

Megan Amelia Knapp Peters

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Current Positions	Assistant Professor <i>University of California, Riverside; Riverside, California</i> Department of Bioengineering Neuroscience Interdepartmental Graduate Program Cooperating Faculty, Department of Psychology	2017-present
	Visiting Research Scientist <i>Advanced Telecommunications Research Institute International; Kyoto, Japan</i> Computational Neuroscience Laboratories - Department of Decoded Neurofeedback	2017-present
Education	Ph.D., Psychology: Computational Cognitive Neuroscience <i>University of California, Los Angeles; Los Angeles, California</i> Research Advisor: Dr. Ladan Shams Dissertation Title: Hierarchical Bayesian Causal Inference and Natural Statistics Explain Heaviness Perception	2014
	M.A., Psychology: Cognitive Neuroscience <i>University of California, Los Angeles; Los Angeles, California</i>	2010
	B.A., Cognitive Science, magna cum laude <i>Brown University; Providence, Rhode Island</i>	2006
Past Positions	Postdoctoral Researcher <i>University of California, Los Angeles; Los Angeles, California</i> Principal Investigator: Dr. Hakwan Lau	2014-2017
	Graduate Researcher <i>University of California, Los Angeles; Los Angeles, California</i> Principal Investigator: Dr. Ladan Shams	2009-2014
	Post-Baccalaureate Researcher <i>University of Southern California; Los Angeles, California</i> Principal Investigator: Dr. Stanley Huey, Jr.	2008-2009
	Lab Manager & Post-Baccalaureate Researcher <i>University of Southern California; Los Angeles, California</i> Principal Investigator: Dr. Toben Mintz	2007-2009
	Undergraduate Researcher <i>Brown University; Providence, Rhode Island</i> Principal Investigator: Dr. Jack Demick	2005-2006
	Undergraduate Researcher <i>Oregon National Primate Research Center; Hillsboro, Oregon</i> Principal Investigator: Dr. Judy Cameron	2004
Scholarships & Fellowships	UCLA Department of Psychology Dissertation Year Fellowship	2013-2014
	National Science Foundation Graduate Research Fellowship	2010-2013
	National Institute of Health Behavioral Neuroscience Training Fellowship	2009-2010
	University of Southern California (USC) Provost's Fellowship (declined)	2009
	Reed College Young Scholars Program Vollum Scholarship	2001-2002

Awards	University of California Riverside Omnibus Travel Award	2018
	Organization for Human Brain Mapping Merit Abstract Award	2017
	UCLA Brain Research Institute Fine Science Tools Travel Award	2016
	UCLA Best Paper in Psychology Award (Peters & Lau; 2015 <i>eLife</i>)	2016
	UCLA Chancellor's Prize	2009-2010
Funded Grants	The Templeton Foundation (subaward via Duke University)	
	<i>Title:</i> The functions of consciousness: on the initiation of action	
	<i>Principal Investigator:</i> Megan Peters	
	<i>Co-Principal Investigators:</i> Brian Maniscalco, Brian Odegaard, Jorge Morales	
	<i>Funding term:</i> June 2018 - June 2019	
	<i>Amount:</i> \$30,000	
	University of California, Riverside	
	<i>Title:</i> Cross-Species Universalities in Uncertainty Computations	
	<i>Principal Investigator:</i> Megan Peters	
	<i>Funding term:</i> June 2018 - June 2019	
	<i>Amount:</i> \$3,250	
	University of California, Riverside	
	<i>Title:</i> Neural representation overlap may underlie abnormal fear learning in anxious youth	
	<i>Principal Investigators:</i> Kalina Michalska & Megan Peters	
	<i>Funding term:</i> June 2018 - June 2019	
	<i>Amount:</i> \$10,000	
	University of California, Riverside	
	<i>Title:</i> Southern California Computational Neuroimaging and Neuroengineering Symposium	
	<i>Principal Investigator:</i> Megan Peters	
	<i>Co-Principal Investigators:</i> Amit Roy-Chowdhury, Xiaoping Hu, Aaron Seitz, Edward Zagher, Edward Korzus, Khaleel Razak	
	<i>Funding term:</i> February 2018 - February 2019	
	<i>Amount:</i> \$5,000	
	Institute for Mexicans Abroad & the Consulate General of Mexico in Los Angeles	
	<i>Title:</i> Acceso Academy Preparation Courses for the GRE	
	<i>Principal Investigator:</i> Megan Peters	
	<i>Funding term:</i> December 2017 - May 2018	
	<i>Amount:</i> \$10,000	
	Juntos Podemos/Together We Can Foundation (Parents Alliance)	
	<i>Title:</i> Acceso Academy Preparation Courses for the SAT & GRE	
	<i>Principal Investigator:</i> Megan Peters	
	<i>Funding term:</i> April 2017 - March 2018	
	<i>Amount:</i> \$173,000	
	Juntos Podemos/Together We Can Foundation (Parents Alliance)	
	<i>Title:</i> Acceso Academy Preparation Courses for the SAT	
	<i>Principal Investigator:</i> Megan Peters	
	<i>Role:</i> Authored grant proposal, implemented project.	
	<i>Funding term:</i> July 2015 - June 2016	
	<i>Amount:</i> \$156,565	

