

出國報告（出國類別：其他）

參加第八屆「慢性疾病之機能性
食品國際研討會」

服務機關：國立屏東科技大學

姓名職稱：許祥純 副教授

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摘要

為發表研究成果及觀摩其他學者的研究成果，於 2011 年 3 月 12 日至 3 月 20 日赴美國參加於拉斯維加斯所舉行之第八屆「慢性疾病之機能性食品國際研討會」，本會議是由美國機能性食品中心(Functional Food Center)所舉辦的國際研討會，每年的會議主題均不相同，第八屆會議主題是與糖尿病、肥胖、心血管疾病、癌症等慢性疾病有關之機能性食品研究，今年總計共發表 103 篇研究論文。本人在此會議以口頭發表方式發表”山胡椒萃取物對人類乳癌細胞株 MCF-7 之毒殺效果(Cytotoxic effects of *Litsea cubeba* extracts on human breast cancer cell line MCF7)”之論文，與會期間除有多位學者給予本人多項研究上的建議，並聆聽多場不同主題之機能性食品演講及觀看其他研究學者之海報論文發表，對於本人研究及教學方面均收穫良多。

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一、 目的

機能性食品國際研討會(International Conference on Functional Foods)是由美國機能性食品中心(Functional Food Center)自 2004 年起固定每年於美國不同城市舉辦所舉辦的一系列國際研討會，會議主軸均與機能性食品於慢性疾病之預防及處理有關，第八屆研討會則以” Functional Foods and Chronic Diseases: Science and Practice.” 為會議主題，每屆研討會均有均有多國從事機能性食品研究之學者參加，以 2009 年會議為例，共有 138 篇論文發表及來自荷蘭、巴西、印度、中國、美國等 20 餘國學者與會，為從事機能性食品研究學者的年度盛會，也是學者們互相交流研究成果的重要場合，會議當中不但可了解目前機能性食品研究方向，更與各國食品科學研究人員交換研究心得，為從事機能性食品研究與發展人士的重要集會。

因受邀於會議中以口頭方式發表論文，並期望能吸收機能性食品科技新知，故參加 2011 年 3 月 15 日至 3 月 17 日於美國內華達州立大學拉斯維加斯分校舉行之第八屆「慢性疾病之機能性食品國際研討會」。

二、參加會議過程

機能性食品國際研討會(International Conference on Functional Foods)是由美國機能性食品中心所舉辦的國際研討會，主要目的是匯集醫學、生物及食品科學的研究人員討論機能性食品對於慢性疾病之預防與處理，每年的會議主題均不相同，每次會議均有多國從事機能性食品研究之學者參加，第八屆會議於 2011 年 3 月 15 日至 3 月 17 日在美國內華達州立大學拉斯維加斯分校(University of Nevada-Las Vegas)舉行，本次會議議程主要分為: (1) Functional Foods for Diabetes; (2) Functional Foods for Obesity; (3) Functional Foods for Cardiovascular Diseases; (4) Functional Foods for Cancer; (5) Functional Foods in Health and Disease 等五大主題 (表一)，總共有來自美國、加拿大、澳洲、紐西蘭、埃及、日本、中國、韓國、菲律賓、新加坡、印度、以色列、墨西哥、巴西、匈牙利、巴基斯坦、沙烏地阿拉伯、瑞典、葡萄牙、法國、希臘、荷屬安第列斯、伊朗、肯亞、奈及利亞等多國學者參加，台灣除本人代表屏東科技大學外，亦有陽明大學、中山醫學大學等校的教授及學生與會，共有 103 篇論文發表，並集結成會議論文集，書名為'Functional Foods and Chronic Diseases: Science and Practice'(ISSN 9781460971499)。

