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大會歡迎詞

僅代表第三屆環境醫學國際研討會歡迎各位的到來，環境醫學國際研討會已經邁入第三個年頭。本次研討會特別在新竹擴大舉辦，除了新竹是文化、科技和學術中心外，近年來臺大醫院新竹分院因當地的產業結構，致力發展檢驗、環境職業醫學的臨床服務和學術研究，希望為當地居民的健康盡一份心力。同時，國家衛生研究院於去年正式成立國家環境醫學研究所(簡稱環醫所)，做為研究機構及政府之環境醫學智庫，環醫所透過實證醫學發展全面的職業醫學、環境健康、食品安全和毒理研究。透過臺大醫院新竹分院、國家衛生研究院環醫所和臺大醫院環境醫學中心三個重要環境與職業醫學的醫療和研究機構共同參與，推動整合與交流，當可促進桃竹苗以及甚至全國的環境與健康研究和發展！

本研討會秉持知識交流、增加暴露分析、臨床醫療服務和風險溝通以增進大眾的健康為目標，本屆研討會訂定三大主題：檢驗醫學與環境職業健康偵測、高科技產業與健康和新時代的健康議題。

我們邀請了來自美國、日本和韓國的貴賓，感謝您遠道而來與我們分享您寶貴的經驗！以及國內各位專家學者撥冗出席，才能促成此次各方的交流和學習。最後，對各位的參與和支持致上最深的謝意，希望研討會能給您激勵、充實和愉悅的兩天，更重要的是，研討會所討論之科學成果，可以讓全國國民活得更好、更健康。



洪冠予院長

臺大醫院新竹分院院長

臺大醫學院內科教授



郭育良所長

國衛院環醫所所長

臺大醫院環境及職業醫學部及內科部主治醫師

臺大醫學院暨職衛所教授



陳保中教授

臺大醫院環境及職業醫學部主任

臺大公衛學院教授暨職衛所所長

Welcome Message

Welcome to the 2016 International Symposium of Environmental Medicine. On behalf of the symposium organizing committee, we are honored and delighted to welcome you in Hsin-Chu, Taiwan. This year we chose Hsin-Chu as the symposium venue for it is the center of culture, technology and research. Also, National Taiwan University Hospital Hsin-Chu Branch aims to provide superior healthcare by improving environmental and occupational laboratory medicine of clinical services and research recently. Meanwhile, National Institute of Environmental Health Sciences (NIEHS) was established in 2015 for its mission as task-oriented research institution and the Government think tank as a part of National Health Research Institutes (NHRI). NIEHS includes occupational medicine, environmental health sciences, food safety and toxicology research. By the corporation of medical and research institutes as NTU Hospital Hsin-Chu Branch, NIEHS, NHRI and Environmental Medicine Collaboration Center, National Taiwan University Hospital (EMC², NTU Hospital), we'd like to improve healthcare and research in Tao-Yuan, Hsin-Chu and Miao-Li regions also nationwide.

Our aims are to enhance and exchange our knowledge of environmental medicine and improve health eventually by improving exposure science, clinical service and risk communication. There are three sessions for this year's symposium: Environmental and Occupational Laboratory Medicine, High-Tech Healthcare and Current Environmental Health Issues.

The purpose of this symposium is to learn from each other and to pursue future cooperation in this field. We also have our distinguished guests from the United States, Japan and Korea. We deeply appreciate your coming to share with us your unique experience. Finally, we'd like to thank you for your support and your attendance. Wish you find the conference stimulating, fulfilling and enjoyable. We hope the research and innovation results could help people live healthier and better.

Dr. Kuan-Yu Hung

Superintendent, National Taiwan University
Hospital Hsin-Chu Branch
Professor of Nephrology, College of
Medicine, National Taiwan University

Prof. Yue-Leon Guo

Director, National Institute of Environmental
Health Sciences, National Health Research
Institutes
Professor, Department of Public Health and
Institute of Occupational Medicine and
Industrial Hygiene, National Taiwan
University College of Public Health
Attending Physician, Department of
Environmental and Occupational Medicine,
National Taiwan University Hospital

Prof. Pau-Chung Chen

Director, Department of Environmental and
Occupational Medicine, National Taiwan
University Hospital and National Taiwan
University College of Medicine
Professor, Department of Public Health and
Institute of Occupational Medicine and
Industrial Hygiene, National Taiwan
University College of Public Health

第3屆環境醫學國際研討會

2016 International Symposium of Environmental Medicine

2016 年 11 月 19 日 19 November, 2016

新竹芙洛麗飯店 Fleurli Hotel

主題 Session	檢驗醫學與環境職業健康偵測 Environmental and Occupational Laboratory Medicine	高科技產業與健康 High-Tech Healthcare
地點 Venue	3F (I 廳)	3 F (II 廳)
1300-1320	報到 Registration	
	主持人：黃耀輝副院長/臺灣大學公共衛生學院 Moderator: Prof. Yaw-Huei Hwang/Associate Dean, National Taiwan University College of Public Health	主持人：劉佳鈞所長/勞動部勞動及職業安全衛生研究所 Moderator: Dr. Chug-Chun Liu/Chairperson, Institute of Labor, Occupational safety and Health, Ministry of Labor
1320-1400	以特殊標的物確認非法海洛因之使用 Identification of Specific Analytical Markers to Confirm the Administration of Illicit Heroin 陳珮珊副教授/國立臺灣大學法醫學科暨研究所 Assoc. Prof. Pai-Shan Chen/Department and Graduate Institute of Forensic Medicine, National Taiwan University College of Medicine	職安衛與化學品管理趨勢 OSH and Chemical Management Prospective 余榮彬總經理/財團法人安全衛生技術中心 Dr. Jung-Pin Yu/President, Safety and Health Technology Center (SAHTECH)
1400-1440	從事重金屬相關作業工作者健檢之臨床檢驗意義-以勞工健康保護規則為例 Clinical Significance of Medical Examinations among Worker Exposed to Heavy Metal-Examples from Regulations of the Labor Health Protection 朱柏青醫師、蔡瑞元醫師/臺大醫院新竹分院環境及職業醫學部 Dr. Po-Ching Chu & Dr. Jui-Yuan Tsai/Department of Environmental and Occupational Medicine, National Taiwan University Hospital Hsin-Chu Branch	日夜輪班之健康影響：台灣經驗 Health Effects of Day-and-Night Rotating Shift Work : The Taiwan Experience 林育正醫師/恩主公醫院職業醫學科主任 Dr. Yu-Cheng Lin/Director, Department of Occupational Medicine, En Chu Kong Hospital
1440-1510	休息時間 Coffee Break /Poster Presentations & Discussion	
	主持人：謝文祥理事長/社團法人台灣醫事檢驗學會 Moderator: Dr. Wen-Shyang Hsieh/Taiwan Society of Laboratory Medicine	主持人：林瑜雯副教授/輔仁大學公共衛生學系 Moderator: Assoc. Prof. Yu-Wen Lin/Department of Public Health, Fu Jen Catholic University
1510-1550	醫學實驗室建立重金屬檢驗能力經驗分享 Experience Sharing in Capability Building of Heavy Metal Examination in Medical Laboratory 黃雅卿組長/林口長庚紀念醫院檢驗醫學科醫檢組 Ms. Ya-Ching Huang/Supervisor Technologist, Laboratory Medicine, Chang Gung Memorial Hospital, Linkou	奈米科技與健康 Surveillance of Health Hazards in Nanomaterials Workers: Updated Status of Nanoepidemiology 劉紹興研究員/國家衛生研究院國家環境醫學研究所 Dr. Saou-Hsing Liou/National Institute of Environmental Health Sciences, National Health Research Institutes
1550-1630	近五年重金屬檢測結果分析-新竹某區域教學醫院經驗分享 Analysis of the Heavy Metal Examination in Past 5 Years—An Experience of a Regional Teaching Hospital in Hsin-Chu 蕭雅一組長/臺大醫院新竹分院檢驗醫學部 Ms. Ya-I Hsiao/Supervisor technologist, Department of Laboratory Medicine, National Taiwan University Hospital Hsin-Chu Branch	職場社會心理危害：政策議題、研究證據與未來展望 Psychosocial Work Hazards in Taiwan: Policy Issues, Research Findings and Future Directions 鄭雅文教授/國立臺灣大學健康行為與社區科學研究所 Prof. Ya-Wen Cheng/Institute of Health Policy and Management, National Taiwan University College of Public Health

