

Curriculum Vitae

GANQIANG LIU, Ph.D.

Instructor in Neurology, Harvard Medical School

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Date and Place of Birth: 1984 in Fujian, China



EDUCATION

- 2003.09-2007.07 Bachelor of Engineering in School of Life Sciences and Technology, Tongji University, Shanghai, China. Major: Bioinformatics
- 2007.09-2010.06 Master of Biomedical Engineering, School of Life Sciences and Technology, Tongji University, Shanghai, China
- 2012.10-2014.06 Visit student at John Mattick's RNA Biology and Plasticity Group, Garvan Institute of Medical Research, Sydney, Australia
- 2012.08-2014.09 Doctor of Philosophy in the field of Bioinformatics, Professor John S. Mattick lab, Institute for Molecular Bioscience, The University of Queensland, Australia

POSTDOCTORAL TRAINING

- 2014.08-2017.10 Neurogenomics Laboratory and Parkinson Personalized Medicine, Harvard Medical School; Brigham and Women's Hospital, Boston, MA, USA

ACADEMIC APPOINTMENTS

- 2014.02-2014.06 Research Assistants at John Mattick's RNA Biology and Plasticity Group, Garvan Institute of Medical Research, Sydney, Australia
- 2014.08-2017.10 Research Fellow, Department of Neurology, Harvard Medical School and Brigham and Women's Hospital
- 2017.10-present Instructor in Neurology, Harvard Medical School

RESEARCH

- 2006-2007 Undergraduate research internship at Shanghai Center for Bioinformatics Technology.
- 2007-2010 Master research work focuses on microRNAs function in regulating heart development. Thesis title: "The Establishment of Database for miRNA Regulating in Model Organism Heart Development". Participate in the Major State Basic Research Development Program of China (973 Program No.2007CB947002).
- 2010-2014 Doctor of Philosophy thesis focus on "The human transcriptome and RNA interactions" by next-generating sequencing data analysis. Thesis title: "Exploration of The Human Transcriptome and RNA Interactions".
- 2014-Present Harvard neurological biomarker study (HBS) through genome and transcriptome approach to investigate diagnosis and prognosis of Parkinson's disease.

PUBLICATIONS

Peer-reviewed journal articles:

Liu G, Ding M, Wang H, Huang J, Jing Q, Shen B. Pathway analysis of microRNAs in mouse heart development. *Int. J. Bioinform Res Appl.* 2010; 6(1): 12-20. PMID: 20110206.

Liu G, Ding M, Chen J, Huang J, Wang H, Jing Q, Shen B. Computational analysis of microRNA function in heart development. *Acta Biochim Biophys Sin (Shanghai).* 2010; 42(9): 662-670. PMID: 20716610.

Wang Y, Chen J, Li Q, Wang H, **Liu G**, Jing Q, Shen B. Identifying novel prostate cancer associated pathways based on integrative microarray data analysis. *Comput Biol Chem.* 2011; 35(3): 151-158. PMID: 21704261.

Zou J, Li WQ, Li Q, Li XQ, Zhang JT, **Liu GQ**, Chen J, Qiu XX, Tian FJ, Wang ZZ, Zhu N, Qin YW, Shen B, Liu TX, Jing Q. Two functional microRNA-126s repress a novel target gene p21-activated kinase 1 to regulate vascular integrity in zebrafish. *Circ Res.* 2011; 108(2): 201-209. PMID: 21148433. (IF = 13.9)

Liu G, Mattick JS, Taft RJ. A meta-analysis of the genomic and transcriptomic composition of complex life. *Cell Cycle.* 2013; 12(13): 2061-2072. PMID: 23759593. (IF = 3.5)

Liu G, Mercer TR, Shearwood AM, Siira SJ, Hibbs ME, Mattick JS, Rackham O, Filipovska A. Mapping of mitochondrial RNA-protein Interactions by digital RNase footprinting. *Cell Rep.* 2013; 5(3): 839-848. PMID: 24183674. (IF = 8.3)