3 月 15 日上午由機能性食品中心創辦人 Dr. Danik Martirosyan 主持開幕儀式，正式為此次會議揭開序幕，接著進行與治療癌症有關機能性食品的論文發表，首先邀請美國 Institute for Molecular Medicine 的所長 Dr. Garth Nicolson 發表'Lipid Replacement Therapy: a Functional Food Approach for Reducing Cancer-Associated Fatigue and the Adverse Effects of Cancer Therapy'之大會主題演講，說明提供膜脂質、抗氧化劑及維生素的混合機能性食品一周，以 Piper 疲勞量表評估可降低 36.8% 化療病患的疲勞現象，若與 NTFactor 合併使用，則對罹癌及未罹癌病患的疲勞現象均有改善效果。接續有埃及學者報告埃及蔬果中的抗癌物質、澳洲學者發表奈米化乳鐵蛋白對癌症的影響，結果發現牛奶乳鐵蛋白在癌症化學治療中可作為有力的天然佐劑及營養強化劑。本人也在此議程中以'Cytotoxic effects of *Litsea cubeba* extracts on human breast cancer cell line MCF7'為題，口頭發表台灣原住民食物-山胡椒對人類乳癌細胞 MCF7 的毒殺效果，研究發現山胡椒果實酒精萃取物對毒殺人類乳癌細胞 MCF7 的 IC_{50} 為 $32.32 \pm 0.86 \mu\text{g/mL}$ ，可使細胞週期停滯進而引發凋亡作用，與會學者對於此種台灣植物均深表興趣，也給予了本人一些研究建議，作為後續研究之參考。

表一、會議主題 (Conference Topics)

<p>Session 1: Functional Foods for Diabetes</p> <ol style="list-style-type: none"> 1. The epidemiology and health economics of diabetes 2. The modern mechanisms and contributing factors of diabetes 3. Diabetes and metabolic syndrome 4. Modern diets for diabetes: prevention and control 5. Functional Foods for the prevention and management of diabetes: <ul style="list-style-type: none"> • Formulating a new functional food products for diabetes; • New functional food products for the prevention of diabetes (experimental ant clinical studies); • Functional foods for the management of diabetes (clinical studies); • Herbs and Non-traditional plants as a source of functional food products for diabetes.
<p>Session 2: Functional Foods for Obesity</p> <ol style="list-style-type: none"> 1. The epidemiology and health economics of obesity 2. The modern mechanisms and contributing factors of obesity 3. Obesity and metabolic syndrome 4. Modern diets for obesity: prevention and control 5. Functional Foods for the prevention and management of obesity: <ul style="list-style-type: none"> • Formulating a new functional food products for obesity; • New functional food products for the prevention of obesity (experimental ant clinical studies); • Functional foods for the management of obesity (clinical studies); • Herbs and Non-traditional plants as a source of functional food products for obesity.
<p>Session 3: Functional Foods for Cardiovascular Diseases (CVD)</p> <ol style="list-style-type: none"> 1. The epidemiology and health economics of CVD 2. The modern mechanisms and contributing factors of CVD (hypertension, heart disease, stroke) 3. CVD and metabolic syndrome 4. Modern diets for CVD: prevention and control 5. Functional Foods for the prevention and management of hypertension, heart disease, stroke: <ul style="list-style-type: none"> • Formulating a new functional food products for CVD; • New functional food products for the prevention of CVD (experimental ant clinical studies); • Functional foods for the management of CVD (clinical studies); <p>Herbs and Non-traditional plants as a source of functional food products for CVD.</p>

表一、會議主題 (Conference Topics) (續)

Session 4: Functional Foods for Cancer
<ol style="list-style-type: none">1. The epidemiology and health economics of cancer2. The modern mechanisms and contributing factors of cancer3. Cancer and metabolic syndrome4. Modern diets for cancer: prevention and control5. Functional Foods for the prevention and management of cancer:<ul style="list-style-type: none">• Formulating a new functional food products for cancer;• New functional food products for the prevention of cancer (experimental ant clinical studies);• Functional foods for the management of cancer (clinical studies);• Herbs and Non-traditional plants as a source of functional food products for cancer.
Session 5: Functional Foods in Health and Disease
<ol style="list-style-type: none">1. Food for health2. Chronic food related diseases3. Food for the management of disease4. Formulating a new functional food products for disease (experimental ant clinical studies)5. Metabolic syndrome and chronic diseases6. Functional Foods for the management of metabolic syndrome.

