

SIXTH AWARD 第六屆

Cheung On Tak International Award for Outstanding Contribution to Chinese Medicine Award Ceremony-cum-Award Lectures

> 張安德中醫藥國際貢獻獎 頒獎典禮暨得獎學人講座

> > Zoom Webinar 視像會議 2022.7.13







Cheung On Tak International Award for Outstanding Contribution to Chinese Medicine 張安德中醫藥國際貢獻獎

With its rapid development in different parts of the world, traditional Chinese medicine is playing an increasingly important role in the healthcare systems in many countries. Against this backdrop, the School of Chinese Medicine of the Hong Kong Baptist University established the International Award for Outstanding Contribution to Chinese Medicine in 2011. The objectives of the Award are to honour scientists and scholars who have made groundbreaking and internationally recognised achievements in advancing the internationalisation of Chinese medicine or Chinese medicine research, and to promote the internationalisation and modernisation of Chinese medicine for the benefit of the global community.

Established with a generous donation from the Cheung On Tak Charity Foundation, the Award is named after Mr. Cheung On Tak.

The Cheung On Tak International Award is conferred biennially on one to two scholars and carries a total monetary prize of HK\$500,000.

傳統中醫藥在世界各地急速發展,在多個國家的醫療保健制度 中所扮演的角色日趨重要。香港浸會大學中醫藥學院自 2011 年起設立中醫藥國際貢獻獎,目的是透過表揚在推動中醫藥 國際化、或在中醫藥研究領域取得具突破性及獲國際認可成 就的科學家和學者,進一步促進中醫藥現代化和國際化,從 而推動中醫藥發展,惠澤全球。

承蒙張安德慈善基金慷慨捐資,香港浸會大學中醫藥學院得 以設立此獎項,因而特別將獎項命名為「張安德中醫藥國際 貢獻獎」,以彰善舉。

「張安德中醫藥國際貢獻獎」每兩年頒發一次,每屆頒發獎 項予一至兩位學者,獎金總額為港幣五十萬元。



Cheung On Tak Charity Foundation 張安德慈善基金

The Cheung On Tak Charity Foundation was founded by renowned entrepreneur Mr. Cheung On Tak in 1992 to support the society and needy people through the development of education, religious and medical services. Former consultant of Man Po Investment Company Limited and On Tak Enterprise Company Limited, Mr. Cheung is wellknown for his philanthropy and commitment to serving the society. He has an impressive record of services in trade and industrial as well as community organisations, such as President and Chairman of Chiu Chau Plastic Manufacturers Association Company Limited, Director of the Hong Kong Chiu Chow Chamber of Commerce, Honorary President of The Aberdeen Kai-fong Welfare Association Social Service Centre, Chairman of the Southern District Anti-drug Campaign and President of the Hong Kong Cheung Shi Clansmen's Association. In 2011, Mr. Cheung was conferred Honorary University Fellowship by the Hong Kong Baptist University.

Over the years, the Foundation has contributed generously to teaching, and research initiatives, and has made substantial donations to a number of universities in Hong Kong to support their development.

「張安德慈善基金」由張安德院士於 1992 年創辦,以促進教 育、宗教及醫療服務的發展為宗旨,扶危解困,回饋社會, 造福社群。張先生是著名實業家,曾任萬寶置業有限公司及 安德企業有限公司顧問,一向熱心公益,致力履行社會責任, 並曾在多個工商及社區團體擔任職務,包括潮僑塑膠廠商會 會長和主席、香港潮州商會會董、香港仔街坊福利會社會服 務中心榮譽會長、南區反吸毒運動委員會主席、香港張氏宗 親會會長等。2011 年,張先生獲香港浸會大學頒授榮譽大學 院士榮銜。

「張安德慈善基金」自成立以來慷慨捐資,熱心支持本港的 教育及科研事業,曾先後捐資多間大學,積極推動本地高等 教育的發展。

Panel of Adjudicators of the Sixth Award 第六屆評審委員會

Chairman

Professor CHEN Kaixian

- Academician, Chinese Academy of Sciences · Tenured Professor, Shanghai University of
- Traditional Chinese Medicine Chair Professor, Shanghai Institute of Materia Medica, Chinese Academy of Sciences

