

CURRICULUM VITAE

Name: Margaret S. Ho, Ph. D.

Education:

Bachelor of Arts, Department of Molecular and Cellular Biology, Biochemistry
University of California at Berkeley, USA, 1999

Ph.D., Department of Molecular and Cellular Biology
Harvard University, USA, 2003 (Advisor: Dr. Richard Losick)

Career:

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| 2024.02-present | Associate Professor, Institute of Neuroscience, National Yang Ming Chiao Tung University, Taipei |
| 2017.07-2024.01 | Associate Professor, School of Life Sciences and Technology, ShanghaiTech University, Shanghai (tenured 2022.05) |
| 2010.11-2017.06 | Distinguished Professor, School of Medicine, Tongji University, Shanghai |
| 2003.11-2010.10 | Postdoctoral Fellow, Institute of Molecular Biology, Academia Sinica, Taipei (Advisor: Dr. Cheng-Ting Chien) |
| 1998.12-1999.07 | Research Assistant, Department of Chemistry and Chemical Biology, Harvard University, Cambridge (Advisor: Dr. Gregory Verdine) |

Professional and Academic Activities:

Oral Presentations

1. The 3rd Asia Pacific *Drosophila* Neurobiology Conference, Tokyo, Japan, Feb 2024
2. Taiwan International Graduate Program-Interdisciplinary Neuroscience (TIGP-INS) Retreat, Fullon, Taipei, Taiwan, Jan 2024
3. The 7th Chinese *Drosophila* Research Conference, Nanjing, China, Oct 2023
4. Neuroscience Study Group, National Taiwan University College of Medicine, Taipei, Taiwan, Sept 2023
5. The International Society of Neurochemistry (ISN)-ESN Biennial Meeting, session “Microglia in physiology and disease”, Porto, Portugal, Aug 2023
6. The 1st Annual Shanghai ALS Summit, Shanghai, China, March 2023
7. Neuroscience Program of Academia Sinica (NPAS), Taipei, Taiwan, Aug 2022
8. NeuroZoom, Virtual, April 2022
9. The 16th Meeting for Asia-Pacific Society of Neurochemistry, session “Molecular mechanisms of neurodegeneration”, Virtual, Dec 2021

10. The 6th Chinese *Drosophila* Research Conference, Guangzhou, China, Nov 2021
11. The 10th Chinese Society for Cell Biology Cellular Neuroscience Meeting, Wuhan, China, Oct 2021
12. The XV European Meeting on Glial Cells in Health and Disease, session “Glial modulation of circuit assembly and behavior”, Virtual, July 2021
13. The 51th American Society of Neurochemistry Annual Meeting, session “Astrocytes-neuron interaction in health and disease”, Virtual, June 2021
14. The Brain Cognition and Brain Disease Institute, Shenzhen Institutes of Advanced Technology, Shenzhen, China, Jan 2020
15. The 26th European *Drosophila* Research Conference, Lausanne, Switzerland, Sept 2019
16. VIB-KU Leuven Center for Brain and Disease research, Leuven, Belgium, Sept 2019
17. The 5th Chinese *Drosophila* Research Conference, Dalian, China, Aug 2019
18. The 2nd Asia-Pacific *Drosophila* Neuroscience Conference, Taipei, Taiwan, Jan 2019
19. Xian Jiaotong University, Xian, China, Aug 2018
20. Department of Neurobiology, Harvard Medical School, Cambridge, MA, Jan 2018
21. University of Michigan at Ann Arbor, Ann Arbor, Michigan, USA, March 2018
22. The 50th American Society of Neurochemistry Annual Meeting, session “Glial cells in model organisms”, Riverside, CA, USA, March 2018
23. Cold Spring Harbor Asia Conference on Development, Function and Disease of Neural Circuits, Suzhou, China, Oct 2013