接續則是進行肥胖患者的機能性食品議題，共有 5 位學者發表研究成果，分別探討紅雲豆(red kidney bean)、雙醯基甘油、體重控制計畫、瘦體素(leptin)及高鈣高維生素 D 牛奶對控制肥胖的影響。

3 月 15 日下午則是與心血管疾病有關的機能性食品之論文發表，由美國、菲律賓及以色列學者分別發表白藜蘆醇(resveratrol)、營養強化即食果汁及肉桂(cinnamon)對心血管疾病的處理效果。

3 月 16 日上午進行第四項議程，分別針對錫蘭肉桂(Ceylon cinnamon)、椰棗種子、埃及草藥、菲律賓水果及印度傳統食用水果，探討這些機能性食品對於糖尿病或白蛋白糖化之影響。奈及利亞學者 Dr. E. L. Adeyeye 則分析田鼠皮膚、肌肉及肝臟脂肪組成，以評估其作為非洲人民動物蛋白來源的應用性，結果發現所有樣品均富含必需脂肪酸及磷脂質，但皮膚及肝臟膽固醇含量卻是每日建議攝取量的 3 倍，是心血管疾病的高危險因子。

3 月 16 日下午則有來自巴西的 Daniela Maria Alves Chaud 教授發表'果汁維生素 C 在不同儲存方式及時間之變化'，結果發現不管避光與否，維生素 C 含量在儲存期間均會降低，但未避光損耗最顯著(下降 61 ~ 92.8%)。而百香果汁及柑橘汁維生素 C 減少最多，有避光的減少 86 ~ 87%，未必光保護的則下降了 92.8 ~ 95.4%，由此可知適宜的儲存條件才能減少維生素 C 的損失。此外荷屬安第列斯的 Dr. Rameshwar Sarma 則介紹海島居民在機能性食品的攝取限制，接續的議程則是具有其他健康訴求的機能性食品研究成果發表，包括辣椒及苦瓜的生理機能探討、諾麗果(*Morinda citrifolia* L.)具有改善骨質疏鬆的生理機能、研發口中崩解錠劑以改善吞嚥困難、過長沙蛇床子 (*Bacopa monnieri*)可抑制硫胱氨酸蛋白酶(caspase)-1, 3 及金屬蛋白酶活性 (MMP3)減少阿茲海默症及癌症發生等議題。

3 月 17 日上午是有關開發機能性食品的的議程，首先由機能性食品中心的創辦人 Dr. Danik Martirosyan 以'Development and commercialization of specific functional food products'為題，介紹研發特殊機能性食品的必需步驟。來自匈牙利 Eszterhazy Karoly College 的 Dr. Attila Kiss 和 Dr. Diana Virag 則分別介紹可幫助益生菌及具高抗氧化力烘焙製品的研發。印度學者發表印度常食用食物的抗氧化力及熱處理對綠色蔬菜抗氧化力及總酚類化合物含量的影響。巴基斯坦學者則發現脫脂玉米胚芽可作為烘焙食品的膳食纖維及蛋白質來源。

同時也進行海報論文的展示，多國研究學者發表其研究成果，與會來賓也熱烈與作者們交換研究心得，大家也充分把握最後半天的時間聆聽演講及經驗交流，在 Dr. Danik Martirosyan 主持閉幕儀式後，結束了第八屆「慢性疾病之機能性食品國際研討會」，大家都帶著許多的新知和美好的回憶，離開拉斯維加斯市，也結束了此次第八屆「慢性疾病之機能性食品國際研討會」參訪之旅，本次會議的詳細議程則如表二所示。

