CURRICULUM VITAE

Jen-Wei Lin, Ph.D.
Department of Biology
Boston University
5 Cummington St.
Boston, MA 02215

Contact

Phone: 617-353-3443
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Experience

Associate Professor 1999-present
Department of Biology
Boston University

Assistant Professor 1993-1999
Department of Biology
Boston University

Instructor 1990-1993
Department of Physiology and Biophysics
New York University Medical Center

Postdoctoral Fellow 1987-1990
Department of Physiology and Biophysics
New York University Medical Center

Education

Ph.D. in Physiology 1980-1986
Department of Physiology
State University of New York at Buffalo

(Compulsory military service in Taiwan, 1978-1980)

B. Sc. in Zoology 1974-1978
Department of Zoology
National Taiwan University

Honors

Book Ribbon Awards (76, 77, 78); National Taiwan University
IGGN Fellowship (Competitive, 83-86): SUNY-Buffalo
(IGGN: Interdisciplinary Graduate Group in Neuroscience)
National Research Service Award (competitive fellowship) (87-89): NYU Medical Center

Membership Of Professional Societies

American Association for the Advancement of Science
Society for Neurosciences
Society for General Physiologists
American Physiological Society

Manuscripts Reviewed

Brain Research
Proceedings of National Academy of Science (USA)
Journal of Neurophysiology
Journal of Physiology (London)
Neuroscience
Journal of Neuroscience
Journal of Neuroscience Methods
Cell and Molecular Neurobiology

Proposals Reviewed

Jeffress Foundation (A private foundation in Virginia)
National Research Council (A grant submitted for the Cooperation in Applied Science and Technology program; NRC serves the National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine).
National Science Foundation
NIH

Other Professional Services

As a faculty member of the Neurobiology course in Marine Biological Laboratory, Woods Hole (2000-2003).

Peer-reviewed Publications

1. **Lin, J.-W.**, Faber, DS and Wood MR (1983) Organized projection of the gold fish saccular nerve onto the Mauthner cell lateral dendrite. *Brain. Res*. 274: 319-324.

2. Chang, YT, **Lin, J.-W.** and Faber, DS (1987) Spinal inputs to the ventral dendrite of the teleost Mauthner cell. *Brain Res.* 417: 205-213.

3. **Lin, J.-W.** and Faber, D. S. (1987) Synaptic transmission mediated by single club endings on the goldfish Mauthner cell. II. Plasticity of excitatory postsynaptic potentials. *J. Neurosci.* 8: 1313-1325.

4. **Lin, J.-W.** and Faber, D. S. (1987) Synaptic transmission mediated by single club endings on the goldfish Mauthner cell. I. Characteristics of electrotonic and chemical postsynaptic potentials. *J. Neurosci.* 8: 1302-1312.

5. **Lin, J.-W.** and Faber, D. S. (1988) An efferent inhibition of auditory afferents mediated by the goldfish Mauthner cell. *Neurosci.* 24: 829-836.

6. Llinas R, Sugimori M, **Lin, J.-W.** and Cherksey B (1989) Blocking and isolation of a calcium channel from neurons in mammals and cephalopods utilizing a toxin fraction (FTX) from funnel-web spider poison. *Proc Natl Acad Sci (USA)* 86: 1689-93

7. Llinas, R., Sugimori, M., **Lin, J.-W.**, Leopold, P. L., Brady, S. T. (1989) ATP-dependent directional movement of rat synaptic vesicles injected into the presynaptic terminal of squid giant synapse. *Proc. Natl. Acad. Sci.* (USA), 86: 5656-5660.

8. McCormack, K., **Lin, J.-W.**, Iverson, L. E. and Rudy, B. (1990) Shaker K+ channel subunits form heteromultimeric channels with novel functional properties. *Biochem. Biophis. Res. Comm.* 171: 1362-1370.