Meeting Chair and Organizer

1. Chair, session “Microglia in physiology and disease”, the International Society of Neurochemistry (ISN)-ESN Biennial Meeting, Porto, Portugal, Aug 2023
2. Chair, session “Neural development”, the 19th European *Drosophila* Neurobiology Conference, Saint-Malo, France, Sept 2022
3. Chair, session “Molecular mechanisms of neurodegeneration”, the 16th Meeting for Asia-Pacific Society of Neurochemistry, Virtual, Dec 2021
4. Chair, session “Glial modulation of circuit assembly and behavior”, the XV European Meeting on Glial Cells in Health and Disease, Virtual, July 2021
5. Chair, session “Astrocytes-neuron interaction in health and disease”, the 51th American Society of Neurochemistry Annual Meeting, Virtual, June 2021
6. Organizer, Local Fly meeting at Longwu, Hangzhou, China, April 2019
7. Chair, session “Neurodegenerative diseases”, the 2nd Asia-Pacific *Drosophila* Neuroscience Conference, Taipei, Taiwan, Jan 2019
8. Organizer, Fly Neuro Meeting at ShanghaiTech, Shanghai, China, May 2018
9. Chair, session “Glial cells in model organisms”, the 50th American Society of Neurochemistry Annual Meeting, Riverside, CA, USA, March 2018
10. Organizer, International glial workshop at ShanghaiTech, Shanghai, China, Oct 2017

11. Chair, session “Glia-neuron interaction”, the 1st Asia-Pacific *Drosophila* Neurobiology Conference, Wuhan, China, Sept 2017

Editorial Experience

1. Associate Editor, *Hereditas (Beijing)*, 2020-2023
2. Editor and author for the book series “Neuroglia in Neurodegenerative Diseases”, *Adv Exp Med Biol*. Springer, Nov 2019
3. Associate Editor, *Neuroglia*, 2018
4. Associate Editor, *ASN Neuro*, 2017-present
5. Guest Topic Editor, *Frontiers in Molecular Neuroscience*, Research Topic “Glia in Health and Disease”, 2017
6. Associate Editor, *Neuroscience Bulletin*, 2011-2017

Reviewer

1. Academic journals: *Aging Cell*, *ASN Neuro*, *Brain Behavior and Immunity-Health*, *Cellular and Molecular Life Sciences*, *eLife*, *Fly*, *Frontiers Neural Circuits*, *Journal of Cell Biology*, *Journal of Molecular Cell Biology*, *Journal of Neurochemistry*, *Neuroscience Bulletin*, *PLOS Genetics*, *Scientific Reports*, *Traffic*
2. Natural Science Foundation of China (NSFC) grants for excellent young scholars, international collaborative grant, and general program grant
3. Ministry of Education Degree Center, Ph.D. thesis
4. Shanghai Ministry of Education Degree Center, Master and Ph.D. thesis
5. Member for the ISN committee for Aid and Education in Neurochemistry (CAEN), International Society of Neurochemistry, 2023-present

Member of Professional Society

1. The Chinese Society for Cell Biology, Cellular Neuroscience Division, 2021-present
2. The Chinese Neuroscience Society, Glial Cell Division, 2019-2020
3. The American Society of Neurochemistry, 2018-present
4. The International Society of Neurochemistry, 2018-present
5. The Genetics Society of America, 2020-present

Scientific Writing

1. State Key Laboratory of Neuroscience, Scientific Writing Course for Graduates, Shanghai, China, May 2021
2. State Key Laboratory of Neuroscience, Scientific Writing Forum for Young Neuroscientists, Shanghai, China, Sept 2018
3. Continuing education – English for Writing in Science and Industry – certified by the University of Washington at Seattle, completed online June 2007

Grants:

1. 2023.08-2027.07, National Science and Technology Council Taiwan, 2030 Cross-Generation International Outstanding Young Scholars Program (PI). “The

