# *CURRICULUM VITAE*

# Name and Address

 Guoping Feng, PhD

 Poitras Chair Professor of Neuroscience

 McGovern Institute for Brain Research

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**Education**

1978-1982:  **Bachelor of Medical Sciences**

 Dept. of Medicine, Zhejiang Medical University, Hangzhou, China

1983-1985: **Master of Science in Pharmacology**

Shanghai Second Medical University, Shanghai, China

1989-1995: **Ph.D. in Molecular Genetics**

 Dept. of Biochemical Pharmacology, State University of New York at Buffalo, Buffalo, New York. Thesis advisor: Dr. Linda M. Hall

**Professional positions**

1986-1989 Research Assistant, Department of Pharmacology, Shanghai Second Medical University

1995-2000 Postdoctoral Fellow, Department of Anatomy and Neurobiology, Washington University School of Medicine. Mentor: Dr. Joshua R. Sanes.

2000-2008 Assistant Professor, Department of Neurobiology, Duke University Medical Center.

 (Medical leave from March 2004-March 2006)

2008-2010 Associate Professor with tenure, Department of Neurobiology, Duke University Medical Center.

2010- Poitras Chair Professor, McGovern Institute for Brain Research, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA.

2012- Director of Model Systems and Neurobiology Program, Stanley Center for Psychiatric Research, Broad Institute of MIT and Harvard, Cambridge, MA

2014- Institute Member, Broad Institute of MIT and Harvard, Cambridge, MA

**Honors and Awards**

1993-1994 Advanced Predoctoral Fellowship from the PhRMA Foundation.

1993-1994 Mark Diamond Research Fund from State University of New York at Buffalo.

1994 The Grass Fellowships in Neurophysiology at the Marine Biological Laboratory, Woods Hole, Massachusetts from the Grass Foundation.

1995-1998 Postdoctoral Fellow of the Jane Coffin Childs Memorial Fund for Medical Research.

2001-2003 Alfred P. Sloan Research Fellowship, Alfred P. Sloan Foundation.

2001-2004 Klingenstein Fellowship Award, The Esther A. & Joseph Klingenstein Fund.

2001-2004 Whitehall Foundation Research Award, the Whitehall Foundaiton.

2002-2004 Basil O’Connor Starter Research Award, March of Dimes Birth Defects Foundation.

2002-2005 Scientist Development Grant Award, American Heart Association.

2002-2005 Scholar Research Program Award, The EJLB Foundation.

2002-2005 Beckman Young Investigator Award, The Arnold and Mabel Beckman Foundation.

2005-2007 Broad Scholar Award, Ruth K. Broad Foundation for Biomedical Research.

2006-2009 McKnight Neuroscience of Brain Disorders Award, McKnight Endowment Fund for Neuroscience.

2007-2010 Hartwell Individual Biomedical Research Award, The Hartwell Foundation.

2008-2011 Simons Foundation Autism Research Initiative (SFARI) Award

2008-2011 Hartwell Biomedical Research Collaboration Award, The Hartwell Foundation.

2010-2013 Simons Foundation Autism Research Initiative (SFARI) Award

2011-2013 McKnight Technological Innovations in Neuroscience Award

2012 Gill Young Investigator Award, Gill Center for Biomolecular Science, Indiana University

2014-2016 Simons Foundation Autism Research Initiative (SFARI) grant award

2014 Scientific Innovations Award, Brain Research Foundation.

**Other Professional Activities**

1990-present Member, Society for Neuroscience,

1996 Associate director, the Grass Fellowship Program in Neurophysiology, Marine Biological Laboratory, Woods Hole, Massachusetts.

2000- Ad hoc reviewer for Nature, Science, Cell, Neuron, Nature Medicine, Nature Neuroscience, Journal of Cell Biology, Journal of Neuroscience, Proc Natl Acad Sci U S A., Journal of Biological Chemistry, Genesis, Molecular Psychiatry, Biological Psychiatry, Human Genetics.

2006- Grant Reviewer, National Science Foundation.