Members

Professor CHEN Keii

- Academician, Chinese Academy of Sciences
- Award Winner of the First Cheung On Tak International Award for Outstanding Contribution to Chinese Medicine

Professor LEUNG Ping-Chung SBS, OBE, JP

- Director, Centre for Clinical Trials on Chinese Medicine, Institute of Chinese Medicine, The Chinese University of Hong Kong
- · Director, State Key Laboratory of Research on Bioactivities and Clinical Applications of Medicinal Plants in The Chinese University of Hong Kong

Professor LYU Aiping

 Dean of Chinese Medicine and Dr. Kennedy Y.H. Wong Endowed Professor in Chinese Medicine, Hong Kong Baptist University

Professor SO Kwok-Fai

- · Academician, Chinese Academy of Sciences
- · Emeritus Professor, Jessie Ho Professor in Neuroscience, The University of Hong Kong

Alexander Ping-kong WAI

· President and Vice-Chancellor, Hong Kong Baptist University

Dr. Kennedy WONG Ying-Ho BBS, LLD, DCL, JP

- Managing Partner, Philip K. H. Wong, Kennedy Y. H. Wong & Co.
- · Chairman, Advisory Committee of School of Chinese Medicine, Hong Kong Baptist University

Professor Kenneth WU Kun-yu

- Academician, Academia Sinica
- President Emeritus, Honorary Investigator, National Health Research Institutes, Taiwan

陳凱先院士 中國科學院院士

主席

- 上海中醫藥大學終身教授
- 中國科學院上海藥物研究所 研究員

成員

陳可冀院士

- 中國科學院院十
- 第一屆「張安德中醫藥國際 貢獻獎」得獎人

梁秉中教授 SBS, OBE, JP

- 香港中文大學中醫中藥研究所 臨床研究中心總監
- 藥用植物應用研究國家重點 實驗室(香港中文大學)主任

呂愛平教授

• 香港浸會大學中醫藥學院院長、 黃英豪博士中醫藥教授



蘇國輝院士

• 中國科學院院士 香港大學榮休教授、 何馮月燕基金教授席(神經科學)

衞炳江教授 香港浸會大學校長





 香港浸會大學中醫藥學院諮詢 委員會主席

伍焜玉院士

- · 中央研究院院士
- ·台灣國家衛生研究院前院長、 榮譽研究員









Award Ceremony 頒獎典禮

Opening Address 開幕辭

Professor Alexander Ping-kong Wai President and Vice-Chancellor, Hong Kong Baptist University 香港浸會大學校長 衛炳江教授

Presentation Speech 得獎學人介紹

Professor Chen Kaixian Chairman, Panel of Adjudicators 評審委員會主席 陳凱先院士

Thank You Speech 感謝辭

Professor Lyu Aiping Dean, School of Chinese Medicine, Hong Kong Baptist University 香港浸會大學中醫藥學院院長 呂愛平教授

Award Winners' Addresses 得獎學人致辭

Professor Chen Lidian 陳立典教授 Professor Chen Shilin 陳士林教授

Award Lectures 得獎學人講座

Innovation and Development of Integrated Traditional Chinese and Western Medicine in Rehabilitation 中西醫結合康復的創新與發展

> Professor Chen Lidian 陳立典教授

Herbgenomics -Bridging Traditional Chinese Medicine and Modern Technologies 本草基因組學與中醫藥現代化

> Professor Chen Shilin 陳士林教授



Winner of the Sixth Award 得獎學人簡介

Professor Chen Lidian 陳立典教授

- Specialist in Integrated Chinese and Western Medicine in Rehabilitation Sciences
- Academician of the International Eurasian Academy of Sciences
 (IEAS)
- Executive Member of International Society of Physical and Rehabilitation Medicine (ISPRM)
- President of Chinese Association of Rehabilitation Medicine
- Vice-Chairman of China Association of Medical Equipment
- Scholar of "Hundreds of Millions" Talents Project for Traditional Chinese Medicine Inheritance and Innovation (Qi Huang Scholar)
- Candidate of the National Hundreds of Millions Talents Project
- · 中西醫結合康復治療專家
- 國際歐亞科學院院士
- 國際物理醫學與康復醫學學會執行委員
- · 中國康復醫學會會長
- · 中國醫學裝備協會副理事長
- ・國家中醫藥傳承與創新「百千萬」人才工程(岐黃學者)
- 百千萬人才工程國家級人選