- mechanism of α -synuclein prion-like spread from neurons to microglia in Parkinson's disease”
2. 2023.01-2023.12, Ministry of Science and Technology High-end Foreign Expert Program # G2023013051 (PI). “Microglia in neurodegenerative diseases”
 3. 2022.01-2022.12, Ministry of Science and Technology High-end Foreign Expert Program #G2022013013 (PI). “Glia in neurodegenerative diseases”
 4. 2022.01-2025.12, Natural Science Foundation of China, General Program #32170962 (PI). “Mechanism of Aux-mediated glial autophagy regulating neurodegeneration in PD”
 5. 2021.01-2021.12, Shanghai 2021 High-end Foreign Expert Program #21WZ2502300 (PI). “Glial autophagy in neurodegeneration”, 150,000 RMB.
 6. 2019.01-2022.12, Natural Science Foundation of China, General Program #31871039 (PI). “Glia-derived E3 ligase dSmurf regulates *Drosophila* mushroom body development”
 7. 2013.01-2017.12, National Program on Key Basic Research Project 973 Program #2013CB945600 (participant). “Mechanism of fate determination of neural precursor cells”
 8. 2013.01-2016.12, Natural Science Foundation of China, General Program #31270825 (PI). “Ubiquitination and protein degradation of F-box protein CG5003 during *Drosophila* development”
 9. 2013.01-2016.12, Collaborative Grant with Nu Skin Company (PI). “Effect of Nu Skin compounds on fly longevity and locomotor activity”
 10. 2012.01-2015.12: Natural Science Foundation of China, General Program #331171043 (PI). “Gcm phosphorylation regulates *Drosophila* embryonic glial cell development”
 11. 2012.01-2014.12, Central Government Research Fund for Tongji University (PI). “Glial cells in neurodegenerative diseases – using *Drosophila* as a model”
 12. 2012.01-2014.12, National Program on Key Basic Research Project 973 Program #2010CB944901 (participant). “Nucleosome positioning during *Drosophila* embryo development”
 13. 2007.01-2009.12, National Science Council Research Grant and Distinct Postdoctoral Fellowship Taiwan #96-2321-B-001-027-MY2 (PI), F-box genes control Gcm proteostasis in gliogenesis

Teaching:

1. English Writing for Science, graduates and undergraduates, 2018-2023
2. Cell Biology, graduates and undergraduates, 2017-2020
3. Neurobiology, graduates and undergraduates, 2010-2017
4. Developmental Biology, undergraduates, 2010-2017
5. Medical English, undergraduates, 2010-2017

Patent:

1. 一种基于 auxilin 在胶质细胞中的作用机理筛选治疗帕金森的药物的方法
202110982421.9, 2021

Bibliography:

A) Original Research Articles ([#] denotes corresponding author)

