

# CV for Thomas Jhou

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Lab site:

[www.jhoulab.org](http://www.jhoulab.org)

## **Education:**

BS	Massachusetts Institute of Technology	1995	Computer Science
PhD	Harvard University	2003	Neurobiology (Dr Clifford Saper)

## **Post-doctoral training:**

2004-2005	University of California at San Francisco, Ernest Gallo Clinic and Research Center, Dr Howard Fields
2005-2008	Johns Hopkins University, Dept of Psychological and Brain Sciences, Dr Peter Holland
2008-2010	National Institute on Drug Abuse, Behavioral Neuroscience Branch, Dr Satoshi Ikemoto

## **Appointments:**

2010-2019	Assistant professor, Dept of Neurosciences, Medical University of South Carolina
2019-2023	Associate professor, Dept of Neurosciences, Medical University of South Carolina
2023-present	Associate professor, Dept of Neurobiology, University of Maryland School of Medicine

## **Current Extramural Funding (most recent first):**

2021-2026	NIH/NIDA 1 R37 DA054370 (was previously R01, converted to R37 upon receipt of NIH MERIT award), \$1.6M direct costs, \$2.4M total, “Neural mechanisms of cocaine avoidance”. Role: Principal Investigator.
2021-2023	NIH SBIR, R44 NS107142, \$249k direct costs, \$366k total. “Low Cost, Fully Implantable Wireless Implantable Neural Recording Device”. Role: subcontract.
2018-2024	NIH/NIDA 1 U01 DA044468, \$2.2M direct costs, \$3.27M total, “Genomic Analysis of Avoidance Learning in Addiction”. Role: Principal Investigator.

## **Completed Extramural Funding (oldest first):**

2012-2017	\$200k direct costs, subcontract from NIH/NIMH R01MH094489, PI Dr. Paul Shepard, University of Maryland, "Habenulomesencephalic role in depression and anhedonia".
2012-2014	\$250k direct costs, NIH/NIDA, 1R21DA89501, "Neural mechanisms by which punishment modulates drug-seeking", Role: Principal Investigator.
2012-2014	\$100k direct costs, NIH/NIDA, 1R03DA034431, "Gene expression and drug targets in the rostromedial tegmentum", Role: Principal Investigator.
2013	\$25,000. Pilot project for Alcohol Research Center at the Medical University of South Carolina. Role: Principal Investigator.
2015-2016	\$31,316 direct costs, NIH/NIDA 1R21DA037744, PI Rachel Smith, Texas A&M University, "Opposing roles of distinct output projections from prefrontal cortex". Role: subcontract
2015-2018	\$360k direct costs, project on NIH/NIDA P50DA015369, "Neurobiology of Addiction Research Center". Role: Principal Investigator on project 3.
2017-2018	\$30,000 direct costs. NIH/NINDS 1R41NS102049 (Small Business Innovation Research), "A Unified System for Wireless Optogenetics and Brain Microdialysis for Small Molecules: Prototype Development and Validation". Role: subcontract.
2014-2019	\$1.125M direct costs, \$1.6M total. NIH/National Institute on Drug Abuse, R01 DA037327-01 "Cocaine-Conditioned Avoidance Behavior". Role: Principal Investigator.
2016-2019	\$600k direct costs, \$894k total. W911NF-16-0070, Army Research Labs, Department of Defense, "Genetic Anatomy of Sleep". Role: Principal Investigator.
2018-2019	\$54,107 direct costs. NIH/NINDS 1R41NS107142 "Wireless implantable neural recording device". Role: subcontract.

### **Peer-reviewed publications**

11329 total citations, h-index 31 (as of June 2022).

Items 1-14 (prior to 2005) are published under earlier spelling of my last name, "Chou".

1. Cusack, B., Jansen, K. McCormick DJ, **Chou, T**, Pang Y, Richelson E. "A single amino acid of the human and rat neuropeptide Y receptors (subtype 1) determining the pharmacological profile of a species-selective neuropeptide Y agent." *Biochem. Pharmacol.* Sept 15; 60(6):793-801, 2000.
2. Cusack B, **Chou T**, Jansen K, McCormick, DJ, Richelson E, "Analysis of binding sites and efficacy of a species-specific peptide at rat and human neuropeptide Y receptors." *J. Peptide Research* Jan; 55(1):72-80, 2000.
3. Estabrooke IV, McCarthy MT, Ko E, **Chou TC**, Chemelli RM, Yanagisawa M, Saper CB, Scammell TE, Fos expression in orexin neurons varies with behavioral state. *J Neurosci*. 2001 Mar 1;21(5):1656-62. PMCID: PMC6762959.

