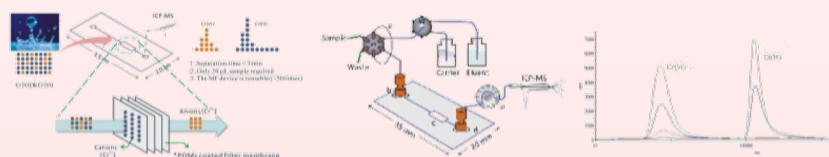
研究室與實驗室：濟世大樓CS610室

聯絡電話：(07)312-1101 ext.2251

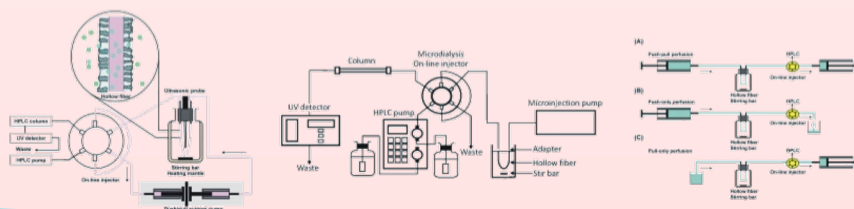
電子信箱：yeliu@kmu.edu.tw

### Major research interests and recent work

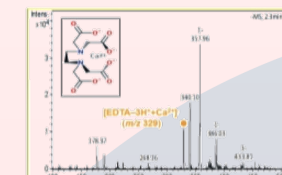
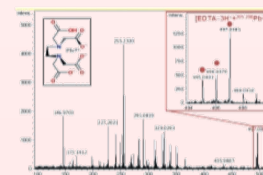
#### Online microfluidics-ICP-MS system for trace element speciation



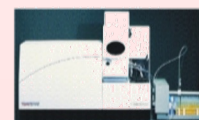
#### Microseparation system coupled with chromatography/mass spectrometry for determining contaminants in biomedical and environmental samples



#### Determination of trace metals using electrospray-assisted laser desorption ionization tandem mass spectrometry (ELDI-MS/MS)



#### Applications of analytical methods for biomonitoring of trace elements and biomarkers

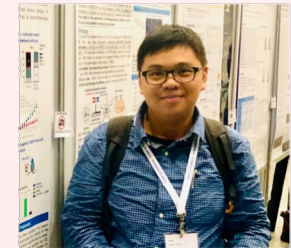
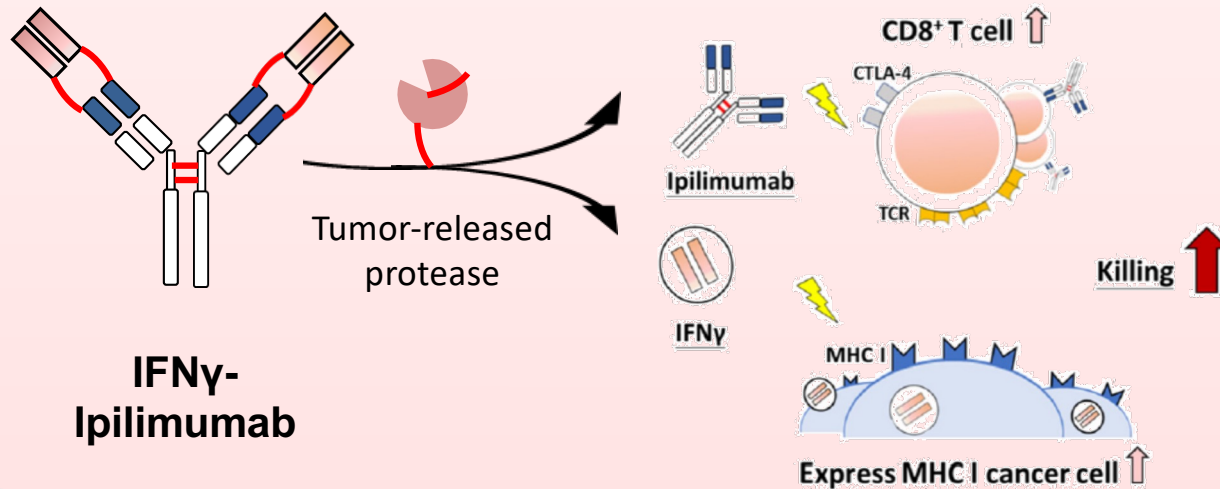