1. Zhang S, Wang L, Yi S, Li S, Wang H, Wang R, Liu Y, Yan W, Liu C, He K, **Ho MS[#]**, 2023, A phosphorylation-dependent switch of the lysosomal V-ATPase assembly regulates α -synuclein clearance in glia, *bioRxiv*, Dec 8, 2023.12.07.570521
2. Wang L, Zhang S, Yi S, **Ho MS[#]**, 2023, A new regulator of autophagy initiation in glia, *Autophagy*, Aug 29;1-3, invited commentary.
3. Wang M and **Ho MS[#]**, 2023, Profiling neurotransmitter-evoked glial responses by RNA-sequencing analysis, *Front. Neural Circuits* 17:1252759.
4. Zhang S, Yi S, Wang L, Li S, Wang H, Song L, Ou J, Zhang M, Wang M, Zheng Y, Wang R, Yang K, Liu T, **Ho MS[#]**, 2023, Cyclin-G-associated kinase GAK/dAux regulates autophagy initiation via ULK1/Atg1 in glia, *Proc Natl Acad Sci U S A*, Jul 18;120(29):e2301002120 (featured in *Logical Thinking Neuroscience* and BioArtMED Wechat public forums).
5. Yi S, Wang L, **Ho MS**, Zhang S[#], 2023, The autophagy protein Atg9 functions in glia and contributes to parkinsonian symptoms in a *Drosophila* model of Parkinson's disease, *Neural Regen Res*, 19(5):1150-1155.
6. Li T, Shi W, **Ho MS[#]**, Zhang YQ[#], 2023, A Pvr-AP-1-Mmp1 signaling pathway is activated in astrocytes upon traumatic brain injury, *eLife*, 12:RP87258 (featured in *Brainnews* Wechat public forum).
7. Wang L, Wang H, Yi S, Zhang S, **Ho MS[#]**, 2022, A LRRK2/dLRRK-mediated lysosomal pathway that contributes to glial cell death and DA neuron survival, *Traffic*, Oct;23(10):506-520 (featured on the Cover).
8. Wang H, Wang L, Yi S, Zhang S, **Ho MS[#]**, 2021, SNARE-dependent mitochondria-lysosome contacts regulate glial mitochondrial dynamics and dopaminergic neuron survival, *bioRxiv*, Aug 17, 2021b, 2021.08.16.456582.
9. Yang M, Wang H, Chen C, Zhang S, Wang M, Senapati B, Li S, Yi S, Wang L, Zhang M, Yin S, He Y, Xue L, Lin S, **Ho MS[#]**, 2021, Glia-derived temporal signals orchestrate neurogenesis in the *Drosophila* mushroom body, *Proc Natl Acad Sci U S A*, 118(23):e2020098118 (featured in *Logical Thinking Neuroscience* Wechat public forum).
10. Yang M, Guo Y, Wang S, Chen C, Chang YH, **Ho MS[#]**, 2021, The F-Box protein CG5003 regulates axon pruning and the integrity of the *Drosophila* mushroom body, *Front Mol Neurosci*, 14:634784.
11. Liu YJ[#], Zhang T, Chen S, Cheng D, Wu C, Wang X, Duan D, Zhu L, Lou H, Gong Z, Wang XD[#], **Ho MS[#]**, Duan S, 2021, The noncanonical role of the protease cathepsin D as a cofilin phosphatase, *Cell Res*, 31(7):801-813 (last corresponding author).
12. Cheng J, Wang H, Bartlett M, Stevenson D, Pan Y, **Ho MS[#]**, Ren Y[#], 2021, Antioxidant blend of curcumin and broccoli seed extract exhibits protective effect on neurodegeneration and promotes *Drosophila* lifespan, *ASN Neuro*, 13:17590914211015033.