National Institutes of Health

Title: Neural Basis of Metacognition, R01NS088628

Principal Investigators: Hakwan Lau, Steve Fleming

Role: Co-authored grant proposal, including significant contributions to specific aims, methodology, paradigm design, and supplemental documents.

Funding term: July 2014 - April 2019

Amount: \$1,686,474

Peer-reviewed Publications

Knotts, J.D., Lau, H., & **Peters, M.A.K.** (in press). Continuous flash suppression and monocular pattern masking impact subjective awareness similarly. *Attention, Perception, & Psychophysics*.

Ruby, E., Maniscalco, B., & **Peters, M.A.K.** (2018). On a 'failed' attempt to manipulate conscious perception with transcranial magnetic stimulation to prefrontal cortex. *Consciousness & Cognition*.

Odegaard, B., Grimaldi, P., Hah Cho, S., **Peters, M.A.K.**, Lau, H., & Basso, M. (2018). Superior colliculus neuronal ensemble activity reflects motion discrimination sensitivity rather than subjective confidence. *Proceedings of the National Academy of Sciences*.

Miuccio, M., Liu, Ka Y., Lau, H., & **Peters, M.A.K.** (2017). Six-fold over-representation of graduates from prestigious universities does not necessitate unmeritocratic selection in the faculty hiring process. *PLoS ONE*.

Peters, M.A.K., Kentridge, R.W., Phillips, I., & Block, N. (2017). Does unconscious perception really exist? Continuing the ASSC20 debate. *Neuroscience of Consciousness* 3(1), nix015. doi:10.1093/nc/nix015

Peters, M.A.K.*, Thesen, T.*, Ko, Y.D.*, Maniscalco, B., Carlson, C., Davidson, M., Doyle, W., Kuzniecky, R., Devinsky, O., Halgren, E., & Lau, H. (2017). Perceptual confidence neglects decision-incongruent evidence in the brain. *Nature Human Behaviour*. [*denotes equal contribution]

Peters, M.A.K., Fesi, J., Amendi, N., Knotts, J.D., Lau, H., & Ro, T. (2017). Transcranial magnetic stimulation to visual cortex induces suboptimal introspection. *Cortex*. doi:10.1016/j.cortex.2017.05.017

Peters, M.A.K., Ma, W.J., & Shams, L. (2016). The Size-Weight Illusion is not anti-Bayesian after all: A unifying quantitative Bayesian account. *PeerJ* 4:e2124 doi:10.7717/peerj.2124.

Peters, M.A.K., Ro, T., & Lau, H. (2016). Who's afraid of response bias? *Neuroscience of Consciousness*. doi:10.1093/nc/niw001.

Maniscalco, B., **Peters, M.A.K.**, & Lau, H. (2016). Heuristic use of perceptual evidence leads to dissociation between performance and metacognitive sensitivity. *Attention, Perception, & Psychophysics*. doi:10.3758/s13414-016-1059-x.

