2020 NATPA-SCAL Spring Seminar

北美州台灣人教授協會南加州分會

March 1st (Sunday) 2020

@

California State University San Marcos

California State University
SAN MARCOS

2020 NATPA-SCAL Spring Seminar

March 1st (Sunday)

- **California State University San Marcos**
- **333 S Twin Oaks Valley Rd, San Marcos, CA 92096**
- **Room Academic Hall 102 (ACD 102) (The same one we used before)**
- **Parking Lot C**

9:30 AM	Registration Starts
10:00 AM	會長致詞
10:10 AM	***Scholar Presentation #1*** 張嘉惠教授 Dr. Chia-hui Chang Visiting Professor at UCSD 國立中央大學資訊工程系教授 **Topic**: 從資訊擷取技術看人工智慧技術的發展 Computation Intelligence and Applications for Information Extraction
10:50 AM	**Scholar Presentation #2** Dr.Chun-nan Hsu (Kun- Lâm Khó') 許鈞南 Project Scientist, Neurosciences, UCSD **Topic**: 人工智慧機器問診的機會與挑戰 Opportunities and challenges of creating an AI Doctor
11:30 AM	***Lunch and Networking***
1:00 PM	**Keynote Speaker** 鍾正明院士, Dr. Cheng-min Chuong **Topic:** 飛羽形成的建構原則與適應: 台灣藍鵲如何飛上國際主要期刊"細胞" 封面 The making of a flight feather: Bio-architectural principles and adaptation
2:00 PM	**Young Scholar Presentation #1** Sheng-pei Wang, MD 王聖裴醫師 **Topic**: Taiwan's small yet important steps in the global community of EB 台灣在國際泡泡龍疾病社會中的角色
2: 50 PM	***Coffee/Tea Break***

3: 10 PM	**Young Scholar Presentation #2** 謝大洋 Diane Hsieh *Doctoral Candidate in Education, UC Irvine* **Topic**: 日常中的心理學 Applying psychology in Daily Lives
3: 50 PM	**Young Scholar Presentation #3** 邱澗庚 Jian-geng Chiou *Postdoctorial Researcher at UCSD* **Topic**: 用數學，細胞捏出五花八門的斑紋與結構！ Principles of Pattern Formation Allow Cells to Regulate Their Shape
4:30 PM	***Coffee/Tea Break***
4:40 PM	**Member Meeting**
5:30 PM	**Dinner** at Pan Asia Buffet 707 Center Dr, San Marcos, CA 92069, (760) 796-7708 https://www.facebook.com/pages/Pan-Asia-Grill-Sushi-Buffet/1416907315194336 http://www.yelp.com/biz/pan-asia-buffet-san-marcos

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Keynote Speaker

鍾正明院士, Dr. Cheng-min Chuong

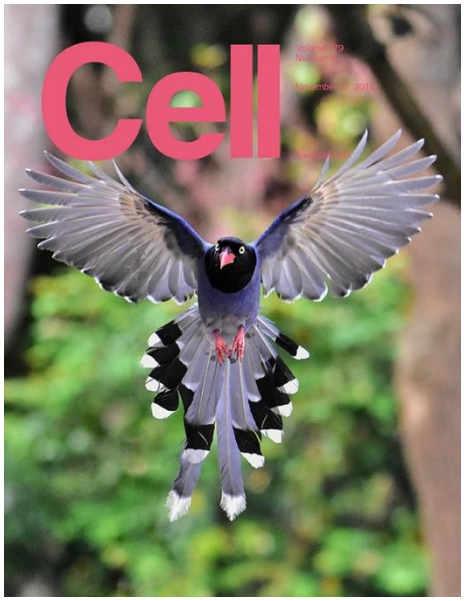
About Dr. Chuong

鍾正明教授為中央研究院院士，美國科學促進會院士，美國南加州大學病理系教授、中國醫藥大學整合幹細胞中心資深科學顧問。鍾院士引領世界外胚層器官如皮膚及其附屬器官羽毛、毛囊的發育、再生及幹細胞組織工程等研究，為細胞粘結、組織器官形態發生、組態形成等研究做出了開拓性的貢獻。

