

國科會生命科學研究推動中心  
研討(習)會 結案報告

一、基本資料

中文名稱	跨領域尖端農業生技研討會
英文名稱	Advanced Multidisciplinary Agricultural Biotechnology Conference
中文摘要報告	<p>農業是人類生存與發展的重要基石，隨著時代的演進，現代農業面臨諸多挑戰，包括氣候變遷、土壤退化、生物多樣性喪失及水資源短缺等問題，對全球糧食安全與生態保護構成威脅。在此背景下，農業生技的應用成為關鍵解決途徑，透過基因改良、病蟲害防治和創新育種技術等手段，不僅提升了作物的抗逆性、品質和產量，還有效減少了對自然資源的依賴。本次「跨領域尖端農業生技研討會」以推動農業生技技術發展和永續農業為核心，匯聚國內外頂尖學者與產官學界專家，共同探討昆蟲、植物病害防治、生物防治等多元主題，展示尖端科研成果。</p> <p>研討會特色在於促進國際交流，特邀來自美國加州大學戴維斯分校、國內中央研究院及國立臺灣大學的知名專家分享農業生技領域的最新進展與未來發展趨勢，同時通過學生壁報競賽與產業參訪活動，縮短學術研究與實務應用的距離。此次盛會不僅加強台灣與國際農業生技研究合作，更有助於培育具有全球視野和創新能力的專業人才，進一步推動永續發展目標的實現。</p>
英文摘要報告	<p>Agriculture serves as a cornerstone of human survival and development, yet modern agriculture faces numerous challenges, including climate change, soil degradation, biodiversity loss, and water scarcity, threatening global food security and ecological conservation. Against this backdrop, agricultural biotechnology emerges as a critical solution. By integrating genetic modification, pest control, and innovative breeding techniques, it enhances crop resilience, quality, and yield while reducing reliance on natural resources. The "Advanced Multidisciplinary Agricultural Biotechnology Conference" centers on advancing agricultural biotechnology and sustainable agriculture, gathering leading scholars and experts from academia, industry, and government to explore diverse topics such as insect science, plant pathology, and biological control.</p> <p>This conference stands out for its emphasis on international collaboration, featuring renowned experts from the University of California, Davis, Academia Sinica, and National Taiwan University to share cutting-edge insights and discuss future directions in agricultural biotechnology. Activities such as student poster competitions and industry visits aim to bridge the gap between academic research and practical applications. This event not only strengthens Taiwan's collaboration with international</p>

	<p>agricultural biotechnology research but also cultivates professionals with global perspectives and innovative capabilities, contributing to the achievement of sustainable development goals.</p>
<p>研討(習)會目的</p>	<p>本次「跨領域尖端農業生技研討會」旨在推動農業生技領域的創新研究與技術應用，促進台灣與國際學界、產業的合作交流，為永續農業發展尋決方案。農業生技結合了先進的生物技術與實際需求，通過基因改良、病蟲害防治與創新育種技術，提升作物品質、抗逆性與生產效能，同時減少資源依賴並保護生態環境。此次研討會特邀來自美國加州大學戴維斯分校及國內頂尖學府的學者，分享其研究成果並探討未來發展方向。</p> <p>本研討會不僅提供學術交流與技術分享的平臺，還包括學生壁報競賽與產業參訪活動，旨在縮短學術研究與實務應用的距離。透過整合跨領域資源，研討會期望促進國內外農業生技領域的技術發展，強化台灣在國求解</p> <p>際農業生物科技領域的影響力，培育具有前瞻性和國際視野的專業人才，並推動關鍵農業生物產業的創新與研發，助力實現聯合國 2030 年永續發展目標。</p>
<p>參加對象(含人數)</p>	<p>本次「跨領域尖端農業生技研討會」吸引了來自國內外農業生技領域的學者、研究人員及研究生參與，涵蓋國內外知名機構，如中央研究院、國立臺灣大學、美國加州大學戴維斯分校等。參加者包括教師、產業專家及碩博士研究生，總計約 250 人。</p> <p>實際簽到人數為第一天 244 人，第二天 166 人，顯示了會議的高度參與度與吸引力。</p>
<p>預期效益達成狀況</p>	<p>本次「跨領域尖端農業生技研討會」成功促進學術交流與國際合作，吸引了來自國內外的頂尖學者和專家參與。講者來自美國加州大學戴維斯分校、國內中央研究院及國立臺灣大學等知名機構，他們分享了最新的研究成果，深入探討農業生技領域的前沿技術與發展趨勢，為學術界與產業界的互動建立了堅實的基礎。</p> <p>在技術發展與成果展示方面，研討會涵蓋昆蟲學、植物病害防治及生物防治等多元議題，展示了台灣農業生技的創新成果與研發活力。特別是學生壁報競賽，為年輕學者提供了一個寶貴的平台，不僅展示了他們的研究成果，也促進了學術討論與創新思維的交流。</p> <p>此外，透過產業參訪活動，參與者深入了解國內農業生技產業的現狀與需求，加強了學術研究與實務應用之間的連結。這些活動有效地促進了台灣農業生技產業與國際市場的接軌，也為學術界與產業界的合作開創了新的契機。</p>