4. Lu J, Zhang YH, **Chou TC**, Gaus SE, Elmquist JK, Shiromani P, Saper CB, "Contrasting effects of ibotenate lesions of the paraventricular nucleus and subparaventricular zone on sleep-wake cycle and temperature regulation.", *J. Neurosci.*, 21(13):4864-74, 2001. PMCID: PMC3508730.
5. **Chou TC**, Lee CE, Lu J, Elmquist JK, Hara J, Willie JT, Beuckmann CT, Chemelli RM, Sakurai T, Yanagisawa M, Saper CB, Scammell TE, "Orexin neurons contain dynorphin", *J. Neurosci.*, 21(19): RC168, 2001. PMCID: PMC6762880.
6. Saper, CB, **Chou, TC**, Scammell, TE, "The sleep switch: hypothalamic control of sleep and wakefulness," *Trends in Neurosci.*, 12:726-31, 2001.
7. Gooley JJ, Lu J, **Chou TC**, Scammell TE, Saper CB. "Melanopsin in cells of origin of the retinohypothalamic tract", *Nat Neurosci*. 2001 Dec;4(12):1165.
8. **Chou, TC**, Bjorkum, A, Gaus, SE, Lu, J, Scammell, TE, Saper, CB, "Afferents to the ventrolateral preoptic nucleus," *J. Neurosci.*, 22(3):977-90, 2002, PMCID: PMC6758527.
9. Saper, CB, **Chou, TC**, Elmquist, JK, "The Need to Feed: Homeostatic and hedonic control of feeding", *Neuron*, 36(2):199, Oct. 2002.
10. Chamberlin NL, Arrigoni E, **Chou TC**, Saper CB, "Effects of adenosine on GABAergic synaptic inputs to identified ventrolateral preoptic neurons", *Neuroscience*, 119(4), 913-918, 2003.
11. **Chou, TC**, Scammell, TE, Gooley, JJ, Gaus, SE, Saper, CB, Lu, J, "Critical role of the dorsomedial hypothalamic nucleus in a wide range of behavioral circadian rhythms", *J. Neuroscience*, 23(33):106910-702, 2003. PMCID: PMC6740926.
12. **Chou TC**, Rotman SR, Saper CB., Lateral hypothalamic acetylcholinesterase-immunoreactive neurons co-express either orexin or melanin concentrating hormone., *Neurosci Lett*. 2004 Nov 11;370(2-3):123-6.
13. Gerashchenko D, **Chou TC**, Blanco-Centurion CA, Saper CB, Shiromani PJ., Effects of lesions of the histaminergic tuberomammillary nucleus on spontaneous sleep in rats., *Sleep*. 2004 Nov 1;27(7):1275-81. PMCID: PMC1249486.
14. Saper CB, Lu J, **Chou TC**, Gooley J., The hypothalamic integrator for circadian rhythms., *Trends Neurosci*. 2005 Mar;28(3):152-7.
15. **Jhou, T**, "Neural mechanisms of freezing and passive aversive behaviors", *J. Comp. Neurol*. Dec. 2005, 493(1):111-4.
16. Lu, J, **Jhou, TC**, Saper, CB, "Identification of Wake-Active Dopaminergic Neurons in the Ventral Periaqueductal Gray Matter", *J. Neurosci.*, January 4, 2006; 26(1): 193 - 202.
17. Phillips, PEM, Walton, ME, **Jhou, TC**, "Calculating Utility: Preclinical evidence for cost-benefit analysis by mesolimbic dopamine", *Psychopharmacology*, 2007; 191(3):483-95.
18. Greco MA, Fuller P, **Jhou TC**, Martin-Schild S, Zadina JE, Hu Z, Shiromani P, Lu J. Opioidergic projections to sleep-active neurons in the ventrolateral preoptic nucleus. *Brain Res*. 2008.
19. **Jhou TC**, Geisler S, Marinelli M, DeGarmo BA, Zahm DS, "The rostromedial tegmental nucleus: a mesopontine structure targeted by the lateral habenula that projects to the ventral tegmental area and substantia nigra compacta". *J. Comp. Neurology*, 513(6):566-96, 2009.
20. **Jhou, TC**, Fields, HL, Baxter, MG, Saper, CB, Holland PC, "The rostromedial tegmental nucleus (RMTg), a major GABAergic afferent to midbrain dopamine neurons, encodes aversive stimuli and promotes behavioral inhibition". *Neuron*, 61(5):786-800, 2009.
21. Hong S, **Jhou TC**, Smith M, Saleem KS, Hikosaka, O, "Negative reward signals from the lateral habenula to dopamine neurons are mediated by rostromedial tegmental nucleus in primates", *J. Neurosci*. 31(32):11457-71, 2011.
22. **Jhou TC**, Xu SP, Lee MR, Gallen CL, Ikemoto S., Mapping of reinforcing and analgesic effects of the mu opioid agonist Endomorphin-1 in the ventral midbrain of the rat. *Psychopharmacology*, 2012.