As a pioneer and leading figure of integrated traditional Chinese and Western medicine in rehabilitation, Professor Chen Lidian has conducted an array of original and systematic research studies with remarkable results in the fields of Chinese rehabilitation theoretical research, technical practice, and development of rehabilitation equipment. He innovated the traditional Chinese medicine (TCM) rehabilitation theory and its evaluation system for motor dysfunction, developed the first Chinese version of stroke assessment tool and made breakthroughs in a number of key technologies for integrated traditional Chinese and Western medicine in rehabilitation, and systematically elaborated their modern scientific mechanisms. In addition, Professor Chen has been involved in various cutting-edge works, such as taking a leading role in the development of the first domestic rehabilitation robot with Independent Intellectual Property Rights, establishing a new mode of rehabilitation with the use of integrated traditional Chinese and Western medicine, as well as formulating its clinical practice and standards. These technologies and methods have been widely adopted in the rehabilitation medicine guidelines in Canada and Mainland China and have also been used by rehabilitation service providers such as hospitals and communal institutions on the Mainland and in some European countries (e.g. Germany and Switzerland).

Professor Chen's significant contributions to the development of integrated traditional Chinese and Western medicine in rehabilitation are highly recognised. He is the only representative from China being elected the Executive Committee member of International Society of Physical and Rehabilitation Medicine (ISPRM). He actively promotes TCM rehabilitation theory and fosters the internationalisation of TCM rehabilitation, advancing the exchange and integration of traditional Chinese and Western rehabilitation medicine in rehabilitation.

Professor Chen has won a string of awards in the capacity of Principal Investigator, including Second Prize of The State Scientific and Technological Progress Award, First Prize of the Science and Technology Award by China Association of Integrative Medicine, First Prize of the Science and Technology Award by the Chinese Association of Rehabilitation Medicine, First Prize of the Popular Science Works Award by China Association of Chinese Medicine, Second Prize of National Teaching Achievement Award, Special Prize of Teaching Achievement in Fujian Province and First Prize of Teaching Achievement Award by the Chinese Association of Rehabilitation Medicine.

陳立典教授是中西醫結合康復學科的主要開拓者和帶頭人,在 中醫康復理論、中西醫結合康復技術和中西醫康復裝備方面 取得一系列原創性和系統性的成果。他在功能障礙的中醫康 復理論與評價體系領域作出創新,開發了首個漢語人群中風 評估工具,在一批中西醫結合康復關鍵技術方案上取得重要 突破,並闡釋其現代科學內涵。此外,陳教授還進行了大量 的開創性工作,包括牽頭研製內地首台擁有自主知識產權的 康復機械人、建立中西醫結合康復的新模式、制定中西醫結 合康復臨床規範與標準,相關成果獲加拿大腦卒中循證指南、 中國中西醫結合診治指南等康復醫學指南採納與應用,以及 在全國多間省市醫院、社區以至歐洲(如德國、瑞士等國家) 的康復醫療機構推廣應用。

陳教授作為中國唯一代表入選和擔任國際物理醫學與康復醫 學學會執委,積極弘揚中醫康復思想,推動中醫康復國際化, 促進中、西醫康復的交流與融合發展,為中西醫結合康復事 業作出重大貢獻。

陳教授以第一完成人獲得國家科技進步二等獎、中國中西醫 結合學會科技一等獎、中國康復醫學會科技一等獎、中華中 醫藥學會科普著作一等獎、國家級教學成果二等獎、福建省 教學成果特等獎和中國康復醫學會教學成果一等獎。



