

## 張雅如 教授

### 基本資料:

中文姓名 張雅如 (Ya-Ju Chang)  
現職 副院長 長庚大學 醫學院  
教授 長庚大學 物理治療學系  
主持人 長庚大學神經肌肉學術研究室  
合聘教授 長庚醫院神經科學研究中心  
聯絡電話 03-2118800 ext. 5515  
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### 主要學歷:

PhD, The University of Iowa, USA (1999, 05)  
MA, The University of Iowa, USA (1995, 08)  
BS, 國立台灣大學 復健系物理治療組 (1992.06)

### 相關經歷:

副院長	長庚大學	醫學院 (2019.08~ )
教授	長庚大學	物理治療學系 (2013.08~ )
系主任	長庚大學	物理治療學系 (2017.08~2019.07 )
訪問教授	The University of Iowa, Department of Physical Therapy and Rehabilitation Science (2016.09~2016.11)	
副教授	長庚大學	物理治療學系 (2008.08~2013.07 )
助理教授	長庚大學	物理治療學系 (2001.02~2008.07)
講師	國立台灣大學	物理治療學系 (1999.08~2001.02)
兼任物理治療師	國立台灣大學附設醫院 (1999.08~2001.02)	
助教	國立成功大學	物理治療學系 (1992.08~1993.07)

### 證照:

中華民國物理治療師證書 (證書號碼: 物字第 000168 號)  
中華民國專門職業及技術人員高等考試及格證書 (證書號碼: (八四)專高第 4683 號)  
美國物理治療師 (愛荷華州 伊利諾州 紐約州)

### 會員:

中華民國物理治療學會  
Society for Neuroscience  
American Physical Therapy Association

### 研究領域專長：

肌電圖、動作誘發電位與皮質興奮調節研究、脊髓神經網路與脊髓損傷復健研究  
巴金森氏病患平衡步態復健研究、運動科學與智慧動作檢測設備開發研究  
老化與長期照顧智慧復健研究

### 榮譽：

- (1). 科技部研究表現優秀人才獎勵(2000, 2011, 2015, 2016, 2017, 2018)
- (2). 長庚醫學研究獎勵(2008, 2009, 2010, 2011, 2012)
- (3). 行政院體育委員會 運動科學研究發展獎勵(2004. 2010)
- (4). Outstanding Poster selected for E-poster by EFNS (2011)
- (5). Selected abstract for press by Society for Neuroscience\* (2005 SFN Annual Conference)  
指導學生:劉宇菁
- (6). Selected abstract for press by Society for Neuroscience\* (2006 SFN Annual Conference)  
指導學生:梁靜農
- (7). 罕見疾病博碩士論文獎助\* 財團法人罕見疾病基金會 (2004.12) 指導學生:陳昕蔓

\*與指導學生共同獲得

### 教授課程：

物理治療學系大學部

- (1). 物理治療專題討論\*
- (2). 神經科物理治療學 I
- (3). 神經科物理治療學實驗 II\*
- (4). 神經科物理治療學 II\*
- (5). 物理因子治療學
- (6). 物理因子治療學實驗
- (7). 肌動學
- (8). 物理治療導論
- (9). 物理治療倫理與行政管理學

復健科學研究所碩士班

- (1). 論文分析\*
- (2). 疾病與感覺動作分析\*
- (3). 生醫儀器學
- (4). 復建科學趨勢
- (5). 復建科學化評量

復健科學研究所博士班

- (1). 論文寫作\*
- (2). 神經科學特論\*

電機工程研究所博士班

- (1). 生醫電子學
- (2). 生醫應用晶片設計與實驗

註一:\*兼課程主授

註二:以上課程均與其他教師共同授課

### 指導研究生

長庚大學復健科學所碩博士學生 現職及畢業論文(擔任指導教授):