9. **Lin, J.-W.**, Rudy, B. and Llinas, R. R. (1990) Funnel-web spider venom and a toxin fraction block calcium current expressed from rat brain mRNA in *Xenopus* oocytes. *Proc. Natl. Acad. Sci.* (USA), 87:4538-4542.

10. **Lin, J.-W.**, Sugimori, M., Llinas, R. R., McGuinness, T. L. and Greengard, P. (1990) Effect of synapsin I and calcium/calmodulin-dependent protein kinase II on spontaneous neurotransmitter release in the squid giant synapse. *Proc. Natl. Acad. Sci.* (USA), 87:8257-8261.

11. McCormack, K., Tanouye, M. A., Iverson, L. E., **Lin, J.-W.**, Ramaswami, M., McCormack, T., Campanelli, J. T., Mathew, M. K. and Rudy, B. (1991) A role of hydrophobic residues in the voltage-dependent gating of Shaker K^+ channels. *Proc. Natl. Acad. Sci.* (USA), 88:2931-2935.

12. Faber, D. S., Korn, H. and **Lin, J.-W.** (1991) Role of medullary networks and postsynaptic membrane properties in regulating Mauthner cell responsiveness to sensory excitation. *Brain Behav. Evol.* 37:286-297.

13. Cottrell, GA., **Lin, J.-W.**, Llinas, R., Price, D. A., Sugimori, M., Stanley, E. F. (1992) FMRFamide-related peptides potentiate transmission at the squid giant synapse. *Experimental Physiology* 77:881-889.

14. **Lin, J.-W.** and Llinas, R. (1993) Depolarization activated potentiation of the T-fiber synapse in the blue crab. *Journal of General Physiology* 101:45-65.

15. Vyshedskiy A. and **Lin, J.-W.** (1997) A study of the inhibitor of the crayfish neuromuscular junction by presynaptic voltage control. *Journal of Neurophysiology* 77:103-115

16. Vyshedskiy, A. and **Lin, J.-W.** (1997) Activation and detection of facilitation as studied by presynaptic voltage control at the inhibitor of the crayfish opener muscle. *Journal of Neurophysiology* 77: 2300-2315.

17. Vyshedskiy, A. and **Lin, J.-W.** (1997) A change of transmitter release kinetics during facilitation revealed by prolonged test pulses at the inhibitory synapse of the crayfish opener muscle. *Journal of Neurophysiology* 78:1791-1799.

18. Kirillova, V. and **Lin, J.-W.** (1998) A whole-cell clamp study of dendrodendritic synaptic activities in mitral cells of turtle olfactory bulb slices. *Neuroscience* 87:255-264.

19. Nugyen, D. and **Lin, J.-W.** (1998) Effects of changing extracellular chloride concentration on inhibitory synaptic transmission at the crayfish opener muscle. *Journal of Neuroscience Methods* 82: 47-51.

20. Vyshedskiy, A., Delaney K. and **Lin, J.-W.** (1998) Neuromodulators enhance transmitter release by two separate mechanisms at the inhibitor of crayfish opener muscle. *J. Neuroscience* 18:5160-5169

21. Vyshedskiy, A. and **Lin, J.-W.** (2000) Presynaptic calcium influx at the inhibitor of the crayfish neuromuscular junction: A photometric study at a high time resolution. *J. Neurophysiol*. 83:552-562

22. Vyshedskiy, A., Allana , T. and **Lin, J.W.** (2000) Analysis of presynaptic Ca^{2+} influx and transmitter release kinetics during facilitation at the inhibitor of the crayfish neuromuscular junction. *J. Neuroscience* 20:6326-6332

23. **Lin, J.-W.** and Faber, D. S. (2002) Modulation of synaptic delay during synaptic plasticity. *Trends in Neurosciences*, 25: 449-455

24. Allana, T. N., **Lin, J.-W.** (2004) Relative distribution of Ca^{2+} channels at the crayfish inhibitory neuromuscular junction. J Neurophysiol. 92:1491-1500

25. **Lin, J.-W.** and Fu, Q. (2005) Modulation of available vesicles and release kinetics at the inhibitor of the crayfish neuromuscular junction. Neuroscience 130:889-895.