鍾院士在包括國際頂尖雜誌 Nature, Science 和 Cell 等共發表論文 200 餘篇，他引次數超過萬次，其研究成果獲選 Science 雜誌 2014 年度十大科學突破。

Topic: 飛羽形成的建構原則與適應: 台灣藍鵲如何 飛上國際主要期刊"細胞" 封面

The making of a flight feather: Bio-architectural principles and adaptation



Birds have flight, contour, downy, and tail feather types, all of which serve different functions, with flight feathers conferring the ability to fly. A flight feather is made of two adaptable modules: the major shaft (rachis) and the vane. In this issue, Chang et al. study the molecular mechanisms of rachis and barb hooklet formation. Using quantitative biophysical approaches, they analyze feather rachis organization in birds with different flight characteristics and determine how multidimensional functionality can be achieved in the development and evolution of flight feathers for adaptation to different eco-spaces. The cover shows a photo of a Taiwan Blue Magpie with fully displayed feathers. Photo credit: Shao Hua Lang of Bird Photography Club in Taiwan.

- Video abstract link (6 minute)
- Paper link in CELL (Nov 27, 2019)

Scholar #1

張嘉惠教授 Dr. Chia-hui Chang

- 中央大學資訊工程系 / Visiting Scholar at UCSD
- 中華民國人工智慧學會理事長 Taiwan Association for Artificial Intelligence (TAAI) President
- 中華民國計算語言學會理事長 Association for Computational Linguistic and Chinese Language Processing (ACLCLP) President

Topic: 從資訊擷取技術看人工智慧技術的發展
Computation Intelligence and Applications for Information Extraction

資訊擷取（Information Extraction）的任務定義是從非結構化或半結構化文檔中自動擷取出結構化的資訊，例如實體，實體之間的關係以及描述實體的屬性。資訊擷取領域起源於自然語言訊息處理的需求，原始任務在於從非結構化的 Free Text 文本中識別命名實體（Named Entity Recognition，NER），例如新聞報導中的人物姓名、組織名稱、地點等，進而理解文件中的意義。另一方面，隨著 Web 網際網路的發展以及資料庫的支援，使用者可以更輕鬆地搜尋到所需的資料，只是這些資料大多嵌在半結構化的樣版網頁之中（又稱為深網 Deep Web），如何讓這些資料可以更有效地被應用， 則是 Web 資料擷取（又稱為 Wrapper Induction）以及語義網（Semantic Web）的目標。在這個演講中，我們以資訊擷取為主題，透過 Wrapper Induction 以及 Named Entity Recognition 所用的技術，與人工智慧領域發展的軌跡相呼應。最後我們以活動資料庫建立、以及科學出版物中的結構化記錄轉換為例說明資訊擷取技術的應用。

The task of information extraction is to automatically extract structured information such as entities, relationships between entities, and attributes describing entities from unstructured or semi-structured documents. The field of information extraction has its genesis in the natural language processing community to recognize named entities such as person names, organization names, locations, etc. in news articles for message understanding. On the other hand, with the development of the WWW, users can easily search for any data supported by databases. However, these data are mainly embedded in semi-structured web pages (also known as Deep Web) with predefined template. Thus, the task of extracting data from template pages (also known as Wrapper Induction) is necessary for information reuse and integration. In this talk, we use the technologies used in wrapper Induction and named entity recognition to illustrate the development in artificial intelligence. Finally, we demonstrate an application of information extraction in event database construction by transforming information from user generated contents on social network into structured records.

Scholar Presentation #2

Chun-nan Hsu (Kun- Lâm Khó') Ph.D. 許鈞南

Project Scientist, Neurosciences, School of Medicine, UCSD
加州大學聖地牙哥分校醫學院神經科學專案科學家