Peters, M.A.K., & Lau, H. (2015). Human observers have optimal introspective access to perceptual processes even for visually masked stimuli. *eLife*. doi:10.7554/eLife.09651

Peters, M.A.K., Balzer, J., & Shams, L. (2015). Smaller = denser, and the brain knows it: Natural statistics of object density shape weight expectations. *PLoS ONE* 10(3), e0119794.

Balzer, J., **Peters, M.A.K.**, & Soatto, S. (2013). Volumetric reconstruction applied to perceptual studies of size and weight. *WACV14: IEEE Winter Conference on Applications of Computer Vision*. arXiv:1311.2642.

Peters, M.A.K., Thompson, B., Merabet, L.B., Wu, A.D., & Shams, L. (2013). Anodal tDCS to V1 blocks visual perceptual learning consolidation. *Neuropsychologia*, *51*(7), 1234 – 1239.

Kim, R., **Peters, M.A.K.**, & Shams, L. (2012). $0+1 > 1$: how adding non-informative sound improves performance on a visual task. *Psychological Science*, *23*(1), 6 – 12.

**Submitted
Manuscripts &
Preprints**

Peters, M.A.K.*, Zhang, L.Q.*, & Shams, L. (preprint, in revision). The material-weight illusion is a Bayes-optimal percept under competing density priors. *PeerJ Preprints* 6:e26825v1 <https://doi.org/10.7287/peerj.preprints.26825v1> [*denotes equal contribution]

Michel, M., Beck, D., Block, N., Brown, R., Carmel, D., Chirimuuta, M., Chun, M., Cleeremans, A., Martinez-Conde, S., Dehaene, S., Fleming, S.M., Frith, C., Haggard, P., He, B., Heyes, C., Goodale, M.A., Irvine, L., Kawato, M., Kentridge, B., King, J.R., Knight, R.T., Kouider, S., Lamme, V., Lamy, D., Lau, H., Laureys, S., LeDoux, J., Lin, Y.T., Liu, K., Macknik, S., Mashour, G.A., Melloni, L., Miracchi, L., Mylopoulos, M., Naccache, L., Owen, A., Passingham, R.E., Pessoa, L., **Peters, M.A.K.**, Rahnev, D., Ro, T., Rosenthal, D., Sasaki, Y., Sergent, C., Solovey, G., Schiff, N.D., Seth, A., Tallon-Baudry, C., Tamietto, M., Tong, F., van Gaal, S., Vlassova, A., Watanabe, T., Weisberg, J., Yan, K., & Yoshida, M. (under review). Opportunities and challenges for a maturing science of consciousness.

Rajananda, S., Zhu, J., Lau, H., & **Peters, M.A.K.** (preprint, under review). Normal observers show no evidence for blindsight in facial emotion perception. *bioRxiv*. <https://doi.org/10.1101/314906>

Rajananda, S., **Peters, M.A.K.**, Lau, H., & Odegaard, B. (preprint). Subjective inflation of color saturation in the periphery under temporal overload. *bioRxiv*. doi: <https://doi.org/10.1101/227074>

**Manuscripts in
Preparation**

Maniscalco, B., Odegaard, B., Grimaldi, P., Hah Cho, S., Basso, M., Lau, H., & **Peters, M.A.K.** (in preparation). Tuned normalization in perceptual decision-making circuits can implement the computation of confidence. [*denotes equal contribution]

Hughes, G., Lau, H., & **Peters, M.A.K.** (in preparation). A confirmation bias in metacognitive judgments of fear detection.

Stolyarova, A., **Peters, M.A.K.**, Lau, H., & Izquierdo, A. (in preparation). Confidence drives learning rates and generalization in reversal learning.

Westphal, A.J., Chow, T.E., Ngoy, C., Zuo, X., Liao, V., Storozuk, L.A., **Peters, M.A.K.**, Wu, A.D., Shams, L., & Rissman, J. (in preparation). Anodal transcranial direct current stimulation to left rostrolateral prefrontal cortex improves source memory retrieval.