26. **Lin, J.-W.**, Fu, Q. and Allana, T. (2005) Probing the endogenous Ca^{2+} buffers at the presynaptic terminals of the crayfish neuromuscular junction. J. Neurophysiol. 94:377-386.

27. Allana, T and **Lin, J.-W.** (2008) Effects of increasing Ca^{2+} channel-vesicle separation on facilitation at the crayfish inhibitory neuromuscular junction. Neuroscience 154:1242-1254.

28. **J.-W. Lin** (2008) Electrophysiological events recorded at presynaptic terminals of the crayfish neuromuscular junction with a voltage indicator J. Physiology 586: 4935-4950.

29. **Lin JW**. (2012) Spatial variation in membrane excitability modulated by 4-AP-sensitive K+ channels in the axons of the crayfish neuromuscular junction. *J Neurophysiol* 107: 2692-2702, 2012

30. **Lin JW**. (2013) Spatial gradient in the TTX sensitivity of axons at the crayfish opener neuromuscular junction. *J Neurophysiol 109:162-179l*.

31. Z. S. Inam, S. K. Nelamangala and **Jen-Wei Lin** (2014) Application of a spike sorting procedure to analyze recordings in the crayfish ventral superficial flexor preparation: A high resolution approach to the study of neuromodulators on axons and synapses. *The Journal of Undergraduate Neuroscience Education (JUNE) 12:141-150*

32. **Lin JW**. (2015) Na^{+} current in presynaptic terminals of the crayfish opener cannot initiate action potentials. *J Neurophysiol. 2015 Nov 11:jn.00959.2015. doi: 10.1152/jn.00959.2015. [Epub ahead of print]*

33. Meng L., Meyer P.N.R., Leary M.L., Mohammed Y.F., Ferber S.D. ***Lin, JW.*** *(2016) Effects of Deltametrhin on crayfish motor axon activity and neuromuscular transmission, Neuroscience Letters (under revision).*

Book Chapters

1. Faber, DS, **Lin, J.-W.** and Korn, H. (1991) Silent synaptic connections and their modifiability. New York Acad. Sci. 627: 151-164.

2. Vega-Saenz de Miera, E. and **Lin, J.-W.** (1992) Use of the polymerase chain reaction to identify members of ion channel gene families. *Methods in Enzymology*, 207:613-619.

3. Leopold, P. L., **Lin, J.-W.**, Sugimori, M., Llinas, R. and Brady, S. T. (1995) The nervous system of *Lolego pealei* provides multiple models for analysis of organelle motility. In "Cephalopd Neurobiology" Abbott, N. J., Williamson, R. and Maddock, L. Oxford University Press, Oxford, pp.15-34.

Seminars

Internal seminars:

The Graduate Group of Neuroscience: 9/21/93
Applied Mathematics Group In BU Mathematics Department: 2/3/94
BU Marine Program, September, 1996.

Invited seminars:

The Sixth Annual Winter Conference on Neuronal Plasticity (Grenada, 02/1994)
Title: The quantal nature of transmitter release.
(However, for personal reasons the trip gad to be canceled).

Department of Physiology; Laval University, School of Medicine; Quebec, Canada

Title: Molecular mechanisms of transmitter release.
Date: 01/13/1995

National Institute of Neurological Disorders and Stroke
Title: Multiple mechanisms regulate neurotransmitter release at the level of vesicular fusion.
Date: 5/15/1998; Host: Elis Stanley and Arthur Sherman.

