CURRICULUM VITAE

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Present position

Investigator, Tenure Track
Neural Circuits and Cognition Unit, Laboratory of Behavioral Neuroscience
Intramural Research Program, National Institute on Aging, National Institutes of Health

Previous positions

2000-2001 Research Assistant, Laboratory of Dr. Chiang-Shan Ray Li
Chang-Gung Memorial Hospital, Taiwan
2002-2006 Graduate Student, Laboratory of Dr. Miguel Nicolelis
Department of Neurobiology, Duke University
2006-2009 Postdoctoral Fellow, Laboratory of Dr. Miguel Nicolelis
Department of Neurobiology, Duke University
2009-Date Tenure Track Investigator, Neural Circuits and Cognition Unit
Laboratory of Behavioral Neuroscience, IRP/NIA/NIH

Education

School and location	Degree	Year	Field
National Taiwan University, Taipei, Taiwan	M.D.	2000	Medicine
Duke Univeristy, Durham, NC	Ph.D.	2006	Neurobiology

Honors and other special scientific recognition

1991 Research Science Institute (RSI) Summer Camp, Washington, DC
1992 Bronze Medal, 33rd International Mathematical Olympiad (IMO
1992-2000 Four times Presidential Award, National Taiwan University
1999 Harvard Medical School Exchange Student, Clinical rotation
2002 HHMI Predoctoral Fellowship, Neuroscience Honorable mention
2008 NARSAD 2008 Young Investigator Award
2009 Pathway to Independence (K99/R00) Award, NIMH, NIH
(*Declined to accept the investigator position at the NIA, NIH)
2010 NARSAD 2010 Young Investigator Award
2014 European Neurasmus Scholar
2014 NIH Graduate Partnerships Program Outstanding Mentor Award

Conference and symposium organizer

2015 Chair of minisymposium: “Optogenetic dissection of the basal forebrain neuromodulatory control of cortical activation, plasticity and cognition.” Society for Neuroscience Annual Meeting, Chicago, IL

Editorial positions

Behavioral Neuroscience, Consulting Editor (2015-present)
Frontiers in Behavioral Neuroscience, Review Editor (2015-present)

Teaching, clinical, educational, and work experience

1999-2000	Internships, National Taiwan University Hospital, Taipei, Taiwan
2005/09	In Vivo Electrophysiology: Beyond Sensory-Motor Functions. Education Series on Neuroscience, National Health Research Institutes (NHRI), Taiwan
2014/01	Advanced course on Neuronal Circuits and Behavior, the European Neurasmus Scholar programme and Center for Neuroscience in the University of Coimbra, Portugal

Grants and Research Support

Completed Research Support

1. PI: "The roles of basal forebrain neuronal ensembles in top-down attention." NARSAD 2008 Young Investigator Award (2008-2009)
2. PI: "The roles of basal forebrain neuronal ensemble in top-down attention." NIMH/NIH (K99/R00) (2009-2014)
   ** Declined the award in order to accept a tenure track investigator position at the National Institute on Aging, NIH
3. PI: "Neural circuit mechanisms of top-down attention." NARSAD 2010 Young Investigator Award (2011-2013)

Ongoing Research Support

1. PI: "Non-cholinergic basal forebrain neurons and neurocognitive aging." NIA Intramural Research Program, NIH (2009-)
2. PI: "The roles of basal forebrain neuronal ensembles in top-down attention." NIA Intramural Research Program, NIH (2009-)

Peer-reviewed Publications (research reports)