第3屆環境醫學國際研討會

2016 International Symposium of Environmental Medicine

2016 年 11 月 20 日 20 November, 2016

新竹芙洛麗飯店 Fleurlis Hotel

主題 Session	新時代環境新議題 Current Environmental Health Issues		地點 Venue	3 F (II 廳)
0840-0910	報到 Registration			
0910-0930	貴賓致詞 Opening Remarks			
主持人：郭育良所長/國家衛生研究院國家環境醫學研究所 Moderator: Prof. Yue-Liang Leon Guo/Director, National Institute of Environmental Health Sciences, National Health Research Institutes				
0930-1010	Progress and Perspectives of Environmental Health Research in NIER, Korea Dr. Kyunghee Choi/National Institute of Environmental Research, Korea			
1010-1050	Developmental Neurotoxicity: Perspectives and Problems in Risk Assessment Prof. Chiharu Tohyama 遠山千春教授/Faculty of Medicine, University of Tsukuba, Japan			
1050-1110	休息時間 Coffee Break /Poster Presentations & Discussion			
主持人：詹長權副院長/臺灣大學公共衛生學院 Moderator: Prof. Chang-Chuan Chan/Associate Dean, National Taiwan University College of Public Health				
1110-1150	Ah Receptor-Mediated Disruption of the Cardiac Embryogenesis Program Prof. Alvaro Puga/University of Cincinnati College of Medicine, USA			
1150-1230	Gene-Environment Interactions in Developmental Toxicity of Dioxin Prof. Ying Xia/University of Cincinnati College of Medicine, USA			
1230-1330	午餐 Lunch	1245-1310	口頭論文發表(一) Oral Presentations & Discussion (I)	
主持人：何啟功次長/衛生福利部 Moderator: Dr. Chi-Kung Ho/Deputy Minister, Ministry of Health and Welfare				
1330-1410	將職業衛生加入建廠設計:以光電半導體產業為例 Incorporation of Occupational Health in the Process Design: Assessment of Health Risk for Exposures to Hazardous Chemicals in Optoelectronic Semiconductor Industry as an Example 吳焜裕委員/立法委員(國立臺灣大學職業醫學與工業衛生研究所教授) Prof. Kuen-Yuh Wu/Legislator, Legislative Yuan			
1410-1450	臺北市鉛水管事件分享 Lead-Based Water Pipes in Taipei 黃世傑局長/台北市政府衛生局局長(國立台灣大學醫學院名譽教授) Dr. Shier-Chieh Huang/Commissioner, Department of Health, Taipei City Government			
1450-1540	休息時間 Coffee Break	1455-1520	口頭論文發表(二) Oral Presentations & Discussion(II)	
主持人：王英偉署長/衛生福利部國民健康署 Moderator: Dr. Ying-Wei Wang/Director-General, Health Promotion Administration, Ministry of Health and Welfare				
1540-1620	呼吸道疾病之環境因子 The Roles of Environmental Factors on Asthma 郭育良所長/國家衛生研究院國家環境醫學研究所(國立臺灣大學職業醫學與工業衛生研究所教授) Prof. Yue-Liang Leon Guo/Director, National Institute of Environmental Health Sciences, National Health Research Institutes			
1620-1700	環境汙染與婦幼健康 - 台灣目前最迫切需要研究的議題是什麼? Among Environmental Factors Related to Maternal/Child Health, What Are the Most Critical Issues to Be Tackled in Taiwan? 郭保麟教授/國立成功大學醫學院婦產學科(國立成功大學醫學院附設醫院婦產部醫師) Prof. Pao-Lin Kuo/National Cheng Kung University College of Medicine			
1700-1710	海報/口頭論文頒獎 Poster/Oral Awards			

口頭報告 Oral Presentation Session

2016 年 11 月 20 日 20 November, 2016

口頭論文發表(一) Oral Presentations & Discussion (I) 1245-1310

主持人：張大元教授/中國醫藥大學公共衛生學院職業安全與衛生學系

Chair: Prof. Ta-Yuan Chang/Professor and Chairperson
China Medical University, College of Public Health,
Department of Occupational Safety and Health