2006- Ad hoc member, NIH Study section (SYN), (NDPR), (MNG).

2006-2010 Member, Independent Scientific Review Panel for the New Jersey Brain Injury Research Commission (NJBIRC).

2008-2012 GENSAT Project Advisory Board, NIH.

2009-2012 External Advisor, CONSORTIUM FOR NEUROPSYCHIATRIC PHENOMICS, University of California, Los Angles.

2010-2013 Scientific Advisory Board, Gallo Research & Clinic Center, University of California, San Francisco.

2011-2013 Biology and Medicine Panel Member, Research Grants Council, Hong Kong.

2011- Board of Directors, Rugen Therapeutics, Inc.

2012- Scientific Advisory Board, The John Merck Fund, Boston, MA

2013- Scientific Advisory Board, Inscopix, Inc.

2013- Regular member, NIH Study section (SYN).

2013- SFN Committee on Committee member

2013- SFN Axelrod Prize Committee chair

2013- SFN Nemko Prize Committee chair

**Peer-reviewed Publications**

Murakami, K., **Feng, G.** and Chen, S.G. (1992) Inhibition of protein kinase C subtypes by lead.  *J. Pharmacol. Exp. Therap.* 264:757-761.

**Feng, G**., Deak, P., Chopra, M. and Hall, L.M. (1995) Cloning and functional analysis of *tipE*: A novel membrane protein which enhances Drosophila *para* sodium channel function. *Cell* 82:1001-1011.

**Feng, G.**, Deak, P., Kasbekar, D., Gil, D. and Hall, L.M. (1995) Cytogenetic and molecular localization of *tipE*: A gene affecting sodium channels in Drosophila melanogaster. *Genetics* 139:1679-1688.

Zheng, W., **Feng, G.**, Ren, D., Eberl, D.F., Hannan, F., Dubald, M. and Hall, L.M. (1995) Cloning and characterization of a calcium channel alpha-1 subunit from Drosophila melanogaster with similarity to the rat brain D isoform. *J. Neurosci.* 15:1132-1143.

**Feng, G.**, Hannan, F., Reale, V., Hon, Y.Y., Kousky, C., Evans, P.D. and Hall, L.M. (1996) Cloning and functional characterization of a novel dopamine receptor in Drosophila melanogaster. *J. Neurosci.* 16:3925-3933.

Ettinger, A.J., **Feng, G.** and Sanes, J.R. (1997) -Sarcoglycan, a broadly expressed homologue of the gene mutated in Limb-girdle muscular dystrophy 2D. *J. Biol. Chem.* 272:32534-32538.

Eberl, D.F., Ren, D., **Feng, G.**, Lorenz, L.J., Vactor, D.V. and Hall, L.M. (1998) Genetic and developmental characterization of *Dmca1D*, a Calcium channel 1 subunit gene in Drosophila melanogaster. *Genetics* 148:1159-1169.

Sanes, J.R., E.D. Apel, R.W. Burgess, R.B. Emerson, **G. Feng**, M. Gautam, D. Glass, R.M. Grady, E. Krejci, J.W. Lichtman, J.T. Lu, J. Massoulie, J.H. Miner, L.M. Moscoso, Q. Nguyen, M. Nichol, P.G. Noakes, B.L. Patton, Y.J. Son, G.D. Yancopoulos, H. Zhou, (1998). Development of the neuromuscular junction: genetic analysis in mice. *J. Physiol. Paris.* 92: 167-172.

**Feng, G.**, Steinbach, J.H. and Sanes, J.R. (1998) Rapsyn clusters neuronal acetylcholine receptors but is inessential for formation of an interneuronal cholinergic synapse. *J. Neurosci.* 18:4166-4176.

**Feng\***, G., Tintrup\*, H., Kirsch, J., Nichol, M., Kuhse, J., Betz, H. and Sanes, J.R. (1998) Dual requirement for gephyrin in glycine receptor clustering and molybdoenzyme activity.  *Science* 282:1321-1324.

