

Academic Positions

<i>Associate Professor</i> , University of California, Berkeley Haas School of Business Helen Wills Neuroscience Institute	2016 – present
<i>Assistant Professor</i> , University of California, Berkeley Haas School of Business Helen Wills Neuroscience Institute	2009 - 2016
<i>Assistant Professor</i> , University of Illinois at Urbana-Champaign Department of Economics Beckman Institute for Advanced Science and Technology Neuroscience Program	2008 - 2009
<i>Beckman Fellow</i> , University of Illinois at Urbana-Champaign Beckman Institute for Advanced Science and Technology	2006-2008

Education

<i>PhD in Economics</i> , California Institute of Technology	2006
<i>BA in Political Science</i> , University of Arizona	2001

Journal Articles

- Adrianna C. Jenkins, Pierre Karashchuk, Lusha Zhu, & Ming Hsu. “Predicting human behavior toward members of different social groups”. Proceedings of the National Academy of Sciences. *Forthcoming*.
- Saez, Ignacio, Jack Lin, Arjen Stolk, Edward Chang, Josef Parvizi, Gerwin Schalk, Robert T. Knight, and Ming Hsu. “Encoding of multiple reward-related computations in transient and sustained high-frequency activity in human OFC”. Current Biology. *Forthcoming*.
- Gao, Xiaoxue, Hongbo Yu, Ignacio Saez, Philip R. Blue, Lusha Zhu, Ming Hsu, Xiaolin Zhou. “Distinguishing neural correlates of context-dependent advantageous and disadvantageous inequity aversion”. Proceedings of the National Academy of Sciences. 2018.
- Lui, Ming, and Ming Hsu. “Viewing sexual images is associated with reduced physiological arousal response to gambling loss”. PLoS ONE. 13: e0195748, 2018.
- Seaman, Kendra, Nickolas Brooks, Teresa Karrer, Jaime Castrellon, Scott Perkins, Linh Dang, Ming Hsu, David Zald, and Gregory Samanez-Larkin. “Subjective Value Representations during Effort, Probability, and Time Discounting across Adulthood”. Social Cognitive and Affective Neuroscience. 13: 449–459, 2018.
- Lieder, Falk, Thomas Griffiths, and Ming Hsu. “Over-representation of extreme events in decision-making reflects rational use of cognitive resources”. Psychological Review. 125: 1-32, 2017.
- Hsu, Ming. “Neuromarketing: Inside the mind of the consumer.” California Management Review. 59:4, 5022, 2017.