主持人：黃柏菁助研究員/國家衛生研究院國家環境醫學研究所

Chair: Dr. Po-Chin Huang /Assistant Investigator, NIEHS,
NHRI

時間 Time	姓名 Name	單位/職稱 Organization/ Position	主題 Topics	題目 Title
1245-1250	莊校奇 Hsiao-Chi Chuang	台北醫學大學呼吸治療學系/ 助理教授 School of Respiratory Therapy, Taipei Medical University College of Medicine/Assistant Professor	癌症與環境 Cancer and the Environment	Tumor protein p63 expression induced by zinc oxide nanoparticles in mice
1250-1255	郭錦輯 Chin-Chi Kuo	中國醫學大學附設醫院/醫師 Kidney Institute, China Medical University Hospital/Attending Physician	化學、金屬物 質與健康 Chemicals, Metals and Health	The association of early life arsenic exposure trajectory and lipid profile in adolescence: A 15-year longitudinal birth cohort study in Taiwan 嬰幼期至青少年間之無機砷暴露軌 跡與血中脂肪濃度之相關性研究
1255-1300	彭高治 Kao-Chih Peng	台灣大學職業醫學與工業衛生 研究所/研究生 Nation Taiwan University College of Public Health/ Graduate Student	健康促進 Health Promotion	Associations between Body Composition and Pulmonary Function Are Age-Dependent in Middle-Aged and Elderly Subjects
1300-1305	翁子軒 Tzu-Hsuan Wong	高雄醫學大學/博士班學生 Graduate Institute of Medicine, Kaohsiung Medical University/ Ph.D. Student	空氣汙染與健 康 Air Pollution and Health	Indeno(1,2,3-cd)pyrene, one of Polycyclic aromatic hydrocarbons in air pollutant, enhances allergic lung inflammation 空氣汙染分子 Indeno(1,2,3-cd)pyrene 的吸入將增 強過敏性肺部發炎
1305-1310	黃柏菁 Po-Chin Huang	國家環境醫學研究所, 國家衛 生研究院/助研究員 National Institute of Environmental Health Sciences, National Health Research Institutes/ Assistant Investigator	兒童環境健康 Children's Environment and Health	Does Risk of Subclinical Hepatic Injury Increased with Urinary Thiodiglycolic Acid level in Children nearby a Petrochemical Complex? 石化區附近兒童尿液中硫代二乙酸 是否增加亞臨床肝臟損傷之風險?

口頭論文發表(二) Oral Presentations & Discussion (ii) 1455-1520

主持人：吳明蒼教授/高雄醫學大學公共衛生學系
Chair: Prof. Ming-Tsang Wu/Professor, Department of Public Health, Kaohsiung Medical University

主持人：王淑麗研究員/國家衛生研究院國家環境醫學研究所
Chair: Dr. Shu-Li Wnag / Investigator, NIEHS, NHRI

時間 Time	姓名 Name	單位/職稱 Organization/ Position	主題 Topics	題目 Title
1455-1500	龔晏平 Yen-Ping Kung	台大醫院環境及職業醫學科/ 醫師 Department of Environmental and Occupational Medicine, National Taiwan University Hospital/Physician	工作環境與健康 Work Environment and Health	A Distribution of Asbestos-Related Disease in Labors in Taiwan 台灣地區勞工罹患石棉暴露相關疾病之探討
1500-1505	王麗婷 Li-Ting Wang	高雄醫學大學醫學研究所/博士後研究員 Graduate Institute of Medicine, Kaohsiung Medical University/ Postdoctoral Fellow	癌症與環境 Cancer and the Environment	Aryl hydrocarbon receptor regulates histone deacetylase 8 expression to repress tumor suppressive activity in hepatocellular carcinoma 芳烴受體調節組蛋白脫乙酰酶 8 表現去抑制抑癌基因的活性並促進肝腫瘤形成
1505-1510	林嘉俊 Kar-Chun Lim	台大醫學系/ 學生 Department of Medicine, College of Medicine, National Taiwan University/Student	工作環境與健康 Work Environment and Health	Flight Safety in Patients with Lung Diseases
1510-1515	黃淑玲 Sheila SL Huang	高雄醫學大學環境醫學研究中心/助理教授 Research Center of Environmental Medicine, Kaohsiung Medical University /Assistant Professor	倫理 Ethics	解構環境汙染之社會性：以『環境正義』析論之
1515-1520	王淑麗 Shu-Li Wnag	國家衛生研究院國家環境醫學研究所/研究員 National Institute of Environmental Health Sciences, National Health Research Institutes/Investigator	兒童環境健康 Children's Environment and Health	Phthalate exposure and Attention Deficit Hyperactivity Disorder traits in children's temperament: A 12-year follow-up study of a Taiwanese birth cohort 塑化劑暴露和兒童氣質中的過動與注意力缺乏特徵之相關性探討：出生世代之 12 年追蹤研究

高科技產業與健康 High-Tech Healthcare

司儀 M.C.

龔晏平醫師/臺大醫院環境及職業醫學部 Dr. Yen-Ping Kung/Department of Environmental and Occupational Medicine, NTU Hospital

主持人 Moderator

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劉佳鈞博士

勞動部勞動及職業安全衛生研究所所長

Dr. Chug-Chun Liu (Taiwan)

Chairperson, Institute of Labor, Occupational safety and Health, Ministry of Labor

學歷 Education and Degrees

- 國立臺灣大學環境工程學研究所博士
Ph. D., Graduate Institute of Environmental Engineering, National Taiwan University
- 國立臺灣科技大學化學工程技術研究所碩士
Master, Department of Chemical Engineering , National Taiwan University of Science and Technology
- 國立臺灣科技大學化學工程技術系學士
Bachelor, Department of Chemical Engineering, National Taiwan University of Science and Technology

專業經歷 Professional Appointments

- 勞動部勞動力發展署署長
Director General, Workforce Development Agency, Ministry of Labor
- 臺北市政府客家事務委員會主任委員
Chairperson, Hakka Affairs Commission, Taipei City Government
- 臺北市政府產業發展局商業處處長
Director, Office of Commerce, Department of Economic Development ,Taipei City Government
- 行政院環境保護署綜合計畫處副處長
Deputy Director, Department of Comprehensive Planning, Environmental Protection Administration, Executive Yuan
- 新竹市環境保護局局長
Director General, Bureau of Environmental Protection, Hsinchu City



余榮彬博士(臺灣)

財團法人安全衛生技術中心總經理

E-mail:paishanchen@ntu.edu.tw

余博士在風險管理、暴露評估、危害辨識、緊急應變、污染控制及品質管理擁有超過28年的經驗，他領導了一個由7個實驗室組成的合作團隊，為政府開發工作場所空氣中有毒物質監測方法。同時幫助政府建立了國家工業衛生實驗室認證計劃。他在1992年成立了台灣第一家由美國工業衛生協會認證的實驗室，並協助推出國家危害通識計畫，使台灣能夠啟動現代工作場所空氣暴露評估和控制規劃。