 \*co-first authors

**Feng,** G., Krejci, E., Molgo, J., Cunningham, J., Massoulie, J. and Sanes, J.R. (1999) Genetic analysis of collagen Q: Roles in acetylcholinesterase and butyrylcholinesterase assembly and in synaptic structure and function.  *J. Cell Biol.* 144:1349-1360.

Serpinskaya, A.S., **Feng, G.**, Sanes, J.R. and Craig, A.M. (1999) Synapse formation by hippocampal neurons from agrin-deficient mice. *Dev. Biol.* 205:65-78.

Butler, M.H,, Hayashi, A., Ohkoshi, N., Villmann, C., Becker, C-M., **Feng, G.**, De Camilli, P. and Solimena, M. (2000) Autoimmunity to Gephyrin in stiff-man syndrome. *Neuron* 26:307-312.

**Feng\***, G., Laskowski\*, M.B., Feldheim, D.A., Wang, H., Lewis, R., Frisen, J., Flanagan, J.G. and Sanes, J.R. (2000) Roles for ephrins in positionally selective synaptogenesis between motor neurons and muscle fibers. *Neuron* 25:295-306.

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**Feng,** G., Hood, R., Bernstein, M., Keller-Peck, C., Nguyen, Q., Wallace, M., Nerbonne, J.M., Litchman, J.W. and Sanes, J.R (2000). Imaging neuronal subsets in transgenic mice expressing multiple spectral variants of GFP. *Neuron* 28:41-51.

Kneussel, M., Brandstätter, J.H., Gasnier, B., **Feng, G.,** Sanes, J.R. and Betz, H. (2001). Gephyrin-independent clustering of postsynaptic GABAA receptor subtypes. *Mol. Cell Neurosci.* 17:973-982.

Keller-Peck, C.R., Gan, W., **Feng, G.**, Sanes, J.R., and Lichtman, J.W. (2001) Asynchronous synapse elimination in neonatal motor units: studies using GFP transgenic mice. *Neuron* 31:381-394.

Keller-Peck CR, **Feng G**, Sanes JR, Yan Q, Lichtman JW, Snider WD. (2001) Glial cell line-derived neurotrophic factor administration in postnatal life results in motor unit enlargement and continuous synaptic remodeling at the neuromuscular junction. *J Neurosci.*  21:6136-46.

Trachtenberg JT, Chen BE, Knott GW, **Feng G**, Sanes JR, Welker E, Svoboda K. (2002) Long-term in vivo imaging of experience-dependent synaptic plasticity in adult cortex. *Nature* 420:788-794.

Buffelli, M, Burgess, RW., **Feng, G**., Lobe, CG.,  Lichtman, JW and Sanes, JR (2003) Genetic evidence that relative synaptic efficacy biases the outcome of synaptic competition. *Nature* 424:430-434.

**Feng, G.**, Reale, V., Chatwin, H., Kennedy, K. Venard, R., Ericsson, C., Yu, K., Evans, PD and Hall, LM (2003). Functional Characterization of a Neuropeptide F-like Receptor from Drosophila melanogaster. *Eur. J. Neurosci.* 18:227-238.

Gan, W-B, Kwon, E., **Feng, G.**, Sanes, JR and Lichtman, JW (2003) Age-dependent decline in synaptic dynamism in an adult mouse parasympathetic ganglion. *Nat. Neurosci.* 6:956-960.

Finn,A.J., **Feng\***, G., and Pendergast\*, A.M. (2003) Postsynaptic requirement for Abl kinases in assembly of the neuromuscular junction. *Nat. Neurosci.* 6:717-23.

 \*co-corresponding authors.

**Feng G**, Lu J, Gross J. (2004) Generation of transgenic mice. *Methods Mol. Med*. 99:255-67.

Parker, M.J., Zhao, S., Bredt, D.S., Sanes, J.R., and **Feng, G**. (2004) PSD93 regulates synaptic stability at neuronal cholinergic synapses. *J. Neurosci.* 24:378-88.