23. Webb SM, Vollrath-Smith FR, Shin R, **Jhou TC**, Xu S, Ikemoto S, "Rewarding and incentive motivational effects of excitatory amino acid receptor antagonists into the median raphe and adjacent regions of the rat", *Psychopharmacology* 224(3):401-12, 2012.
24. Barrot M, Sesack SR, Georges F, Pistis M, Hong S, **Jhou TC**, "Braking dopamine systems: a new GABA master structure for mesolimbic and nigrostriatal functions". *J. Neurosci.* 32(41):14,094-101, 2012.
25. **Jhou, TC**, Good CH, Rowley CS, Xu SP, Wang H, Burnham N, Hoffman AF, Lupica CR, Ikemoto S, "Cocaine drives aversive conditioning via delayed activation of dopamine-responsive habenular and midbrain pathways", *J. Neurosci.* vol. 33(17):7501-12, 2013.
26. Bentzley BS, **Jhou TC**, Aston-Jones G, "Economic demand predicts addiction-like behavior and therapeutic efficacy of oxytocin in the rat." *Proc. Natl. Acad. Sci. USA*, 2014, PMC4136574.
27. Quina LA, Tempest L, Ng L, Harris JA, Ferguson S, **Jhou TC**, Turner EE., "Efferent pathways of the Mouse Lateral Habenula", *J. Comp. Neurol.* 2014, 253(1):32-60, PMCID: PMC4232452.
28. Vujovic N, Gooley JJ, **Jhou TC**, Saper CB. Projections from the subparaventricular zone define four channels of output from the circadian timing system. *J Comp Neurol.*, 2015, 523(18):2714-37, 2015, PMCID: PMC4607558.
29. Glover EJ, McDougle MJ, Siegel GS, **Jhou TC**, Chandler LJ, Role for the rostromedial tegmental nucleus in signaling the aversive properties of alcohol. *Alcohol Clin Exp Res*, Aug 2016, 40(8):1651-61. PMCID: PMC4961514.
30. Baker PM, **Jhou T**, Li B, Matsumoto M, Mizumori SJ, Stephenson-Jones M, Vicentic A. The Lateral Habenula Circuitry: Reward Processing and Cognitive Control. *J Neurosci.* 2016 Nov 9; 36(45):11482-11488. PMCID: PMC5125215.
31. Brown RM, Kupchik YM, Spencer S, Garcia-Keller C, Spanswick DC, Lawrence AJ, Simonds SE, Schwartz DJ, Jordan KA, **Jhou TC**, Kalivas PW. Addiction-like synaptic impairments in diet-induced obesity. *Biol Psychiatry*, 2017, PMCID: PMC4889544.
32. Vento PJ, Rowley CS, Burnham NW, **Jhou TC**. Learning from one's mistakes: A dual role for the rostromedial tegmental nucleus in the encoding and expression of punished reward seeking. *Biological Psychiatry*, 2017, PMID27931744, PMCID 5400739.
33. Dennis TS, **Jhou TC**, McGinty JF, Cocaine self-administration and time-dependent decreases in prelimbic activity. *bioRxiv*, Jan 30, 2018.
34. Smith RJ, Vento PJ, Chao YS, Good CH, **Jhou TC**, Gene expression and neurochemical characterization of the rostromedial tegmental nucleus (RMTg) in rats and mice. *Brain Structure and Function*, 224(1):219-238, Jan 2019, PMCID PMC6467516.
35. Li H, Pullmann D, Cho JY, Eid M, **Jhou TC**, Generality and opponency of rostromedial tegmental (RMTg) roles in valence processing. *eLife*, Jan 22, 2019; 8. pii: e41541, PMCID: PMC6361585.
36. Elmer GI, Palacarolla H, Mayo CL, Brown PL, **Jhou TC**, Brady D, Shepard PD. The rostromedial tegmental nucleus modulates the development of stress-induced helpless behavior, *Behav Brain Res*, Feb 1, 2019, 359:950-957, PMID29932954.
37. Li H, Pullmann D, **Jhou TC**, Valence-encoding in the lateral habenula arises from the entopeduncular nucleus, *eLife*, Mar 11 2019, 8. pii: e41223, PMC6456292.
38. **Jhou TC**, Vento PJ, Bidirectional regulation of reward, punishment, and arousal by dopamine, the lateral habenula, and the rostromedial tegmentum (RMTg). *Current Opinion in Behavioral Sciences*, April 1, 2019, 26:90-96. PMCI A N/A.
39. Hardaway JA, Halladay LR, Mazzone CM, Pati D, Bloodgood DW, Kim M, Jensen J, DiBerto JF, Boyt KM, Shiddapur A, Erfani A, Hon OJ, Neira S, Stanhope CM, Sugam JA, Saddoris MP, Tipton G, McElligott Z, **Jhou TC**, Stuber GD, Bruchas MR, Bulik CM, Holmes