- Kobayashi, Kenji, and Ming Hsu. "Neural mechanisms of updating under reducible and irreducible uncertainty". Journal of Neuroscience. 37: 6972-6982, 2017.
- Jenkins, Adrianna, and Ming Hsu. "Dissociable contributions of imagination and willpower to the malleability of human patience." Psychological Science. 28: 894-906, 2017.
- Seaman, Kendra, Marissa Gorlick, Kruti Vekaria, Ming Hsu, David Zald, Gregory Samanez-Larkin. "Adult age differences in decision making across domains: Increased discounting of social and health-related rewards." Psychology and Aging. 31: 737-746, 2016.
- Jenkins, Adrianna, Lusha Zhu, and Ming Hsu. "Cognitive neuroscience of honesty and deception: A signaling framework." Current Opinions in Behavioral Sciences. 11:130-137, 2016.
- Yim, Onn-Siong, Xing Zhang, Idan Shalev, Mikhail Monakhov, Songfa Zhong, Ming Hsu, Soo Hong Chew, Poh San Lai, and Richard P. Ebstein. "Delay discounting, genetic sensitivity, and leukocyte telomere length." Proceedings of the National Academy of Sciences. 113:2780-2785, 2016.
- Zhong, Songfa, Robin Chark, Ming Hsu, and Soo Hong Chew. "Computational Substrates of Social Norm Enforcement by Unaffected Third Parties." NeuroImage, 129:95-104, 2016.
- Kitayama, Shinobu, Anthony King, Ming Hsu, and Israel Liberzon. "Dopamine-System Genes and Cultural Acquisition: The Norm Sensitivity Hypothesis." Current Opinion in Psychology, 8: 67-174, 2016.
- Chiong, Winston, Kristie Wood, Alexander Beagle, Ming Hsu, Andrew Kayser, Bruce Miller, and Joel Kramer. "Neuroeconomic dissociation of semantic dementia and behavioral variant frontotemporal dementia." Brain, 139: 578-87, 2015.
- Hsu, Ming and Carolyn Yoon. "The Neuroscience of Consumer Choice." Current Opinions in Behavioral Sciences, 5: 116-121, 2015.
- Hsu, Ming and Adrianna Jenkins. "Character studies." Nature Neuroscience, 18: 1198-1199, 2015.
- Chen, Yu-Ping, Leif Nelson, and Ming Hsu. "From "Where" to "What": Distributed Representations of Brand Associations in the Human Brain." Journal of Marketing Research, 52: 453-466, 2015.
- Lieder, Falk, Ming Hsu, and Thomas Griffiths. "Utility-weighted sampling in decisions from experience." Proceedings of the 2nd Multidisciplinary Conference on Reinforcement Learning and Decision Making.
- Saez, Ignacio, Eric Set, Lusha Zhu, Andrew Kayser, and Ming Hsu. "Dopaminergic modulation of human egalitarianism". Current Biology, 25, 912-919, 2015.
- Zhu, Lusha, Adrianna Jenkins, Eric Set, Donatella Scabini, Robert Knight, Pearl H. Chiu, Brooks King-Casas, and Ming Hsu. "Damage To Dorsolateral Prefrontal Cortex Affects Tradeoffs Between Honesty And Self-Interest." Nature Neuroscience, 17: 1319-1321, 2014.
- Saez, Ignacio, Eric Set, and Ming Hsu. "From Genes to Behavior: Placing Cognitive Models in the Context of Biological Pathways." Frontiers in Neuroscience, 2014.
- Set, Eric, Ignacio Saez, Lusha Zhu, Daniel Houser, Noah Myung, Songfa Zhong, Richard Ebstein, Soohong Chew, and Ming Hsu. "Dissociable Contribution Of Prefrontal And Striatal Dopaminergic Genes To Learning In Economic Games." Proceedings of the National Academy of Sciences, 111: 9615-9620, 2014.
- Bertoux, Maxime, Florian Cova, Mathias Pessiglione, Ming Hsu, Bruno Dubois and Sacha Bourgeois-Gironde. "Behavioral variant frontotemporal dementia patients do not succumb to the Allais paradox." Frontiers in Neuroscience, 8, 2014.

