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Appointments

2021- **Vice President of Research and Development**, NYCU, Taiwan
2021- **Distinguished Professor**, Institute of Brain Science (IBS), College of Medicine, NYCU, Taiwan
2021- **Adjunct Professor**, Department of Biological Science & Technology, NYCU, Taiwan
2018- Member of the Study Panel for Research Grants, Ministry of Science and Technology, Taiwan
2020-2021 **Professor**, IBS, School of Medicine, National Yang-Ming University (NYMU), Taiwan
2020-2021 **Deputy Vice President of Research and Development**, NYMU, Taiwan
2020-2021 **Chief of General Planning Section**, Office of Research and Development, NYMU, Taiwan
2019-2021 **Adjunct Associate Professor**, Department of Biological Science & Technology, National Chiao Tung University (NCTU), Taiwan
2018-2020 **Associate Professor**, IBS, School of Medicine, NYMU, Taiwan
2014-2015 The 8th "France-Taiwan Frontiers of Science" Planning Group Member, Ministry of Science and Technology
2012-2018 **Assistant Professor**, IBS, School of Medicine, NYMU, Taiwan
2010-2012 **Scientific Manager**, Department of Biomedical Imaging, Early Research and Development, Genentech Inc., South San Francisco, CA
2009-2010 **Postdoctoral Scholar**, Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research, University of California, San Francisco (UCSF), San Francisco, CA
2008-2009 **Postdoctoral Fellow**, Skirball Institute of Biomolecular Medicine, New York University (NYU) Langone Medical Center, New York, NY
2000-2002 Second Lieutenant in Artillery (Survey Officer of the Artillery Command), Taiwan
1999 **Teaching Assistant**, Institute of Microbiology and Immunology, NYMU

Education

2002 - 2008: Ph.D., Cellular, Molecular, and Biophysical Studies, **Columbia University**, New York, USA
1998 - 2000: M.S., Microbiology and Immunology, **National Yang-Ming University**, Taiwan
1994 - 1998: B.S., Physics and Zoology (double major), **National Taiwan University**, Taiwan

Awards and Honors

2021 The 2nd Kenneth K. Wu Lecture
2021 The 17th VGH-UST Outstanding Research Articles—Runner-up
2020 Outstanding Research Award, Ministry of Science and Technology, Taiwan
2020 Epilepsy Research Award, Taiwan Epilepsy Society
2020 Top 5 Innovations for NYMU's 45th Anniversary
2015-2020 Medical Student elected Excellent Teaching Award, School of Medicine, NYMU
2019 TienTe Lee Award for Medical and Pharmacological Technologies (Young Investigators)
2019 Excellent Teaching Award, National Yang-Ming University
2019 Academia Sinica Research Award for Junior Research Investigators, Academia Sinica
2019 The 17th Y. Z. Hsu Science Paper Award, Far Eastern Y. Z. Hsu Science and Technology Memorial Foundation
2019 Epilepsy Research Articles of the Year, First Place, Taiwan Epilepsy Society
2018, 2015 Excellent Teaching Award, National Yang-Ming University
2018 Runner-up in the VGH-UST Research Grant Poster Contest
2017, 2014 Outstanding Young Investigator Research Grant, Ministry of Science and Technology
2012 Talent Recruitment Program, National Science Council
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 The Outstanding Thesis Award, National Yang-Ming University

1998 Wu Chien-Shiung Science Award, Wu Chien-Shiung Education Foundation

1997 Undergraduate Summer Research Grant, National Science Council, Taiwan

1996, 1994 Presidential Award, National Taiwan University

1994 Scholarship for Talented Students in Mathematics and Natural Sciences, Ministry of Education

1994 The 25th International Physics Olympiad contestant

1994 The 6th Asian Pacific Mathematics Olympiad contestant

Invited Presentations

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 the 3rd Cross-Strait Epilepsy Junior Summit, Changchun, China (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-ASN 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)

Patents

1. Lin CH, Tsai JW & Yi YS. "Cell Observing Method and the System Thereof" Patent of the Republic of China (Taiwan) #00594011 (2004-2020).