最後，研討會在人才培育和永續發展方面也取得了顯著成果。活動內容強化了參與者對永續農業與生態保護的認知，並成功培育出具有國際視野與創新能力的專業人才，為實現聯合國 2030 年永續發展目標作出了積極貢獻。這次盛會的成功舉辦，進一步提升了台灣在農業生技領域的國際影響力與競爭力。

## 二、邀請主講人姓名及學經歷

姓名	學歷	經歷	現任
Bruno Chomel	DVM, Lyon's Veterinary School; MS, Pasteur Institute; PhD, University Claude Bernard-Lyon	Professor, University of California, Davis	Professor Emeritus, Population Health & Reproduction, UC Davis
Diane M Beckles	PhD, University of Cambridge; BSc, University of Sheffield	Professor, Department of Plant Sciences, University of California, Davis	Professor, Postharvest Integrative Biology, UC Davis
Gabrielle A. Nevitt	PhD in Zoology, University of Washington; MS in Biology, Stanford University	Professor, Neurobiology, Physiology and Behavior, UC Davis	Professor, Neurobiology, Physiology and Behavior, UC Davis
John J. Harada	PhD in Biochemistry, University of Washington; BS in Biochemistry, UCLA	Professor, UC DAVIS College of Biological Sciences	Distinguished Professor Emeritus, UC Davis
Russ Hovey	PhD, Massey University, New Zealand; BA in Agricultural Science, University of Queensland	Professor, Department of Animal Science, UC Davis	Professor, Department of Animal Science, UC Davis
Savithamma P Dinesh-Kumar	PhD in Molecular Biology, Iowa State University; BSc/MSc in Genetics,	Chair, Dept. of Plant Biology, UC Davis	Professor and Chair, UC Davis College of Biological Sciences

姓名	學歷	經歷	現任
	University of Agricultural Sciences, Bangalore		
Stefan Rothenburg	PhD (Dr. med.), University of Hamburg, Germany	Professor, Virology & Immunology, UC Davis	Professor, Virology & Immunology, UC Davis
Yen-Wen Kuo	PhD in Plant Pathology, University of California, Davis	Assistant Professor, Department of Plant Pathology, UC Davis	Assistant Professor, Department of Plant Pathology, UC Davis
Ioannis Stergiopoulos	PhD in Plant Sciences, Wageningen University, Netherlands	Associate Professor, Department of Plant Pathology, UC Davis	Associate Professor, Department of Plant Pathology, UC Davis
Kristina Horback	PhD in Experimental Psychology, University of Southern Mississippi	Associate Professor, Department of Animal Science, UC Davis	Associate Professor, Department of Animal Science, UC Davis
葉文斌	博士，國立中興大學昆蟲學系	教授，國立中興大學昆蟲學系	教授兼系主任，國立中興大學昆蟲學系
林慧玲	博士，國立臺灣大學園藝學系所	教授，國立中興大學園藝學系所	教授，國立中興大學園藝學系所
蔡坤憲	博士，國立臺灣大學生物資源暨農學院昆蟲學系	教授，國立臺灣大學公共衛生學系	教授，國立臺灣大學環境與職業健康科學研究所
趙黛瑜	博士，國立臺灣大學流行病學研究所	教授，國立中興大學微生物暨公共衛生學研究所	教授，國立中興大學微生物暨公共衛生學研究所
呂冠儒	博士，國立中興大學生物科技所	助理教授，國立中興大學生物科技所	助理教授，國立中興大學生物科技所
陳禮弘	博士，美國加州大學戴維斯分校植物病理系	助理教授，國立中興大學植物病理學系	助理教授，國立中興大學植物病理學系
洪志銘	博士，美國明尼蘇達大學	副研究員，中央研究院生物多樣性	副研究員，中央研究院生物多樣性研究中心