- Lieder, Falk, Ming Hsu, and Thomas Griffiths. "The high availability of extreme events serves resource-rational decision-making." Proceedings of the 36th Annual Conference of the Cognitive Science Society. July, 2014.
- Smidts, Ale, Ming Hsu, Alan Sanfey, Maarten Boksem, Richard Ebstein, Scott Huettel, Joe Kable, Uma Karmarkar, Shinobu Kitayama, Brian Knutson, Israel Liberzon, Terry Lohrenz, Mirre Stallen, and Carolyn Yoon. "Advancing Consumer Neuroscience." Marketing Letters, 25: 257-267, 2014.
- Preuschhoff, Kerstin, Peter Mohr, and Ming Hsu. "Decision making under uncertainty." Frontiers in Neuroscience 7:218, 2013.
- Chiong, Winston, Ming Hsu, Danny Wudka, Bruce Miller, and Howard Rosen, "Financial errors in dementia: Testing a neuroeconomic conceptual framework." NeuroCase, 2013.
- Zhu, Lusha, Daniel Walsh, and Ming Hsu. "Neuroeconomic Measures of Social Decision-Making Across the Lifespan." Frontiers in Neuroscience, 6: 1-7, 2012.
- Hsu, Ming and Lusha Zhu. "Learning in Games: Neural computations underlying strategic learning." Louvain Economic Review, 78: 47-72, 2012.
- Zhu, Lusha, Kyle Mathewson, and Ming Hsu. "Dissociable neural representations of reinforcement and belief prediction errors underlie strategic learning." Proceedings of the National Academy of Sciences, 109: 1419-1424, 2012.
- Amaldoss, Wilfred, Alexander Brown, Yan Chen, Tony Cui, Alberto Galasso, Teck-Hua Ho, Tanjim Hossain, Ming Hsu, Noah Lim, Mo Xiao, and Botao Yan (order alphabetical). "Behavioral models of managerial decision-making." Marketing Letters, 23: 405-421, 2012.
- Rastad, Mahdi, Lusha Zhu, Roger Koenker, Jesse Spencer-Smith, and Ming Hsu. "Incorporating Action Unit Co-movement in Classification of Dynamic Facial Expressions Using LASSO." International Conference on Pattern Recognition, 2010.
- Kang, Min-Jeong, Ming Hsu, Ian Krajbich, George Loewenstein, Samuel McClure, Joseph Wang, and Colin Camerer. "The Wick in the Candle of Learning: Epistemic curiosity activates reward circuitry and enhances memory." Psychological Science, 20: 963-973, 2009.
- Sokol-Hessner, Peter, Ming Hsu, Nina Curley, Mauricio Delgado, Colin Camerer, and Elizabeth Phelps. "Thinking like a trader selectively reduces individuals' loss aversion." Proceedings of the National Academy of Sciences 106: 5035-5040, 2009.
- Hsu, Ming, Ian Krajbich, Chen Zhao, and Colin Camerer. "Neural Response to Anticipated Reward under Risk is Nonlinear in Probabilities." Journal of Neuroscience, 29: 2231-2237, 2009.
- Hsu, Ming, Cédric Anen, and Steven Quartz. "The Right and the Good: Distributive Justice and Neural Encoding of Equity and Efficiency." Science. 320: 1092-1095, 2008.
- Schultz, Wolfram, Kerstin Preuschhoff, Colin Camerer, Ming Hsu, Christopher Fiorillo, Philippe Tobler, and Peter Bossaerts. "Explicit Neural Signals Reflecting Reward Uncertainty." Philosophical Transactions of the Royal Society B. 363: 3801-3811, 2008.
- Hsu, Ming, Meghana Bhatt, Ralph Adolphs, Daniel Tranel, and Colin Camerer. "Neural Systems Responding to Degrees of Uncertainty In Human Decision Making." Science, 310: 1624-1625, 2005.
- Thomas, Kevin, Ming Hsu, Holly Laurance, Lynn Nadel, and W. Jake Jacobs. "Place learning in virtual space III: Investigation of spatial navigation training procedures and their application to fMRI and clinical neuropsychology." Behavior Research Methods, Instruments, & Computers 33:1, 2001.

Hsu, Ming, Lee Ryan, Lynn Nadel, Kevin Thomas, and W. Jake Jacobs. "Functional neuroimaging of place learning in a computer-generated space." *NeuroImage*, 11:5, 2000.

Book Chapters

Hsu, Ming. "Customer-Based Brand Equity: Insights from Consumer Neuroscience," in *Moran Cerf, Manuel Garcia, eds. Consumer Neuroscience*. MIT Press. *Forthcoming*.

Hsu, Ming and Winston Chiong. "From Laboratory to Clinic and Back: Connecting Neuroeconomic and Clinical Measures of Decision-Making Dysfunctions," in *Michael Diefenbach, Deborah Bowen, and Suzanne M. Miller, eds. (2016) Handbook of Health Decision Science*. Springer.

Hsu, Ming and Kerstin Preuschoff. "Uncertainty," in *Arthur W. Toga, ed. (2015) Brain Mapping: An Encyclopedic Reference*. Academic Press.

Hsu, Ming and Lusha Zhu. "Commentary: Ambiguity Decisions in the Human Brain," in *Tom Zentall and Phil Crowley, eds. (2013) Comparative Decision Making Analysis*. Oxford University Press.