Medical College of Georgia
Title: Changes in synaptic delay during facilitated transmitter release: What does synaptic delay tell us about synaptic transmission?
Date: 1/31/2001

Marine Biological Laboratory, Monday Night Seminar series
Title: Changes in synaptic delay during synaptic facilitation.
Date: 6/11/2001

University of Texas, Austin
Title: Changes in synaptic delay during synaptic facilitation.
Date: 4/19/2002

Boston University Medical School
Title: Biophysical parameters regulating intracellular calcium dynamics in presynaptic terminals.
Date: 2/24/2004

University of Pittsburgh, Center for Neuroscience
Title: Function of persistent Na current in a branching axon.
Date: 06/23/09.

Boston University Medical School: Department of Pharmacology
Title: Function of persistent Na current in a branching axon.
Date: 9/30/2009

Undergraduate Research Advisees

Summer 1994:
Emily Cogger (NSF-REU student)
Ramin Davudi (Summer research student)
Jeniffer Brunton (Summer research student)

Summer 1996:
Elena Leznik (Hughes Summer research student),
Vanessa Tsuda (Hughes Summer research student, co-advised with Dr.Traniello)
Monet France (NSF-REU student, co-advised with Dr.Traniello)
Duong Nguyen (Summer research student)

Fall, 96 & Spring 97:
Elena Leznik (Honors thesis)
Duong Nguyen (Honors thesis)
Kyle Richards (Honors thesis, co-supervised with Dr. D. Farb)
Jill Kerekes (Honors thesis, co-supervised with Dr. J.Traniello)

Fall, 99 &Spring 00
Nathan Burns

Spring 04
Daniel DiMatteo

Fall 04 & Spring 05
Nour Faisal
Amitha Ananth (Honors thesis)
Andrew Hooper (Psychology)

Summer 05

Sean O'Donnell (UROP)

Summer 06

Rick Dang (UROP)

Summer 07

Rick Dang (Summer Research)

2010-2011

Eileen Kodack, Olivia Swanson.

2011-2012

Ian Huang (UROP), Wong,Vanessa,
Zaina Inam (UROP)
Nelamangala, Shruti, Kamala (UROP)

2012-2013

Zaina Inam
Nelamangala, Shruti, Kamala

2013-2014

Acciardo, Andrew, Stephen; Prajvi Bagga; Fisher, Lea, Marguerite; Linlin Meng

Ph.D. Student Advisees

Andrey Vyshedskiy: Ph.D. (1999)
Thesis title: Multiple mechanisms underlying presynaptic enhancement at the inhibitor of the crayfish neuromuscular junction.

Tariq Allana: Ph.D. (2005)
Thesis title: Calcium channel-synaptic vesicle organization at the crayfish inhibitory neuromuscular junction and its functional implication

Sooyun Kim: Ph.D. candidate (2006-2009): on leave.

M.S. Student Advisees (Laboratory Research students)

Varya Kirillova: M.S. (1999)
Thesis title: Presynaptic mechanisms of olfactory nerve input to mitral cells in the turtle and rat olfactory bulb.

Yu-Wen Chao: (2003)

Qinghao Fu: (2004)

Lauren E. Ganski M.S. (2004) Department of Biomedical Engineering
Thesis Title: Investigating the presynaptic calcium dynamics following uncaging with DM-nitrophen at the cryafish neuromuscular junction.

Masters Student Advisees (Library Research STudents)

Lashawn Freeman-Stover (1995-1997; Second Reader)
Mary Martin (1997-present, First Reader)
Jane Willan (Spring 1998).
Greg O'Connor (1999)
Zhong LiWen (2000)
Young-gon Goh (2008)
Gloria DeWatt (2013)
James P. Gilbert (2013)

Graduate Student Directed studies:
Khulood Hussein, Hsin-Yun Hsieh, Danqing Xiao

Examination Committees Of Ph.D. Students

Students who have completed their thesis defense:

Lisa Ann Sorbera (1994)
Thesis title: Physiological regulation of smooth and cardiac muscle: Role of hormones and channels.

Danielle Gelinas (1994)
Thesis title: Cellular and molecular physiology of aromatase in the brain and retina of the goldfish, (Carassius Auratus).