- |     |        |  |
|-----|--------|--|
| 謝宗勳 | (2003) | 副教授 長庚大學物理治療學系<br>動作誘發電位和 H 反射在感覺缺損之脊髓損傷患者經周邊神經刺激後之調控                                    |
| 方佳瑩 | (2003) | 部定講師 長庚大學復健科學研究所博士班進修中<br>反覆牽張降低脊髓損傷患者肌肉高張力之探討   |
| 劉宇菁 | (2004) | 部定講師 振興醫院物理治療師<br>探討人類 H 反射低頻抑制作用的位置：是在突觸前還是突觸後？<br>探討人類 H 反射低頻抑制作用的位置                   |
| 楊筱筑 | (2004) | 國泰綜合醫院物理治療師<br>正中神經電刺激對小腦萎縮症患者動作誘發電位的促進調控研究  |
| 張人牧 | (2005) | 林口長庚紀念醫院 整形外科 物理治療師<br>雙突觸交互抑制在短期交替收縮或共同收縮訓練後的影響   |
| 陳昕蔓 | (2005) | 基金會<br>八週神經肌肉電刺激訓練後對多發性硬化症病患疲勞的影響  |
| 李柏融 | (2005) | 台南市物理治療師公會理事長<br>脊髓小腦萎縮者執行快速目標取向動作前脊髓上層之調控   |
| 梁靜農 | (2006) | 助理教授 Department of physical therapy, University of Nevada<br>探討連續性被動活動對慢性脊髓損傷患者神經肌肉特性的影響 |
| 徐育廷 | (2007) | 公職<br>增加感覺輸入訓練對慢性前十字韌帶斷裂患者自主活化程度及神經調控的影響   |
| 江孟潔 | (2007) | 進修中<br>脊髓小腦共濟失調症患者之感覺輸入引發大腦皮質興奮調節能力的研究   |
| 黃婉婷 | (2008) | 高雄市立大同醫院物理治療師<br>探討腳踏車訓練對脊髓小腦共濟失調症患者交互抑制的影響  |
| 張亦婷 | (2010) | 美國進修中<br>長期連續性被動活動對慢性期脊髓損傷者神經及肌肉特性的影響  |
| 張堯舜 | (2010) | 台北市立萬芳醫院物理治療師  |

- 葉玫秀 (2011) 時序性電刺激輔助訓練對小腦萎縮症患者辨距失調的效果  
成功大學基礎醫學研究所博士班進修中
- 張芳宇 (2012) 全身性震顫訓練對脊髓小腦共濟失調症患者神經及肌肉特性之影響  
美國進修中
- 高煜昇 (2012) 輔以股四頭肌神經肌肉電刺激與自主膝伸直運動對於帕金森氏病患者疲勞之訓練效果  
物理治療師
- 劉偉嘉 (2014) 被動活動對於亞急性脊髓損傷後缺乏活動造成之神經肌肉適應性改變的影響  
物理治療師
- 徐珩翔 (2014) 電刺激輔助等張膝伸直訓練對帕金森氏病患者肌肉疲勞與走路功能之影響  
物理治療師
- 林珉平 (2015) 以八周的腳踏車訓練介入帕金森氏症患者針對力學與疲勞問題的療效  
物理治療師
- 林依依 (2015) 脊髓損傷患者於橢圓機步態的反射調節特性研究  
中國發展
- 游旻達 (2016) 認知負荷下跑步機訓練對於帕金森氏症患者行走自動化之效果  
南山人壽保險業務
- 仇韋達 (2016) 長期橢圓機器輔助訓練對於脊髓損傷病人的影響  
鳳山 802 國軍醫院職能職療師
- 張秀楨 (2016) 運動訓練對改善早期帕金森患者凍結步態與非動作症狀之效果  
陸教授神經科診所研究助理
- Mai Thi Phuc (2018) 以臨床、生化指標、定量步態測量來探討「腳踏車合併認知之雙重任務訓練」對於早期帕金森病的影響  
長庚大學復健科學研究所博士班進修中
- 方佳瑩 (2020) 步長與視覺導引對帕金森氏病患者步態起始的影響  
長庚大學物理治療學系神經肌肉學術研究室博士後研究員
- 脊髓損傷患者痙攣之新型治療

#### 他校研究生 現職 (擔任指導教授或共同指導教授)

- 鍾宇政 (2001) 副教授兼體育室訓練競賽組組長 國立嘉義大學體育與健康休閒學系  
健康及受傷棒球投手尺神經傳導速度之研究
- 康福仁 (2002) 比較踝關節功能性不穩定者與正常人其本體感覺與內外翻肌力比值的關係
- 黃奕銘 (2003) 執行長 Optimum Kinetics-BODY Project  
(2008) 主動肌疲勞對快速與慢速力量控制準確度與肌電活動模式之影響

(2003 碩士論文)

給予感覺刺激的肌力訓練對慢性前十字韌帶損傷患者神經調控與功能性表現之影響(2008 博士論文)