Publications

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

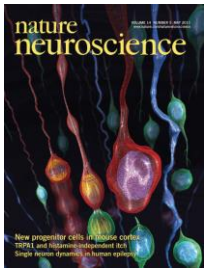
YC, Soong BW*, Tsai JW* (2016) PRRT2 mutations lead to neuronal dysfunction and neurodevelopmental defects. ***Oncotarget***, 7(26):39184-96. (* corresponding)

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.

2011



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30. Tsai JW & Vallee RB (2011) Live microscopy of neural stem cell migration in brain slices. ***Methods Mol Biol***, 750:131-42. (* first author)
31. Wang X, Tsai JW, Lamonica B & Kriegstein AR (2011) A new subtype of progenitor cell in the mouse embryonic neocortex. ***Nat Neurosci***, 14(5):555-61. **(Cover; featured in *News and Views*)**

2010

32. Tsai JW*, Lian WN*, Kemal SK, Kriegstein AR & Vallee RB (2010) Kinesin 3 and cytoplasmic dynein mediate interkinetic nuclear migration in neural stem cells. ***Nat Neurosci***, 13(12):1463-71. (* first author)

2009

Nature 461(7266) cover

33. Wang X, Tsai JW, Imai JH, Lian WN, Vallee RB & Shi SH (2009) Asymmetric inheritance of centrosome maintains neural progenitors during mammalian neocortical neurogenesis. ***Nature*** 461(7266):947-55. **(Cover; featured in *News and Views*)**
34. Vallee RB, Seale GE & Tsai JW (2009) Emerging roles for myosin II and cytoplasmic dynein in migrating neurons and growth cones. ***Trends Cell Biol*** 19(7):347-55.

2007

35. Tsai JW, Bremner KH & Vallee RB (2007) Dual subcellular roles for LIS1 and dynein in radial neuronal migration in live brain tissue. ***Nat Neurosci*** 10(8):970-9. (* first author)

2006

36. Vallee RB & Tsai JW (2006) The cellular roles of the lissencephaly gene LIS1, and what they tell us about brain development. ***Genes Dev*** 20:1384-93.

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37. Hsieh CF, Chang BJ, Pai CH, Chen HY, Tsai JW, Yi YH, Chiang YT, Wang DW, Chi S, Hsu L & Lin CH (2006) Stepped changes of monovalent ligand-binding force during ligand-induced clustering of integrin $\alpha_{IIb}\beta_3$. ***J Biol Chem*** 281(35):25466-74.

2005

38. Tsai JW, Chen Y, Kriegstein AR & Vallee RB (2005) LIS1 RNAi blocks neural stem cell division, morphogenesis, and motility at multiple stages. ***J Cell Biol*** 170(6):935-45. **(Cover and highlight paper)** (* first author)

2004

39. Hsieh CF, Chang BJ, Pai CH, Chen HY, Chi S, Hsu L, Tsai JW & Chi-Hung Lin (2004) Identification of stepped changes of binding affinity during interactions between the disintegrin rhodostomin and integrin $\alpha_{IIb}\beta_3$ in living cells using optical tweezers. ***Proc SPIE*** 5514:215-224.

2001

40. Liu JC, Hwang WL, Chen MS, Tsai JW & Lin CH (2001) Wavelet-based active contour model for object tracking. ***ICIP Proc*** 3:206-9.

2000

41. Tsai JW, Liao BY, Huang CC, Hwang WL, Wang DW, Chiou AE & Lin CH (2000) Applications of optical tweezers and an integrated force measurement module for biomedical research. ***Proc SPIE*** 4082:213-21. **(Best Student Paper Award)** (* first author)
42. Lin CH & Tsai JW (2000) Applications of optical tweezers in biological force measurements. ***Physics Bimonthly*** 22:500-5.

1999

43. Lian WN, Tsai JW, Yu PM, Wu TW, Yang SC, Chau YP & Lin CH (1999) Targeting of aminopeptidase N to bile canaliculi correlates with secretory activities of the developing canalicular domain. ***Hepatology*** 30(3): 748-60.