George R. Gomez (1994)
Thesis title: Temporal filter properties of olfactory receptor cells of the American lobster, Homarus americanus.

Eva Kornberg (1997):
Thesis title: Mating-induced prolactin in the female rat: a comparison of neural and endocrine responses to differential mating stimulation.

Laurie Nelson (1997):
Thesis title: Disruption and overexpression of flp-1, a gene encoding FMRFamide-like peptides in the nematode *Caenorhabditis Elegans.*

Todd Blute (1997)
Thesis title: Nitric oxide and cyclis GMP signaling in the inner retina of the turtle.

Kyeong-Hoon Jeong (1998)
Thesis title: Characterization of the sympatho-adrenomedullary system and reproductive hormone responses to stress in corticotrophin-releasing hormone deficient mice.

Joong-Jean Park (1999)
Thesis Title: Development and function of the sexually dimorphic dorsal preoptic area/anterior hypothalamus of the ferret.

Jeung Woon Lee (1999)
Thesis title: Anatomical and behavioral analysis of the neuronal circuitry mediating the mating-induced analgesia in female rats.

Heather Kindon (2000)
Thesis title: Pheromonal communication in BALB/C mice: Profile of immediate-early gene induction in the vomeronasal projection pathway

Kevin Kelliher (2001)
Thesis Title: Sex differences and adult steroid modulation of chemosensory communication in the ferret (*Mustela putorius furo*): The detection, neuronal processing and function of pheromones in a carnivore

Murat Okatan (2001) (Cognitive Neuroscience)
Thesis Title: A stochastic model of mechanisms underlying plasticity in depressing excitatory cortical synapses

Kyuhyung Kim (2002)
Title: Function of a FMRFamide-related Neuropeptide Gene Family in Caenorhabditis elegans

Luxiang Cao (2003)
Thesis Title: The heme oxygenase/carbon monoxide system in the retina: Biochemistry, anatomy and interactions with the nitric oxide/cGMP pathway

Dao Yu (2005)
Thesis Title: Immunocytochemical investigation of the relationships between nitric oxide and the inhibitory transmitters GABA and glycine in the turtle retina

Stephanie Heflin (2007)
Thesis Title: Sodium Currents, Action Potential Firing Properties And Light Responses Of Narrow And Wide Field Amacrine Cells In The Tiger Salamander Retina.

Rohin Rajan (2007)
Thesis Title: The Origin And Effect Of Spike-Dependent Inhibition In The Tiger Salamander Retina.

Lisa M. Giocomo (2008) (Psychology)
Thesis Title: Biophysical Properties Of Entorhinal Cortex Neurons And Their Relationship To Spatial Memory Function

Christopher Frenz (2008)

Thesis Title: Voltage-Gated Sodium Channel Isoform Expression In The Mouse Main Olfactory Epithelium: A Neuronal Role For The Cardiac Isoform, $Na_v1.5$.

Birgit Werner (2008)

These Title: A Functional Analysis Of The Excitatory Synaptic Inputs To On-Off Ganglion Cells In The Aquatic Tiger Salamander Retina

Dan Wesson (2008)

These Title: Sniffing And Olfactory Receptor Neuron Activation In The Behaving Rodent

Nicolas Pirez (2008)

Thesis Title: In Vivo Control Of Olfactory Receptor Neuron Input To The Olfactory Bulb By Presynaptic Inhibition

Winnie Pong (2009) (Second Reader)

Thesis Title: Hydrogen sulfide as a gaseous neuromodulator in the retina.

Heather Yu (2009)

Thesis Title: Vocal initiation in Xenopus laevis (The African clawed frog); a role for serotonin

Kurt Schoener (2010) (Biomedical Engineering)

Thesis Title: Non-invasive, high-resolution spatiotemporal mapping of neuronal activity through field-induced changes in birefringence

Ningdong (Cam) Kang (2010)

Thesis Title: An anatomical pathway between the murine olfactory system and the medial amygdala and its role in conveying information about sex

Mark P. Brandon (2010)

Thesis Title: Theta oscillations and spatial coding in the presubsiculum and medial entorhinal cortex. (Second Reader)

Robert W. Komorowski (2011)

Thesis Title: Associations of item and context: a functional role for hippocampal contributions to memory.