1. Li C-S, **Lin S-C** (2002) A perceptual level mechanism of the inhibition of return in oculomotor planning. Cognitive Brain Research 14:269-276
2. Li C-S, **Lin S-C** (2002) Inhibition of return in temporal order saccades. Vision Research 42:2089-2093
3. Li C-S, Chang H-L, **Lin S-C** (2003) Intact inhibition of return of attention in children with ADHD. Experimental Brain Research 149(1):125-30
4. Ribeiro S, Gervasoni D, Soares E, Zhou Y, **Lin S-C***,* Pantoja J, Lavine M, Nicolelis MAL (2004) Long-lasting novelty-induced neuronal reverberation during slow-wave sleep in multiple forebrain areas. PLOS Biology 2(1):E24
5. Gervasoni D*, **Lin S-C***,* Ribeiro S*, Soares E, Pantoja J, Nicolelis MAL (2004) Global forebrain dynamics predict rat behavioral states and their transitions. The Journal of Neuroscience 24(49): 11137-47 (***equal contributions**)
6. Dzirasai K, Ribeiro S, Costa RM, Santos LM, **Lin S-C***,* Grosmark A, Sotnikova TD, Gainetdinov RR, Caron MG, Nicolelis MAL (2006) Dopaminergic control of wake-sleep states. The Journal of Neuroscience 26(41):10577-10589
7. Costa RM, **Lin S-C**, Sotnikova TD, Gainetdinov RR, Caron MG, Nicolelis MAL (2006) Rapid alterations in corticostriatal ensemble coordination during acute dopamine dependent motor dysfunction. Neuron 52(2):359-69
8. **Lin S-C**, Gervasoni D, Nicolelis MAL (2006) Fast modulation of prefrontal cortex activity by basal forebrain non-cholinergic neuronal ensembles. Journal of Neurophysiology 96(6):3209-19
9. Pereira A, Ribeiro S, Wiest M, Moore LC, Pantoja J, **Lin S-C**, Nicolelis MAL (2007) Processing of tactile information by the hippocampus. PNAS 104(46):18286-91
10. Ribeiro S, Shi X, Engelhard M, Zhou Y, Zhang H, Gervasoni D, **Lin S-C**, Wada K, Lemo NA,

Nicolelis MAL (2007) Novel experience induces persistent sleep-dependent plasticity in the cortex but not in the hippocampus. Frontiers in Neuroscience 1(1):43-55

11. **Lin S-C**, Nicolelis MAL (2008) Neuronal ensemble bursting in the basal forebrain encodes salience irrespective of valence. Neuron 59(1):138-149
12. Zhang H, **Lin S-C**, Nicolelis MAL (2009) Acquiring local field potential information from ameperometric neurochemical recordings. Journal of Neuroscience Methods 179(2):191-200
13. Diniz Behn CG, Klerman EB, Mochizuki T, **Lin S-C**, Scammell TE (2010) Abnormal Sleep/Wake Dynamics in Orexin Knockout Mice. Sleep 33(3):297-306
14. Zhang H, **Lin S-C**, Nicolelis MAL (2010) Spatiotemporal Coupling between Hippocampal Acetylcholine Release and Theta Oscillations In Vivo. The Journal of Neuroscience 30(40):13431-13440
15. Zhang H, **Lin S-C**, Nicolelis MAL (2011) A distinctive subpopulation of medial septal slow-firing neurons promote hippocampal activation and theta oscillations. Journal of Neurophysiology, 106(5):2749-63
16. Avila I, **Lin S-C** (2014) Motivational salience signal in the basal forebrain is coupled with faster and more precise decision speed. PLOS Biology 12(3): e1001811
17. Nguyen DP, **Lin S-C** (2014) A frontal cortex event-related potential driven by the basal forebrain. eLife 3:e02148
18. Mayse JD, Nelson GM, Park P, Gallagher M, **Lin S-C** (2014) Proactive and reactive inhibitory control in rats. Frontiers in Neuroscience, Decision Neuroscience section 8:104
19. Avila I, **Lin S-C** (2014) Distinct neuronal populations in the basal forebrain encode motivational salience and movement. Frontiers in Behavioral Neuroscience 8:421
20. Mayse JD, Nelson GM, Avila I, Gallagher M, **Lin S-C** (2015) Basal forebrain neuronal inhibition enables rapid behavioral stopping. Nature Neuroscience 18(10):1501-8
21. Whitmore NW, **Lin S-C** (2016) Unmasking local activity within local field potentials (LFPs) by removing distal electrical signals using Independent Component Analysis. NeuroImage (In Press)