Locascio JJ, Eberly S, Liao Z, **Liu G**, Hoelsing AN, Duong K, Trisini-Lipsanopoulos A, Dhima K, Hung AY, Flaherty AW, Schwarzschild MA, Hayes MT, Wills AM, Shivraj Sohur U, Mejia NI, Selkoe DJ, Oakes D, Shoulson I, Dong X, Marek K, Zheng B, Iverson A, Hyman BT, Growdon JH, Sudarsky LR, Schlossmacher MG, Ravina B, Scherzer CR. Association between α -synuclein blood transcripts and early, neuroimaging-supported

Parkinson's disease. *Brain*. 2015; 138(9): 2659-2671. PMID: 26220939. (IF = 10.3)

**** Featured as Hot Topic in *Movement Disorders* 2016; 31:42.**

**** Featured in CDMRP news release, Department of Defense, congressionally directed medical research programs**

Azmanov DN, Siira SJ, Chamova T, Kaprelyan A, Guergueltcheva V, Shearwood AJ, **Liu G**, Morar B, Rackham O, Bynevelt M, Grudkova M, Kamenov Z, Svechtarov V, Tournev I, Kalaydjieva L, Filipovska A. Transcriptome-wide effects of a POLR3A gene mutation in patients with an unusual phenotype of striatal involvement. *Hum Mol Genet*. 2016; 25(19): 4302-4314. PMID: 27506977. (IF = 5.5)

Liu G, Boot B, Locascio JJ, Jansen IE, Winder-Rhodes S, Eberly S, Elbaz A, Brice A, Ravina B, van Hilten JJ, Cormier-Dequaire F, Corvol JC, Barker RA, Heutink P, Marinus J, Williams-Gray CH, Scherzer CR; International Genetics of Parkinson Disease Progression (IGPP) Consortium. Specifically neuropathic Gaucher's mutations accelerate cognitive decline in Parkinson's. *Ann Neurol*. 2016; 80(5): 674-685. PMID: 27717005. (IF = 9.9)

**** Featured in Commentary in *Annals of Neurology*, 2016; 80:660-661**

**** Featured in Foxfeed Blog, BWH Bulletin, NeuroscienceNews**

Liu G, Locascio JJ, Corvol JC, Boot B, Liao Z, Page K, Franco D, Burke K, Jansen IE, Trisini-Lipsanopoulos A, Winder-Rhodes S, Tanner CM, Lang AE, Eberly S, Elbaz A, Brice A, Mangone G, Ravina B, Shoulson I, Cormier-Dequaire F, Heutink P, van Hilten JJ, Barker RA, Williams-Gray CH, Marinus J, Scherzer CR, for the HBS, CamPaIGN, PICNICS, PROPARK, PSG, DIGPD and PDBP investigators. Prediction of cognition in Parkinson's disease with a clinical-genetic score: a longitudinal analysis of nine cohorts. *Lancet Neurol*. 2017; 16(8): 620-629. PMID: 28629879. (IF = 26.3)

**** Featured in Commentary in *Lancet Neurology*, 2017; S1474-4422: 30170-9**

**** Featured in NIH Press Release, Alzforum, Michael J Fox Foundation News**

**** Featured in The Express, Federal Practitioner, Parkinson's News Today, Life Science Daily, Science News Online**

**** Recommended by the Faculty of 1000**

Conference abstracts & poster:

Avession L, **Liu G**, Smith MA, Crumlish L, Barry G, Mattick JS. A role for ADAR3 in neurogenesis and synaptic plasticity. *The Non-coding Genome*, EMBL Heidelberg, Germany Oct 9-12. 2013.

Schonrock N, Bartonicek N, **Liu G**, Dinger M and Mattick JS. A Taste of the Epitranscriptome. *3rd Annual Garvan Postdoc Symposium*, Sydney, June 26, 2014.