他幫助CESH / ITRI獲得ISO 9001、ISO 14001和OHSAS 18001的證書，余博士也是台灣開發光學遙感技術的先驅。他擔任台灣半導體產業協會(TSIA)環安委員會第一任主席，自2007年起，他同時擔任國家職業安全衛生獎的委員會成員和現場評估組組長。余博士還領導一個主要由地方政府和500名職業安全健康 (OSH) 專業人員組成的團隊，為少於100名員工的單位提供現場諮詢服務，透過他的領導，SAHTECH幫助台灣職安署(OSHA)和環保署(EPA)制定國家化學品管理計劃，實施國家職業安全健康管理計劃和機械/安裝/防爆電氣等設備安全認證計劃。 SAHTECH還與電子、半導體、顯示器和化學產業密切合作，發展環境安全健康相關的操作規範。

學歷

1983-1987 美國愛荷華大學分析化學博士

1977-1981 臺灣大學化學系學士

專業經歷

2006-2007 工研院能環所總計畫主持人

2000-2005 工研院環安中心副主任

1988- 1999 工研院工安衛中心正研究員/組長/中心副主任

1987-1988 美國Smith Kline & French Laboratories (King of Prussia, PA, USA)博士後研究員

專長

- 風險管理、暴露評估、危害辨識、緊急應變、污染控制及品質管理

特殊成就

- 協助勞動部規劃推動工作場所國家化學品管理制度
- 協助勞動部規劃推動小企業安全衛生及工作環境改善計畫
- 協助勞委會推動作業環境監測制度與工業衛生實驗室認證制度
- 主導工研院環安中心通過安全衛生環保與品質管理系統整合驗證(ISO 9001、ISO 14001、OHSAS 18001)
- 協助台灣半導體產業協會(TSIA)環安委員會和世界半導體協會(WSC)達成全氟化物(PFC)溫室效應氣體減量目標協議
- 2010年榮獲世界安全組織的傑出職業獎(WSO Concerned Professional Award)
- 2005年經濟部科專優良計畫協同主持人



Dr. Jung-Pin Yu (Taiwan)

President of Safety and Health Technology Center (SAHTECH)

E-mail: jpyu@sahtech.org

Dr. Yu has more than 28 years of experience in risk management, exposure monitoring, emergency response, pollution control and quality management. Dr. Yu led a collaboration team, consisting of 7 laboratories, to develop workplace airborne-hazardous-substances monitoring methods for government. He helps government establish a national industrial hygiene laboratory accreditation program. Dr. Yu established Taiwan's first accredited laboratory of American Industrial Hygiene Association in 1992. He also helps to launch the National Hazard Communication Program. Those activities have enabled Taiwan to launch a modern workplace airborne exposure assessment and control scheme since 1992.

Dr. Yu helped CESH/ITRI receive certificates of ISO 9001, ISO 14001, and OHSAS 18001. Dr. Yu is a pioneer in developing optical-remote-sensing technologies for process control, exhaust control and fence line emission monitoring in Taiwan. He served as the first Chair of green-house PFC emission control task force for Taiwan Semiconductor Industrial Association. Dr. Yu also is the committee member and the on-site assessment group leader of National OSH Award since 2007.

Dr. Yu also leads a collaboration team, consisting of most of local county governments and 500 occupational safety and health (OSH) voluntary professionals, to deliver on-site consultation services to business with workers less than 100. Through Dr. Yu's leadership, SAHTECH has helped Taiwan OSHA and EPA establish national chemical management scheme, and implement national OSH management program and safety certification program for machinery/installation/explosion-proof electrical equipment. SAHTECH also works closely with electronic, semiconductor, display and chemical industries to develop ESH related codes and practices.

Education and Degrees

1983-1987 Ph.D., University of Iowa (major in Analytical Chemistry)

1977-1981 BS, National Taiwan University (Chemistry)

Professional Appointments

2006-2007	Project Leader General, Energy and Environmental Laboratory of Industrial Technology Research Institute (ITRI)
2000-2005	Deputy General Director of Environmental, Safety and Health Technology Center (CESH), ITRI
2000-2006	Core Member of ITRI Quality Management Team
1988- 1999	Researcher, Senior Researcher, manager of AIHA accredited Lab, Director of Industrial Hygiene Division, Deputy General Director of Industrial Safety and Health Technology Center, ITRI
1987-1988	Post Doctor Researcher, SKF Pharmaceuticals, King of Prussia, PA, USA

職安衛與化學品管理趨勢

余榮彬博士(臺灣)

E-mail: jpyu@sahtech.org

財團法人安全衛生技術中心 總經理

綜整近九年優質職業安全衛生企業的管理特質發現，包含有感領導與安衛融入企業經營文化中、個人及部門之安衛績效與年度考核相連結、企業自己的安衛績效良好、關懷協助員工工作生活的平衡與安全、照護協助承攬商與供應商的安全衛生、關懷協助周遭鄰近廠商的安全衛生、樂於與同業分享安全衛生經驗並熱心其他安衛公益。

此外，結合資通訊及分析統計技術，職場對勞工依能力、性別、年齡、文化差異、健康特性等提供多元管理工具與服務，可更加保護勞工的安全、健康與幸福，將能促使勞工能夠且樂意在職場上貢獻得更長，也將有益於漸趨高齡的勞動力社會。其中的基礎建設，包含使既有與新化學品的危害資訊透明並加以分級管制，除可增進勞工與人民健康及環境安全外，亦可協助相關產業增進消費大眾信心，我國與國際先進國家如歐盟、美、日、韓等均努力調整及更新相關法規與執行實務。

OSH and Chemical Management Prospective

Dr. Jung-Pin Yu (Taiwan)

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President of Safety and Health Technology Center (SAHTECH)

Common features of national occupational safety and health (OSH) award's enterprises in recent 9 years include felt leadership and OSH embedded in business culture, OSH performance of individual and department linked with annual appraisal, outstanding enterprise OSH performance, care to employee work life fit, outreaching OSH to contractors, suppliers, sharing with neighboring companies, and provision of OSH expertise for commonweal activities.

By incorporating information technology and statistics, diversified tools and services guarantee better workplace protection for laborers in terms of their ability, gender, age and culture differences. These create a safer, healthier and happier workplace, as well as incentives that laborers are willing to stay employed and make contribution, especially for a society facing aging in labor force. Moreover adequate infrastructures such as new/existing chemicals transparency and the control banding system, not only facilitate environmental and human health protection, but builds public trust. Therefore advanced countries such as EU, USA, Japan, South Korea and Taiwan are all working diligently to make and implement sound chemical regulatory decisions that protect the health and environment.