Peters, M.A.K.*, Ericson, M.*, Sklaar, S., Valero-Cuevas, F.J., Starr, P., Smyth, R., & Ragusa, G. (in preparation). Efficacy of small, targeted groups on test performance and anxiety reduction for underserved minority youth in preparation for college admission. [*shared first authorship]

**Chaired
Conference
Symposia &
Workshops**

Computational models of perception, metacognition, and consciousness: a hands-on tutorial

Association for the Scientific Study of Consciousness Tutorial, June 2018

Organizers & Instructors: Megan Peters & Brian Odegaard

How can you be so sure? Behavioral, computational, and neuroscientific perspectives on metacognition in perceptual decision-making

Vision Sciences Society Symposium, May 2017

Speakers: Megan Peters, Ariel Zylberberg, Michele Basso, Wei Ji Ma, Pascal Mamassian

The Neural and Computational Construction of Confidence in Decision-Making

Society for Neuroscience Mini-Symposium, November 2016

Speakers: Megan Peters, Piercesare Grimaldi, Angela Yu, Roozbeh Kiani, Steve Fleming, Ariel Zylberberg

Does Unconscious Perception Really Exist?

Association for the Scientific Study of Consciousness Symposium, June 2016

Speakers: Megan Peters, Bob Kennerly, Ian Phillips, Ned Block

Am I attending the right workshop? Certainty and confidence in decision-making

Computational and Systems Neuroscience Workshop, March 2016

Speakers: Megan Peters, Alexandre Pouget, Roozbeh Kiani, Sophie Deneve, Alan Yuille, Fanny Cazzettes, Cristina Savin, Jan Drugowitsch, Adam Kepecs, Saleem Nicola, Marc Sommer, Angela Yu, Ariel Zylberberg, Florent Meyniel, Wei Ji Ma

Conference Oral Presentations

Peters, M.A.K. Thesen, T., Ko, Y.D., Maniscalco, B., Carlson, C., Davidson, M., Doyle, W., Kuzniecky, R., Devinsky, O., Halgren, E., & Lau, H. [talk]. Decoding the neural correlates of objective versus subjective perception using human intracranial electrocorticography. *Association for the Scientific Study of Consciousness Annual Meeting, Krakow, Poland, June 2018.*

Peters, M.A.K. [talk]. Can access to unconscious representations be learned? *COSYNE Annual Meeting Workshops, Breckenridge, CO, March 2018.*

Peters, M.A.K., Thesen, T., Ko, Y.D., Maniscalco, B., Carlson, C., Davidson, M., Doyle, W., Kuzniecky, R., Devinsky, O., Halgren, E., & Lau, H. [talk]. Human ECoG reveals dissociable calculations for perceptual decisions and confidence judgments. *Organization for Human Brain Mapping Annual Meeting, Vancouver, BC, Canada, June 2017.*

Peters, M.A.K. [talk]. Transcranial magnetic stimulation to visual cortex induces suboptimal introspection. Presented as Chair of *How can you be so sure? Behavioral, computational, and neuroscientific perspectives on metacognition in perceptual decision-making* Symposium at the *Vision Sciences Society Annual Meeting, St. Pete Beach, FL, May 2017.*

Peters, M.A.K., Thesen, T., Ko, Y.D., Maniscalco, B., Carlson, C., Davidson, M., Doyle, W., Kuzniecky, R., Devinsky, O., Halgren, E., & Lau, H. [talk]. Human intracranial electrophysiology suggests suboptimal calculations underlie perceptual confidence. *Vision Sciences Society Annual Meeting, St. Pete Beach, FL, May 2017.*

Peters, M.A.K. & Lau, H. [talk]. Separable contributions to decisions and confidence judgments. Presented as Chair of *The Neural and Computational Construction of Confidence in Decision-Making* Mini-Symposium at the *Society for Neuroscience Annual Meeting, San Diego, CA, November 2016.*

Peters, M.A.K. & Lau, H. [talk]. Intracranial electrocorticography supports dissociable representations for perceptual decisions and confidence judgments. *Society for Neuroscience Annual Meeting, San Diego, CA, November 2016.*

Peters, M.A.K. [talk]. “Unconscious Direct Discrimination” Isn’t Actually Unconscious. Presented as Chair of the *Does unconscious perception really exist?* Symposium at the *ASSC Annual Meeting, Buenos Aires, Argentina, June 2016.*