Reviews, Commentary & Book Chapters

1. **Lin S-C** and Gervasoni D (2007) Defining Global Brain States using Multielectrode Field Potential Recordings. In: Nicolelis MAL (Eds.): Methods for Neural Ensemble Recordings, 2nd Edition, CRC Press, pp. 145-168.
2. **Lin S-C** (2010) The dynamics of striatum circuitry. Frontiers in Integrative Neuroscience 4: 3
3. Raver SM, **Lin S-C** (2015) Basal forebrain motivational salience signal enhances cortical processing and decision speed. Frontiers in Behavioral Neuroscience 9:277
4. **Lin S-C**, Brown RE, Hussain Shuler MG, Petersen CCH, Kepecs A (2015) Optogenetic dissection of the basal forebrain neuromodulatory control of cortical activation, plasticity and cognition. The Journal of Neuroscience 35(41):13896-903

Invited Lectures

Conferences

1. In Vivo Electrophysiology: Beyond Sensory-Motor Functions. Education Series on Neuroscience, National Health Research Institutes (NHRI), September 2005, Taipei, Taiwan
2. A novel mode of neuromodulatory action: Transient synchronization of basal forebrain cortical projecting GABAergic neuronal ensemble at gamma frequency. NHRI Conference on Neuroscience, September 2005, Taiwan
3. Motivational Saliency Encoded By Synchronous Bursting Of Basal Forebrain Non-Cholinergic Neurons. Sleep and Circadian Biology DataBlitz, Society for Neuroscience annual meeting, November 2007, San Diego, CA
4. Neuronal ensemble bursting in the basal forebrain encodes salience irrespective of valence. Computational and Systems Neuroscience (COSYNE), March 2008, Salt Lake City, UT
5. Neuronal ensemble bursting in the basal forebrain encodes salience irrespective of valence. Janelia

Farm Conference on Neural Circuits and Decision-Making in Rodents, April 2008, Ashburn, VA

6. Attentional modulation of cortical ERPs gated by basal forebrain ensemble bursting. COSYNE workshop: Modulation of cortical responses by behavior and brain state, March 2009, Snowbird, UT
7. The roles of non-cholinergic basal forebrain neurons in top-down attention. Annual meeting of the Associated Professional Sleep Societies (APSS), symposium on "New Insights into the Role of the Basal Forebrain in Cortical Activation", June 2009, Seattle, WA
8. Detection and discrimination of motivationally salient cues by basal forebrain neurons. NIH Research Festival Symposium, September 2014, Bethesda, MD
9. Inhibitory control in young and aged rats and its gating by basal forebrain neuronal inhibition. Symposium on "Decision-making in animal models for neuropsychiatric disorders", International Behavioral Neuroscience Society (IBNS) annual meeting, June 2015, British Columbia, Canada
10. Non-cholinergic basal forebrain neurons as a gain modulation signal for the decision-making process. Chair of minisymposium on "Optogenetic dissection of the basal forebrain neuromodulatory control of cortical activation, plasticity and cognition", Annual Meeting of the Society for Neuroscience, October 2015, Chicago, IL