林育正 醫師 (臺灣)

恩主公醫院職業醫學科主任

輔仁大學醫學系助理教授

E-mail: gphinx@gmail.com

林育正醫師目前是恩主公醫院職業學科主任。他於高雄醫學大學取得醫學士學位，並獲得臺灣大學職業醫學與工業衛生研究所博士學位。林醫師為家庭醫學及職業醫學專科醫師，專長於一般醫學、流行病學及職業健康管理；目前受聘於各領域事業單位，擔任資深臨廠服務醫師，同時也參與了許多輪班工作者健康的研究。

研究領域

- 職業健康管理規劃及實務。
 - 輪班的各項健康效應，包含代謝症候群、肝臟健康、工作相關疲勞等。
-

學歷

2008-2011 臺大職業醫學與工業衛生研究所博士

1994-1999 高雄醫學大學·醫學士

專業經歷

2011- 恩主公醫院職業學科·主任

論文發表 (近五年內)

1. Utilizing the metabolic syndrome component count in workers' health surveillance: An example of day-time vs. day-night rotating shift workers. Lin YC, Hsieh IC, Chen PC. **Int J Occup Med Environ Health**. 2015;28(4):675-88.
2. Long-term day-and-night rotating shift work poses a barrier to the normalization of alanine transaminase. Lin YC, Hsieh IC, Chen PC. **Chronobiol Int**. 2014 May;31(4):487-95.
3. Risk for work-related fatigue among the employees on semiconductor manufacturing lines. Lin YC, Chen YC, Hsieh HI, Chen PC. **Asia Pac J Public Health**. 2015 Mar;27(2):NP1805-18.
4. Persistent rotating shift work exposure is a tough second hit contributing to abnormal liver function among on-site workers having sonographic fatty liver. Lin YC, Chen PC. **Asia Pac J Public Health**. 2015 Mar;27(2):NP1765-74.
5. Synergistic effect of gamma glutamyltransferase and obesity on metabolic syndrome, independent of hepatic steatosis. Hwang AC, Lin YC, Liu PT, Kao YM, Chen JD. **Ann Epidemiol**. 2012 Dec;22(12):876-80.

**Dr. Yu-Cheng Lin (Taiwan)**

Director, Department of Occupational Medicine, En Chu Kong Hospital

Assistant Professor, School of Medicine at Fu Jen Catholic University

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Dr. Yu-Cheng Lin is Director of Department of Occupational Medicine, En Chu Kong Hospital. He obtained his MD at Kaohsiung Medical University and PhD at the National Taiwan University in Taiwan. He is an expert in the occupational medicine, especially in occupational health services; also, he is an experienced family physician. His research foci cover shift work and occupational health management.

Research Interests

- Occupational health management, including the design and practice of occupational health services.
 - Health effects of shift work, including metabolic syndrome, liver function and work-related fatigue.
-

Education and Degrees

2008-2011 PhD, National Taiwan University

1994-1999 MD, Kaohsiung Medical University

Professional Appointments

2011- Director, Department of Occupational Medicine, En Chu Kong Hospital

Publications (Within 5 yrs)

1. Utilizing the metabolic syndrome component count in workers' health surveillance: An example of day-time vs. day-night rotating shift workers. Lin YC, Hsieh IC, Chen PC. **Int J Occup Med Environ Health**. 2015;28(4):675-88.
2. Long-term day-and-night rotating shift work poses a barrier to the normalization of alanine transaminase. Lin YC, Hsieh IC, Chen PC. **Chronobiol Int**. 2014 May;31(4):487-95.
3. Risk for work-related fatigue among the employees on semiconductor manufacturing lines. Lin YC, Chen YC, Hsieh HI, Chen PC. **Asia Pac J Public Health**. 2015 Mar;27(2):NP1805-18.
4. Persistent rotating shift work exposure is a tough second hit contributing to abnormal liver function among on-site workers having sonographic fatty liver. Lin YC, Chen PC. **Asia Pac J Public Health**. 2015 Mar;27(2):NP1765-74.
5. Synergistic effect of gamma glutamyltransferase and obesity on metabolic syndrome, independent of hepatic steatosis. Hwang AC, Lin YC, Liu PT, Kao YM, Chen JD. **Ann Epidemiol**. 2012 Dec;22(12):876-80.

日夜輪班之健康影響：台灣經驗

林育正醫師 (臺灣)

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恩主公院職業醫學科主任

日夜輪班在台灣各行業是常見且必要的工作形態。日夜輪班的效應不但影響勞工個人健康，更相關於廣大及長遠的勞動品質，邇來漸受台灣學界與業界關注。

在橫斷研究的觀察中，我們發現輪值夜班工作者，在工作相關的疲勞感受上，為日班工作者的兩倍。此外，在一個製造業職場研究世代研究中，我們發現持續日夜輪班的女性工作者，代謝症候群發生機率高於常日班工作者，達三．五倍。而肝功能異常之男性工作者，代謝症候群發生機率明顯高於常日班工作者，達二．七倍。再者，我們發現持續日夜輪班的工作者肝功能異常數據不易回歸正常，在長期觀察中，與常日班工作者相較，異常肝臟功能血液檢測數值復正機率，明顯下降了將近五成。

本土現有流行病學數據顯示，日夜輪班確實為影響台灣勞工的身心健康重要的職業暴露因子，其預防及改善有其必要與迫切性。

Health Effects of Day-and-Night Rotating Shift Work : The Taiwan Experience

Assi. Prof. Yu-Cheng Lin (Taiwan)

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Director, Department of Occupational Medicine, En Chu Kong Hospital

Shift work is a worldwide health hazard among industrialized societies. Studies are needed for modern workplaces in Taiwan to figure out the associations between day-and-night rotating shift work (RSW) and health among workers.

The present study examined a cohort of workers from an electronics manufacturing company. Cross-sectional and longitudinal workplace surveys on shift work affecting the health conditions (including work related-fatigue, metabolic syndrome (MetS) and liver function) of workers were conducted by utilizing registration records, job contents and general health evaluation data. The health checkups included personal and need for recovery scale (NFR) questionnaires, physical examinations, abdominal ultrasound, blood tests. Data analyzed also included lifestyle factors, job type, occupational exposures and educational levels.

Firstly, after adjusted for potential confounders, shiftworkers had a 2.0-fold (95% confidence interval (CI) = 1.5 - 2.6) increased risk for high need for recovery after work (h-NFR), which represented the work-related fatigue. Secondly, significantly raised risks of developing MetS were found in the female workers with persistent RSW exposure (odds ratio (OR), 3.5; 95% CI =1.3 – 9.0) vs. day workers). Thirdly, persistent RSW plus elevated alanine aminotransferase (e-ALT) increased a significant risk for MetS development (OR, 2.7; 95% CI = 1.4 – 5.3, vs. workers without baseline e-ALT nor RSW exposures) among male workers. Fourthly, in terms of liver health, analysis indicated that the workers exposed to RSW were 46% less likely (OR, 0.54; 95% CI = 0.3 – 0.95) to attain normal ALT levels comparing with the persistent daytime co-workers.