Winner of the Sixth Award 得獎學人簡介

Professor Chen Shilin 陳士林教授

- Director and Chief Researcher of the Institute of Chinese Materia Medica, China Academy of Chinese Medical Sciences (ICMM, CACMS)
- Director of the World Health Organization Collaborating Center for Traditional Medicine
- Academician of International Eurasian Academy of Sciences (IEAS)
- Vice-President of the Consortium for Globalization of Chinese Medicine (CGCM)
- Visiting Professor of Tokyo University of Pharmacy and Life Sciences
- Honorary Professor of School of Chinese Medicine, Hong Kong Baptist University
- · 中國中醫科學院中藥研究所所長、首席研究員
- 世界衛生組織傳統醫學合作中心主任
- · 國際歐亞科學院院士
- · 中藥全球化聯盟副主席
- · 日本東京藥科大學客座教授
- · 香港浸會大學中醫藥學院榮譽教授

Professor Chen Shilin dedicates himself to the work on quality assurance and authentication of traditional Chinese medicine (TCM). He laid the foundation of developing Herbgenomics as a discipline by establishing a DNA barcoding system based on ITS2, psbA-trnH and COI which solved the long-standing problem of authentication of Chinese herbal medicine from the genetic perspective. Apart from having sequenced a large number of medicinal organism genomics including those of *Ganoderma lucidum* and *Panax Ginseng*, he has also obtained certificates of new cultivar for eight medicinal plants and established a pollution-free and precision breeding system which helped reduce the use of fertiliser/pesticide in the breeding process of herbs and safeguard human health from chemical toxic threats. Under Professor Chen's leadership, the "Global Pharmacopoeia Genome Database" (GPGD) was launched in 2021, which gave scientists across the globe a leg up for the genetic research of traditional herbs.

Professor Chen has published more than 500 academic articles on world-renowned academic journals including but not limited to *Science*, *Nature Communications, Molecular Plant, PNAS*. With a total citation count of more than 25,000 in Google Scholar and an H-index of 73, Professor Chen has been selected into the list of Chinese Highly Cited Researchers released by Elsevier for six consecutive years since 2014. He won numerous awards including three Second Prize of The State Scientific and Technological Progress Awards, Wu Jieping Medical Innovation Award, First Prize of International Award for Contribution to Chinese Medicine Science and Technology Progress Award by the World Federation of Chinese Medicine Societies in 2018.

陳士林教授專注於傳統中醫藥質量與鑒定研究工作。他奠定 《本草基因組學》學科基礎,創建了基於ITS2、psbA-tmH和 COI的中藥材 DNA 條形碼鑒定技術體系,從基因層面解決長久 以來中草藥物種真偽鑒定的難題;完成靈芝和人參等多種中 藥全基因圖譜繪製及相關組學研究,成功培育並獲批8個中 藥材新品種證書;構建了無公害中藥材精細栽培體系,減少 在栽培過程中使用的肥料或農藥,使人類健康得到保護,免 受化學毒性的危害。2021年,「全球藥典草藥基因組數據庫」 在陳士林教授的領導下完成,為世界各地的中草藥的基因研 究專家提供重要支持。

陳教授發表了 500 多篇學術著作,刊登於《科學》、《自 然通訊》、《分子植物》、《美國國家科學院院刊》等國際 知名學術期刊,論文被引用 2.5 萬餘次,H指數 73 (Google Scholar),自 2014 年起連續 6 年獲入選 Elsevier 發佈的高被引 中國學者榜單。陳士林教授獲授予 3 項國家科技進步二等獎、 吳階平醫藥創新獎和世界中醫藥學會聯合會 2018 年中醫藥國 際貢獻獎(科技進步獎)一等獎。



Innovation and Development of Integrated Traditional Chinese and Western Medicine in Rehabilitation 中西醫結合康復的創新與發展

Professor Chen Lidian 陳立典教授

The uniqueness and advantage of Chinese rehabilitation medicine lies in its integration of Chinese and Western medicine, an approach first advocated by Professor Chen Keji, Academician of the Chinese Academy of Sciences, in his monograph entitled Traditional Chinese Rehabilitation Medicine in 1988. After more than three decades of development, the integrated approach has become the primary paradigm of rehabilitation in China and plays an indispensable role in China's healthcare system. To meet the huge clinical demand, Chinese and Western medicine has continued to evolve, innovate and work seamlessly together. An array of clinical strategies combining rehabilitation techniques of traditional Chinese medicine (TCM) with modern rehabilitation therapies have emerged and come into play in recent years. Nonetheless, there is plenty of room for improvement in the field of integrated Chinese and Western rehabilitation medicine. Some of the key scientific questions that remain to be answered include: What are the theoretical framework and scientific foundation of integrated Chinese and Western rehabilitation medicine? How can we incorporate modern technology into TCM rehabilitation? What approach should we take to develop generic techniques for TCM rehabilitation?