# TAIWAN National Innovation Award

Inactive state  
block each other

Activate simultaneously  
Promote T cell activation and kill  
tumor



Chuang Chih-Hung, 莊智弘

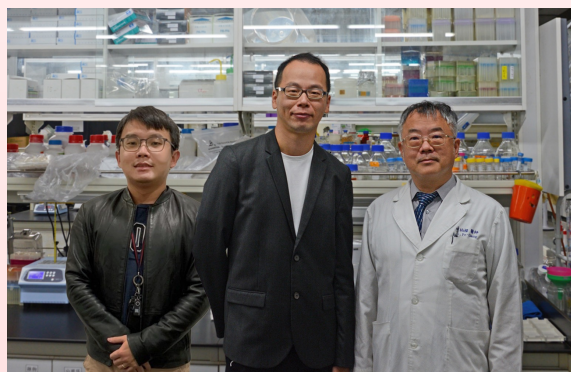
Department of Medical Laboratory  
Science and Biotechnology

[a4132600@kmu.edu.tw](mailto:a4132600@kmu.edu.tw)





# Strength & features of MLSB



**Mass spec.**  
Disease markers,  
lipid metabolism  
and cardiovascular  
disease



1. 抗體鎖(Hinge)
  2. 蛋白酶受質胜肽
- 前驅抗體

**Protein Drugs**

Antibody-locker,  
enzymes,  
bioengineering protein  
for tumors and ASCVD

**Clinical medicine**

Diagnostic kit for  
COVID, dengue,  
Antibacterial drugs for  
multiple drug resistant  
organisms

**Tellurum**





# Visiting Professor



伊藤悦朗  
Etsuro Ito

Integrative Bioscience and Biomedical Engineering, Waseda University, Japan

○ January 2011 – date: President of International Society for Invertebrate Neurobiology

○ Editors in journals: 2017 – date, Associate Editor, *European Zoological Journal*; 2016 – date: Editorial Board, *Scientific Reports*, Associate Editor, *Frontiers in Behavioral Neuroscience*; 2015 – date: Academic Editor, *PLOS ONE*; 2013 – date: Associate Editor, *PLoS ONE*

## **Publications :**

>260 papers

1. Chu CS, et al. *Biomedicines* 2020 Jul 30
2. Mishra VK<sup>†</sup>, et al. *Cells* 2020 May 6;9(5)
3. Iha K, et al. *Diagnostics* 2019 Jul 18; 9
4. S Yamakado, et al. *BMJ Open Diabetes*

- snail animal model for researches on neuroscience
- Ultra-Sensitive ELISA
- Cell Clock, Ca<sup>2+</sup> Imaging
- Near-infrared spectroscopy; NIRS




WASEDA

TWIns 東京女子医科大学・早稲田大学先端生命医科学研究教育施設

## 物理生物学の世界ようこそ

### 研究者紹介



早稲田大学  
教育・総合科学学術院  
教授  
伊藤 悦朗

担当学部： 教育学部理学科生物学専修  
担当大学院： 大学院先進理工学研究科生命理工学専攻／物理学及  
応用物理学専攻

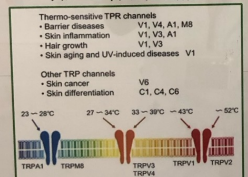
早稲田大学高等学院卒業、早稲田大学理工学部卒業、  
早稲田大学大学院理工学研究科修了（理学博士）。  
早稲田大学人間総合研究センター 助手、アメリカNIH-NINDS visiting fellow  
北海道大学大学院理学研究科 助教授、徳島文理大学香川薬学部 教授  
を経て現職。