Bossaerts, Peter, Kerstin Preuschoff, and Ming Hsu. "The Neurobiological Foundations of Valuation in Human Decision Making under Uncertainty," in *Paul Glimcher, Colin Camerer, Ernst Fehr, and Russell Poldrack, eds. (2008) Neuroeconomics: Decision Making and the Brain*. Amsterdam, Elsevier.

Hsu, Ming, Hung-Tai Lin, and Paul McNamara. "The Neuroeconomics of Decision-Making in the Aging Brain: The Example of Long-Term Care," in *Kevin McCabe and Daniel Houser, eds. (2008) Advances in Health Economics and Health Services Research*. Amsterdam, Elsevier.

Camerer, Colin, Meghana, Bhatt, and Ming Hsu. "Neuroeconomics: Illustrated by fMRI and Lesion-Patient Evidence of Ambiguity-Aversion," in *Bruno Frey and Alois Stutzer, eds. (2007) Economics and Psychology: a Promising New Cross-Disciplinary Field*. Cambridge, MIT Press.

Hsu, Ming. "A Game Theoretic Model of Elections with Spatial and Distributive Preferences." *Caltech Working Paper* 1198.

Reviews and Popular Writing

Hsu, Ming. "Neuromarketing: Mere Bundles of Mental States?" *Peer Sphere: The CMO Council Journal*, 2:36-37, 2012.

Hsu, Ming. Preface to "Investing and the Irrational Mind", Robert Koppel, *McGraw-Hill*, 2011.

Hsu, Ming. Review of *Midbrain Mutiny: The Picoeconomics and Neuroeconomics of Disordered Gambling* by D. Ross, C. Sharp, R. Vuchinich, & D. Spurrett, *Journal of Economic Literature*, XLVII: 1135-1136, 2009.

Teaching Experience

Marketing Research, <i>MBA Course Instructor</i> .	Fa2010, Fa2013, Sp2014, Fa2014, Sp2016, Sp2017, Fa2017
Decision Making and the Brain, <i>Ph.D. Course Instructor</i>	Sp2009, Sp2012, Sp2014
Marketing Research, <i>Undergraduate Course Instructor</i> .	Sp2010, Sp2011, Fa2014, Sp2017
Core Marketing, <i>Undergraduate Course Instructor</i> .	Sp2012, Sp2013
Behavioral Economics, <i>Undergraduate Course Instructor</i> .	Sp2009

Mentoring

Postdoctoral Mentoring

Gil Sharvit, <i>Ph.D. Neuroscience</i> , University of Geneva	Mar 2017-
Zhihao Zhang, <i>Ph.D. Neuroscience</i> , Yale	Aug 2017-
Ignacio Saez, <i>Ph.D. Neuroscience</i> , Baylor College of Medicine <i>Assistant Professor, University of California, Davis</i>	Jan 2013 – Jun 2018
Adrianna Jenkins, <i>Ph.D. Psychology</i> , Harvard <i>Assistant Professor, University of Pennsylvania</i>	Oct 2012 - Jun 2018

Doctoral Thesis Advisor

Nicholas Angelides, <i>Psychology</i> , University of California, Berkeley	Aug 2015-
Kenji Kobayashi, <i>Neuroscience</i> , University of California, Berkeley <i>Postdoc, Columbia University</i>	Aug 2011 - Jun 2016
Yuping Chen, <i>Haas School of Business</i> , University of California, Berkeley <i>Assistant Professor, National Taiwan University College of Management</i>	Aug 2010 - Jun 2015
Eric Set, <i>Economics</i> , University of Illinois at Urbana-Champaign <i>Assistant Professor, NYU Shanghai</i>	Aug 2009 – Apr 2017
Lusha Zhu, <i>Economics</i> , University of Illinois at Urbana-Champaign <i>Assistant Professor, Peking University Institute of Biological Sciences</i>	Aug 2008 - Jun 2012

Doctoral Rotation Advisor

Molly Lapoint, <i>Neuroscience</i> , University of California, Berkeley	Sp2018
Zuzanna Balewski, <i>Neuroscience</i> , University of California, Berkeley	Fa2016
Falk Lieder, <i>Neuroscience</i> , University of California, Berkeley	Fa2013