**Conference
Posters and
Collaborations**

Peters, M.A.K. & Lau, H. [talk]. Separable calculations underlie decisions and confidence judgments. *COSYNE Annual Meeting Workshop, Snowbird, UT, March 2016.*

Peters, M.A.K., & Lau, H. [talk]. Bayesian ideal observer predicts weak blindsight in normal observers. *Vision Sciences Society Annual Meeting, St. Pete Beach, FL, May 2015.*

Peters, M.A.K., Thompson, B., Merabet, L.B., Wu, A.D., & Shams, L. [talk]. Anodal tDCS to V1 blocks visual perceptual learning consolidation. *Vision Sciences Society Annual Meeting, Naples, FL, May 2013.*

Stolyarova, A., **Peters, M.A.K.**, Lau, H., & Izquierdo, A. [poster]. Distinct roles of anterior cingulate cortex and basolateral amygdala in reinforcement learning under perceptual uncertainty. *Computational Neuroscience Annual Meeting, Seattle, WA, June 2018.*

Rajananda, S., **Peters, M.A.K.**, Lau, H., & Odegaard, B. [poster]. Psychophysical threshold estimation in web-based experiments. *Vision Sciences Society Annual Meeting, St. Pete's Beach, FL, May 2018.*

Peters, M.A.K., Brian Odegaard, Vincent Taschereau-Dumouchel, Jeffrey D. Knotts, Hakwan Lau, Kaoru Amano, Mitsuo Kawato, & Kazuhisa Shibata [poster]. Improving functional connectivity to prefrontal cortex with decoded neurofeedback. *Real-Time Functional Imaging and Neurofeedback Annual Meeting, Nara, Japan, November 2017.*

Brian Odegaard, **Peters, M.A.K.**, Jeffrey D. Knotts, Vincent Taschereau-Dumouchel, Mitsuo Kawato, Kaoru Amano, Kazuhisa Shibata, & Hakwan Lau [poster]. Investigating the role of prefrontal cortex in conscious perception with decoded neurofeedback. *Real-Time Functional Imaging and Neurofeedback Annual Meeting, Nara, Japan, November 2017.*

Peters, M.A.K., Thesen, T., Ko, Y.D., Maniscalco, B., Carlson, C., Davidson, M., Doyle, W., Kuzniecky, R., Devinsky, O., Halgren, E., & Lau, H. [poster]. Human ECoG reveals dissociable calculations for perceptual decisions and confidence judgments. *Organization for Human Brain Mapping Annual Meeting, Vancouver, BC, Canada, June 2017.*

Odegaard, B., Grimaldi, P., Ha-Cho, S., **Peters, M.A.K.**, Lau, H., & Basso, M.A. [talk]. Investigating perceptual confidence in the superior colliculus with multi-unit neuronal recordings. *Vision Sciences Society Annual Meeting, St. Pete's Beach, FL, May 2017.*

Odegaard, B., Grimaldi, P., Ha-Cho, S., **Peters, M.A.K.**, Lau, H., & Basso, M.A. [talk]. Decoding perceptual confidence signals in the superior colliculus. *The SfN Annual Meeting, San Diego, CA, November 2016.*

Westphal, A.J., Ngoy, C.D., Chow, T.E., Storozuk, L.A., Liao, V., **Peters, M.A.K.**, Wu, A.D., Shams, L., & Rissman, J. [poster]. Transcranial direct current stimulation to left rostrolateral prefrontal cortex results in divergent effects on memory and reasoning. *International Conference on Memory Annual Meeting, Budapest, Hungary, July 2016.*

Peters, M.A.K. & Lau, H. [poster]. A neuronal network model of perceptual confidence supports the empirical link between consciousness and metacognition. *ASSC Annual Meeting, Buenos Aires, Argentina, June 2016.*

Knotts, J.D., Lau, H., & **Peters, M.A.K.** [talk]. Human subjects have optimal introspective access even under varieties of masking conditions. *ASSC Annual Meeting, Buenos Aires, Argentina, June 2016.*

Peters, M.A.K., & Lau, H. [poster]. Stimulus detectability in confidence judgments:

a normative account and recurrent neural network. *COSYNE Annual Meeting, Salt Lake City, UT, February 2016.*