University and NIH lectures

1. Revealing the functions of basal forebrain non-cholinergic neuronal ensembles. Institute of Neuroscience, National Yang Ming University, January 2007, Taipei, Taiwan
2. Revealing the functions of basal forebrain non-cholinergic neuronal ensembles. Institute of Biomedical Sciences, Academia Sinica, January 2007, Taipei, Taiwan
3. The roles of non-cholinergic basal forebrain neurons in top-down attention. Department of Pharmacology, National Taiwan University, August 2008, Taipei, Taiwan
4. The roles of non-cholinergic basal forebrain neurons in top-down attention. Department of Psychology and Neuroscience, Duke University, August 2008, Durham, NC
5. The roles of non-cholinergic basal forebrain neurons in top-down attention. Cognition and Neuroscience Program, University of Texas at Dallas, December 2008, Dallas, TX
6. The roles of non-cholinergic basal forebrain neurons in top-down attention. National Institute on Aging, NIH, December 2008, Baltimore, MD
7. The roles of non-cholinergic basal forebrain neurons in top-down attention. Department of Psychology, University of Chicago, January 2009, Chicago, IL
8. The roles of non-cholinergic basal forebrain neurons in top-down attention. Department of Psychology, University of Toronto, February 2009, Toronto, Canada
9. The roles of non-cholinergic basal forebrain neurons in top-down attention. Neuroscience program, Cold Spring Harbor Laboratory, April 2009, Cold Spring Harbor, NY
10. The roles of non-cholinergic basal forebrain neurons in top-down attention. RIKEN Brain Science Institute, July 2009, Wako, Japan
11. The roles of non-cholinergic basal forebrain neurons in top-down attention. Department of Molecular and System Neurobiology, University of Tokyo, July 2009, Tokyo, Japan
12. The roles of non-cholinergic basal forebrain neurons in top-down attention. Neuroscience Seminar Series, University of Illinois Urbana-Champaign, November 2009, Champaign, IL
13. The roles of non-cholinergic basal forebrain neurons in top-down attention. Neuroscience and Cognitive Seminar Series, University of Maryland, College Park, April 2010, College Park, MD
14. The roles of non-cholinergic basal forebrain neurons in top-down attention. Neuroscience Research Seminar Series, Johns Hopkins University, April 2010, Baltimore, MD
15. The functional significance of non-cholinergic basal forebrain neurons. Behavioral Neuroscience Research Branch, National Institute on Drug Abuse (NIDA), NIH, April 2011, Baltimore, MD
16. The functional significance of non-cholinergic basal forebrain neurons. IRP seminar series, National Institute on Drug Abuse (NIDA), NIH, December 2011, Baltimore, MD
17. Executive functions and non-cholinergic basal forebrain neurons. Behavioral and Neural Sciences Graduate Program, Rutgers, The State University of New Jersey, June 2012, Newark, NJ

18. Executive functions and non-cholinergic basal forebrain neurons. IRP seminar series, National Institute on Alcohol Abuse and Alcoholism (NIAAA), NIH, November 2012, Rockville, MD
19. Decision making, event-related potential and non-cholinergic basal forebrain neurons. School of Biomedical Engineering, Science and Health Systems at Drexel University, February 2013, Philadelphia, PA
20. Decision making, event-related potential and non-cholinergic basal forebrain neurons. University of Maryland School of Medicine, March 2013, Baltimore, MD
21. Decision making, event-related potential and non-cholinergic basal forebrain neurons. University of Coimbra, January 2014, Coimbra, Portugal
22. Decision making, event-related potential and non-cholinergic basal forebrain neurons. Champalimaud Centre for the Unknown, January 2014, Lisbon, Portugal
23. Decision making, event-related potential and non-cholinergic basal forebrain neurons. National Institute of Mental Health (NIMH), NIH, April 2014, Bethesda, MD
24. Motivational salience signal in the basal forebrain. Graduate Institute of Brain and Mind Sciences, National Taiwan University College of Medicine, August 2014, Taipei, Taiwan
25. Motivational salience signal in the basal forebrain. Department of Psychology, National Taiwan University, August 2014, Taipei, Taiwan
26. Motivational salience signal in the basal forebrain. Institute of Neuroscience, National Yang-Ming University, August 2014, Taipei, Taiwan
27. Motivational salience signal in the basal forebrain. Institute of Biomedical Sciences, Academia Sinica, August 2014, Taipei, Taiwan
28. Motivational salience signal in the basal forebrain. Department of Neurobiology, Duke University, November 2014, Durham, NC
29. Motivational salience signal in the basal forebrain. National Institute of Environmental Health Sciences (NIEHS), NIH, November 2014, Research Triangle Park, NC
30. Howard Hughes Medical Institute, Janelia Research Campus, June 2016, Ashburn, VA