A, Kash TL. Central Amygdala Prepronociceptin-Expressing Neurons Mediate Palatable Food Consumption and Reward. *Neuron*. 2019 Jun 5;102(5):1037-1052.e7. PMC6750705.

40. Parker KE, Pedersen CE, Gomez AM, Spangler SM, Walicki MC, Feng SY, Stewart SL, Otis JM, Al-Hasani R, McCall JG, Sakers K, Bhatti DL, Copits BA, Gereau RW, **Jhou TC**, Kash TJ, Dougherty JD, Stuber GD, Bruchas MR. A Paranigral VTA Nociceptin Circuit that Constrains Motivation for Reward. *Cell*. 2019 Jul 25;178(3):653-671.e19. PMC7001890.

41. Walker RA, Wright KM, **Jhou TC**, McDannald MA. The ventrolateral periaqueductal grey updates fear via positive prediction error. *Eur J Neurosci*. 2019 Aug 3. doi: 10.1111/ejn.14536. PMC6995762.

42. Wright KM, **Jhou TC**, Pimpinelli D, McDannald MA, Cue-inhibited ventrolateral periaqueductal gray neurons signal fear output and threat probability in male rats. *eLife*. Sep 30, 2019. PMCID: PMC6821491.

43. Glover EJ, Starr EM, Chao Y, **Jhou TC\***, Chandler LJ\*, Inhibition of the rostromedial tegmental nucleus reverses alcohol withdrawal-induced anxiety-like behavior. *Neuropsychopharmacology*, 44(11):1896-1905, Oct 2019. PMC6785010. (\* indicates equal last-author contribution)

44. Li H, Vento PJ, Parrilla-Carrero J, Pullmann D, Chao YS, Eid M, **Jhou TC**, Three rostromedial tegmental afferents drive triply dissociable aspects of punishment learning and aversive valence encoding, *Neuron*, Dec 4, 2019: 104(5):987-999. PMCID: PMC6989096

45. Vento PJ, **Jhou TC**, Bidirectional valence encoding in the ventral pallidum (preview). *Neuron*, Mar 4; 105(5):766-768. PMCID N/A.

46. Rodriguez-Romaguera J, Ung RL, Nomura H, Otis JM, Basiri ML, Namboodiri VMK, Zhu X, Robinson JE, van den Munkhof HE, McHenry JA, Eckman LEH, Kosyk O, Jhou TC, Kash TL, Bruchas MR, Stuber GD., Prepronociceptin-Expressing Neurons in the Extended Amygdala Encode and Promote Rapid Arousal Responses to Motivationally Salient Stimuli, *Cell Rep*, 2020, Nov 10; 33(6):108362. PMC8136285.

47. Li H, Eid M, Pullmann D, Chao YS, Thomas AA, **Jhou TC**, Entopeduncular nucleus projections to the lateral habenula contribute to cocaine avoidance, *J. Neuroscience*, Jan 2021, 41(2):298-306. PMC7810656

48. Cruz AM, Spencer HF, Kim TH, **Jhou TC**, Smith RJ., Prelimbic cortical projections to rostromedial tegmental nucleus play a suppressive role in cue-induced reinstatement of cocaine seeking, *Neuropsychopharmacology*, 2021 Jul; 46(8):1399-1406, PMC8209220.

