

January 2021

## Employment

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|----------------|---|
| 2015 - Present | <b>Assistant Professor</b> , Department of Psychological and Brain Sciences, Quantitative Biomedical Sciences, Dartmouth College              |
| 2012-2015      | <b>Postdoctoral Fellow</b> , University of Colorado Boulder (with Tor Wager, PhD)   |
| 2011 – 2012    | <b>Predoctoral Clinical Psychology Intern</b> , University of California Los Angeles Semel Institute for Neuroscience (Health Behavior Track) |

## Education & Training

|             |   |
|-------------|---|
| 2006 – 2012 | <b>University of Arizona</b> , Tucson, AZ<br>PhD in Clinical Psychology (with Alan Sanfey, PhD & John Allen, PhD)                     |
| 2004 – 2006 | <b>New School for Social Research</b> , New York, NY<br>MA in Clinical Psychology (with David Silbersweig, MD, Marcel Kinsbourne, DM) |
| 1998 – 2002 | <b>Reed College</b> , Portland, OR<br>BA in Psychology (thesis with Jennifer Henderlong-Corpus, PhD)                                  |

## Funding

|                |  |
|----------------|--|
| Pending        | <b>Co-PI</b> , R01 National Institute on Drug Abuse<br>Neural mechanisms of social connection  |
| Pending        | <b>Co-I</b> , R01 National Institute of Mental Health<br>Neural and Molecular Mechanisms Underlying Stress-Induced Inflammatory Responses  |
| Pending        | <b>Co-I</b> , R21 National Institute of Mental Health<br>Modulation of emotion perception and memory via basolateral amygdala stimulation in humans                                  |
| 2020-Present   | <b>PI</b> , Remote Experiential Learning Mini-Grant<br>Dartmouth Center for the Advancement of Learning<br>Experiential learning in an online neuroimaging methods laboratory course |
| 2019-Present   | <b>PI</b> , CAREER 1848370 National Science Foundation<br>Neural and computational basis of guilt in decision-making   |
| 2018-Present   | <b>PI</b> , R01MH116026-01 National Institute of Mental Health.<br>Dynamic brain representations underlying emotional experience   |
| 2018-Present   | <b>PI</b> , R56 MH080716 National Institute of Mental Health.<br>Prefrontal-Amygdala interaction in social-learning  |
| 2017 – Present | <b>PI</b> , The Nelson A. Rockefeller Center at Dartmouth College, Faculty Research Grant.   |

Improving healthcare decisions: Managing emotions in social decision-making with exogenous constraints

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|-------------|--|
| 2017 – 2018 | <b>Co-PI</b> , Chiang Ching-kuo Foundation for International Scholarly Exchange.<br>Towards a computational understanding of social status and mianzi in Chinese and American Cultures |
| 2016 – 2017 | <b>PI</b> , Neukom Institute for Computational Science, CompX Grant<br>Crowd sourced development and validation of Neuro-computational models of affect                                |
| 2014 – 2016 | <b>Co-I</b> , National Institute of Health, Big Data to Knowledge (PI: Tor Wager)<br>fMRI-based Biomarkers for Multiple Components of Pain   |
| 2012 – 2015 | <b>Co-I</b> , National Institute of Health (PI: Tal Yarkoni)<br>Large-scale automated synthesis of functional neuroimaging data  |
| 2009 – 2012 | <b>PI</b> , National Institute of Mental Health, National Research and Service Award.<br>Mechanisms Underlying Social Cooperative Behavior   |

## Awards & Fellowships

|             |  |
|-------------|--|
| 2019        | <b>Fellow</b> Association for Psychological Science  |
| 2019        | <b>Janet Taylor Spence Award for Transformative Early Career Contributions</b> , Association for Psychological Science |
| 2018        | <b>Junior Faculty Fellowship</b> , Dartmouth College   |
| Summer 2010 | <b>Cognitive Science Center Neuroeconomics Summer School</b> , University of Amsterdam                                 |
| 2009        | <b>Graduate and Professional Student Council Student Showcase - 1<sup>st</sup> place</b> , University of Arizona       |
| 2009        | <b>Technology Research Initiative Fund Graduate Student Imaging Fellowship</b> , University of Arizona                 |
| Summer 2008 | <b>Neuroimaging Training Program Fellowship</b> , University of California Los Angeles                                 |
| Summer 2007 | <b>Summer Institute in Cognitive Neuroscience Fellowship</b> , University of California Santa Barbara                  |
| 2006 – 2007 | <b>Graduate Minority Fellowship</b> , University of Arizona  |
| 2006 – 2007 | <b>Deans Fellowship</b> , New School for Social Research (Declined)  |
| 2004 – 2006 | <b>University Scholars Award</b> , New School for Social Research  |

## Publications

Underlined authors are current or former trainees (postdoctoral, graduate, undergraduate, and research assistants).