劉 強 (2005) 教授 台北市立大學運動器材科技研究所

被動反覆等速肌力訓練之神經肌肉適應性(博士論文)

許孟霖 (2007) 成功大學健康照護科學研究所博士班進修

八週被動反覆等速肌力訓練對比目魚肌交互抑制之影響

洪郁婷 (2014) 巴金森氏症病患於聽覺提示下執行節律性動作之依頻大腦皮質興奮性

### 博士後研究員 現職

黃奕銘：執行長 Optimum Kinetics-BODY Project

陳婉菁：助理教授 台北市立大學運動器材科技研究所

方佳瑩：博士後研究員 長庚大學物理治療學系神經肌肉學術研究室

### 校內服務

- (1). 物理治療學系導師 (2001-2017)
- (2). 新進助理教授輔導:陳治中助理教授(2010.06 起) 莊麗玲助理教授(2012.08 起)
- (3). 物理治療系學會社團指導老師(2005, 2009)
- (4). 物理治療學系海報展與競賽:負責人(2011)
- (5). 物理治療學系職能治療學系早期療育研究所聯合海報展與競賽:負責人(2012, 2014-2016)
- (6). 校慶週物治、職治、早療暨醫放四系聯合海報展與競賽:負責人(2013)
- (7). 長庚大學職員禮貌競賽評審委員(2012)
- (8). 運動傷害防護學程召集人(2012.02-2012.08)
- (9). 物理治療學系自評委員會自評委員(2010 起)
- (10). 物理治療學系教評會教評委員(2009 起)
- (11). 物理治療學系學術委員會(2011 起)
- (12). 物理治療學系招生委員會(2004, 2008, 2012)
- (13). 物理治療學系大學部甄試委員(2008, 2012)
- (14). 復健科學研究所碩士班甄試委員、筆試出題與閱卷委員(2002 起)
- (15). 復健科學研究所博士班口試委員(2009 起)
- (16). 長庚大學圖書館諮詢委員(2004, 2005)
- (17). 長庚大學校務會議教師代表(2009)

### 校外服務：

- (1). 科技部研究專案初、複審委員
- (2). 體育學報運動力學領域編輯(2015-2019)
- (3). 考試院典試委員(2016)
- (4). 台灣物理治療學會秘書長(2016-2017)

- (5). 台灣物理治療學會臨床專科委員會委員(2017.04-2020.03)
- (6). 台灣物理治療學會連續性照護推動委員會委員(2017.04-2020.03)
- (7). 國立體育大學人體研究倫理審查委員會委員(2013.04-2014.07)
- (8). 中華小腦萎縮症病友協會第五屆 醫療顧問 (2012.04-2015.03)
- (9). 行政院體育委員會國家運動選手訓練中心 運科小組委員 (2006)
- (10). 行政院體育委員會學界智庫 (非正式組織) 智庫委員 (2006)
- (11). 國科會人文處體育學門計畫初審委員
- (12). 國科會生物處復健學門計畫初審委員
- (13). 國科會工程處醫工學門計畫初審委員
- (14). 長庚醫學研究計畫審查委員
- (15). 中華民國物理治療學會身心障礙者福利促進委員會委員 88.09.25~90.09.26
- (16). 中華民國物理治療學會國際事務委員會委員 88.09.25~90.09.26
- (17). 中華民國物理治療學會甄審委員會委員 94.04~07.03
- (18). 論文口試委員：國立台灣大學物理治療研究所，國立台灣大學職能治療研究所，陽明大學物理治療研究所，國立體育大學，台北市立體育學院

#### 國內外學術會議服務：

- (1). 2013 WCPT-AWP & ACPT CONGRESS (2013) Abstract Reviewer
- (2). 中華民國物理治療學會物理治療學會第 63 次學術論文研討會暨繼續教育課程:繼續教育課程協辦單位負責人(2011.09.24)
- (3). 物理治療臨床專業行為風範研習營:Chair (2010.06.27)
- (4). 小腦萎縮症病友協會 99 年度家庭照顧者課程(北一場):協辦單位負責人 (2010.07.17-18)
- (5). XXI Congress of the International Society of Biomechanics: Chair & Abstract Reviewer
- (6). 中華民國物理治療學會物理治療學會學術研討會:論文比賽評審