Dong X, Liao Z, Gritsch D, Guennewig B, Hadzhiev Y, Bai Y, **Liu G**, Zheng B, Blauwendraat C, Hu Q, Adler CH, Hedreen JC, Frosch M, Faull R, Nelson PT, Locascio JJ, Vanderburg C, Rizzu P, Cooper AA, Heutink P, Beach TG, Mueller F, Mattick JS, Scherzer CR. BRAINCODE: How Does the Human Genome Function in Specific Brain Neurons? *American Society of Human Genetics Annual Meeting 2015*, Baltimore, MD, USA, October 6-10, 2015. "*The Biology of Genome*" *CSHL 2016* May 10-14, 2016.

Liu G, Boot B, Locascio JJ, Liao Z, Franco D, Duong K, Page K, Jansen IE, Yi T, Trisini-Lipsanopoulos A, Dong X, Hutten SJ, Winder-Rhodes S, Amr S, Tanner CM, Lang AE, Nalls M, Eberly S, HBS, CamPaIGN, PICNICS, PROPARK, PSG, DIGPD, Sudarsky L, Elbaz A, Brice A, Ravina B, Shoulson I, van Hilten JJ, Cormier-Dequaire F, Corvol JC, Barker RA, Heutink P, Marinus J, Williams-Gray CH, Scherzer CR, International Genetics of Parkinson Disease Progression (IGPP) Consortium. *Neuropathic Gaucher's Mutations: Shifting Parkinson's Into High Gear*. 2017 American Academy of Neurology Meeting in Boston, MA, USA, April 22-28, 2017 ("Best of" Session: presentation).

Liu G, Locascio JJ, Corvol JC, Boot B, Liao Z, Page K, Franco D, Burke K, Jansen IE, Trisini-Lipsanopoulos A, Winder-Rhodes S, Tanner CM, Lang AE, Eberly S, Elbaz A, Brice A, Mangone G, Ravina B, Shoulson I, PDBP, HBS, Cormier-Dequaire F, Heutink P, van Hilten JJ, Barker RA, Williams-Gray CH, Marinus J, Scherzer CR for International Genetics of Parkinson Disease Progression (IGPP) Consortium. *Prediction of Cognition: Cognitive Risk Score for Parkinson's Disease*. NINDS Parkinson's disease Biomarkers Program Consortium meeting 2017, Bethesda, MD, USA, Aug 7-8, 2017.

Talks:

Pathway Enrichment Analysis of MicroRNAs in Mouse Heart Development. *The 7th International Bioinformatics Workshop*, June 20-22, 2009, Soochow University, Suzhou, China.

Predicting the Future: Meta-Analysis of GBA Mutations to Predict Prognosis in Sporadic PD. *ADPD Seminar Series 2015* June 30; Ann Romney Center for Neurologic Disease, BWH, Boston, USA.

Parkinson's: Predicting the Future: Genetic Variants to Predict Prognosis in Parkinson's disease. *ADPD Seminar Series 2016* Dec 13; Ann Romney Center for Neurologic Disease, BWH, Boston, USA.

Precision Neurology: From GBA mutations to precision biomarkers for Parkinson. *ADPD Seminar Series 2017* Nov 14; Ann Romney Center for Neurologic Disease, BWH, Boston, USA

HONORS AND SCHOLARSHIPS

2003-2006	Excellent Student Scholarship of Tongji University
2007-2010	Award of master graduated scholarship of Tongji University
2009	Excellent Student in Tongji University
2010-2014	International Postgraduate Research Scholarship (IPRS) University of Queensland Centennial Scholarship (UQCent) University of Queensland Advantage Top-Up Scholarship (UQAdv)
2012-2014	Garvan Institute pro-rata top-up Scholarship
2013	Chinese Government Award For Outstanding Self-Financed Students Abroad
2014	University of Queensland International Scholarship(UQI)

SOCIETIES AND HONORARIES

2017-present American Academy of Neurology Member