Welch, J.W. Wang, D., and **Feng, G**. (2004) Differential mRNA expression and protein localization of the SAP90/PSD-95-associated proteins (SAPAPs) in the nervous system of the mouse. *J. Comp. Neurol.* 472:24-39*.*

Demyanenko GP, Schachner M, Anton E, Schmid R, **Feng G**, Sanes J, Maness PF. (2004) Close homolog of l1 modulates area-specific neuronal positioning and dendrite orientation in the cerebral cortex. *Neuron* 44:423-37.

Young P, **Feng G**. (2004) Labeling neurons in vivo for morphological and functional studies. *Curr Opin Neurobiol.* 14:642-6.

Bas Orth C, Vlachos A, Del Turco D, Burbach GJ, Haas CA, Mundel P, **Feng G**, Frotscher M, Deller T. (2005) Lamina-specific distribution of synaptopodin, an actin-associated molecule essential for the spine apparatus, in identified principal cell dendrites of the mouse hippocampus. *J Comp Neurol.* 487:227-39.

Haverkamp S, Wassle H, Duebel J, Kuner T, Augustine GJ, **Feng G**, Euler T. (2005) The primordial, blue-cone color system of the mouse retina. *J Neurosci.* 25:5438-45.

Young, P., Nie, J., Wang, X., McGlade, CJ, Rich, MM, and **Feng, G**. (2005) Interaction of ErbB2 with LNX1 E3 ubiquitin ligase: potential role in the development of perisynaptic Schwann cells at the neuromuscular junction. *Mol. Cell. Neurosci.* 30:238-48.

Ficklin, MB., Zhao, S., and **Feng, G.** (2005) Ubiquilin-1 regulates nicotine-induced upregulation of neuronal nicotinic acetylcholine receptors. *J. Biol. Chem.* 280:34088-34095.

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Lee WC, Huang H, **Feng G**, Sanes JR, Brown EN, So PT, Nedivi E. (2006) Dynamic remodeling of dendritic arbors in GABAergic interneurons of adult visual cortex. *PLoS Biol*. 4(2):e29.

Mizrahi A, Lu J, Irving R, **Feng G**, Katz LC. (2006) In vivo imaging of juxtaglomerular neuron turnover in the mouse olfactory bulb. *Proc Natl Acad Sci U S A*. 103:1912-7

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Kelly BB, Hedlund E, Kim C, Ishiguro H, Isacson O, Chikaraishi DM, Kim KS, **Feng G.** (2006) A tyrosine hydroxylase-yellow fluorescent protein knock-in reporter system labeling dopaminergic neurons reveals potential regulatory role for the first intron of the rodent tyrosine hydroxylase gene. *Neurosci.* 142:343-54.

Deisseroth K, **Feng G**, Majewska AK, Miesenbock G, Ting A, Schnitzer MJ. (2006) Next-generation optical technologies for illuminating genetically targeted brain circuits. *J Neurosci.*  26:10380-6.

Berglund K, Schleich W, Krieger P, Loo LS, Wang D, Cant NB, **Feng G,** Augustine GJ, Kuner T. (2006) Imaging synaptic inhibition in transgenic mice expressing the chloride indicator, Clomeleon. *Brain Cell Biol.* 35:207-28.

Arenkiel, B.A., Peca, J., Davison, I.G., Feliciano, C., Deisseroth, K., Augustine, G.J., Ehlers, M.D., and **Feng, G.** (2007) Light-Induced Activation of Neural Circuitry in Transgenic Mice Expressing Channelrhodopsin-2. *Neuron* 54:205-218.

Wang, H., Peca, J., Matsusaki, M., Matsusaki, K., Noguchi, J., Qiu, L., Wang, D., Zhang, F., Boyden, E., Deisseroth, K., Kasai, H., Hall, WC., **Feng\*, G.**, and Augustine\*, GJ (2007) High-speed mapping of synaptic connectivity using photostimulation in Channelrhodopsin-2 transgenic mice. *Proc Natl Acad Sci U S A.*104:8143-8148.