49. Zhao YN, Yan YD, Wang CY, Qu WM, **Jhou TC**, Huang ZL, Yang SR., The Rostromedial Tegmental Nucleus: Anatomical Studies and Roles in Sleep and Substance Addictions in Rats and Mice, *Nat Sci Sleep*. 2020 Dec 24; 12:1215-1223. PMC7769149.

50. Parrilla-Carrero J, Eid M, Li H, Chao Y, **Jhou TC**, Synaptic adaptations at the rostromedial tegmental nucleus underlie individual differences in cocaine avoidance, *J. Neuroscience*, 41(21):4620-30, 2021, PMC8260244.

51. Kruyer A, Parrilla-Carrero J, Powell C, Brandt L, Gutwinski S, Angelis A, Chalhoub RM, **Jhou TC**, Kalivas PW, Amato D., Accumbens D2-MSN hyperactivity drives antipsychotic-induced behavioral supersensitivity, *Mol. Psychiatry*, 2021, 26(11):6159-69.

52. **Jhou TC**, "The rostromedial tegmental "brake" on dopamine and behavior: a decade of progress but also much unfinished work", *Neuropharmacology*, Oct 2021, 198:108763.

53. Laque A, Wagner GE, Matzeu A, De Ness GL, Kerr TM, Carroll AM, de Guglielmo G, Nedeaescu H, Buczynski MW, Gregus AM, **Jhou TC**, Zorrilla EP, Martin-Fardon R, Koya E, Ritter RC, Weiss F, Suto N., Linking drug and food addiction via compulsive appetite., *Br J Pharmacol*, 2022, 179(11):2589-2609.

54. Ouyang W, Lu W, Zhang Y, Liu Y, Kim JU, Shen H, Wu Y, Luan H, Kilner K, Lee SP, Lu Y, Yang Y, Wang J, Yu Y, Wegener AJ, Moreno JA, Xie Z, Wu Y, Won SM, Kwon K, Wu C, Bai W, Guo H, Liu TL, Bai H, Monti G, Zhu J, Madhvapathy SR, Trueb J, Stanslaski M, Higbee-Dempsey EM, Stepien I, Ghoreishi-Haack N, Haney CR, Kim TI, Huang Y, Ghaffari R, Banks AR, **Jhou TC**, Good CH, Rogers JA., A wireless and battery-less implant for multimodal closed-loop neuromodulation in small animals, *Nat Biomed Eng.* 2023 Apr 27. doi: 10.1038/s41551-023-01029-x. PMCID: N/A

55. Chao YS, Parrilla-Carrero J, Eid M, Culver OP, Jackson TB, Lipat R, Taniguchi M, **Jhou TC**, Innate cocaine-seeking vulnerability arising from loss of serotonin-mediated aversive effects of cocaine in rats, *Cell Rep.* 2023 May 30;42(5):112404. PMCID: N/A

#### **Awards and Honors:**

2010 Travel fellowship for Winter Conference on Brain Research (WCBR).

2013 Young Investigator Award (formerly Herrick Award) from American Association of Anatomists.

2022 NIH Method To Extend Research In Time (MERIT) award for R01 DA 054370 "Neural mechanisms of cocaine avoidance".

#### **Talks and symposia:**

May, 2005 *Anatomy of the Soul* conference, "Neural Mechanisms of Freezing and Passive Aversive Behaviors", Hosted by Drs. Clifford Saper and Gert Holstege, Ameland, Netherlands

Jan, 2008 St. Louis University. "The Good and the Bad: aversive processing by a GABAergic afferent to midbrain dopamine neurons". Hosted by Dr. Daniel S. Zahm

April, 2009 Maryland Psychiatric Research Center, Hosted by Dr. Paul Shepard, "A convergence of aversion, pathways linking aversive and appetitive brain systems"

Jan, 2010 Speaker and travel award recipient, Winter Conference on Brain Research, Breckenridge, CO. Session chaired by Dr. Susan Sesack: "A Newly Discovered Collection of GABA Neurons in the Brainstem Tegmentum that Projects Strongly to Midbrain Dopamine Cells and Influences Aversive Behavior"

Feb, 2010 "Role of the habenula", at Banbury Center, Cold Spring Harbor, New York. Hosted by Dr. Fritz Henn

April, 2010 Co-chair, workshop panel at 5<sup>th</sup> Motivational Neural Networks Meeting, Wrightsville Beach, North Carolina. Panel organized by Daniel S. Zahm.