2017年度 日本動物学会 学会賞受賞。  
International Society for Invertebrate Neuroscience会長。

### 研究内容

生物は各種の物理量で記述することができます。生物は物理法則による支配から逃れることはできません。また逆にいえば、生物は、力、熱、電磁波などをうまく使っています。これらの物理量との関係を強く意識しながら、生物を眺めて行きたいというのが、当研究室のスタンスとなります。この考え方を物理生物学（Physicobiology）と呼びます。

#### 熱・放射線を考慮に入れたスローエイジングの研究



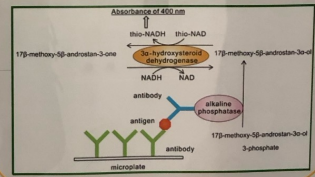
Thermo-sensitive TRP channels  
• Barrier diseases V1, V4, A1, M8  
• Skin inflammation V1, V3, A1  
• Hair growth V1, V3  
• Skin aging and UV-induced diseases V1

Other TRP channels  
• Skin cancer V5  
• Skin differentiation C1, C4, C6

23 ~ 28°C 27 ~ 34°C 33 ~ 38°C 43°C 52°C

TRPA1 TRPM8 TRPV3 TRPV1 TRPV2

#### 早期・非侵襲的診断を目指したタンパク質・核酸の超高感度測定法の開発



Absorption of 400 nm

17β-methoxy-5β-androstan-3-one

5α-hydroxy-17β-androstan-3-one

antibody

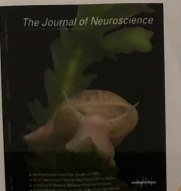
antigen

alkaline phosphatase

17β-methoxy-5β-androstan-3-one-3-phosphate


microplate

#### 無脊椎動物を用いた学習記憶の研究

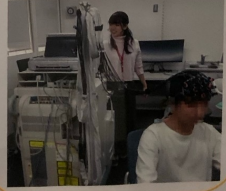


The Journal of Neuroscience

#### 歯髄由来の幹細胞を用いた細胞分化の研究



#### 痛みの緩和機構とその脳内応答の研究



## 全自動学習装置による淡水産巻貝の学習記憶能力における地域差の解析

\*戸谷 勇輝, 伊藤 悦朗  
早大・教育・生物

### 要旨

- ① 実験動物への訓練・学習成績評価を自動で行う装置を開発した。
- ② その装置を用いて学習能力の地域差を解析した。

### ヨーロッパモノアラガイ

A



1 cm

B



0.5 mm

A) 淡水産の巻貝 *Lymnaea stagnalis*  
学習能力があり、雌雄同体・孵化前に変態・3-4ヶ月で成熟。  
B) *Lymnaea stagnalis* の中枢神経系（脳）  
構造が単純で理解しやすいため、  
学習記憶に関する詳細な解析が可能。

### 味覚嫌悪学習

A



身体刺激  
ベルの音  
嫌悪学習  
シロ糖  
嫌悪学習  
シロ糖  
嫌悪学習  
シロ糖

B



嫌悪学習  
シロ糖  
嫌悪学習  
シロ糖  
嫌悪学習  
シロ糖

A) パロフの犬 B) 味覚嫌悪学習

### 自動学習装置

サイフォンの原理によりチューブ内を常に液体で満たすことで、ポンプの駆動と動物に液体が溜くタイミングとの差をなくした。

### 画像認識による口の検出

A 閉 開 閉

口が開くに従い、唾液分泌が増大

学習能力

A 短期記憶に長期記憶で

B 10 min post-trial

C 24 h post-trial

- snail animal model for researches on neuroscience
- Ultra-Sensitive ELISA
- Cell Clock, Ca<sup>2+</sup> Imaging
- Near-infrared spectroscopy; NIRS

