蔡金吾 特聘教授兼研發長
國立陽明交通大學 醫學院 腦科學研究所
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現職：

2021- 國立陽明交通大學腦科學研究所 特聘教授
2021- 國立陽明交通大學研究發展處 研發長／產學運籌中心校區主任
2021- 國立陽明交通大學生命科技系暨研究所 合聘教授
2021- 台灣基礎神經科學學會理事
2018- 科技部研究計畫複審委員

經歷：

2020-2021 國立陽明大學研究發展處 副研發長／綜合企劃組組長
2020-2021 國立陽明大學腦科學研究所 專任教授
2019-2021 國立交通大學生命科技系暨研究所 合聘副教授
2018-2020 國立陽明大學腦科學研究所 專任副教授
2014-2015 第八屆科技部「台法前鋒科學論壇」規劃委員
2012-2018 國立陽明大學腦科學研究所 專任助理教授
2010-2012 Genentech Inc. 研究及發展部生醫影像組科學經理 (Scientific Manager)
2009-2010 加州大學舊金山分校(UCSF)幹細胞與再生醫學研究中心及神經科博士後研究員
2008-2009 紐約大學 (NYU) 分子神經生物學博士後研究員
2000-2002 陸軍砲兵少尉義務役預備軍官（砲兵指揮部測量排長）
1999 國立陽明大學微生物及免疫學助教

學歷：

2002 - 2008: 哥倫比亞大學(Columbia University)細胞分子及生物物理學博士(Cellular, Molecular, and Biophysical Studies)（指導教授：Richard Vallee）
1998 - 2000: 國立陽明大學微生物及免疫學碩士（指導教授：林奇宏）
1994 - 1998: 國立台灣大學物理學及動物學雙學士

獎項與榮譽：

2021 第二屆「伍焜玉院士學術講座」
2021-2025 科技部「2030 國際年輕傑出學者研究計畫」
2021 第 17 屆「榮台聯大優良論文獎」第二名
2020 科技部 108 年度「傑出研究獎」
2020 台灣癲癇醫學會「癲癇傑出研究獎」
2020 獲選國立陽明大學 45 週年校慶「飛耀陽明 5 大創新」
2015-2020 連續六年獲國立陽明大學醫學院「醫學系學生網路教學評估優良教師」
2019 第 15 屆「永信李天德青年醫藥科技獎」
2019 第 24 屆中央研究院「年輕學者研究著作獎」
2019 第 17 屆「有庠科技論文獎」，遠東徐有庠先生紀念基金會
2019-2021 科技部領袖學者助攻方案「沙克爾頓計畫（突破研究型）」
2019 國立陽明大學院級「教學傑出獎」
2019 台灣癲癇醫學會「癲癇研究論文獎」第一名
2018, 2015 國立陽明大學「教學優良獎」
2018 榮總台聯大專題研究計畫成果壁報競賽第二名
2017-2020 科技部「優秀年輕學者研究計畫」

2014-2017 科技部「優秀年輕學者研究計畫」
2012 國科會「延攬特殊優秀人才」補助計畫
2011 Recognition Award, Genentech Inc.
2011 Ruth L. Kirschstein National Research Service Awards for Individual Postdoctoral Fellows, National Institutes of Health, USA
2010 "Study Abroad" Postdoctoral Fellowship, National Science Council, Taiwan
2008 Spinal Cord Injury Research Program Postdoctoral Fellowship Award, Spinal Cord Injury Research Board (SCIRB), New York State Department of Health
2008 The Rover Award for Outstanding Achievement in Anatomy and Cell Biology
2008 Ph.D. degree with Distinction, Columbia University
2007 International Brain Research Organization Travel Grant for the World Congress of Neuroscience
2007 The British Council Stem Cell Workshop Scholarship
2006 AAAS/Science Program for Excellence in Science
2006 NIH National Graduate Student Research Festival Scholarship
2006 Taiwanese Bioscientist Association Student Travel Award
2005 The Brunie Prize in Neural Stem Cell Research
2005 American Society for Cell Biology (ASCB) Predoctoral Student Travel Award
2000 The Best Student Paper Award, International Society for Optical Engineering
2000 國立陽明大學「優秀碩士論文獎」
1998 「吳健雄科學獎」，吳健雄教育基金會
1997 行政院國家科學委員會「大專生暑期研究計畫」
1996, 1994 國立台灣大學「成績優良（書卷）獎」
1994 「高級中學自然科學資賦優異學生」保送國立台灣大學物理學系
1994 獲選第 25 屆「國際物理奧林匹亞競賽 (International Physics Olympiad) 」國家代表隊
1994 獲選參加「亞太數學奧林匹亞競試 (Asian Pacific Mathematics Olympiad) 」
1994 「全國科學才能青年選拔活動高中數學競試」二等獎
1994 當選「台灣省、台北市暨高雄市高級中學特殊優良學生」
1994 「中華民國第 34 屆中小學科學展覽」物理科高中組第二名
1994 「高級中學數學及自然學科競賽」物理科決賽第二名