Professional activities

Ad hoc reviewer: Journals: Neuron, eLife, Current Biology, The Journal of Neuroscience, Neuropharmacology, Cerebral Cortex, Brain Structure and Function, Journal of Neurophysiology, Neurobiology of Aging, BMC Neuroscience, PLOS One, Neuroscience, Frontiers in Neuroscience, Frontiers in Behavioral Neuroscience, Frontiers in Integrative Neuroscience, Journal of Neuroscience Methods, The Chinese Journal of Physiology

Ad hoc reviewer: Grant agencies**:** Swiss Brazilian Scientific & Technology Cooperation Fund, French National Research Agency neuroscience grant

Ad hoc reviewer: Meetings and symposium: Computational and Systems Neuroscience (COSYNE) meeting abstract, NIH Fellows Award for Research Excellence (FARE) abstract

NIH/NIA/IRP committee service

NIH Stadtman Tenure Track Investigator, Neuroscience search committee
National Institute on Aging (NIA) staff scientist search committee
National Institute on Aging (NIA) IT steering committee
National Institute on Aging (NIA) Lab Specialist Promotion Committee
National Institute on Drug Abuse (NIDA) Computational Neuroscience Investigator search committee

Scientific societies

Society for Neuroscience, 2000-present

Mentorship

Awards

NIH Graduate Partnerships Program Outstanding Mentor Award (2014)

Postdoctoral fellows

1. David P. Nguyen (2010-2013): Department of Pharmacokinetics, Pfizer Inc
2. Irene Avila (2010-2014): Scientific Program Manager, Office for Scientific Workforce Diversity, NIH
3. Hachi Manzur (2011-2016): Neurology Residency, University of Chile
4. Alessandro Scaglione (2011-)
5. Sylvie M. Raver (2014-2015): Training and Policy Manager, Society for Neuroscience

Graduate students

1. Jeffrey D. Mayse (co-mentoring with Michela Gallagher) (2010-2014): Postdoctoral fellow, Brown University

IRTA students (NIH Postbaccalaureate training program, immediate position after leaving NIA)

1. Geoffrey M. Nelson (2009-2011): PhD Student, Open University, UK
2. Ksenia Vlasov (2013-2015): Research Assistant, MIT/Massachusetts General Hospital, Boston, MA
3. Rhett Greenfield (2014-2015): Biology Master's program, American University, Washington, DC
4. Nathan W. Whitmore (2014-)
5. Ruby Lam (2014-)
6. Jing Liang (2015-)

Summer students

1. Kaivalya S. Deshpande (2013), University of Michigan
2. Matthew Vetere (2015), Syracuse University

Honors and Awards for Trainees

1. Nguyen D.P.: Japan Society for the Promotion of Science (JSPS) postdoctoral fellowship for foreign researchers (short-term), 2010
2. Nelson G.M.: The Scientific Director's Award at NIA postbac poster day 2011
3. Nelson G.M.: NIH postbac award at NIH postbac poster day 2011
4. Nguyen D.P.: Nathan W. Shock Postdoctoral Travel Award, National Institute on Aging, 2012
5. Deshpande K.S.: Barbara A. Hughes Award of Excellence for best poster among summer student interns, National Institute on Aging, 2013
6. Mayse J.D.: NIH NRSA F31 Grant (F31AG045039), The Neural Basis of Response Inhibition, 2013
7. Scaglione A.: 2nd place award for the best systems neuroscience poster (postdoc category) at the Baltimore Chapter of Society for Neuroscience poster session, 2014
8. Manzur H.: 2015 NIH Fellows Award for Research Excellence (FARE)