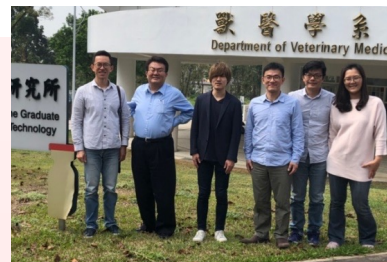


# @Biochemie, University of Cologne



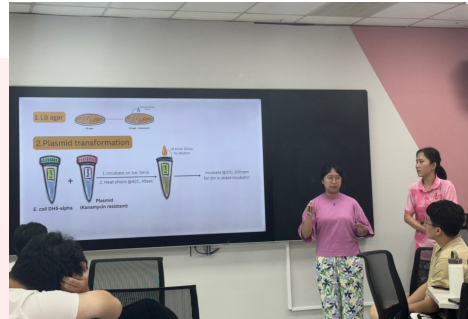


# @TWIns, Waseda University





# Chulalongkorn university





# MOE TEEP program

## TAIWAN EXPERIENCE EDUCATION PROGRAM

<https://teep.studyintaiwan.org/>



### Guarantee & Scholarship



All TEEP programs are approved and guided by Taiwan Ministry of Education (MOE), and must comply with laws and regulations to ensure education quality and also the basic rights and safety of all students. Each participant is eligible to receive a monthly stipend (maximum 15,000 NTD) based on MOE regulations and program rules.

**NTD\$ 15000/month**



### Transnational Collaboration



Work and learn with professors, students, and cooperative enterprises around the world. Connect to the academic communities in Taiwan and the globe, and immerse yourself in industries that matches your career goals. In TEEP, you will have the opportunities to be deeply involved in transnational collaboration projects.



### Active in Research & Development



Taiwan's research and development (R&D) expenditures exceeded US\$20 billion in 2019.



### Future with Possibilities and Opportunities



The TEEP program will help you develop critical professional skills and networks. You'll also learn

CV

Photocopy of Passport

- -- > Application from KMU
- -- > MOE Taiwan
- -- > MFA Taiwan --> VISA



# NSTC IIPP program

**NSTC** | International Internship  
Pilot Program

About Us ▾

For Applicants ▾

Mentors/Jobs ▾

Partnership Alliance

Login

<https://iipp.tw/program>

## VI. Evaluation and Matching Process

- Matching between the potential intern and PI will be mainly conducted via an online system. The NSTC may also convene platform review meetings based on policy requirement.
- PIs offering internship positions will evaluate applicants based on the provided information. Upon mutual agreement, the system will issue an acceptance letter to the intern.

## VII. Subsidies

**NTD\$ 1000/day**

- Internship Allowance: NT\$1,000 per intern per day, with a maximum duration of 30 days. Interns who have been issued IIPP acceptance letter cannot request to change PI.
- Internship Operating Expenses: For each intern hosted, the PI may receive expenses related to guiding interns in experiments, research, etc. (In principle, the amount shall not exceed NT\$1,000 per day. Exception may be granted due to nationality diversification concern.)

## VIII. Funding Appropriation

- Upon receiving the institute's request for funds based on the internship status, the NSTC will review and allocate funds.

CV

Photocopy of Passport

Proof of current enrollment (PIs may request additional academic performance proof and internship plans)

Recommendation letter

■ -- > Apply online

■ -- > NSTC review



# KMU scholarships and others



高雄醫學大學  
國際事務處  
Kaohsiung Medical University  
Office of Global Affairs

<https://ciae2.kmu.edu.tw/index.php/en-gb/international-students1/new-students/scholarships>

## Scholarships

Elite- MOE Scholarship for Lecturers from South and Southeast Asia Countries

Elite- MOE Scholarship for Lecturers from Africa Countries

MOFA- MOFA Taiwan Scholarship Program (Guidelines)

MOE- MOE Taiwan Scholarship Program (Guidelines)

KMU Scholarship- Guidelines for the KMU International Student Scholarship





高雄醫學大學  
KAOHSIUNG MEDICAL UNIVERSITY

未來高醫 引領未來

KMU