May, 2010 University of Texas, San Antonio. Hosted by Drs. Hitoshi Morikawa and Michael Beckstead.

May, 2010 Center for Neuroeconomics, New York University. Hosted by Dr. Nathaniel Daw.

Sept, 2010 Symposium speaker, 33<sup>rd</sup> Annual Japan Neuroscience Meeting, Kobe Japan. Hosted by Drs. Masayuki Matsumoto and Hitoshi Okamoto.

Oct, 2010 Symposium speaker, "Brain Circuits and Behavioral Control", NIH Research Day, National Institute on Mental Health, Bethesda MD. Hosted by Dr. Heather Cameron.

April 2011 Duke University. Hosted by Drs. Ben Hayden and Michael Platt.

Feb, 2012 University of Washington, Seattle Children's Research Institute, Center for Integrative Brain Research. Hosted by Dr. Eric Turner. "An 'anti-dopamine' nucleus:

	role of the rostromedial tegmental nucleus (RMTg) in aversive processes and behavioral inhibition.”
March, 2013	International Basal Ganglia Society (IBAGS) meeting, Eilat, Israel. Hosted by Dr. Peter Redgrave. “Basal ganglia interactions with the RMTg”.
April, 2013	Young Investigator Award Symposium, Boston, MA. “Dopamine and anti-dopamine systems: polar opposite roles in behavior”
Jan, 2014	Co-organizer with Marisela Morales, panel “Habenula and beyond”, Winter Conference on Brain Research
April, 2014	UT Austin, hosted by Dr. Michela Marinelli, “Central role of RMTg in motivated behavior”.
April, 2014	The Scripps Research Institute, hosted by Dr. Bert Weiss. “Interactions of Reward and Aversion”
July, 2014	INRC (International Narcotics Research Conference), Montreal, Canada, “Nociceptin in the rostromedial tegmental nucleus”
June, 2015	University of Chicago, <i>Rat Genetics and Genomics for Psychiatric Disorders and Addiction</i> , organized by NIDA and Center for GWAS in Outbred Rats.
Sept, 2015	University of Helsinki, hosted by Mikko Airavaara, “Interactions of reward and aversion: habenular and RMTg roles in fear, aversive learning, and opponent responses to abused drugs”
Sept, 2016	Texas A&M, hosted by Rachel Smith
Nov 15, 2016	SFN symposium on habenula, hosted by Susan Volman, NIDA. “Habenulo-mesencephalic roles in opponent processes of motivated behavior”
Jan 30, 2017	Panel at Winter Conference on Brain Research, chaired by Carl Lupica, NIDA. “Novel interactions between lateral habenula (LHb) and RMTg, and implications for aversive learning”
Feb 14, 2017	University of North Carolina, Chapel Hill, “Addiction and avoidance”, hosted by Kate Reissner
April 20, 2017	University of Pennsylvania, hosted by Mariela de Biasi, “Make no mistake: new findings on RMTg, addiction”
April, 2017	University of Pittsburgh, hosted by Susan Sesack and Alan Sved
Aug 3, 2017	NASA Ames Research Center, “Genetic markers of sleep-regulatory brain sites”
Feb 1, 2018	Winter Conference on Neural Plasticity, Curacao, speaker panel chaired by Sheri Mizumori, “Make no mistake: new findings on RMTg, LHb, and aversive processing
Dec 12, 2018	Departmental seminar at University of Tennessee, Health Science Center, hosted by Dr Hao Chen
March, 2019	Fudan University, Shanghai, China, symposium “Cellular and circuit mechanisms of motivated behaviors”, hosted by Drs. Bo Li and Ping Zheng
April, 2019	University of Washington, Seattle, hosted by Dr. Jeansom Kim.
Feb, 2022	Session chair: “Appetitive-Aversive Influences on Cocaine-Seeking - Possible Convergence on Striatal D2 Neurons”. Winter Conference on Brain Research, Snomass, CO.
June, 2022	College on Problems in Drug Dependence 84 <sup>th</sup> annual meeting, Minneapolis, MN.
Aug, 2022	Addiction Gordon Research Conference, Sunday River, Maine, “Rostromedial tegmental roles in punishment and cocaine aversion”, conference organized by Dr. Yavin Shaham, session led by Dr. Anjali Rajadhyaksha.
April, 2024	Medical College of Wisconsin, hosted by Dr. John Mantsch