<u>指導學生獲獎：</u>

2021 碩士班張芊惠、林莞茜獲「罕見疾病基金會獎學金」
2021 生物科技系林子崴、醫學系廖證硯獲科技部「大專生研究計畫」
2021 博士班鄭皓元獲陽明交大「博士班優良論文獎學金」優等獎
2021 碩士班柯皓禎獲「紀念尹珣若先生品學及論文優良獎學金」優等獎
2020 醫學系林映岑健康科學文教基金會第 15 屆「醫學系學生暑期研究計畫成果發表」佳作
2020 碩士班張玉玄獲玉泉公益教育基金會獎學金
2020 碩士班林均儒獲台灣發育生物學年會口頭報告佳作獎
2020 醫學系林莞茜獲科技部「大專生研究計畫」
2020 醫學系林映岑獲健康科學文教基金會「獎助暑期大專生參與研究計畫」
2020 碩士班林均儒獲「陽明大學論文優良獎學金」入圍獎
2019 博士班鄭皓元、碩士班林均儒獲「罕見疾病基金會獎學金」
2019 博士班張家祥獲「永信李天德醫藥科技傑出論文獎」
2019 醫技系林昕儀、醫學系盧謙獲科技部「大專生研究計畫」
2019 博士班粘芳馨獲「陽明博士班優良論文獎學金」優等獎
2019 碩士班趙年欣獲「紀念尹珣若先生品學及論文優良獎學金」優等獎
2019 博士班呂怡陵獲安安慢飛天使家庭關懷協會「2019 全國兒童神經精神科學勵翔獎」第一名
2019 博士班黃嘉偉獲推薦代表台灣參加日本 HOPE 2019 會議
2019 博士班 Ridwan Ibrahim 獲中央研究院跨領域神經科學國際學程 Travel Award
2018 碩士班康以寧、張馨云、劉臻獲 the 15th Meeting of the Asian-Pacific Society for Neurochemistry

(APSN) Travel Award 並獲選 Oral presentation
2018 碩士班王竣弘獲「陽明大學學術論文比賽」佳作獎
2018 碩士班康以寧獲「紀念尹珣若先生品學及論文優良獎學金」優等獎
2018 碩士班劉臻獲陽明大學「生技教育基金」獎學金
2018 生科系陳文碩、醫學系洪學宇獲科技部「大專生研究計畫」
2017 醫學系洪學宇獲健康科學文教基金會「醫學系學生暑期研究計畫成果發表亞軍」
2017 碩士班張馨云獲「罕見疾病基金會獎學金」
2017 博士班黃嘉偉、鄭皓元獲陽明大學「生技教育基金」獎學金
2017 碩士班鄭皓元獲陽明大學「修讀博士班獎學金」
2017 碩士班蕭景如獲「紀念尹珣若先生品學及論文優良獎學金」入選獎
2017 醫學系洪學宇獲健康科學文教基金會「醫學系學生暑期研究計畫」
2017 生科系柳維思、醫學系洪學宇獲科技部「大專生研究計畫」
2016 碩士班陳怡安獲「陽明大學學術論文比賽」優等獎
2016 碩士班陳怡安獲「紀念尹珣若先生品學及論文優良獎學金」入選獎
2016 生科系張馨云、葉思妤獲科技部「大專生研究計畫」
2015 醫學系陳紹倫、廖柔謙獲科技部「大專生研究創作獎」
2015 碩士班張家祥獲「紀念尹珣若先生品學及論文優良獎學金」優等獎
2015 醫學系廖柔謙、林伯禧獲科技部「大專生研究計畫」
2014 博士班粘芳馨獲選 Cold Spring Harbor Asia Meeting on Neurobiology 口頭報告
2014 醫學系廖柔謙獲健康科學文教基金會「獎助暑期大專生參與研究計畫」
2014 醫學系陳紹倫、廖柔謙獲科技部「大專生研究計畫」
2013 碩士班粘芳馨獲「紀念尹珣若先生品學及論文優良獎學金」入選獎