Peters, M.A.K., & Shams, L. [poster]. The Size-Weight Illusion is not anti-Bayesian after all: A Hierarchical Causal Inference Model. *Joint Symposium on Neural Computation, University of California Irvine, Irvine, CA, May 2014.*

Clark, S., Odegaard, B., **Peters, M.A.K.**, & Shams, L. [poster]. The computational consequences of noninvasive electrical stimulation on humans' audio-visual perception. *Stanford Undergraduate Psychology Conference, Palo Alto, CA, May 2014.*

Zhu, J., **Peters, M.A.K.**, & Shams, L. [poster]. Decoupling subjective heaviness and density in humans' judgments of object value. *UCLA Psychology Undergraduate Research Conference, University of California Los Angeles, Los Angeles, CA, May 2014.*

Peters, M.A.K., & Shams, L. [poster]. The Size-Weight Illusion is not anti-Bayesian after all. *COSYNE Annual meeting, Salt Lake City, UT, February 2014.*

Ko, Y., **Peters, M.A.K.**, & Lau, H. [poster]. Human intracranial electrophysiology supports a heuristic model of perceptual confidence. *COSYNE Annual meeting, Salt Lake City, UT, February 2014.*

Peters, M.A.K., & Shams, L. [poster]. Humans possess density biases as a function of object size. *Society for Neuroscience Annual Meeting, San Diego, CA, November 2013.*

Acerbi, L., t'Hart, B.M., Behbahani, F.M.P., & **Peters, M.A.K.** [poster]. Optimality under fire: Dissociating learning from Bayesian integration. *Translational and Computational Motor Control (TCMC) satellite meeting at the Society for Neuroscience Annual Meeting, San Diego, CA, November 2013.*

Peters, M.A.K., Thompson, B., Merabet, L.B., Wu, A.D., & Shams, L. [poster]. Blocking perceptual learning consolidation: anodal tDCS to visual cortex may engage homeostatic plasticity mechanisms. *Joint Symposium on Neural Computation, Caltech, June 2013.*

Peters, M.A.K., Welday, A., & Mintz, T. [poster]. Novel word extensions reflect syntactic knowledge in 18-month-old infants. *Southern California Symposium on Cognitive and Language Development, Los Angeles, CA, May 2009.*

Keynotes & Invited Talks

Peters, M.A.K. [talk]. An 'instantaneous' measure of dynamic functional connectivity. *University of California, Riverside Center for Quantitative Modeling in Biology, University of California, Riverside, May 2018.*

Peters, M.A.K. [talk]. Reverse-Engineering the Brain. *Brain Awareness Day, University of California, Riverside, May 2018.*

Peters, M.A.K. [talk]. Revealing the role of prefrontal cortex in consciousness with a new measure of functional connectivity. *University of California, Los Angeles Brain Injury Research Center, University of California, Los Angeles, April 2018.*

Peters, M.A.K. [talk]. Assessing the role of prefrontal cortex in consciousness via a new metric of functional connectivity. *LabRoots Neuroscience 2018 Virtual Event, online/worldwide, March 2018.*

Peters, M.A.K. [talk]. Monitoring our own uncertainty: neural and computational mechanisms. *University of California, Riverside Neuroscience Seminars, University of California, Riverside, February 2018.*

Peters, M.A.K. [talk]. A new metric of dynamic functional connectivity to assess

the role of prefrontal cortex in conscious awareness. *University of California, Los Angeles Brain Research Institute Visual Neurosciences Affinity Group Seminar Series, University of California, Los Angeles, January 2018.*

Peters, M.A.K. [keynote]. Neuroscientific approaches to understanding uncertainty in perception and awareness. *Hong Kong Cognitive Science Meeting 2017, Hong Kong, December 2017.*

Peters, M.A.K. [talk]. Is consciousness a result of metacognitive computations? *University of California, Riverside Psychology - Cognitive Area Seminar Series, University of California, Riverside, November 2017.*

Peters, M.A.K. [talk]. Probabilistic brains: the neural computation of uncertainty. *University of California, San Diego Bioengineering Seminar Series, University of California, San Diego, November 2017.*