Doctoral Student Service

Monica Gates, <i>Neuroscience</i> , University of California, Berkeley	QE Committee, 2017
Zuzanna Balewski, <i>Neuroscience</i> , University of California, Berkeley	QE Committee Chair, 2017
Christine Tseng, <i>Neuroscience</i> , University of California, Berkeley	QE Committee, 2017
Elizabeth Johnson, <i>Psychology</i> , University of California, Berkeley	Thesis Committee, 2017
	QE Committee, 2014
Feng-Kuei Chiang, <i>Psychology</i> , University of California, Berkeley	Thesis Committee, 2017
	QE Committee, 2013
Maria Eckstein, <i>Psychology</i> , University of California, Berkeley	QE Committee, 2017
Craig Anderson, <i>Psychology</i> , University of California, Berkeley	Thesis Committee, 2016
Christopher Gagne, <i>Psychology</i> , University of California, Berkeley	QE Committee, 2016
Adam Krause, <i>Psychology</i> , University of California, Berkeley	QE Committee, 2016
Falk Lieder, <i>Neuroscience</i> , University of California, Berkeley	QE Committee Chair, 2015
Mikel Delgado, <i>Psychology</i> , University of California, Berkeley	QE Committee, 2013
Michael Urbancic, <i>Economics</i> , University of California, Berkeley	Thesis Reader, 2012

Services

Organizing Committee Co-Chair, <i>CRCNS Principal Investigators Meeting</i>	2018
Reviewer, <i>NSF Research Traineeship (NRT) Panel</i>	April, 2018
PhD Admissions Committee, <i>Helen Wills Neuroscience Institute</i>	Sp2018

Mentor, <i>Berkeley Fiat Lux Scholar</i>	2017
Interview Committee, <i>Regents' and Chancellor's Scholarships</i>	Fa2017, Sp2018
Faculty Recruitment Committee, <i>Haas Marketing</i>	Fa2016, Fa2017
Mentor, <i>Berkeley Regents' Scholar</i>	2015
Panelist, <i>Berkeley Summer Undergraduate Research Fellow Conference</i>	August 2015
Working Group on Open-Access Publication, <i>Society for Neuroscience</i>	Fall, 2013
Selection Committee, <i>Berkeley-Haas Asia Business Center Wu Fellowship</i>	May 2012
Steering Committee, <i>Berkeley Center for Brain, Language and Thought</i>	September 2011

Honors

Sackler Sabbatical Exchange Program	2016
Society for Neuroeconomics Early Career Award	2015
1st Prize Poster Award at <i>4th Interdisciplinary Symposium on Decision Neuroscience</i>	2014
Hellman Faculty Fund Award	2012
Kavli Fellow	2008
Beckman Fellowship	2006
Everhart Lecture Series Speaker	2006
Li Ming Fellowship	2005
Russell Sage Summer Institute for Behavioral Economics	2004

Grant Funding

NSF 1822572 (Hsu)	4/15/2018-3/31/2019	
<i>2018 CRCNS Principal Investigators Meeting</i>	\$49,700	
This award is to support the annual Principal Investigators meeting for the Collaborative Research in Computational Neuroscience (CRCNS) program at Berkeley, California.		
Role: Co-PI		
R21 MH109851-01A1 (Hsu)	1/10/2017-12/31/2019	.25 calendar
NIMH	\$275,000	
<i>Cortical Oscillatory Dynamics and Human Decision-Making</i>		
The research proposal focuses on studying the electrophysiological and oscillatory mechanisms underlying decision-making involving risk-reward tradeoffs.		
Role: Co-PI		
R01 DA 043196 (Hsu)	9/1/2016-7/31/2019	.75 calendar
NIDA	\$474,302	
<i>CRCNS: Neurocomputational substrates of monetary exchange</i>		
The research proposal focuses on studying how objects come to acquire value, and their neurocognitive underpinnings.		
Role: Co-PI		
K01 MH108815-01A1 (Saez)	8/1/2016-7/31/2020	0 calendar
NIMH	\$188,136	
<i>Electrocorticography of Human Prefrontal Cortex during Value-Based Decision-Making</i>		
Role: Mentor		

R01 MH098023 (Hsu) 4/01/2013-03/31/2018 .5 calendar
NIMH \$200,000/yr

Neurobiological Substrates of Social Behavior: A Neuroeconomic Framework

The goal of this proposal is to study neural mechanisms of social learning in healthy adults as a precursor to understanding the impact of mental illnesses on social functioning.