In an attempt to address the above questions, Professor Chen Lidian and his research team have undertaken the following initiatives:

- putting forth the theory of overall functionality in TCM rehabilitation and building an associated rehabilitation model by integrating the holistic concept of "unity of form and spirit" and "unity of nature and human" in TCM with the International Classification of Functioning, Disability and Health (ICF) model;
- developing generic technologies for TCM rehabilitation and formulating new strategies combining TCM and western medicine for cognitive, exercise, and pain rehabilitation, thereby promoting the integration and optimisation of Chinese-Western medicine rehabilitation technologies;
- establishing a model for functional assessment based on the concept of holism in TCM as well as a system for evaluating the effectiveness of rehabilitation;

 conducting research about the use of traditional Chinese exercises to mitigate the impact of motor dysfunction and delay disease progression, which reveals the movement characteristics and clinical efficacy of traditional Chinese exercise therapies such as *Tai Chi* and *Baduanjin*, elucidates the mechanism by which they work, as well as provides new therapeutic solutions that combine traditional Chinese exercises and modern rehabilitation technologies. These research findings are widely adopted by rehabilitation service providers such as hospitals and communal institutions at home and abroad.

中國康復醫學的特色與優勢在於中西醫的融合。中國科學院院士陳可冀教授於1988年在其專著《中國傳統康復醫學》中 首次提倡中西醫結合康復。經過30多年的發展,中西醫結合 康復已成為中國康復醫療體系的主流模式,在康復治療中擔 當不可或缺的角色。面對龐大的臨床需求,中、西醫康復持 續發展、融會創新,一系列結合中醫康復技術和現代康復療 法的臨床方案相繼出爐並付諸應用。然而,要完善中西醫結 合康復,仍有不少關鍵科學問題須解決,例如:中西醫結合 康復的理論內涵和科學基礎是甚麼?如何將中醫康復與現代 康復技術有機結合?如何發展中醫康復共性技術?

針對上述問題,陳立典教授及他的研究團隊開展了相關工作:

- 將中醫學形神合一、天人合一的整體觀與國際健康功能與 身心障礙分類系統(ICF)的功能分類模式相互融合,提 出中醫整體功能觀康復理論,並建立中醫整體功能觀康復 模型;
- 創建中醫康復共性技術,並制定中西醫結合認知、運動、 疼痛康復方案,從而促進中西醫康復技術的融合與優化;
- 建立基於中醫整體功能觀的功能評價,開發康復成效評價 系統;
- 開展傳統運動改善功能障礙、減輕疾病狀態的研究,揭示 以太極拳、八段錦為代表的傳統運動療法的動作特點與臨 床療效,闡釋其作用機制,以及建立傳統運動結合現代康 復技術的新方案,相關研究成果獲國內外的醫院、基層社 區組織等康復機構廣泛應用。

Synopsis 講座摘要

Herbgenomics -Bridging Traditional Chinese Medicine and Modern Technologies 本草基因組學與中醫藥現代化

Professor Chen Shilin 陳士林教授

Herbgenomics is an interdisciplinary subject proposed by Professor Chen Shilin and his research team in which genomics and related omics are used to form the theoretical and technological basis for research on medicinal model organisms, genuine medicinal materials, targeted breeding of medicinal plants, molecular identification, bioactive metabolites synthetic biology and construction of herbal gene banks. In 2015, the team was invited by Science to publish a review titled "Herbal Genomics: Examining the Biology of Traditional Medicines" in its supplementary issue to elucidate the concept and application of herbgenomics. Apart from having sequenced more than 100 medicinal organism genomes so far including those of Ganoderma lucidum, Panax ginseng, Salvia miltiorrhiza, Perilla frutescens, Selaginella tamariscina, Andrographis paniculate and Coptis chinensis, the team has also released the "Global Pharmacopoeia Genome Database", an integrated and mineable database incorporating herb genomic data from international pharmacopoeias. In addition, Professor Chen has carried out guite a number of studies on the authentication of medicinal herbs, herbal drug safety, biosynthetic pathways of pharmacologically active ingredients and molecular breeding of good varieties. Relevant research findings were published in top-tier international academic journals including Science, Nature Communications, Molecular Plants, and PNAS. Being a focus area of TCM research and an important driving force for the modernisation of TCM, herbgenomics has been included in the undergraduate and postgraduate curricula of a number of universities and colleges in Mainland China.