**Study section/Grant review activity:**

March, 2013 NIH: Cutting Edge Brain Research Awards (CEBRA)

June, 2013	NIH: F02A-J(20) Fellowships: Behavioral Neuroscience
May, 2013	ANR (L'Agence nationale de la recherche), France, SAMENTA 2013.
April, 2014	Grant reviewer for MUSC Specialized Center of Research (SCOR) on Sex and Gender Factors Affecting Women's Health.
Dec, 2014	Grant reviewer for MUSC Specialized Center of Research (SCOR) on Sex and Gender Factors Affecting Women's Health.
June, 2014	NIH: ETTN-C(10) Small Business: Clinical Neurophysiology, Devices, Neuroprosthetics, and Biosensors
July, 2014	Grant review for Medical Research Council (MRC), UK.
Oct, 2014	Grant review for NSF CAREER awards
June, 2015	NIH: study section, Neurobiology of Motivated Behavior (NMB)
July, 2015	Grant review for Medical Research Council (MRC), UK.
Nov, 2016	NIH: ETTN-C(10) Small Business: Clinical Neurophysiology, Devices, Neuroprosthetics, and Biosensors
Oct, 2018	Grant reviewer for National Science Center in Poland.
June 2019	Grant reviewer for NIH/NIDA special emphasis panel, U01.
March 2020	Grant reviewer for NIH/NIDA ZDA1 TXT-V(16)R, special emphasis panel. "The Rat Opioid Genome Project" (U01 Clinical Trial Not Allowed).
June 2020	Grant reviewer for NIH/NIDA ZDA1 IXR-Q(05)S, special emphasis panel, "Genetic analysis of non-human animal models to understand the genomic architecture of substance abuse disorders and addictive behaviors (U01 Clinical Trial Not Allowed)".
June 2021	Grant reviewer for NIH/NIDA ZDA1 IXR-Q (05) "Genetic Analysis of non-human animal models to understand the genomic architecture of substance use disorders and addictive behaviors (U01 clinical trial not allowed)"

**Journal/Editorial activity:**

**Reviewer for journals (112 articles reviewed from 2010-2020):**

Behavioral Brain Research  
 Biological Psychiatry  
 Brain Research  
 Cell Reports  
 Current Biology  
 Current Opinion in Behavioral Sciences  
 European Journal of Neuroscience  
 eNeuro  
 iScience  
 Journal of Comparative Neurology  
 Journal of Neurophysiology  
 Journal of Neuroscience  
 Journal of Visualized Experiments  
 Nature Communications  
 Nature Neuroscience  
 Neuropsychopharmacology  
 Neuroscience and Biobehavioral Reviews  
 Pharmacology Biochemistry and Behavior  
 PLoS One  
 Progress in Neuropsychopharmacology

Psychopharmacology  
Science Advances  
Synapse  
Translational Psychiatry  
Trends in Neurosciences