姓名	學歷	經歷	現任
		研究中心	
王建鎧	博士，英國諾丁漢大學	副教授，國立中興大學動物科學系	副教授，國立中興大學動物科學系

三、議程

August 27, 2024 (Tuesday)			
Time	Programs		
08:30-09:00	Registration(報到)		
09:00-09:20	<b>Opening Ceremony &amp; Group Photo Taking(開幕、合影)</b>	Poster presentation (海報競賽)	
<b>Section: Advanced Plant Science</b>			
09:20-10:10	<b>Keynote I: Dr. John J. Harada</b> Chair: Dr. Shyi-Dong Yeh (葉錫東院士) Title: Dissecting the Cellular Architecture and Genetic Circuitry of the Seed		
10:10-10:30	Break (中場休息)		
10:30-11:20	<b>Keynote II: Dr. Savithramma P. Dinesh-Kumar</b> Chair: Dr. Chang-Hsien Yang (楊長賢院士) Title: Plant Immune Signaling		
11:30-12:00	<b>Section I: Dr. Kuan-Ju Lu (呂冠儒 助理教授)</b> Chair: Dr. Chang-Hsien Yang (楊長賢院士) Title: Exploring the plasmodesmata permeability in the liverwort, <i>Marchantia polymorpha</i>		
12:00-13:10	Lunch(午餐)		
12:30-13:10			
<b>Section: From Physiological Insights to Commercial Success: Advances in Postharvest Technology</b>			Grading criteria (海報評分)
13:10-14:00	<b>Keynote III: Dr. Diane M. Beckles</b> Chair: Dr. Su-may Yu (余淑美院士) Title: The tomato fruit ripening-to-senescence transition and its response to chilling		
14:00-14:30	<b>Section II: Dr. Huey-Ling Lin (林慧玲教授)</b> Chair: Dr. Su-may Yu (余淑美院士) Title: Postharvest Technology of Guava Fruits for Long Term Transportation		
14:30-14:50	Refreshment (下午茶)		
<b>Section: Advanced Agricultural Biotechnology Against Plant Pathology and Pests</b>		Poster presentation (海報競賽)	
14:50-15:40	<b>Keynote IV: Dr. Ioannis Stergiopoulos</b> Chair: Dr. Ching-Hsiu Tsai (蔡慶修特聘教授) Title: Battling fungal plant pathogens through a deeper understanding of their genome architectures and virulence mechanisms		
15:40-16:10	<b>Section III: Dr. Wen-Bin Yeh (葉文斌主任)</b> Chair: Dr. Ching-Hsiu Tsai (蔡慶修特聘教授) Title: Application of DNA microarray based on specific probes of ITS2		

	sequences for the simultaneous identification of agricultural thrips (Thysanoptera: Thripidae)	
16:10-16:20	Break (中場休息)	
16:20-16:50	<b>Invited I: Dr. Yen-Wen Kuo</b> Chair: Dr. Miin-Huey Lee (李敏惠特聘教授) Title: Biological properties and vector competence of <i>Diaphorina citri</i> for <i>Candidatus Liberibacter asiaticus</i> modulated by an insect-specific virus	
16:50-17:20	<b>Section IV: Dr. Li-Hung Chen (陳禮弘助理教授)</b> Chair: Dr. Miin-Huey Lee (李敏惠特聘教授) Title: Spray-induced gene silencing (SIGS) strategy to control plant diseases caused by <i>Alternaria</i> spp. and <i>Colletotrichum</i> spp.	
18:00-	<b>Symposium Banquet</b>	

August 28, 2024 (Wednesday)		
Time	Programs	
<b>Section: Physiology and behaviour across farm and wild animals</b>		
09:00-09:50	<b>Keynote V: Dr. Gabrielle Nevitt</b> Chair: Dr. Chuan-Mu Chen (陳全木副校長) Title: Following the scent of avian olfaction: Investigations into sub-Antarctic Procellariiform Seabirds	Poster presentation (海報競賽)
09:50-10:20	<b>Section V: Dr. Chih-Ming Hung (洪志銘副研究員)</b> Chair: Dr. Chuan-Mu Chen (陳全木副校長) Title: Genomic architecture and gene expression plasticity underlying the adaptation to high elevation in a songbird	
10:20-10:40	Break (中場休息)	
10:40-11:30	<b>Keynote VI: Dr. Russ Hovey</b> Chair: Dr. Pin-Chi Tang (唐品琦主任) Title: Manipulating the mammary glands to modify function	
11:30-12:00	<b>Section VI: Dr. Chien-Kai Wang (王建鎧副教授)</b> Chair: Dr. Pin-Chi Tang (唐品琦主任) Title: Relationship of the health risk and energy balance during the transition period of dairy cows	
12:00-13:30	Lunch(午餐)	Grading criteria (海報評分)
12:30-13:30		
13:30-14:20	<b>Keynote VII: Dr. Kristina Horback</b> Chair: Dr. Pin-Chi Tang (唐品琦主任) Title: Animal Personality: Assessment and Impact to Health and Welfare	Poster presentation (海報競賽)
14:20-14:40	Refreshment (下午茶)	
<b>Section: One Health</b>		