Role: PI

R01 NS074917-01A1 (Ivry) 5/1/2012 – 1/31/2017 0 calendar
NINDS \$250,000/yr

Neural Mechanisms Underlying Hand Choice for Unimanual Action

The major goal of this project is to identify the neural processes that underlie the simple decision to use the left or right hand when reaching for an object, a fundamental aspect of human behavior.

Role: Co-Investigator

R01 AG044838-01 (Zald) 9/1/2012 – 8/31/2015 0 calendar
NIA \$416,497/yr

Dopaminergic Modulation of Subjective Valuation across Adulthood

Research grant to assess the influence of individual and age differences in dopamine receptors and frontostriatal network function on individual differences in affective traits, cognitive ability, and decision preferences in a life-span sample of adults between the ages of 20 and 80.

Role: Co-Investigator

MOE2012-T2-1-051 (Hong) 11/1/2012 – 10/31/2015 0 calendar
Ministry of Education, Singapore S\$157,707/yr

Discovering the Cognitive and Neurological Basis of Cultural Competence

This project seeks to understand how social, cognitive and emotional parameters interact with cultural competence, background and experience.

Role: Co-Investigator

NUS/Berkeley Risk Management Institute 2010-2012
Psychophysiology of Bubbles and Crashes in Experimental Asset Markets \$50,000

The goal of this study is to use neural and physiological techniques to study effects of emotions on financial decision-making.

UC Berkeley Faculty Research Grant 2009-2010
Neural Computations underlying Strategic Learning \$20,000

The goal of this study is to use game theory and neuroimaging to characterize computations underlying social decision-making processes.

Professional Experience

Editorial Boards

Frontiers in Neuroscience: 2010 – present

Journal of Neuroscience, Economics, and Psychology: 2011 – present

New Mathematics and Natural Computation: 2012 – present

Ad Hoc Reviewer

Business, Economics, and Marketing:

American Economic Review; Economics and Philosophy; European Economic Review; European

Marketing Journal; Games and Economic Behavior; International Journal of Research in Marketing; Journal of the Association for Consumer Research; Journal of Behavioral Decision Making; Journal of Economic Behavior and Organization; Journal of Marketing Behavior; Journal of Marketing Research; Journal of Strategy and Management; Management Science; Marketing Science; MIS Quarterly; Organizational Behavior and Human Decision Processes

Biological Sciences:

Behavioral Brain Research; Cognitive, Affective, & Behavioral Neuroscience; Cognitive Processing; Current Biology; Computer Methods and Programs in Biomedicine; Current Opinions in Behavioral Sciences; Emotion; eLife; eNeuro; European Journal of Neuroscience; Frontiers in Neuroscience; Human Brain Mapping; Journal of Cognitive Neurosciences; Journal of Neuroscience; Journal of Neuroscience, Economics, and Psychology; Journal of Physiology–Paris; Journal of Theoretical Biology; Nature Communications; Nature Human Behavior; Nature Neuroscience; NeuroImage; Neuron; Neuropsychologia; Neuropsychology; Neuroscience & Biobehavioral Reviews; Neuroscience Letters; Perspectives in Psychological Science; PLOS Computational Biology; Proceedings of the National Academy of Sciences; Psychological Science; Review of Philosophy and Psychology; Social Cognitive & Affective Neuroscience; Social Neuroscience; Trends in Cognitive Science; Trends in Neurosciences

Funding Agencies:

Dana Foundation; French National Center for Scientific Research; Human Frontier Science Program; National Institutes of Health; National Science Foundation; Research Grants Council of Hong Kong; Social Sciences and Humanities Research Council of Canada; Swiss National Science Foundation