

Academic Positions

University of California, Berkeley

Associate Professor, Haas School of Business	7/2016 – present
Assistant Professor, Haas School of Business	7/2009 – 7/2016
Affiliate Faculty, Helen Wills Neuroscience Institute	2010 – present
Affiliate Faculty, Department of Psychology	2010 – present

University of California, San Francisco

Visiting Assistant Professor, Neurology	Fall, 2015
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University of Illinois at Urbana-Champaign

Assistant Professor, Department of Economics	7/2008 – 7/2009
Affiliate Faculty, Beckman Institute	
Affiliate Faculty, Neuroscience Program	
Beckman Fellow, Beckman Institute	7/2006 – 7/2008

Education

California Institute of Technology, Pasadena, CA

Ph.D. in Economics	2006
Dissertation: <i>Three Essays on Neuroeconomics</i>	

University of Arizona, Tucson, AZ

B.A. in Political Science	2001
<i>Summa cum Laude</i>	

Journal Articles

Kobayashi, Kenji, and Ming Hsu. “Neural mechanisms of updating under reducible and irreducible uncertainty”. *Journal of Neuroscience*. *Forthcoming*.

Lieder, Falk, Thomas Griffiths, and Ming Hsu. “Over-representation of extreme events in decision-making reflects rational use of cognitive resources”. *Psychological Review*. *Forthcoming*.

Hsu, Ming. “Neuromarketing: Inside the mind of the consumer.” *California Management Review*. *Forthcoming*.

Jenkins, Adrianna, and Ming Hsu. “Dissociable contributions of imagination and willpower to the malleability of human patience.” *Psychological Science*. 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.
- Preuschoff, 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 Preuschoff, 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
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

Ignacio Saez, *Ph.D. Neuroscience*, Baylor College of Medicine

Postdoc Advisor, 2013-

Adrianna Jenkins, *Ph.D. Psychology*, Harvard

Postdoc Advisor, 2012-

Doctoral Student Advising

Zuzanna Balewski, *Neuroscience*, University of California, Berkeley

Rotation Advisor, Fa2016

Nicholas Angelides, *Psychology*. University of California, Berkeley

Ph.D. Advisor, 2015-

Kenji Kobayashi, <i>Neuroscience</i> , University of California, Berkeley <i>Postdoc, Columbia University</i>	Ph.D. Advisor, 2011-2017
Eric Set, <i>Economics</i> , University of Illinois at Urbana-Champaign	Ph.D. Advisor, 2009- 2017
Falk Lieder, <i>Neuroscience</i> , University of California, Berkeley	Rotation Advisor, Fa2013
Yuping Chen, <i>Haas School of Business</i> , University of California, Berkeley <i>Assistant Professor, National Taiwan University College of Management</i>	Ph.D. Advisor, 2010-2015
Lusha Zhu, <i>Economics</i> , University of Illinois at Urbana-Champaign <i>Assistant Professor, Peking University Institute of Biological Sciences</i>	Ph.D. Advisor, 2008-2012

Doctoral Student Service

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
Elizabeth Johnson, <i>Psychology</i> , University of California, Berkeley	QE Committee, 2014
Feng-Kuei Chiang, <i>Psychology</i> , University of California, Berkeley	QE Committee, 2013
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

Regents' and Chancellor's Scholarships Interview Committee	Fall, 2017
Haas Marketing Faculty Recruitment Committee	Fall, 2016
Regents' Scholar Mentor	2015
Berkeley Summer Undergraduate Research Fellow Conference	August 2015
Society for Neuroscience Working Group on Open-Access Publication	Fall, 2013
Berkeley-Haas Asia Business Center Wu Fellowship Selection Committee	May 2012
Berkeley Center for Brain, Language and Thought Steering Committee	September 2011

Honors

Sackler Sabbatical Exchange Program	2016
Society for Neuroeconomics Early Career Award	2015
1st Prize Poster Award at 4 th <i>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

Research Support

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: PI

R01 DA 043196 (Hsu) 9/1/2016-7/31/2019 .75 calendar
NIDA \$474,302

CRCNS: Neurocomputational substrates of monetary exchange

The research proposal focuses on studying how objects come to acquire value, and their neurocognitive underpinnings.

Role: PI

K01 MH108815-01A1 (Saez) 8/1/2016-7/31/2020 0 calendar
NIMH \$188,136

Electrocorticography of Human Prefrontal Cortex during Value-Based Decision-Making

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, using experimental, computational and neurobiological methods to uncover the interaction between culture and (i) social interactions (trust, cooperation/competition), (ii) collective emotion, and (iii) cognitive flexibility.

Role: Co-Investigator

Center on the Economics and Demographics of Aging (Hsu) 2014-2015
Monoamine turnover and decision-making in older adults \$20,000

This project examines role of monoamines in decision-making by directly measuring monoamine metabolite from cerebral spinal fluid (CSF) in humans.

Center on the Economics and Demographics of Aging (Hsu)	2011-2012
<i>Lesion Models of Social Decision-Making Deficits</i>	\$36,277

This project examines social decision-making deficits in focal brain lesion patients using game theory experimental paradigms as cognitive probes.

NUS/Berkeley Risk Management Institute	2010-2012
<i>Psychophysiology of Bubbles and Crashes in Experimental Asset Markets</i>	\$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
<i>Neural Computations underlying Strategic Learning</i>	\$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; 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

Conferences:

Special Session Reviewing Committee, *Association for Consumer Research*

Program Committee, *Association for Consumer Research*

Competitive Paper Reviewer, *Association for Consumer Research*

Competitive Paper Reviewer, *Society for Consumer Psychology*

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