Day-and-night rotating shift works impact mental and physical health of Taiwanese employees. Shift works is apparently associated with work related-fatigue. Persistent day-and-night rotating shift contribute to the occurrence of MetS; and pose a vigorous obstacle to the normalization of e-ALT among the workers with preexisting abnormal liver function.



林瑜雯博士

輔仁大學公共衛生學系副教授兼系主任

台灣職業衛生學會理事長

Dr. Yu-Wen Lin (Taiwan)

Associate Professor and Department Head, Department of Public Health, College of Medicine, Fu Jen Catholic University

President of Taiwan Occupational Hygiene Association (TOHA)

學歷 Education and Degrees

- 美國加州大學洛杉磯校區博士, Ph.D. Department of Environmental Health, School of Public Health, University of California, Los Angeles (UCLA), U.S.A.
- 美國加州大學洛杉磯校區碩士, MS. Department of Environmental Health, School of Public Health, University of California, Los Angeles (UCLA), U.S.A.
- 台灣東海大學理學士, BSc. Department of Environmental Sciences, Tunghai University, Taiwan

專業經歷 Professional Appointments

- 亞洲職業衛生聯盟理事 Board of Asian Occupational Hygiene Network (ANOH)
- 輔仁醫學期刊編輯委員 Editorial Board of Fu Jen Journal of Medicine (FJJM)
- 輔仁大學公共衛生學系助理教授 Assistant Professor, Department of Public Health, Fu Jen Catholic University
- 台灣職業衛生學會秘書長 Secretary General of Taiwan Occupational Hygiene Association (TOHA)
- 經濟部標準檢驗局日常用品國家標準技術委員會委員 Member of National Standard Technical Committee, Bureau of Standard, Metrology & Inspection, MOEA
- 桃園縣第二屆環境教育審議會委員 Committee of Environmental Education Council, Taoyuan County
- 桃園縣第二屆環境教育基金管理會委員 Member of Environmental Education Foundation Management Committee, Taoyuan County

專長 Major Research Area

- 皮膚防護 Skin Protection
- 暴露評估 Exposure Assessment
- 空氣採樣分析 Air Sampling and Analysis
- 化學性防護衣 Chemical Protective Clothing
- 職業衛生教育 Occupational Hygiene Education

**劉紹興研究員 (臺灣)**

國家衛生研究院國家環境醫學研究所

E-mail: shliou@nhri.org.tw

劉紹興目前是國家衛生研究院國家環境醫學研究所研究員，他畢業於國防醫學院醫學系，並得到哈佛大學公共衛生學院職業醫學碩士及約翰霍普金斯大學職業醫學哲學博士，他是職業醫學專科醫師，也兼任國防醫學院三軍總醫院職業醫學科主治醫師。

研究領域

1. 職業性肺病: 粉塵顆粒引發之疾病，如礦工塵肺症、石棉塵肺症、棉塵症或細微粒或奈米顆粒引發之疾病。
 2. 重金屬中毒: 鉛中毒、汞中毒、氧化銻錫中毒。
 3. 致癌物暴露之生物監測: Urine Ames test, cytogenetic effects, e.g. sister chromatid exchange, chromosome aberrations, micronuclei;
 4. 全國性職業病統計與監測: 職業世代之建立與職業性癌症或職業疾病追蹤。
 5. 職業性癌症: 各行職業之癌症風險。
-

學歷

1984-1988	約翰霍普金斯大學哲學博士
1983-1984	哈佛大學公共衛生學院職業醫學碩士
1973-1980	國防醫學院醫學士

專業經歷

2008-2015	國家衛生研究院環境衛生與職業醫學研究組組主任
1997-2003	國防醫學院公共衛生學系 教授兼系主任
1993-1999	中華民國職業病醫學會理事長
1993-2012	勞工安全衛生研究所顧問
1991-2016	三軍總醫院職業醫學科主治醫師

論文發表

超過150篇期刊論文發表。

**Saou-Hsing Liou, M.D., MOH., Ph.D. (Taiwan)**

Investigator, National Institute of Environmental Health Sciences, National Health Research Institutes

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Dr. Saou-Hsing Liou is an investigator at National Institute of Environmental Health Sciences, National Health Research Institutes. He got his MD from National Defense Medical Center in Taiwan. He obtained Master of Occupational Health from Harvard School of Public Health and PhD from Johns Hopkins University, USA. He is a board-certified Occupational Medicine Physician. He is also joint-appointed at Department of Occupational Medicine, Tri-Service General Hospital, National Defense Medical Center.

Research Interests

1. Occupational Lung Diseases: Dust-induced diseases, e.g. pneumoconiosis, asbestosis, byssinosis, and fine particles or nanoparticles-related diseases;
 2. Heavy Metal Intoxications: Lead poisoning, mercury poisoning, and indium-tin oxide poisoning;
 3. Biological Monitoring on the Effects of Carcinogen Exposure: Urine Ames test, cytogenetic effects, e.g. sister chromatid exchange, chromosome aberrations, micronuclei;
 4. National Statistics in Occupational illnesses: Occupational cohort study of cancer risk or occupation-related Diseases in Taiwan;
 5. Occupational Cancer: occupation-related cancer in varied industries;
-

Education and Degrees

1984-1988	PhD, Johns Hopkins University
1983-1984	MOH, Harvard School of Public Health
1973-1980	MD, National Defense Medical Center

Professional Appointments

2008-2015	Director, Division of Environmental Health and Occupational Medicine, National Health Research Institutes
1997-2003	Chairman, Department and Institute of Public Health, NDMC.
1993-1999	President, Association of Occupational Medicine in R.O.C.
1993-2012	Consultant, Institute of Occupational Safety and Health, Council of Labor Affairs, The Executive Yuan, R.O.C.

Publications

More than 150 papers in peer reviewed journals.