 *\*co-corresponding authors*

Lu, Z, Je, H-S., Young, P., Groos, J., Lu, B., and **Feng, G**. (2007) Regulation of Synaptic Growth and Maturation by a Synapse-Associated E3 Ubiquitin Ligase at the Neuromuscular Junction. *J Cell Biol.* 177:1077-1089*.*

Welch, JM., Lu, J., Rodriguiz, RM., Trotta, NC., Peca, J., Ding, J-D., Feliciano, C., Chen, M., Adams, JP., Luo, J., Dudek, SM., Weinberg, RJ., Calakos, N., Wetsel, WC., and **Feng, G.** (2007) Cortico-striatal synaptic defects and OCD-like behaviors in SAPAP3 mutant mice.  *Nature* 448:894-900.

Wang, D., Kelly, B.B., Albrecht, D.E., Adams, M.E., Froehner, S.C., and **Feng, G.** (2007) Complete deletion of all α-dystrobrevin isoforms does not reveal new synaptic phenotypes. *Gene Expression* 14:47-57*.*

Cohen TJ, Waddell DS, Barrientos T, Lu Z, **Feng G**, Cox GA, Bodine SC, Yao TP. (2007) The histone deacetylase HDAC4 connects neural activity to muscle transcriptional reprogramming. *J Biol Chem.* 282:33752-9.

Young, P., Qiu, L., Wang, D., Gross, J., Zhao, S., and **Feng, G.** (2008). Single-neuron labeling with inducible cre-mediated knockout in transgenic mice. *Nature Neurosci.* 11:721-8.

Berglund K, Schleich W, Wang H, **Feng G,** Hall WC, Kuner T, Augustine GJ. (2008) Imaging synaptic inhibition throughout the brain via genetically targeted Clomeleon. *Brain Cell Biol.* 36:101-18.

Zhao, S., Cunha, C., Zhang, F., Liu, Q., Gloss, B., Deisseroth, D., Augustine, GJ, **Feng, G.** (2008) Improved expression of halorhodopsin for light-induced silencing of neuronal activity. *Brain Cell Biol.* 36:141-54.

Züchner S, Wendland JR, Ashley-Koch AE, Collins AL, Tran-Viet K-N, Quinn K, Cuccaro M, Pericak-Vance M, Steffens D, Krishnan R, **Feng G,** Murphy DL (2009) Multiple rare *SAPAP3* missense variants in trichotillomania and OCD. *Mol. Psychiatry,* 14:6-9.

Bienvenu, OJ, Wang, Y., Shugart, YY., Welch, JW., Grados, MA., Fyer, AJ., Rauch, SL., Murphy, DL., McCracken, JT., Rasmussen, SA., Cullen, B., Valle, D., Hoehn-Saric, R., Greenberg, BD., Pinto, A., Knowles, JA., Piacentini, J., Pauls, DL., Liang, KY., Riddle, M., Samuels, JF., **Feng, G.**, and Nestadt, G. (2009) Sapap3 and pathological grooming in humans: results from the OCD Collaborative Genetics Study.  *American J. Med. Genet. Part B: Neuropsychiatric Genet.* 150B(5):710-20.

Nguyen D, Deng P, Matthews EA, Kim DS, **Feng G**, Dickenson AH, Xu ZC, Luo ZD. (2009) Enhanced pre-synaptic glutamate release in deep-dorsal horn contributes to calcium channel alpha-2-delta-1 protein-mediated spinal sensitization and behavioral hypersensitivity. *Mol. Pain*. 2009 Feb 12;5(1):6.

Roberts AC, Díez-García J, Rodriguiz RM, López IP, Luján R, Martínez-Turrillas R, Picó E, Henson MA, Bernardo DR, Jarrett TM, Clendeninn DJ, López-Mascaraque L, **Feng G**, Lo DC, Wesseling JF, Wetsel WC, Philpot BD, Pérez-Otaño I. (2009) Downregulation of NR3A-containing NMDARs is required for synapse maturation and memory consolidation. *Neuron* 63:342-56.