Peters, M.A.K. [talk]. Unconscious perception, aka "blindsight": harder to demonstrate than we thought? *Center for Mind, Brain and Consciousness debate series symposium, New York University, New York, New York, April 2017.*

Peters, M.A.K. [talk]. What can the computational mechanisms of metacognition tell us about consciousness? *University of California, Santa Barbara Cognition, Perception, & Cognitive Neuroscience Seminars, Santa Barbara, CA, March 2017.*

Peters, M.A.K. [talk]. When confidence and consciousness collide: neural and computational approaches to understanding how the brain creates subjective experience. *LabRoots Neuroscience 2017 Virtual Event, online/worldwide, March 2017.*

Peters, M.A.K. [talk]. The neural and computational mechanisms of consciousness and confidence. *University of California, Los Angeles Cognitive Forum series, Los Angeles, CA, February 2017.*

Peters, M.A.K., & Shams, L. [talk]. Natural statistics, mixture models, and the perception of heaviness. *University of Southern California Viterbi School of Engineering, Los Angeles, CA, April 2014.*

Peters, M.A.K., & Shams, L. [talk]. The Size-Weight Illusion is not anti-Bayesian after all. *University College London Institute for Cognitive Neuroscience, London, UK, March 2014.*

Peters, M.A.K., & Shams, L. [talk]. Hierarchical causal inference can explain the Size-Weight Illusion. *Imperial College London Brain, Behavior, and Machine Learning Group, London, UK, March 2014.*

Peters, M.A.K., & Shams, L. [talk]. Modifying perceptual learning consolidation with noninvasive brain stimulation. *University of California, Riverside Sleep and Cognition (SaC) Group, Riverside, CA, March 2014.*

Peters, M.A.K. [talk]. $0 + 1 > 1$: how adding non-informative sound improves performance on a visual task. *University of California, Los Angeles CogFog Group, Los Angeles, CA, May 2011.*

Teaching

University of California, Riverside

- *Special Topics in Biocomputation (BIEN263/265)* 2018
- *Effective Writing for Bioengineering Research Publications (BIEN402)* 2018

Workshops, Seminars, and Guest Lectures

- Organizer, *Association for the Scientific Study of Consciousness* June 2018
Workshop "Computational models of perception, metacognition, and consciousness: a hands-on tutorial"

- Lecturer, *National Institutes of Health* September 2017
Summer School *Online Brain Intensive*, “Building a generative model”
- Guest Lecturer, *University of California, Los Angeles* March 2017
Undergraduate course *Consciousness: Current Debates (Psych124D)*, “Consciousness & Metacognition: Two sides of the same coin?”

University of California, Los Angeles

- TA, *Sensation and Perception (Psych120B)* 2012
- TA, *Cognitive Psychology (Psych120A)* 2011

Miscellaneous

- SAT Instructor, *Self-employed* 2007-2017
One-on-one instruction for high school juniors and seniors to prepare them for the SAT and ACT college entrance exams. Approximately 5-10 one-on-one students every year.
- Organizer, *GRE Summer Intensive Course* 2014 - 2016
In collaboration with the USC Viterbi School of Engineering and National Autonomous University of Mexico (UNAM)
Designed and taught a 6-week intensive GRE curriculum for visiting UNAM students doing summer research at USC.
- ESL Instructor, *Japan Exchange and Teaching (JET) Programme* 2006-2007
Asahi, Chiba, Japan
Designed and taught ESL curricula for 1 preschool class, 1 kindergarten class, 24 1st-6th grade classes, and 3 7th-9th grade classes.

Mentoring & Supervision

Scientific mentorship

2009-present

- Supervised graduate students:
 - Sana Hussain (Ph.D., co-supervised with Xiaoping Hu)
 - Kenneth Nelson (M.S.)
 - J.D. Knotts (Ph.D., co-supervised with Hakwan Lau)
 - Eugene Ruby (Ph.D., co-supervised with Hakwan Lau)
- Committee member for:
 - Esteban Lelo de Larrea-Mancera (Ph.D.)
 - Emily Mech (Ph.D.)
- Post-baccalaureate students:
 - Sivananda Rajananda
 - Michael Miuccio
- Undergraduate students:
 - Ria Bhatt
 - Jason Carpenter
 - Albert Chung
 - Gabriel Hughs
 - Akhil Mauze
 - James Quish
 - Yazmin Senega
 - Austin Clark
 - Jeanette Zhu

Co-founder & College/Graduate Admissions Counselor

2008-2017

IvyApproved, LLC; Los Angeles, California

Individual counseling and mentorship to prepare high school seniors to apply to college, including selecting schools, completing application requirements, and planning and writing personal statements. Approximately 10-20 one-on-one students every year.