#### 擔任期刊審稿：

- (1). Archive of physical medicine and rehabilitation (SCI)
- (2). Journal of Rehabilitation Research and Development (SCI)
- (3). Sensors (SCI)
- (4). Clinical Interventions in Aging (SCI)
- (5). Multiple Sclerosis International
- (6). Neuromodulation: Technology at the Neural Interface
- (7). 大專體育學刊(Sports & Exercise Research) (TSSCI)
- (8). 體育學報 (Physical Education Journal) (TSSCI)
- (9). 特殊教育學報 (TSSCI)
- (10). 物理治療(Formosa Journal of Physical Therapy)
- (11). 台灣職能治療研究與實務雜誌(Journal of Taiwan Occupational Therapy Research and Practice)

### 受邀演講：

- (1). 第一屆亞太職能治療學術研討會 (2017.10.21)  
Gait deficits in PD patients during single and dual task walking.
- (2). 香港醫院管理局委託課程:生物力學於復健領域之應用(2017.06)  
Introduction of Electromyography
- (3). 社團法人中華小腦萎縮症病友協會講座(2017.07.03)  
小腦萎縮患者之居家自我訓練運動平衡與肌力的加強
- (4). 林口長庚紀念醫院神經科學研究中心系列講座(2015.04.23)  
Central and Peripheral Fatigue – Measurement and Intervention
- (5). 財團法人桃園市私立脊髓損傷潛能發展中心運動傷害專題講座(2014.01)
- (6). 台灣動作障礙學會 2013 台灣動作障礙學會基礎教學講座  
Gait disorders : features, differential diagnosis, and management in Parkinson Disease  
(2013.1.6)
- (7). 2013 中華民國職能治療師公會全國聯合會專題演講  
疲勞之分類與介入-在老化的應用(2012.06.30)
- (8). 成大醫學院物理治療學系專題演講  
Muscle Fatigue – Classification, Mechanisms, and ES Intervention (2012.03.29)
- (9). 國立體育大學專題演講  
Muscle Fatigue Classification and Intervention (2012.06.01)
- (10). 台灣大學物理治療學系專題演講  
Measurement and Intervention of Muscle Fatigue - Studies Revealed by Electrical  
Stimulation (2012.10.06)
- (11). 高雄醫學大學物理治療學系專題演講  
Measurement of fatigue (2011.04.28)
- (12). 小腦萎縮症病友協會 99 年度家庭照顧者課程(北一場) (2010.07.17-18)
- (13). 多發性硬化症病友協會年會專題演講  
多發性硬化症患者的疲勞成因與運動原則 (2007)
- (14). 新竹南門醫院醫療照顧者之教育專題演講  
轉位與被動關節活動原則 (2003)

### 研究計畫：

計劃名稱與編號	補助機構	起迄年月	計畫經費
巴金森氏病患者居家獨立行走與自主復健訓練智慧輔具開發(2/2) 109-2224-E-182-001	科技部	2020.6.1~ 2021.5.30	3,445,000
巴金森氏病患者居家獨立行走與自主復健訓練智慧輔具開發(重點主題:A2/A3)(1/2) 108-2218-E-182-010	科技部	2019.6.1~ 2020.8.30	4,009,000