Glykys, J., Dzhala, V.I., Kuchibhotla, K.V., **Feng, G**., Kuner, T., Augustine, G., Bacskai, BJ., Staley, KJ. (2009) Differences in cortical vs. subcortical GABAergic signaling: a candidate mechanism of electroclinical dissociation of neonatal seizures. *Neuron* 63:657-72.

ThyagarajanS, van Wyk, M., Lehmann, K., Löwel, S., **Feng, G**. and Wässle, H. (2010) Visual function in mice with photoreceptor degeneration and transgenic expression of channelrhodopsin 2 in ganglion cells.  *J. Neurosci.* 30:8745-58.

Zhao S., Zhou,Y., Gross, J., Miao, P., Qiu, L., Wang, D., Chen, Q., and **Feng, G.** (2010) Fluorescent Labeling of Newborn Dentate Granule Cells in GAD67-GFP Transgenic Mice: A Genetic Tool for the Study of Adult Neurogenesis. *PLoS One*, 5(9). pii: e12506.

Dzhala VI, Kuchibhotla KV, Glykys JC, Kahle KT, Swiercz WB, **Feng G,** Kuner T, Augustine GJ, Bacskai BJ, Staley KJ. (2010) Progressive NKCC1-dependent neuronal chloride accumulation during neonatal seizures. *J Neurosci.* 30:11745-61.

Ren, J, Qin, C, Tan, J., Qiu, L., Zhao, S., **Feng, G.**, and Luo, M. (2011) Habenula "Cholinergic" Neurons Co-release Glutamate and Acetylcholine and Activate Postsynaptic Neurons Via Distinct Transmission Modes. *Neuron* 69:445-452.

Chen M, Wan Y, Ade K, Ting J, **Feng G,** and Calakos N. (2011) Sapap3 deletion anomalously activates short-term endocannabinoid-mediated synaptic plasticity. *J Neurosci.* 31:9563-73.

Peca J, Feliciano C, Ting JT, WangW, Wells MF, VenkatramanTY, LascolaCD, Fu Z and **Feng G**. (2011) *Shank3* mutant mice display autistic-like behaviours and striatal dysfunction. *Nature,* 472:437-42.

Halassa MM, Siegle JH, Ritt JT, Ting JT, **Feng**\* **G**, Moore\* CI. (2011) Selective optical drive of thalamic reticular nucleus generates thalamic bursts and cortical spindles. *Nat Neurosci.* 14:1118-20.

 \*co-corresponding authors.

Zhao, S., Ting, JT., Atallah HE., Qiu, L., Tan, J., Gloss, B., Augustine, GJ., Deisseroth, K., Luo, M., Graybiel, AM. and **Feng, G.** (2011) Cell-type Specific Optogenetic Mice for Dissecting Neural Circuitry Function. *Nature Methods* 8:745-752.

Wan, Y., **Feng, G.** and Calakos, N. (2011) *Sapap3* deletion causes mGluR5-dependent silencing of AMPAR synapses. *J. Neurosci.* 31:16685-91.

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Chen R, Zhang J, Wu Y, Wang D, **Feng G**, Tang YP, Teng Z, Chen C. (2012) Monoacylglycerol lipase is a therapeutic target for Alzheimer's disease. *Cell Rep.* 2:1329-39.

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Asrican B, Augustine GJ, Berglund K, Chen S, Chow N, Deisseroth K, **Feng G**, Gloss B, Hira R, Hoffmann C, Kasai H, Katarya M, Kim J, Kudolo J, Lee LM, Lo SQ, Mancuso J, Matsuzaki M, Nakajima R, Qiu L, Tan G, Tang Y, Ting JT, Tsuda S, Wen L, Zhang X, Zhao S. (2013) Next-generation transgenic mice for optogenetic analysis of neural circuits. *Front Neural Circuits.* 7:160.

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**Reviews/Views/Chapters**

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