13. Liu YJ, Zhang T, Cheng D, Yang J, Chen S, Wang X, Li X, Duan D, Lou H, Zhu L, Luo J, **Ho MS[#]**, Wang XD[#], Duan S[#], 2020, Late endosomes promote microglia migration via cytosolic translocation of immature protease cathD, *Sci Adv*, 6(50):eaba5783.
14. Hao X, Wang S, Lu Y, Yu W, Li P, Jiang D, Guo T, Li M, Li J, Xu J, Wu W, **Ho MS[#]**, Zhang L[#], 2020, Lola regulates *Drosophila* adult midgut homeostasis via non-canonical hippo signaling, *eLife*, 9:e47542.
15. Li M, Hu X, Zhang S, **Ho MS**, Wu G, Zhang L, 2019, Traffic jam regulates the function of the ovarian germline stem cell progeny differentiation niche during pre-adult stage in *Drosophila*, *Sci Rep*, 9(1):10124.
16. Zhang S, Guo X, Wu H, Sun Y, Ma X, Li J, Xu Q, Wu C, Li Q, Jiang C, Li W, **Ho MS**, Lv Z, Xue L, 2019, Wingless modulates activator protein-1-mediated tumor invasion, *Oncogene*, 38(20):3871-3885.
17. Zhang W, Xu J, Li J, Guo T, Jiang D, Feng X, Ma X, He L, Wu W, Yin M, Ge L, Wang Z, **Ho MS**, Zhao Y, Fei Z, Zhang L, 2018, The TEA domain family transcription factor TEAD4 represses murine adipogenesis by recruiting the cofactors VGLL4 and CtBP2 into a transcriptional complex, *J Biol Chem*, 293(44):17119-17134.
18. Cao W, Song L, Cheng J, Yi N, Cai L, Huang FD, **Ho MS[#]**, 2017, An automated rapid iterative negative geotaxis assay for analyzing adult climbing behavior in a *Drosophila* model of neurodegeneration, *J Vis Exp*, (127):56507.
19. Xiao X, Chen C, Yu TM, Ou J, Rui M, Zhai Y, He Y, Xue L, **Ho MS[#]**, 2017, Molecular chaperone Calnexin regulates the function of *Drosophila* sodium channel Paralytic, *Front Mol Neurosci*, 10:57.
20. Chen C, Yin S, Cao W, **Ho MS[#]**, 2017, *Drosophila* ubiquitin E3 ligase dSmurf is required for synapse remodeling and axon pruning by glia, *J Genet Genomics*, 44(1):67-70.
21. Xi X, Lu L, Zhuge CC, Chen X, Zhai Y, Cheng J, Mao H, Yang CC, Tan BC, Lee YN, Chien CT, **Ho MS[#]**, 2017, The hypoparathyroidism-associated mutation in *Drosophila* Gcm compromises protein stability and glial cell formation, *Sci Rep*, 7:39856.
22. Song L, He Y, Ou J, Zhao Y, Li R, Cheng J, Lin CH, **Ho MS[#]**, 2017, Auxilin underlies progressive locomotor deficits and dopaminergic neuron loss in a *Drosophila* model of Parkinson's disease, *Cell Rep*, 18(5):1132-1143.
23. Xu J, Hao X, Yin MX, Lu Y, Jin Y, Xu J, Ge L, Wu W, **Ho MS**, Yang Y, Zhao Y, Zhang L, 2017, Prevention of medulla neuron dedifferentiation by Nerfin-1 requires inhibition of Notch activity, *Development*, 144(8):1510-1517.
24. Ou J, Gao Z, Song L, **Ho MS[#]**, 2016, Analysis of glial distribution in *Drosophila* adult brains, *Neurosci Bull*, 32(2):162-70.
25. Hu L, Xu J, Yin MX, Zhang L, Lu Y, Wu W, Xue Z, **Ho MS**, Gao G, Zhao Y, Zhang L, 2016, Ack promotes tissue growth via phosphorylation and suppression of the Hippo pathway component Expanded, *Cell Discov*, 2:15047.
26. Wang C, Zhang W, Yin MX, Hu L, Li P, Xu J, Huang H, Wang S, Lu Y, Wu W, **Ho MS**, Li L, Zhao Y, Zhang L, 2015, Suppressor of Deltex mediates Pez degradation

- and modulates *Drosophila* midgut homeostasis, *Nat Commun*, 6:6607.
27. Wang X, Wang Z, Chen Y, Huang X, Hu Y, Zhang R, **Ho MS**, Xue L, 2014, FoxO mediates APP-induced AICD-dependent cell death, *Cell Death Dis*, 5(5):e1233.
 28. Chen J, Yan H, Ren DN, Yin Y, Li Z, He Q, Wo D, **Ho MS**, Chen Y, Liu Z, Yang J, Liu S, Zhu W, 2014, LRP6 dimerization through its LDLR domain is required for robust canonical Wnt pathway activation, *Cellular Signaling*, 26(5):1068-74.
 29. Wu HJ, Liu YJ, Li HQ, Chen C, Dou Y, Lou HF, **Ho MS**, Li XM, Gao Z, Duan S, 2014, Analysis of microglial migration by a micropipette assay, *Nat Protoc*, 9(2):491-500.
 30. Jin Y, Xu J, Yin MX, Lu Y, Hu L, Li P, Zhang P, Yuan Z, **Ho MS**, Ji H, Zhao Y, Zhang L, 2013, Brahma is essential for *Drosophila* intestinal stem cell proliferation and regulated by Hippo signaling, *eLife*, 2:e00999.
 31. Wu JT, Lin WH, Chen WY, Huang YC, Tang CY, **Ho MS**, Pi H, Chien CT, 2011, CSN-mediated deneddylation differentially modulates Ci (155) proteolysis to promote Hedgehog signalling responses, *Nat Commun*, 2:182.
 32. **Ho MS***, Chen H, Chen M, Jacques C, Giangrande A, Chien CT, 2009, Gcm protein degradation suppresses proliferation of glial progenitors, *Proc Natl Acad Sci U S A*, 106(16):6778-83 (This article won the France-Taiwan Scientific Prize and was featured in the Asia-Pacific International Molecular Biology Network A-IMBN)
 33. **Ho MS***, Carniol K, Losick R, 2003, Evidence in support of a docking model for the release of the transcription factor sigma F from the antisigma factor SpoIIAB in *Bacillus subtilis*, *J Biol Chem*, 278(23):20898-905.