應邀演講：

1. Invited speaker in EMBO Workshop on Neural Development and Neurodegeneration, Taipei, Taiwan (2022)
2. Invited symposium speaker in the 16th Meeting of the Asian-Pacific Society for Neurochemistry (APSN), Singapore (2021)
3. Invited speaker in the 14th Asia Pacific Federation of Pharmacologist (APFP), Taipei, Taiwan (2021)
4. Invited speaker in the International Conference of Developmental Biology, Stem Cells and Regenerative Medicine, Taipei, Taiwan (2021)
5. Invited speaker and panelist in the International Brain Research Organization (IBRO) Associate School on Neuromics, Kuala Lummpur, Malaysia (2021)
6. Invited speaker in the 34th International Epilepsy Congress, Paris, France (2021)
7. Invited speaker in the 16th Taiwan Society for Stem Cell Research (TSSCR) Annual Meeting, Taipei, Taiwan (2020)
8. Invited speaker in the 5th NHRI-ToMMo Conference, Tohoku, Japan (2019)
9. Invited speaker in AsiaPacific Forum on Population Genomics, Taipei, Taiwan (2019)
10. Invited speaker in the Taiwan Society for Biochemistry and Molecular Biology Autumn Camp (2018)
11. Invited speaker in the 23rd Congress of Chinese Pediatric Society, Xiamen, China (2018)
12. Invited speaker in the 12th NYMU-UCSD Bilateral Symposium, La Jolla, CA (2018)
13. Invited speaker in the Annual Meeting of the Association for the Study of Neurons and Diseases, Taipei, Taiwan (2018)
14. Invited speaker in the Cross-Strait Epilepsy Gene Research Forum, Taipei, Taiwan (2018)
15. Invite speaker in 第三屆兩岸四地癲癇病學青年峰會,中國長春 (2018)
16. Keynote speaker in the Asia Pacific Medical Student Symposium (APMSS), Taipei, Taiwan (2017)
17. Invited speaker in the 10th NYMU-UCSD Bilateral Symposium, La Jolla, CA (2016)
18. Invited symposium speaker in the 14th Meeting of the Asian-Pacific Society for Neurochemistry (APSN), Kuala Lumpur, Malaysia (2016)
19. Invited speaker in Focus on Microscopy 2016 conference , Taipei, Taiwan (2016)
20. Invited symposium speaker in the 6th Federation of Asia-Oceanian Neuroscience Society (FAONS) Congress and the 11th Biennial Conference of CNS, Wuzhen, China (2015)
21. Invited speaker in the 25th ISN-APSN-ANS Joint Meeting Satellite Meeting, Cairns, Australia (2015)