14:40-15:30	<p align="center"><b>Keynote VIII: Dr. Bruno Chomel</b></p> <p align="center">Chair: Dr. Chao-Chin Chang (張照勤副校長)</p> <p align="center">Title: From comparative to shared/integrative medicine and environmental health: a One health approach</p>
15:30-16:00	<p align="center"><b>Section VII: Dr. Kun-Hsien Tsai (蔡坤憲教授)</b></p> <p align="center">Chair: Dr. Wei-Li Hsu (徐維莉所長)</p> <p align="center">Title: Evidence of <i>Anaplasma phagocytophilum</i>, <i>Neoehrlichia mikurensis</i> and a novel <i>Rickettsia</i> sp. in ticks from companion animals and small mammals in Hualien</p>
16:00-16:10	Break (中場休息)
16:10-17:00	<p align="center"><b>Keynote IX: Dr. Stefan Rothenburg</b></p> <p align="center">Chair: Dr. Wei-Li Hsu (徐維莉所長)</p> <p align="center">Title: Evolution and Determinants of Poxvirus Host Range and Virulence</p>
17:00-17:30	<p align="center"><b>Section VIII: Dr. Day-Yu Chao (趙黛瑜教授)</b></p> <p align="center">Chair: Dr. Wei-Li Hsu (徐維莉所長)</p> <p align="center">Title: Breaking the cycles of cross-species transmission of avian influenza virus</p>
17:30-18:00	<b>Closing Ceremony (閉幕式)</b>
18:00-	<b>Speakers' Night (演講者之夜) (Invited Only)</b>

August 29, 2024 (Thursday)	
Time	Programs
09:00-17:00	Study Tour (學習考察) (Invited Only)



#### 四、活動照片和影片

● 8/27 Day 1



研討會會眾合影



國外學者交流



開幕式，中興大學詹富智校長致詞



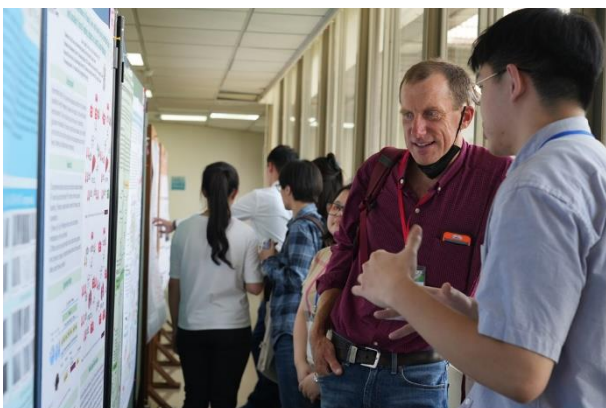
Keynote II: Dr. Savithamma P. Dinesh-Kumar



Section I: 呂冠儒 助理教授



Section II speaker 林慧玲教授



Poster session 海報競賽

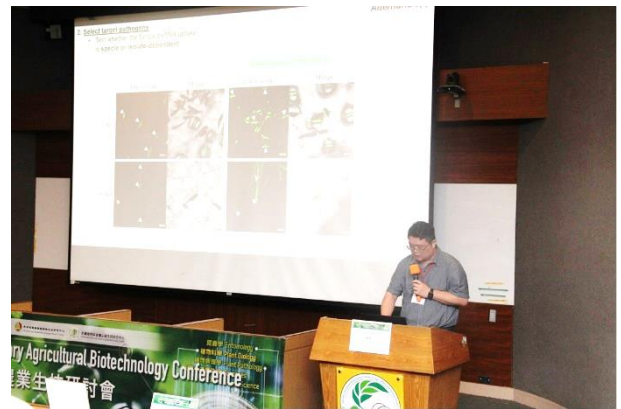


Section III: 葉文斌主任





Invited I: Dr. Yen-Wen Kuo



Section IV: 陳禮弘助理教授

● 8/28 Day 2



Section V: 洪志銘副研究員



Section VI: 王建鎧副教授



Keynote VII: Dr. Kristina Horback



Section VII: 蔡坤憲教授



Section VIII: 趙黛瑜教授



海報競賽頒獎