Service, Leadership, & Community Involvement	Member of the Neuroscience Steering Committee 2017-present <i>LabRoots, Inc.</i>
	President, Co-founder, & Program Director 2015-present <i>Acceso Academy, a 501(c)(3) non-profit organization promoting access to higher education for underprivileged students, drawing students from over forty different high schools and universities in the Los Angeles area; Los Angeles, California.</i>
	Funding and partnerships: <ul style="list-style-type: none"> • 2017-2018: Grant of \$10,000, Institute of Mexicans Abroad & The Consulate General of Mexico in Los Angeles • 2017-2018: Grant of \$173,000, Juntos Podemos/Together We Can Foundation • 2015-2016: Grant of \$156,565, Juntos Podemos/Together We Can Foundation • Resource sharing and collaboration with TEACH Academy of Technologies/TEACH Public Schools, MOSTe, SCS Noonan Foundation (previously South Central Scholars Foundation), University of Southern California, the Consulate General of Mexico in Los Angeles, Institute for Mexicans Abroad, Cal State LA/LSAMP, and others
	Editor/Peer Reviewer 2010-present <ul style="list-style-type: none"> • Review Editor: <i>Frontiers in Human Neuroscience</i> • Reviewer - Funding agencies: <i>National Science Foundation: CRCNS panel, Career Awards</i> • Reviewer - Journals: <i>Consciousness & Cognition · eLife · Frontiers in Integrative Neuroscience · Journal of Cognitive Psychology · Journal of Experimental Psychology: Human Perception & Performance · Journal of Experimental Psychology: General · Journal of Neurophysiology · Journal of Vision · Nature Human Behaviour · Neuroscience of Consciousness · Memory & Cognition · Personality Neuroscience · PLoS Biology · PLoS ONE · Proceedings of the National Academy of Sciences · Proceedings of the Royal Society B: Biological Sciences · Psychological Review</i> • Reviewer - Conferences: <i>Cognitive Science Society</i>
	Alumna admissions interviewer for the Los Angeles area 2007-present <i>Brown University</i>
	Coordinator of the Computational Neuroscience Affinity Group 2012-2016 <i>UCLA Brain Research Institute</i>
Additional Education	Computational Sensory Motor (CoSMo) Summer School August 2013 <i>Queens University; Kingston, Ontario, Canada</i>
	Cognitive Neuroscience Workshop November 2012 <i>Mathematical Biosciences Institute, Ohio State University; Columbus, Ohio</i>
	Probabilistic Models of Cognition Graduate Summer School July 2011 <i>Institute for Pure and Applied Mathematics, UCLA</i>
Memberships	Association for the Scientific Study of Consciousness (ASSC) · Organization for Human Brain Mapping (OHBM) · Society for Neuroscience (SfN) · Vision Sciences Society (VSS)
Technical Skills	<ul style="list-style-type: none"> • Computer programming, statistical analysis, and stimulus creation and presentation: MATLAB with PsychToolbox & Statistics Toolbox, Python & PsychoPy, SPM, R, SPSS, JAGS, Arduino, Photoshop, L^AT_EX 2_ε

- Computational models of cognition, perception, & metacognition; Monte Carlo simulation; Bayesian inference; machine learning (support vector machine, logistic regression, MVPA, RSA, functional connectivity); SPRT & drift diffusion models; recurrent neural networks
- Neuroimaging: data collection/analysis (fMRI, EEG, ECoG, LFP, single- and multi-unit recordings in non-human animals)
- Non-invasive brain stimulation (tDCS, TMS)

Languages

English (native), Japanese (conversational)