**Member of Editorial Board:**

PLoS One

**Teaching and mentoring:**

**Member of thesis committees:**

P. Leon Brown, PhD 2014, Dept. of Psychiatry, University of Maryland, advisor Dr. Paul Shepard.  
(I am external committee member)  
Michael Stefanik, PhD 2014, Dept. of Neurosciences, MUSC, advisor Dr. Peter Kalivas.  
Zachary Cope, PhD 2014, Dept. of Neurosciences, MUSC, advisor Dr. Gary Aston-Jones.  
Brandon Bentzley (MD-PhD) Dept of Neurosciences, MUSC, advisor Dr. Gary Aston-Jones.  
Ellen McGlinchey, PhD 2015, Dept of Neurosciences, MUSC, advisor Dr. Gary Aston-Jones.  
Douglas Wolfe, MD-PhD 2015-7, Dept of Neurosciences, MUSC, advisor Dr. Peter Kalivas  
Jasper Heinsbroek, PhD 2015-8, Dept of Neurosciences, MUSC, advisor Dr. Peter Kalivas  
Spencer Bell, PhD 2016-7, Dept of Neurosciences, MUSC, advisor Dr. Brett Froeliger  
Brandon Vaughan, MS 2016-7, Dept of Neurosciences, MUSC, advisor Dr. Jane Joseph  
Zahraa Sabra, PhD 2017-2019, Dept of Neurosciences, MUSC, advisor Dr. Thomas Naselaris  
Jessica Breedlove, PhD 2017-2019, Dept of Neurosciences, MUSC, advisor Dr. Thomas Naselaris  
Harold Haun, PhD 2018-2020, Dept of Neurosciences, MUSC, advisor Dr. Howard Becker  
Kevin Braunscheidel, PhD 2019-2020, Dept of Neurosciences, MUSC, advisor Dr. John  
Woodward  
Brandon Hughes, PhD 2019-2022, Dept of Neurosciences, advisor Dr. Chris Cowan  
Graham Warner, PhD 2019-2021, Dept of Neurosciences, advisor Dr. Jane Joseph  
Vivian Chioma, PhD 2020, Dept of Neurosciences, MUSC, advisor Dr. Peter Kalivas  
Daniel Wood, PhD 2020-2024, Dept of Neurosciences, MUSC, advisor Dr. Chris Cowan  
Reda Chalhoub, PhD 2020-2023, Dept of Neurosciences, MUSC, advisor Dr. Peter Kalivas  
Stewart Cox, PhD 2020-2021, Dept of Neurosciences, MUSC, advisor Dr. Carmela Reichel  
Heyam Saleh, PhD 2020-present, Dept of Neurosciences, advisor Dr. Judson Chandler  
Allen Chang, PhD 2020-2023, Dept of Neurosciences, advisor Dr. Nathan Rowland  
Kristen O'Hara, PhD 2021-present, Dept of Neurosciences, MUSC, advisor Dr. Patrick Mulholland  
Sissi Huang, PhD 2024-present, Dept of Neurobiology, UMB, advisor Dr. Marco Venniro

**Graduate students:**

Taylor S. Hoover, MS candidate, 2014-2015  
Hao Li, PhD candidate, Fall 2014-2019  
Maya Eid, MD-PhD candidate, Fall 2015-2020  
Ying Chao, MD-PhD candidate, Fall 2016-2022  
Oliver (Paul) Culver, MD-PhD candidate, Fall 2020-present  
Madeline Hohmeister, PhD candidate, Summer 2022-present

**Post-doctoral fellows/Junior faculty:**

Peter Vento, March, 2013 – 2021 (now faculty at University of South Carolina)  
Rachel Smith, June, 2013 – Feb, 2015 (now faculty at Texas A&M University)  
Jennifer L. Thompson, Oct, 2014 – June 2016 (now working in industry)  
Torry Dennis, Sept 2016 – August 2017 (co-mentor with Dr. Jakie McGinty)  
Jeffrey Parilla-Carrero, Sept, 2017 – present (converted to research-track faculty in Nov 2021)  
Zachary Hough, June 2022 – present.

**Summer Undergraduate Research Program (SURP) students:**

Dominika Pullmann, summer 2014  
Samantha Black, summer 2016  
Eslie Aguilar, summer 2017  
Alen Thomas, summer 2017  
Katie Jimenez, summer 2018  
Stephanie Davis, summer 2022  
Deyana Underwood, summer 2022

**High school volunteers in lab:**

Leonardo Awgulewitsch, Academic Magnet High School, summer 2014  
Shivani Kakadia, Palmetto Scholars Academy, fall 2020-spring 2021.

**Lectures/Classes taught:**

Spring 2012-present. Fundamentals of Neuroscience. 3 lectures on neuroanatomy, thalamus, hypothalamus, and brainstem.  
Fall 2013-2019. Clinical and Systems Neuroscience. 3 lectures on circuits of motivated behavior, animal cognition, and opioids.  
Spring 2013, Cognitive Neuroscience, 1 lecture on reward prediction error  
Fall 2013, Neuroscience journal club.  
Fall 2015, and 2019-present: Mathematical Methods in Neuroscience, quarter elective.  
Fall 2023. Biostatistics and Proseminar in Experimental Design, University of Maryland.

**Publications in the humanities:**

Jhou TC, “René Descartes and modern science – a legacy in retrospect”. Preface to the Chinese translation of *Descartes and the Meditations*, by Gary Hatfield, translated by Clayton Chou. Routledge, New York, 2009.