應用於脊髓損傷者之智慧型虛擬實境導引與生理監控懸吊橢圓機訓練平台研發-子計畫二:脊髓損傷者之新型態橢圓機步行訓練與運動模式開發研究-步態正常化與強迫運動 107-2221-E-182-009-MY3	科技部	2018.8.1~ 2021.7.31	3,512,000
巴金森氏病之提示智慧助行鞋研發與應用研究(重點主題:A1)(2/2) 107-2218-E-182-003-	科技部	2018.1.1~ 2019.6.30	3,000,000
巴金森氏病之提示智慧助行鞋研發與應用研究(重點主題:A1)(1/2) 106-2218-E-182-003	科技部	2017.1.1~ 2018.3.31	4,470,000
脊髓損傷者步態相位相關反射調節研究 - 指標建立與修正式機器輔助步態訓練的效應 104-2314-B-182-007-MY3	科技部	2015.8.1~ 2018.7.31	2,340,000
姿態平衡監測系統場域測試	工業技術 研究院	2017.7.1~ 2017.10.31	280,000
利用感壓鞋墊建立衰弱老化相關監測參數	工業技術 研究院	2016.5.1~ 2016.11.30	260,000
虛擬實境雙重任務檢測與訓練平台設計：應用於巴金森氏病病患之大腦可塑性研究(子計畫二):腳踏車運動誘發動作皮質塑性與動作功能改善-在巴金森氏病患的雙重任務評估模型 104-2221-E-182-016	科技部	2015.8.1~ 2016.7.31	799,000
(科)腳踏車運動誘發動作皮質塑性與動作功能改善-在巴金森氏病患的雙重任務評估模型 CMRPD1G0041	長庚醫療 財團法人	2017.1.1~ 2017.12.31	767,464
巴金森氏病患者步態啟動困難之預期性姿勢調控與訓練研究 CMRPD3E0111、CMRPD3E0112、CMRPD3E0113	長庚醫療 財團法人	2015.1.1~ 2018.12.31	2,962,044
疲勞之中樞與周邊臨床指標與虛擬實境抗疲勞訓練模式之建立-應用於帕金森氏病患者 II 103-2221-E-182-036	科技部	2014.8.1~ 2015.10.31	809,000
脊髓損傷者神經肌肉反向靜止適應研究 II-單突處反射活化後抑制之機制、適應與機器輔助牽張復健研究 102-2314-B-182-021-MY2	科技部	2013.8.1~ 2015.10.31	1,652,000
(子計畫二)：疲勞之中樞與周邊臨床指標與虛擬實境抗疲勞訓練模式之建立-應用於帕金森氏病患者 102-2221-E-182-022	科技部	2013.8.1~ 2014.10.31	783,000



前衰弱者肌肉適能缺損評估與訓練模式研究 101-2410-H-182-027	國科會	2012.8.1~ 2013.7.31	560,000
帕金森氏病患者之中樞疲勞與周邊疲勞分析與訓練研究 CMRPD1B0271、CMRPD1B0272、CMRPD1B0273	長庚醫療財團法人	2012.2.1~ 2015.1.31	2,294,798
脊髓損傷者神經肌肉反向靜止適應研究-再活動對活化後抑制與肌肉收縮特性之回復之效果 100-2314-B-182-005-	國科會	2011.8.1~ 2012.7.31	659,000
增進感覺輸入對前十字韌帶損傷後股四頭肌抑制之改善研究 II 98-2410-H-182-021-MY2	國科會	2009.8.8~ 2011.7.31	2,085,000
伸張過度之主動拮抗肌組中樞調節機制與前饋復健研究 CMRPD180101、CMRPD180102	長庚醫療財團法人	2009.6.1~ 2011.5.31	1,239,410
增進感覺輸入對前十字韌帶損傷後股四頭肌抑制之改善研究 97-2410-H-182-017	國科會	2008.8.1~ 2009.10.31	734,000
中樞疲勞之周邊成因,監測與治療研究 95-2314-B-182-044-MY2	國科會	2006.8.1~ 2008.7.31	1,314,000
去感覺回饋對動作神經元池興奮性調節研究—ASIA 分類 C 之脊髓損傷患者力量調節機制分析 (1-3) 94-2314-B-182-003、93-2314-B-182-015、92-2314-B-182-031	國科會	2003.8.1~ 2006.7.31	1,403,600
脊髓損生者肌肉張力治療儀之研發與應用 90-2213- E-182-023	國科會	2001.8.1~ 2002.7.31	676,000
脊髓損傷者之神經科技輔具的研發與應用—子計劃二：脊髓損傷後肌肉電生理適應研究—神經科技輔具生理控制參數分析(1-3) 91-2422-H-002-1302、90-2213- E-182-021、89-2614-E-002-007	國科會	2000.8.1~ 2003.7.31	1,996,400

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2. Tang WT, Hsu M, Huang YM, Hsu YT, Chuang LL, Chang Y\*. (2020): Low-intensity electrical stimulation to improve the neurological aspect of weakness in individuals with chronic anterior cruciate ligament lesion. *Biomed Res Int.* Volume 2020, Article ID 7436274. (IF:2.197, Biotechnology & Applied Microbiology:94/162) 107-2221-E-182-009-MY3, EMRPD1I0451
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## 專利

- (1). 發明創作中文名稱：踏板調整結構、其調整方法及具有踏板調整結構之步態訓練裝置  
編號：101127883  
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(2). 發明創作中文名稱：體感控制系統及其方法

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(3). 發明創作中文名稱：生理資訊紀錄裝置及其生理資訊紀錄方法

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(4). 發明創作中文名稱：一種指標顯示裝置、指標控制裝置、指標控制系統及其相關方法

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