22. Invited speaker in the 4th Symposium of World Association of Chinese Epileptologists (WACE), Kaohsiung, Taiwan (2014)
23. Invited speaker in the 4th Annual World Congress of Molecular & Cell Biology Meeting, Dalian, China (2014)
24. Invited speaker in the 12th Annual Meeting of the Taiwan Epilepsy Society, Taipei, Taiwan (2014)
25. Invited speaker in the Conference of the Federation of Asian Societies for Molecular Imaging, Taipei, Taiwan (2013)
26. Invited speaker in the Combined ASBMB, ASPS, and ANZSCDB Annual Meeting (ComBio), Perth, Australia (2013)
27. Invited speaker in the International Symposium on Development, Morphogenesis, and Stem Cells, Taipei, Taiwan (2013)
28. Invited speaker in the 6th NYMU-UCSD Bilateral Symposium, La Jolla, CA (2012)
29. Invited speaker in the Annual Meeting of Taiwan Neuroscience Society, Taipei, Taiwan (2011)
30. Invited speaker in the 4th NYMU-UCSD Bilateral Symposium, La Jolla, CA (2010)
31. Speaker in the 39th Neuroscience Meeting, Chicago, IL, Society for Neuroscience (2009)
32. Invited speaker in the 2nd Global COE Retreat, Hokuto, Japan, University of Tokyo (2009)
33. Invited speaker in the 1st Tohoku Neuroscience GCOE conference "From Genes to Development and Behavior", Zao, Japan, Tohoku University (2008)
34. Speaker in the "Stem cells, axon guidance and migration in the developing and adult brain" conference, Cairns, Australia, IBRO (2007)
35. Invited speaker in the 46th Cell Biology Meeting, San Diego, CA, ASCB (2006)
36. Invited speaker in the CAS Symposium on Model Organisms and Diseases, Beijing, China, Chinese Academy of Sciences (2006)
37. Speaker in the 36th Neuroscience Meeting, Atlanta, GA, Society for Neuroscience (2006)
38. Speaker in the 35th Neuroscience Meeting, Washington, DC, Society for Neuroscience (2005)
39. Invited speaker in the 44th Cell Biology Meeting, Washington, DC, ASCB (2004)
40. Invited speaker in Photonics Taiwan 2000, Taipei, Taiwan, Int'l Society of Optical Engineering (2000)

專利：

1. 林奇宏、蔡金吾、易永祥 「細胞側視系統與方法」中華民國發明專利#00594011 (2004-2020).

期刊著作：

2021

1. Savino E, Guarnieri FC, Tsai JW, Corradi A, Benfenati F, Valtorta F* (2021) An emerging role of PRRT2 in regulating growth cone morphology, ***Cells***, 10(10):2666.
2. Chen HY, Hsu CL, Lin3 HY, Lin YF, Tsai SF, Ho YJ, Li YR, Tsai JW, Teng SC*, Lin CH* (2021) Clinical and functional characterization of a novel STUB1 frameshift mutation in autosomal dominant spinocerebellar ataxia type 48 (SCA48). ***J Biomed Sci***, 28(1):65.

2020

3. Tsai MH, Muir AM, Wang WJ, Kang YN, Yang KC, Chao NH, Wu MF, Chang YC, Porter BE, Jansen LA, Sebire G, Deconinck N, Fan WL, Su SC, Chung WH, Almanza Fuerte EP, Mehaffey MG, University of Washington Center for Mendelian Genomics, Ng CC, Chan CK, Lim KS, Leventer RJ, Lockhart PJ, Riney K, Damiano JA, Hildebrand MS, Mirzaa GM, Dobyns WB, Berkovic SF, Scheffer IE, Tsai JW*, Mefford HC* (2020) Pathogenic variants in CEP85L cause sporadic and familial posterior predominant lissencephaly. ***Neuron***, 106(2):237-245. (* corresponding)
4. Tsai MH, Cheng HY, Nian FS, Liu C, Chao NH, Chiang KL, Chen SF, Tsai JW* (2020) Impairment in dynein-mediated nuclear translocation by BICD2 C-terminal truncation leads to neuronal migration defect and human brain malformation. ***Acta Neuropathol Commun***, 8(1):106. (* corresponding)
5. Ibrahim RB, Yeh SY, Lin KP, Ricardo F, Yu TY, Chan CC, Tsai JW*, Liu YT* (2020) Cellular secretion and cytotoxicity of transthyretin mutant proteins underlie late onset amyloidosis and neurodegeneration. ***Cell Mol Life Sci***, 77(7):1421-1434. (* corresponding)
6. Yang CP, Yang WS, Wong YH, Wang KH, Teng YC, Chang MH, Liao KH, Nian FS, Chao CC, Tsai JW, Hwang WL, Lin MW, Tzeng TY, Wang PN, Campbell M, Chen LK, Tsai TF, Chang PC, Kung HJ (2020) Muscle atrophy-related myotube-derived exosomal microRNA in neuronal dysfunction: Targeting both coding and long noncoding RNAs. ***Aging Cell***, 19(5):e13107.
7. Chang CY, Liang MZ, Wu CC, Huang PY, Chen HI, Yet SF, Tsai JW, Kao CF, Chen L (2020) WNT3A

promotes neuronal regeneration upon traumatic brain injury. ***Int J Mol Sci***, 21(4):1463.