B) Editorials, Reviews, Chapters, and Books (# denotes corresponding author)

Editorial

1. **Ho MS**[#], Verkhatsky A[#], Duan S[#], Parpura V[#], 2019, Editorial: Glia in health and disease, *Front Mol Neurosci*, 12:63.
2. **Ho MS**[#], 2014, Neurodevelopment and degeneration, *Neurosci Bull*, 30(4):539-41.

Research Highlight

1. **Ho MS**[#], 2018, A shared neural node for multiple innate behaviors in *Drosophila*, *Neurosci Bull*, 34(6):1103-1104.
2. **Ho MS**[#], 2017, Neuroglial crosstalk by mitochondria, *Neurosci Bull*, 33(1):111-112.

Book Chapter

1. **Ho MS**[#], 2019, Microglia in Parkinson's disease-Neuroglia in neurodegenerative diseases, *Adv Exp Med Biol*, 1175:335-353.
2. Verkhatsky A, **Ho MS**, Zorec R, Parpura V, 2019, The concept of neuroglia-Neuroglia in neurodegenerative diseases, *Adv Exp Med Biol*, 1175:1-13.
3. Verkhatsky A, **Ho MS**, Vardjan N, Zorec R, Parpura V, 2019, General

pathophysiology of astroglia-Neuroglia in neurodegenerative diseases, *Adv Exp Med Biol*, 1175:149-179.

4. Verkhratsky A, **Ho MS**, Parpura V, 2019, Evolution of neuroglia-Neuroglia in neurodegenerative diseases, *Adv Exp Med Biol*, 1175:15-44.
5. Wang L, Wang H, **Ho MS[#]**, 2019, *Drosophila* glia, Colloquium series on neuroglia in biology and medicine: from physiology to disease, Morgan & Claypool Publishers.
6. **Ho MS[#]** and Duan, S[#], 2013, Purinergic mechanisms in glial cells, invited book chapter, *Neuroglia*, Oxford University Press, 306-319.

Review

1. Yi S, Wang L, Wang H, **Ho MS[#]**, Zhang S[#], 2022, Pathogenesis of α -synuclein in Parkinson's Disease: From a Neuron-Glia Crosstalk Perspective, *Int. J. Mol. Sci.* 23, 14753 (*IJMS* Top View papers in 2022).
2. Wang MX, **Ho MS[#]**, 2022, Recent advances on the role of glia in physiological behaviors: insights from *Drosophila melanogaster* (Chinese), *Yi Chuan (遗传)*, 44(4):300-312.
3. Cheng J, Lu Q, Song L, **Ho MS[#]**, 2018, α -Synuclein Trafficking in Parkinson's Disease: Insights From Fly and Mouse Models, *ASN Neuro*, 10:1759091418812587.
4. Ou J, He Y, Xiao X, Yu TM, Chen C, Gao Z, **Ho MS[#]**, 2014, Glial cells in neuronal development: recent advances and insights from *Drosophila melanogaster*, *Neurosci Bull*, 30(4):584-94.
5. Mao H, Lv Z, **Ho MS[#]**, 2012, Gcm proteins function in the developing nervous system, *Dev Biol*, 370(1):63-70.
6. **Ho MS***, Ou C, Chan YR, Chien CT, Pi H, 2008, The utility F-box for protein destruction. *Cell Mol Life Sci*, 65(13):1977-2000.
7. **Ho MS***, Tsai PI, Chien CT, 2006, F-box proteins: the key to protein degradation. *J Biomed Sci*, 13(2):181-91.

Contact

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