Topic: 人工智慧機器問診的機會與挑戰 Opportunities and challenges of creating an AI Doctor

Abstract: This talk will focus on how to develop an AI (Artificial Intelligence) Doctor that can read human natural language such as English and Chinese and diagnose human diseases. AI doctors are in need because of the shortage of qualified clinicians and high rates of error diagnosis. The need is particularly serious in countries like China but is a world-wide issue given that the population is aging rapidly. AI doctor is possible now due to the advances in modern machine learning and semantic representation of natural languages. The talk will present AI Doctor software that the speaker developed. The first one can read emergency department notes from Rady's Children Hospital to identify patients who may be highly suspicious of Kawasaki disease, a rare disease that is usually overlooked. The second one can learn to read chief complaint and history of the present illness to diagnose a broad range of pediatric diseases. The last one can learn to ask clinical questions to assign the patient to a department as a triage service using an idea similar to learning to play GO to beat the human GO champion. The talk will also discuss the barriers and resistance of AI doctors.
(Note: If time allows the talk will also cover some of the speakers' work on "AI PhD" that reads research documents automatically to organize biomedical knowledge.)

Bio: Chunnan Hsu is an angry data scientist looking to disrupt the current practice of healthcare with Artificial Intelligence and disrupt the status quo of Taiwan's international status. He failed miserably in both so far. However, he will keep trying.
He received a PhD degree in AI from USC and was an Assistant Professor at Arizona State University before he joined the Institute of Information Science of Academia Sinica in Taiwan for 10 years. He was forced to quit from Academia Sinica in 2014 because in 2013 he joined the Biomedical Informatics department of the School of Medicine, UC San Diego. In July 2019 he transferred to the Department of Neurosciences. He is a Senior Member of Association of Computing Machinery, IBM Faculty Award winner, and was the President of the Taiwanese Association for Artificial Intelligence from 2009 to 2011. When he is not working, he hits tennis balls hard to release his anger and lower his blood pressure.

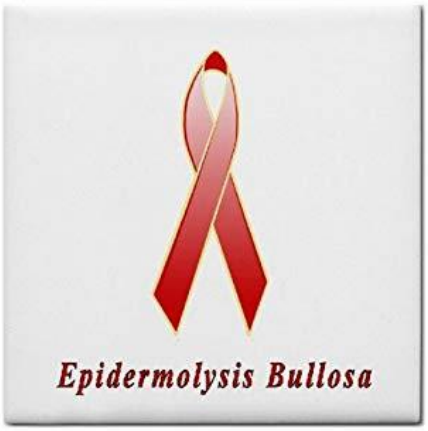
Young Scholar #1

Sheng-Pei Wang, M.D. 王聖裴醫師

Visiting Scholar, Department of Pathology, University of Southern California
南加州大學病理學科，訪問學者

Topic: 台灣在國際泡泡龍疾病社會中的角色
Taiwan's Small Yet Important Steps in The Global Community of EB

Epidermolysis Bullosa (EB) is a group of rare genetic diseases that result in skin and mucosa fragility. Patients are prone to develop blisters and wound on skin due to friction and minor trauma. In severe subtypes, patients have wound on esophagus, and suffer from complications of esophageal scarring and narrowing. This talk will include the pathogenesis and current treatments of EB, and emphasize Taiwan's role in EB society.



俗稱泡泡龍的「表皮溶解性水泡病」是一種罕見的基因疾病。患者的表皮及黏膜十分脆弱，容易因為輕微摩擦就起水泡、產生傷口。罹患嚴重亞型的病人連食道等黏膜都會有傷口，造成食道瘢痕及狹窄。這次演講除了此疾病的成因、治療方式，也會分享台灣目前的研究及台灣在國際泡泡龍疾病社會中扮演的角色。

Young Scholar #2

謝大洋 Diane Hsieh

Doctoral Candidate in Education, UC Irvine

Topic: 日常中的心理學 Applying psychology in Daily Lives

Psychology is one of the most popular fields of study in the U.S., for example being a prerequisite for subjects like sociology, biology, business, and education. In Taiwan, however, I would argue psychology is under-studied and under-appreciated. In this presentation, I will introduce the many branches of psychology, and illustrate with concrete examples how having a deeper understanding of basic psychological principles can enhance our daily lives.