奈米科技與健康

劉紹興博士 (臺灣)

E-mail: shliou@nhri.org.tw

國家衛生研究院國家環境醫學研究所研究員

「奈米科技」被公認為現今這一個世紀最重要的產業之一，「奈米科技」領域涵蓋甚廣，從基礎科學橫跨至應用科學，包括物理、化學、材料、光電、生物及醫藥等。從民生消費性產業到尖端的高科技領域，都能找到與奈米科技相關的應用。雖然「奈米科技」具有許多優點，但是伴隨而來亦有其潛在之風險。雖然奈米物質對人體的健康影響仍未知，越來越多的研究提出暴露奈米物質將會對生物系統產生健康危害，但當前並沒有任何標準指引可以有效監測不同製程所產生不同奈米物質的暴露量，因此建議在當前應控制各勞工的暴露環境於職業暴露限制內。

奈米物質之暴露途徑包括吸入、皮膚接觸、攝入和注射。許多奈米微粒包括奈米碳管、金屬氧化物如二氧化鈦(TiO₂)、二氧化矽(silicon dioxide)、奈米金和奈米銀等材料經動物實驗證實會誘發發炎效應與產生氧化壓力。然而慢性發炎與氧化壓力已被證實與許多的疾病有關，包括癌症。在一般人群中，流行病學研究顯示微粒空氣污染和增加呼吸道和心血管疾病的發病率和死亡率有關。目前，國際上與健康相關之奈米物質研究，大多集中在細胞實驗以及動物實驗，但是奈米物質的使用劑量在細胞實驗與動物實驗上往往會遠超過人類所接觸之實際劑量，因此在結果之推論上也就需要格外的注意。有關人類流行病學之資料相當缺乏，因而回顧目前世界各國工程奈米作業人員健康危害的流行病學研究之狀況。

我們利用 nanomaterials, engineered nanoparticles, epidemiologic study 搜索 PubMed 及 Google 發表的文獻，或研討會的論文集，或網站訊息。研討會包括奈米職業環境衛生 (NanOEHS)研討會，職業流行病學研討會(EPICOH)，以及美國毒物學會年會(SOT)。

我們總共收集 12 篇已發表的文獻，1 篇博士論文及 3 篇研討會摘要，另外在網站找到美國、法國、澳洲正在進行流行病學研究，但尚未有結果發表。以國家區分，台灣已經發表 5 篇全文論文，捷克已經發表 3 篇全文論文，韓國已發表 2 篇全文論文。中國大陸及蘇俄則各有 1 篇全文論文。另外美國華盛頓大學的一篇博士論文發表其在中國山西碳酸鈣奈米工廠的研究結果。

至於研究設計則多為橫斷面研究(11 篇)，僅有台灣、中國大陸和捷克等國發表縱斷面追蹤研究(4 篇)。有兩篇為描述型研究，描述奈米物質環境監測及生物監測的狀況。探討的奈米物質則以奈米碳管最多，包括蘇俄、韓國、及荷蘭等三國。韓國除了奈米碳管外尚探討奈米銀，中國大陸則探討二氧化鈦及碳酸鈣奈米，台灣則探討多種混合暴露的奈米物質。

至於探討的健康效應指標包括肺、心血管、發炎反應、氧化性傷害(包括基因、脂肪和蛋白質氧化性傷害)、過敏性疾病、及免疫效應指標。其中較特別的是台灣另測量基因傷害指標及神經行為測試。蘇俄利用血液及痰液 TGF- β 1 (transforming growth factor beta-1), KL-6 (Krebs Von den Lungen 6) and osteopontin 濃度當作肺部纖維化指標，而美國利用 KL-6 及 MMP (Matrix metalloproteinases)當作肺部纖維化指標，此外，美國還測量白血球型態(leukocyte profiling)。荷蘭除了測量免疫細胞激素外，尚且測量甲基化程度，以及一些 omics 指標。大部份的測量介質為血液、尿液、及呼氣濃縮物。另有一個研究有測量痰中發炎細胞激素。除了健康效應指標外，台灣利用問卷調查工作相關症狀和過敏疾病包括氣喘、過敏性鼻炎、過敏性皮膚炎。

暴露評估，蘇俄、韓國、及荷蘭等三國奈米碳管的三個研究均有個人及區域採樣及元素碳的測量分析。台灣之研究則無空氣採樣，而利用 control banding 及問卷調查區別暴露程度(risk level)。奈米銀、二氧化鈦及碳酸鈣奈米評估則僅有區域採樣。

工程奈米作業人員的健康危害在橫斷面研究多為陽性，健康效應包括抗氧化酵素活性降低，心血管指標增高，心跳變異的低頻/高頻比值異常，痰中 IL-1 β 和 IL-8 增加，尿液及呼氣濃縮物的基因、脂肪和蛋白質氧化性傷害增加，以及某些免疫細胞激素指標增加等。橫斷面研究亦發現工作相關症狀打噴嚏及因工作惡化的過敏性皮膚炎有顯著增加。而縱斷面追蹤研究(工作前與工作後比較)則均為陰性，台灣四年的追蹤研究結果亦為陰性。

結論：目前發表的 12 篇論文，具有研究樣本數小且針對某單一奈米物質的缺點。雖然在幾個橫斷面研究發現工程奈米作業人員的健康危害指標較對照組為差，但至目前為止的縱斷面追蹤研究，包括台灣四年縱斷面追蹤的研究結果，尚未發現工程奈米作業人員的顯著健康危害。橫斷面研究有其研究設計上的偏差，尚賴更多的縱斷面追蹤的研究，才能對工程奈米的危害做成結論。

關鍵字：工程奈米作業人員、流行病學研究、橫斷性研究法、縱斷面追蹤研究法、健康效應指標、奈米暴露評估。

Surveillance of Health Hazards in Nanomaterials Workers: Updated Status of Nanoepidemiology

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Nano- and advanced-materials have been used in commerce since the early 2000s. Engineered nanomaterials (ENM) are now being used in many different types of commercially available products, including electronics, medical and health care products, advanced polymers, food, textiles, athletic gear, and household products. The use of nanomaterials in industrial and consumer applications continues to grow. As of August 2016, the publicly available online (<http://www.nanotechproject.org/cpi/>) inventory of ENM based consumer products contained 1,827 products. In 2015, it is estimated that the market for ENM-containing products will reach the \$1 trillion milestone. The use of nanomaterials in the development of novel materials for new purposes has led to an increase in the numbers of workers exposed to nano-objects, their aggregates and agglomerates (NOAA). There is increasing public, governmental, and scientific interest in the potential adverse health effects of ENM exposure.

Although health hazards caused by ENM have not been confirmed in humans, there is accumulating evidence from animal studies suggesting that the exposure to some nanomaterials could be harmful. There is a need to assess the risk of potentially adverse health effects among workers handling nanomaterials and to recommend biological markers, as well as preclinical and clinical outcomes that might be useful for their periodic examination to prevent late/delayed effects and identify failures of disease prevention. We emphasize that this survey is not to try to answer “What are the health effects of nanoparticles?” Instead, with this hypothesis-generating study, we sought to answer “What are the potential health hazards among workers handling nanomaterials who are potentially exposed to nanoparticles?”