表二、第八屆「慢性疾病之機能性食品國際研討會」議程

8th International Conference

Functional Foods for Chronic Diseases: Science and Practice

March 15-17, 2011, University of Nevada, Las Vegas, USA

Conference Program

	Tuesday, March 15, 2010	
8:00 - 9:00 am	Conference Registration	
9:00 - 9:10 am	Conference Opening	Conference Chairman: Danik M. Martirosyan, PhD, Founder of Functional Food Center, Associate Clinical Professor at Nutrition and Food Science Department, Texas Woman's University, USA
9:10 - 9:20 am	Welcome to the University of Nevada, Las Vegas (UNLV)	Kelsey Finn, Director, Student Union, University of Nevada, Las Vegas, USA
	Session 1: Functional Foods for Cancer	Session Chair: Garth L Nicolson, PhD, Professor
9:20 - 9:55 am	Lipid Replacement Therapy: a Functional Food Approach for Reducing Cancer-Associated Fatigue and the Adverse Effects of Cancer Therapy.	Invited Keynote Speaker: Garth L Nicolson, PhD, Professor, Department of Molecular Pathology, President of Institute for Molecular Medicine, S. Laguna Beach, California , USA
9:55 - 10:20 am	The cancer inhibition actions of phytochemicals from fruits and vegetables grown in Egypt	Ahmed M. Aboul-Enein, Professor. Biochemistry Department, Faculty of Agriculture, Cairo University, Cairo, Egypt
10:20 - 10:30 am	Refreshment	
10:30 - 10:55 am	Ceramic Nanocarriers with Modified Lactoferrin for Cancer and Bio-Distribution through MRI	Jagat R. Kanwar, PhD. Head, Immunology and Molecular Biomedical Research Laboratory, Deakin University, Australia
11:05 - 11:30 am	Cytotoxic effects of Litsea cubeba extracts on human breast cancer cell line MCF7.	Shyang-Chwen Sheu, PhD, National Pingtung University of Science and Technology, Pingtung, Taiwan
	Session 2. Functional Foods for Obesity	Session Chair: Wen-Jun Shen, PhD
11:30 - 12:00 pm	Attenuation of Dyslipidemia in Mice Chronically Fed on a Diet Containing Red Kidney Beans (<i>Phaseolus Vulgaris</i> L.)	Wen-Jun Shen, PhD, Stanford University, California, USA
12:00 - 1:00 pm	Lunch	Wen-Jun Shen, PhD, Stanford University, California, USA
1:00 - 1:30 pm	Diacylglycerol for Obesity-Serotonin Hypothesis	Hidekatsu Yanai, MD, PhD, Department of Internal Medicine, National Center for Global Health and Medicine, Kohnodai Hospital, Chiba, Japan
1:30 - 1:50 pm	Effectiveness of Weight Control Program on the Healthy Promoting School	Hsiu-Mei Huang, PhD student, National Taipei University of Nursing and Health Science, Taipei, Taiwan
1:50 - 2:20 pm	Inverse correlation between leptin sensitivity and susceptibility to high-fat induced obesity in Sprague Dawley rats	Yi Zhang, PhD, Professor, Research Service, Malcom Randall Veterans Affairs Medical Center, Gainesville, Florida

表二、第八屆「慢性疾病之機能性食品國際研討會」議程 (續)