The team's genomic research has laid a solid foundation for the application of species like *Ganoderma lucidum* and *Salvia miltiorrhiiza* as medicinal model organisms. In particular, their study on *Ganoderma lucidum*, in which genomics was used as the basis to elaborate how the genetic mechanism of traits contributing to high yield, fine quality, high disease resistance and high stress tolerance could enhance selection efficiency and accelerate the breeding process, was featured as one of the Research Highlights in *Nature China* and reported by *USA Today* in an article entitled *"Chinese 'Mushroom of Immortality' Genome Mapped"*. This new strategy was successfully deployed by

the team to breed cultivars of medicinal herbs such as *Panax ginseng*, *Panax notoginseng*, *Perilla frutescens*, *Artemisia annua* and *Gastrodia elata*, which demonstrated that herbgenomics plays a pivotal role in molecular-assisted breeding.

"DNA barcoding system for identification of medicinal species" is another iconic study led by Professor Chen. Not only has it been included in the Pharmacopoeia of the People's Republic of China, it has also won a host of honours including Second Prize of The State Scientific and Technological Progress Award, 2016 Top 10 Medical Advancement in China, and the International Award for Contribution to Chinese Medicine from the World Federation of Chinese Medicine Societies in 2018.

本草基因組學(Herbgenomics)是由陳士林教授及他的研究 團隊提出的交叉學科,旨在通過基因組學及相關技術,為藥 用模式生物、道地藥材研究、基因組輔助育種、分子鑑定、 中藥活性代謝物合成生物學、基因數據庫構建等提供理論基 礎和技術支撐。2015年,團隊應邀在《科學》增刊撰文,以 'Herbal Genomics: Examining the Biology of Traditional Medicines' 為 題,系統闡釋本草基因組學學科的內涵和應用。迄今,團隊 已完成靈芝、人參、丹參、紫蘇、卷柏、穿心蓮、黃連等過 百種藥用植物的全基因組測序,並在最近推出可挖掘的集成 數據庫——「全球藥典草藥基因組數據庫」,藴藏來自多國 藥典的傳統藥物基因組數據。此外,陳教授在草藥物種鑒定、 用藥安全、藥效成分生物合成途徑解析、優良品種分子育種 等方面開展了大量研究,相關論文在《科學》、《自然通訊》 《分子植物》、《美國國家科學院院刊》等國際頂級期刊發表。 本草基因組學乃中草藥研究的熱點領域,在中藥現代化發展 中發揮著重要作用,更獲國內多所大專院校納入研究生和本 科課程。

團隊通過全基因組研究,推動靈芝、丹參等形成藥用模式生物研究體系。其中,靈芝基因組研究工作獲《自然中國》選為中國最佳研究,《今日美國》亦以「揭秘中國『仙草』基因組」為題報導。是項研究以基因組遺傳信息為基礎解析高產量、高品質、抗病、抗逆等優良性狀的遺傳機制如何提高選擇效率,加快育種進程。團隊運用此方法成功選育人參、 三七、紫蘇、黃花蒿、天麻等藥用植物的優良品種,引證本 草基因組學在分子輔助育種領域中發揮重大作用。

「中藥材 DNA 條形碼鑒定技術體系」是陳教授的另一標誌性 研究,不僅納入《中華人民共和國藥典》,更摘下國家科技進 步二等獎、獲評為「2016年中國十大醫學進展」,並於 2018 年榮獲世界中醫藥學會聯合會頒發的中醫藥國際貢獻獎。

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