Since our publication of “Assessing the first wave of epidemiological studies of nanomaterial workers” on J Nanopart Res in October 2015, six more papers were published. A total of 16 published papers are reviewed and characterized for their study design, findings, and limitations. Of the 16 studies, 14 were analytic epidemiological studies (one study had both cross-sectional and longitudinal studies), including 11 cross-sectional and 4 longitudinal studies. 2 of 16 studies were descriptive study with description of exposure concentrations or percent of positive detection. Most of these studies involved single nanomaterial exposure, for example, carbon nanotubes (MWCNT), titanium dioxide, iron oxides, carbon black, but 5 studies in Taiwan involved multiple exposures. Generally, biomarkers were used as the outcomes variables which were compared between exposed and control groups, except for 1 study surveyed work-related symptoms and diseases worsen by work. Exhaled breath condensate (EBC) and sputum were the most frequently used biospecimen (7 studies). All 11 cross-sectional studies and 1 six-month longitudinal panel study showed a positive relationship between nanomaterial exposures and various biomarkers. Positive health effects include: 1). Lung injury markers: elevation of lung fibrosis markers (sputum KL-6 (Krebs Von den Lungen 6)), elevation of lung inflammation markers (sputum IL-1B and IL-6, TNFalpha, FeNO), and reduction of lung function; 2). Cardiovascular markers: elevation of cardiovascular injury markers (fibrinogen, intercellular adhesion molecule (ICAM), and IL 6), and elevation of RR50+/- in HRV; 3). Oxidative damages markers: elevation of EBC nucleic acid, lipid and protein oxidative markers, reduction of antioxidant enzymes. This review provides some insight into potentially adverse effects that might be related to nanomaterial exposures and provides a foundation for future work. We expect more publications from nanotechnology well-developed countries, e.g. USA, UK, and Germany. We also expect more longitudinal studies with repeated measurements to explore chronic and cumulative effects of nanomaterial exposure. In the future, nanoparticles in the EBC may be served as biomonitoring markers of nanoparticles exposure.

Keywords: Biomonitoring, nanomaterial workers, exposure and health effect markers, nanoepidemiology



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鄭雅文博士於美國哈佛公共衛生學院取得流行病學博士學位，自2003年起於台灣大學公衛學院擔任教職至今。鄭教授結合社會流行病學與政策分析研究法，長期投入工作壓力、職場社會心理危害、社會致病因素，與職場安全健康政策分析。鄭教授之研究團隊針對職場社會心理危害問題發展中文版量表，進行信效度檢驗並發表於國際期刊，受國內外華語社群研究者或實務工作者廣泛使用，並應用於全國性職場健康調查，有助於政府決策部門了解職場社會心理危害之分佈、健康風險與高風險族群，並據以擬定因應政策。

研究領域

- 職場安全健康政策
 - 職場社會心理危害
 - 社會致病因素
 - 社會與健康不平等
-

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論文發表

超過80篇期刊論文與專書章節發表。

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Dr. Cheng obtained her doctoral degree of epidemiology from the Harvard School of Public Health. She has been a faculty member in the Institute of Health Policy and Management of NTU since 2003. Combining social epidemiology and policy analysis approaches, Dr. Cheng has consistently devoted to research concerning job stress, psychosocial hazards at work, social determinants of health, and occupational safety and health policies. Measurement scales developed by her research team have been widely used both locally and internationally in Chinese speaking populations. In Taiwan, these scales have been incorporated into national surveys, aiding the government to better comprehend the extent of job stress problems, the distributions of major psychosocial work hazards and high risk groups of stress-related health problems.

Research Interests

- Occupational health policies
 - Psychosocial work hazards
 - Social determinant of health
 - Social inequalities in health
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職場社會心理危害：政策議題、研究證據與未來展望

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職場社會心理危害已知對工作者身心健康帶來負面衝擊。在台灣，全國性工作者調查結果指出，過去幾年來工作者的工作控制感下降、就業不安定感上升，工作者感受的心理壓力感也呈上升趨勢。近年來，過勞疾病甚至猝死案例不時出現在媒體，使過勞問題成為重要職業健康政策議題。

為了回應社會大眾對過勞議題、職場社會心理危害與整體勞動市場環境的關注，政府近年來參考先進國家經驗，通過若干規定和準則，以提高工作壓力疾病的職業病認定率，並試圖降低此類疾病的發生率。然而，政策引發的爭議不斷，例如，有關疾病的工作相關性如何證實？認定標準如何訂定？疾病的責任歸屬如何判斷？利害關係人的力常與論述為何？如何有效預防工作壓力相關疾病的發生，防患於未然？如何強化勞動檢查機制與職場健康管理機制？

因工作速度加快與職業健康社會不平等所導致工作壓力問題，並不僅侷限於東亞國家，也是許多歐美工業先進國家面臨的當代議題。許多工業先進國家已發展出各類職場健康政策，以回應日益增加的工作壓力問題。在此次演講中，鄭雅文教授將首先回顧台灣工作壓力問題與政策爭議的發展脈絡，接著呈現近年來實證研究發現，並對當前台灣政府因應工作壓力問題的政策提出評論，最後將從政策、實務與研究如何連結，提出看法與研究發展建議。

Psychosocial Work Hazards in Taiwan: Policy Issues, Research Findings and Future Directions

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It is well known that psychosocial hazards at work have significant impacts on the health and wellbeing of working people. In Taiwan, data from national surveys of employees indicated that over the past few years, the levels of job control have been on the decline, employment insecurity became more widespread, and the levels of perceived job stress increased substantially. In recent years, a string of widely reported sudden deaths that were allegedly attributed to overwork and inadequate working conditions have gained public attention.

In response to growing social concerns on job stress and deteriorating working conditions, the government of Taiwan has adopted several regulations and guidelines from developed countries, concerning the recognition and prevention of stress-related health problems in the workplace. However, many issues are under heated debates. For instance, what evidences should be collected and what criteria should be used when determining the 'work-relatedness' of a health event? How to lay responsibility of the stress-related health risk among employers, employees and other stakeholders? How to prevent stress-related health problems before they occur? How can the labor inspection systems or/and occupational health services be strengthened for the prevention of psychosocial hazards at work?

Stress-related health problems due to work intensification and worsening social inequalities in occupational health are not limited to East Asian countries but are also important public health issues in western countries. Many advanced countries have taken steps at the policy level to address these issues. The lecture by Prof. Yawen Cheng will first provide an overview of the emergence of job stress problems and related policy disputes in Taiwan, following by a summary of empirical research findings and discussion about the uniqueness and limitations of Taiwan's current policies, and conclude with remarks on challenges and future directions from an interconnected policy-practice-research perspective.