2:20- 2:50 pm	The Effect of High Calcium and Vitamin D Fortified Milk on Anthropometric Indices of Post Menopausal Women	Mario V. Capanzana, PhD, Director, Food and Nutrition Research Institute, Department of Science and Technology, Bicutan, Taguig City, Philippines
2:50 - 3:00 pm	Refreshment	
	Session 3: Functional Foods for Cardiovascular Diseases	Session Chair: Nilanjana Maulik, PhD
3:00 -3:30 pm	Resveratrol: Expanding Roles in Cardiovascular Disorders	Nilanjana Maulik, PhD, Professor, University of Connecticut Medical Center, Director of Health Research, Farmington, Connecticut, USA
3:30 - 3:50 pm	Ready - to – Drink Fortified Juice Resulted in Improved Iron and Zinc Status of Schoolchildren.	Imelda Angeles-Agdeppa, PhD, Food and Nutrition Research Institute, Department of Science and Technology, Bicutan, Taguig City, Philippines.
3:50 - 4:20 pm	Dietary cinnamon supplementation and changes in systolic blood pressure in subjects with type 2 diabetes	Mona Boaz, Naftali Stern, Shimrit Heller, Julio Wainstein.Epidemiology and Research Unit; Diabetes Unit, E. Wolfson Medical Center, Holon, Israel
4:20 - 4:30 pm	Closing	
	Wednesday, March 16, 2011	
	Session 4: Functional Foods for Diabetes	Session Chair: Jennie Wickenberg, PhD, MD
9:00-9:25 am	Ceylon cinnamon does not affect postprandial plasma glucose or insulin in subjects with impaired glucose tolerance	Jennie Wickenberg, MD, PhD, Department of Medicine, Lund University, Malmö University Hospital, Malmö, Sweden
9:25-9:50 am	Hypoglycemic effect of an extract from date seeds on diabetic rats	Ahmed El Fouhil, PhD, MD, College of Medicine, King Saud University, Saudi Arabia
9:50-10:15 am	Natural Herbal Plant Extracts as Antioxidant and Anticancer Agents in Egypt	Hany A. El-Shemy, professor.Biochemistry Department, Faculty of Agriculture, Cairo University, Cairo, Egypt
10:15-10:25 am	Refreshment	
10:25 -10:45 am	Commonly consumed fruits in the Philippines: are they good and safe for diabetics?	Trinidad P. Trinidad, PhD, Food and Nutrition Research Institute, Department of Science and Technology, Taguig City, Philippines
10:45-11:05 am	Inhibitory potential of some traditionally consumed fruits and plant materials against fructose induced glycation of albumin.	Snehal Gite, PhD and Vaishali Agte, PhD, Professor, Agharkar Research Institute, G.G.Agarkar Road, Pune, India
	Session 5: Functional Foods in Health and Disease	Session Chair: Jagat R. Kanwar, PhD.
11:05-11:30am	Lipid Profiles of the Skin, Muscle and Liver of Greater Cane Rat (<i>Thryonomys swingerianus</i>): Dietary Implications	Emmanuel Ilesanmi Adeyeye, PhD, Professor and Olufemi Olaofe, PhD, Professor, Department of Chemistry, University of Ado Ekiti, Ado Ekiti, Nigeria
11:30-11:55 pm	Bacopa monnieri inhibits the activity of Caspase-1 and 3, and the matrix metalloproteinase MMP3	Diana I. Lurie, PhD, Professor, Department of Biomedical and Pharmaceutical Sciences, The University of Montana, Missoula, MT, USA
11:55-1:00 pm	Lunch	
1:00-1:25 am	Analysis of Vitamin C in fruit juices in different periods and types of storage	Daniela Maria Alves Chaud, MD, Professor. Centro de Ciências Biológicas – Universidade Presbiteriana Mackenzie – São Paulo, Brazil

表二、第八屆「慢性疾病之機能性食品國際研討會」議程 (續)

1:25-1:45 am	Functional Food Availability, a Limitation to People's Health in Island	Rameshwar Sarma, PhD, Saint James School of Medicine, Kraladijk Bonaire, Netherlands Antilles
1:50-2:15 am	Medicinal and Nutraceutical Properties of Hot Pepper (<i>Capsicum</i> spp.) and Bitter Melon (<i>Momordica charantia</i> L.).	Mohammad Jalaluddin, PhD, Professor, Department of Agriculture, University of Arkansas at Pine Bluff, AR, USA
2:20-2:30 pm	Refreshment	
2:30-2:50 pm	Body composition and its associated CHD risk factors in apparently middle aged men	Sujatha D, and Venkata Ramana, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, Andhra Pradesh, India
2:50-3:15 pm	Fighting Dysphagia with Orally Disintegrating Tablets.	Jason McConville, PhD, College of Pharmacy, University of Texas at Austin, Austin, TX, USA
3:15- 3:40 pm	Effects of irregular menstruation on transport of folate mediated by plasma membrane transporters in syncytiotrophoblast tissue	Xiaokun Cai, PhD, Department of Pharmaceutics, School of Pharmacy, University of Washington, Seattle, WAashington, USA
3:40-4:05 pm	<i>Morinda citrifolia</i> L. improves the Quality of Life in adults with Osteoarthritis	Mian-Ying Wang, MD, Department of Pathology, University of Illinois College of Medicine at Rockford, Rockford, IL, USA
4:05-4:20 pm	Closing	
	Thursday, March 17, 2011	
	Session 6: Development of Functional Food Products	Session Chairs: Maulik N, PhD, Professor and Martirosyan DM, PhD
9:00-9:30 am	Development and commercialization of specific functional food products	Danik M. Martirosyan, PhD, Founder of Functional Food Center Inc., Asso. Clinical Professor, Texas Woman's University, Denton, TX, USA
9:30-9:50 pm	Development of natural component-based unique functional foodstuffs with enhanced prebiotic effect	Attila Kiss, PhD, Eszterhazy Karoly College, Egerfood Regional Knowledge Center, Hungary
9:50-10:10 pm	Natural antioxidant activity of commonly consumed foods in India and effect of heat treatment of green leafy vegetables	Dande Sreeramulu, PhD. National Institute of Nutrition (ICMR), Hyderabad, India
10:10- 10:20	Refreshment	
10:20-10:40 am	Development of antioxidant rich bakery products by maillard reaction and newly described transformation products	Diana Virag, PhD, Eszterhazy Karoly College, EGERFOOD- Regional Knowledge Center, Hungary
10:40-11:00 am	Characterization of defatted maize germ as a source of dietary fiber and protein to develop functional bakery products	Muhammad Nasir, PhD, University of Veterinary & Animal Science, Lahore, Pakistan
11:00-11:10 am	Refreshment	
11:10am-12:40 pm	Session 7: Posters Presentation Session and Workshop	
12:40-1:00 pm	Conference Closing	Danik Martirosyan, PhD, Chairman