Jeremy C. Chaufty (2011)

Thesis title: protein sorting and trafficking by neuronal adaptor proteins: characterization of a conserved dendritic targeting motif on kv4 channels and endocytic sorting of amyloid precursor protein by mint2/x11l.

Jan Blom (2011)

Characterizationof the nitric oxide and adrenomedullin signaling pathways in the murine retina.

Shirley Sanchez (2012)

Localization and functional characterization of the nitric oxide and carbon monoxide signaling pathways in the postnatal rat hippocampal formation

Shane Lee (2012)

Interactions of Gamma frequency rhythms in computational model of primary auditory cotex.

Jim Heys (2012)

Cellular mechanisms underlying spatial processing in medial entorhinal cortex

Amy Lin (2013)

Regulation of glutamatergic ampa receptor stability and Trafficking by ubiquitination

Brett Thomas Dibenedictis (2014)
Odor hedonics: processing of male pheromones in the female mouse brain

Ph.D. Students who have not completed their thesis defense:
Elizabeth Mccarthy, Gregory Dillon, Guan Wang, James Gilbert, Ali Badreddine, Katrina Furth.

Students from other institutes

Berbardo Sabatini (1997); Department of Neurobiology; Harvard Medical School.
(Major professor: Dr. W. G. Regehr)
Thesis title: Calcium control of neurotransmitter release at a cerebellar synapse.

Pradeep Atluri (2000); Department of Neurobiology; Harvard Medical School.
(Major professor: Dr. W. G. Regehr)
Thesis title: The Role of Presynaptic Calcium in Short-Term Synaptic Plasticity

Kelly Ann Foster (2004); Department of Neurobiology, Harvard Medical School
(Major professor: Dr. W. G. Regehr)
Thesis Title: Mechanisms and functional consequences of short-term plasticity at excitatory synapses in the cerebellum.

Fujin Luo (2009): Center for Neuroscience, University of Pittsburgh
Experimental and Monte Carlo studies of Ca2+ channel function and fast transmitter release at presynaptic active zones of the frog neuromuscular junction

Teaching Record

Neurobiology Summer course at Marine Biological Laboratory, 2000-2003.

Course	Semester	Student contact per week	Comments
BI445/645 Neurobiology	93-present	3 1-hour lectures, 2 3-hour laboratory sessions	New course and laboratory sessions developed.
BI575 Techniques in cell and molecular neuroscience	1997-2008.	2 4-hour laboratory sessions (For half a semester)	Moved Laboratory component of BI445/645 to this course. Co-taught with Dr. Chris Li
BI481/681 Neurochemistry	1998-1999	3 1-hour lectures, 1 1-hour discussion	New course developed.
BI325 Principles of Neuroscience	2005,-present	2 1.5 hours lectures /week.	Since 2012, implement classroom, live demonstration of electrophysiological experiments.

All courses were taught entirely by JWL unless indicated otherwise.

Service and Committees

Conflict of Interests committee (Charles River campus) 2011-presence.
Associate chairman (biology): 2007-2010
APT: 2006-2010
IACUC: 2005-2008
Department Advisory Committee: 2004-2010. (Oversee Biology machine shop (2005))
College of Arts and Sciences: Natural Science Curricular committee: 2001-2004 (Chairman 2003-2004)
Academic Policy committee, College of Sciences and Arts (1996-1999).
Curricular committee, Department of Biology (1997-1999).
Graduate Committee, Department of Biology (1998-1999).
Faculty search committee, 1998, 1999.

Interview for Accelerated Medical Program (SMED) (2008-present)
Interview for MMEDIC applicants (2007, 2008, 2010-present)