8. Hu CJ, Lu YC, Tsai YH, Cheng HY, Takeda H, Huang CY, Xiao R, Hsu CJ, Tsai JW, Vandenberghe LH, Wu CC, Cheng YF (2020) Efficient in utero gene transfer to the mammalian inner ears by a synthetic adeno-associated viral vector Anc80L65. ***Mol Ther-Methods & Clin Dev***, 18:493-500.

Mol Ther-Methods & Clin Dev 18(1) cover

2019

9. Chang CH, Zanini M, Shirvani H, Cheng JS, Yu H, Feng CH, Mercier AL, Hung SY, Forget A, Wang CH, Cigna SM, Lu IL, Chen WY, Leboucher S, Wang WJ, Ruat M, Spassky N, Tsai JW*, Ayrault O* (2019) Atoh1 controls primary cilia formation to allow for SHH-triggered granule neuron progenitor proliferation. ***Dev Cell***, 48(2):184-199.e5. (* corresponding)
10. Tsai MH, Nian FS, Hsu MH, Liu WS, Liu YT, Liu C, Lin PH, Hwang DY, Chuang YC, Tsai JW* (2019) *PRRT2* missense mutations cluster near C-terminus and frequently lead to protein mislocalization. ***Epilepsia***, 60(5):807-817. (* corresponding)
11. Chen JL, Chang CH, Tsai JW* (2019) Gli2 rescues delays in brain development induced by Kif3a dysfunction. ***Cereb Cortex***, 29(2):751-64. (* corresponding)
12. Nian FS, Li LL, Cheng CY, Wu PC, Lin YT, Tang CY, Ren BS, Tai CY, Fann MJ, Kao LS, Hong CJ, Tsai JW* (2019) Rab18 collaborates with Rab7 to modulate lysosomal and autophagy activities in the nervous system: An overlapping mechanism for Warburg micro syndrome and Charcot-Marie-Tooth neuropathy type 2B. ***Mol Neurobiol***, 56(9):6095-6105. (* corresponding)
13. Chang HY, Cheng HY, Tsao AN, Liu C, Tsai JW* (2019) Multiple functions of KBP in neural development underlie brain anomalies in Goldberg-Shprintzen syndrome. ***Front Mol Neurosci***, 12:265. (* corresponding)
14. Ibrahim RB, Liu YT, Yeh SY, Tsai JW* (2019) Contributions of animal models to the mechanisms and therapies of transthyretin amyloidosis. ***Front Physiol***, 10:338. (* corresponding)
15. Valente P, Romei A, Fadda M, Sterlini B, Lonardoni D, Forte N, Fruscione F, Castroflorio E, Michetti C, Giansante G, Valtorta F, Tsai JW, Zara F, Nieus T, Corradi A, Fassio A, Baldelli P, Benfenati F (2019) Constitutive inactivation of the PRRT2 gene alters short-term synaptic plasticity and promotes network hyperexcitability in hippocampal neurons. ***Cereb Cortex***, 29(5):2010-2033.