三、心得及建議事項

本人以口頭方式發表論文時，發表完畢有多位與會學者發問並給予本人許多研究上的建議，收穫良多。另這次本人的發表主題是原住民作物—山胡椒，對國外學者是一極為陌生的作物，也使他們對這樣的研究主題深感興趣，因此台灣的原住民作物應是極具潛力的研究主題。

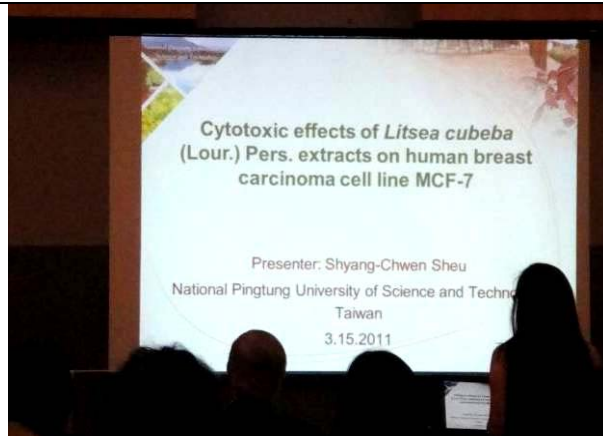
由於現代人日漸重視養生保健的觀念，因此本次大會主題以機能性食品為主，在三天會議期間可聽取世界各國機能性食品研究學者之成果發表，內容包羅萬象，由抗氧化能力、抗腫瘤、免疫功能、改善腸胃道功能、降血脂等保健功能，進行一系列評估，雖是第一次參加此會議，但有深度及多樣性的探討機能性食品與慢性疾病的關係，讓人印象深刻。

台灣也有多校學者參與這次的會議，發表論文，使其他國家的學者也知道台灣的研究實力，與會的博士班學生也可藉由這樣的國際研討會，增廣視野及吸收他人研究經驗，實應鼓勵國內學者多參與國際會議，提升台灣學術的國際地位。

建議事項則如下所列:

1. 政府機關應多鼓勵及補助國內學者參加國際會議，發表論文，以提升我國之國際學術地位，但目前國科會多限於經費無法補助國內學者參與國際會議，其他單位情況相同，只能由各校編列經費補助，期望能在經費足夠的情況下，使更多的國內學者出席國際會議。
2. 由國際會議中論文發表情況，發現各國研究趨勢，作為我國計畫申請時之重點方向參考。
3. 國際會議的舉辦模式，可作為我國機關團體或學術單位主辦國際會議的參考。
4. 建議國內學者參與國際研討會時應多與國外學者交流，尋求國際合作的機會。
5. 鼓勵國內研究生出席國際會議，提升國際競爭力。

四、活動記實



本人口頭報告發表論文(I)



本人口頭報告發表論文(II)



匈牙利學者發表論文



與會人士專心聆聽發表



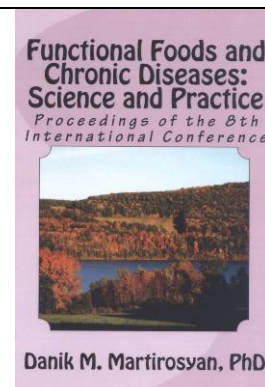
學者發表論文



海報論文發表



會場



會議論文集