心理學在美國是許多大學最熱門的主修之一, 也是社會學, 生物, 商學, 教育學學等等領域的必修。但是心理學在台灣相對非常不普遍，也令許多人對這門學科有錯誤的認知或不必要的畏懼。 我將簡介心理學的許多分支：社會心理學，認知心理學，發展心理學，臨床心理學等等，也將用一些經典的研究討論心理學對社會的貢獻。 保持科普的精神，我希望經由這個短講我可以將心理學帶入大家的日常生活中。

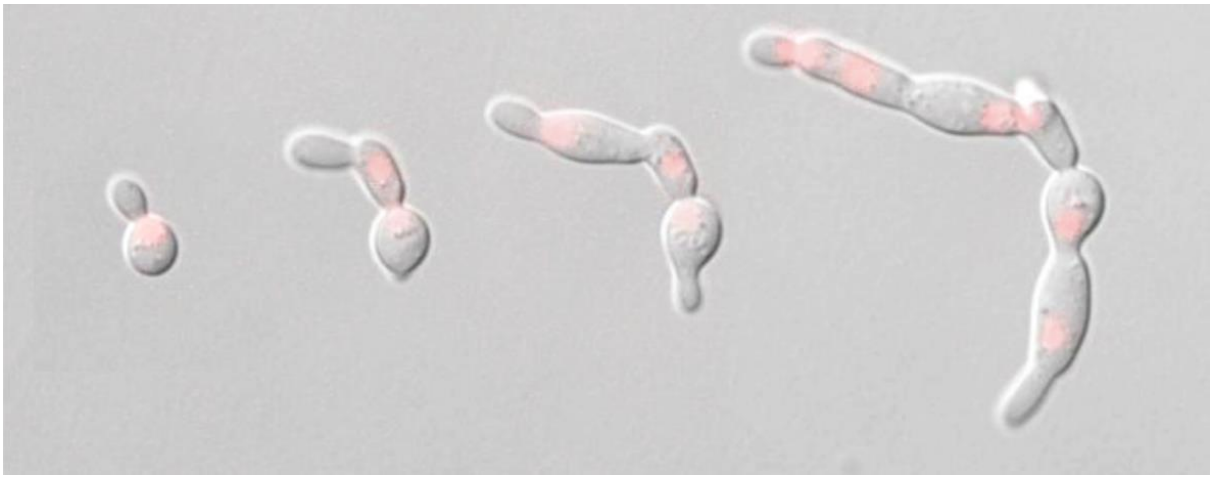
Young Scholar #3

邱澗庚 Jian-geng Chiou

Postdoctoral Researcher at UCSD

Topic: 用數學，細胞捏出五花八門的斑紋與結構！Principles of Pattern Formation Allow Cells to Regulate Their Shape

從一顆圓形的受精卵，斑馬與熱帶魚如何無中生有地發育出身體結構，進而展現五花八門的斑紋？這其中的數學原則不僅僅被用在理解動植物發育的課題上，更決定了許多單細胞生物攸關生死的結構特徵。在這個短講當中，我會介紹斑紋形成的數學原則，以及我在博班的研究當中，如何透過改變這些數學原則，讓圓形出芽的酵母菌長出長條而分岔的菌絲！



Where Do We Meet?

Meeting Location: California State University San Marcos

Address: 333 S Twin Oaks Valley Rd, San Marcos, CA 92096

Room: Academic Hall 102 (ACD 102) (A little walk with stairs)

Parking Lot C (Parking $10)

2020 NATPA-SCAL Annual Meeting
March 1st (Sunday) 2020
Registration Form

Member's English Name: _____

Taiwanese Name:_____

Address: _____

Phone: _____

E-Mail Address: _____ (for confirmation use)

Spouse / Family Member accompany you

English Name _____ Relationship: _____ Taiwanese Name:_____

**如果你有過去參加研討會的名牌，可以帶去以節省貼紙型的名牌。 If you have the name tags from previous conferences, welcome to bring them.

Meals (per person) :

Lunch	**$10 X _____(人數) = $_____**
Dinner	**$25 X _____(人數) = $_____**
Lunch (Students and post-doc)	**$0 x _____ (人數)**
Dinner (Students and post-doc)	**$15 x _____ (人數)**
Dinner Children (under 12)	**$ 0 x _____ (人數)**

NATPA-SCAL Membership Fee :

☐ $30 Annual fee for regular member)
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- Registration website:
- For more information: Please contact natpa.scc1985@gmail.com
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