2018

16. Lu IL, Chen C, Tung CY, Chen HH, Pan JP, Chang CH, Cheng JS, Chen YA, Wang CH, Huang CW, Kang YN, Chang HY, Li LL, Chang KP, Shih YH, Lin CH, Kwan SY, Tsai JW* (2018) Identification of genes associated with cortical malformation using a transposon-mediated somatic mutagenesis screen in mice. ***Nat Commun***, 9(1):2498. (* corresponding)
17. Hsiao CJ, Chang CH, Ibrahim RB, Lin IH, Wang CH, Wang WJ, and Tsai JW* (2018) Gli2 modulates cell cycle re-entry through autophagy-mediated regulation on the length of primary cilia. ***J Cell Sci***, 131(24). pii: jcs221218. (* corresponding)
18. Chen YA, Lu IL, Tsai JW* (2018) Contactin-1/F3 regulates neuronal migration and morphogenesis through modulating RhoA activity. ***Front Mol Neurosci***, 11:422. (* corresponding)
19. Jheng GW, Hur SS, Chang CM, Wu CC, Cheng JS, Lee HH, Chung BC, Wang YK, Lin KH, del Álamo JC, Chien S, Tsai JW* (2018). Lis1 dysfunction leads to traction force reduction and cytoskeletal disorganization during cell migration. ***Biochem Biophys Res Commun***, 497(3):869-75. (* corresponding)
20. Kilander MBC, Wang CH, Chang CH, Nestor JE, Herold K, Tsai JW, Nestor MW, Lin YC (2018) A rare human CEP290 variant disrupts the molecular integrity of the primary cilium and impairs Sonic Hedgehog machinery. ***Sci Rep***, 8(1):17335.

2017

21. Chakraborty S, Karmenyan A, Tsai JW, Chiou A (2017) Inhibitory effects of curcumin and cyclocurcumin in 1-methyl-4-phenylpyridinium (MPP+) induced neurotoxicity in differentiated PC12 cells. ***Sci Rep***, 7(1):16977.
22. Liu YH, Tsai JW, Chen JL, Yang WS, Chang PC, Cheng PL, Turner DL, Yanagawa Y, Wang TW, Yu JY (2017) Ascl1 promotes tangential migration and confines migratory routes by induction of Ephb2 in the telencephalon. ***Sci Rep***, 7:42895.
23. Chen HR, Juan HC, Wong YH, Tsai JW, Fann MJ (2017) Cdk12 regulates neurogenesis and late-arising neuronal migration in the developing cerebral cortex. ***Cereb Cortex***, 27(3):2289-302.

2016

24. Liu YT, Nian FS, Chou WJ, Tai CY, Kwan SY, Chen C, Kuo PW, Lin PH, Chen CY, Huang CW, Lee YC, Soong BW*, Tsai JW* (2016) PRRT2 mutations lead to neuronal dysfunction and neurodevelopmental defects. ***Oncotarget***, 7(26):39184-96. (* corresponding)
25. Tsai MH, Kuo PW, Myers CT, Li SW, Lin WJ, Fu TY, Chang HY, Mefford HC, Chang YC*, Tsai JW* (2016). A novel DCX missense mutation in a family with X-linked lissencephaly and subcortical band heterotopia syndrome inherited from a low-level somatic mosaic mother: Genetic and functional studies. ***Eur J Paediatr Neurol***, 20(5):788-94. (* corresponding)
26. Ma L*, Qiao Q*, Tsai JW*, Yang G, Li W, Gan WB (2016) Experience-dependent plasticity of dendritic spines of layer 2/3 pyramidal neurons in the mouse cortex. ***Dev Neurobiol***, 76(3):277-286. (* first author)
27. Qiao Q, Ma L, Li W, Tsai JW, Yang G, Gan WB (2016) Long-term stability of axonal boutons in the mouse barrel cortex. ***Dev Neurobiol***, 76(3):252-261.
28. Chakraborty S, Nian FS, Tsai JW, Karmenyan A, Chiou A (2016) Quantification of the metabolic state in cell-model of Parkinson's disease by fluorescence lifetime imaging microscopy. ***Sci Rep***, 6:19145.

2015

29. Cheng CY, Wu JC, Tsai JW, Nian FS, Wu PC, Kao LS, Fann MJ, Tsai SJ, Liou YJ, Tai CY, Hong CJ (2015) ENU mutagenesis identifies mice modeling Warburg Micro syndrome with sensory axon degeneration caused by a deletion in Rab18. ***Exp Neurol***, 267:143-51.

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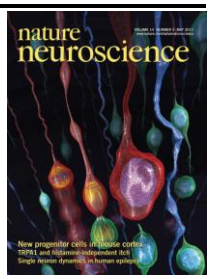

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