- 1) Mollick, J.A., **Chang, L.J.**, Krishnan, A., Hazy, T.E., Krueger, K.A., Frank, G.K.W., Wager, T.D., O'Reilly, R.C. (In Press). The neural correlates of cued reward omission. *Frontiers in Human Neuroscience*.
- 2) Jolly, E., & **Chang, L.J.** (In Press). Spatial feature selection in multivariate pattern analysis. *Social Cognitive Affective Neuroscience*.
- 3) Cheong, J.H., Molani, Z., Sadhukha, S., & **Chang, L.J.** (In Press). Synchronized emotions in shared experiences increase social connection. *Nature Communications Biology*.

- 4) Clark, M.D., & **Chang, L.J.** (2021). Surprise signals changing affective experiences in naturalistic sports spectating. *Neuron*.
- 5) van Baar, J., Klaassen, F., Ricci, R., **Chang, L.J.**, & Sanfey, A.G. (2020). Stable distribution of reciprocity motives in a population. *Scientific Reports*, 10, 18164.
- 6) Jolly, E.\*, Sadhukha, S., & **Chang, L.J.** (2020). Response to Lynch et al: On measuring head motion and effects of head molds during fMRI. *Neuroimage*.
- 7) van der Meer, J., Breakspear, M., **Chang, L.J.**, Sonkusare, S., & Cocchi, L. (2020). Movie viewing elicits rich and reliable brain state dynamics. *Nature Communications*.
- 8) Jolly, E.\*, Sadhukha, S.\*, & **Chang, L.J.** (2020). Headcases do not reduce head motion during natural viewing and speech. *Neuroimage*. \*denotes equal contributions.
- 9) Gonzalez, B., & **Chang, L.J.** (2020). Arbitrating computational models of observational learning. *Neuron* 106, 558-560.
- 10) Chen, P.H., Jolly, E., Cheong, J.H., & **Chang, L.J.** (2020). Inter-subject representational similarity analysis reveals individual variation in affective experience when viewing erotic movies. *Neuroimage*, 216.
- 11) Yu, H., Koban, L., **Chang, L.J.**, Wagner, U., Krishnan, A., Vuilleumier, P., Zhou, X., & Wager, T.D. (2020). The neural signature of cognitive antecedents and behavioral responses of interpersonal guilt. *Cerebral Cortex*, 30 (6) 3558-3572.
- 12) Gonzalez, B. & **Chang, L.J.** (In Press). Computational models of mentalizing. In *Theory of Mind*. Gilead, M & Ochsner, K. (Eds).
- 13) Chen, P.H.A., Cheong, J.H., Jolly, E., Elhence, H., Wager, T.D., & **Chang, L.J.** (2019). Socially transmitted placebo effects. *Nature Human Behavior*, 1-11.
- 14) Cheong, J.H., Brooks, S., & **Chang, L.J.** (2019). FaceSync: Open source framework for recording facial expressions. *F1000 Research*, 8.
- 15) Gong, X, Brazil, I.A., **Chang, L.J.**, & Sanfey, A.G. (2019). Psychopathic traits are related to diminished guilt aversion and reduced trustworthiness during social decision-making. *Scientific Reports*.
- 16) Van Baar, J., **Chang, L.J.**, & Sanfey, A.G. (2019). Neural and computational substrates of moral phenotypes in social decision-making. *Nature Communications*, 10 (1) 1483.
- 17) Fareri, D.S., **Chang, L.J.**, & Delgado, M.R. (2019). Mechanisms of social learning. In *The Cognitive Neurosciences* 6<sup>th</sup> edition. Gazzaniga, M.S (Ed). MIT Press.
- 18) Jolly, E., & **Chang, L.J.** (2019). The Flatland Fallacy: Moving beyond low dimensional thinking. *Topics in Cognitive Science*, 11(2), 433-454.
- 19) FeldmanHall, O. & **Chang, L.J.** (2018). Social Learning: Emotions aid in optimizing goal-directed social behavior. In *Understanding Goal-Directed Decision-Making: Computations and Circuits*, Bornstein, A & Shenhav, A (Eds). Elsevier.

- 20) **Chang, L.J.** & Jolly, E. (2018). Emotions as computational signals of goal error. In *Nature of Emotion*, Fox, D., Lapate, R., Shackman, A., & Davidson, R.J (Eds). Oxford Press.
- 21) Taylor, V., Roy, M., **Chang, L.J.**, Gill, L. N., Mueller, C., & Rainville, P. (2018). Reduced Fear-Conditioned Pain Modulation in Experienced Meditators: A Preliminary Study. *Psychosomatic medicine*.
- 22) Vavra, P., & **Chang, L.J.**, & Sanfey, A.G. (2018). Expectations in the Ultimatum Game: Distinct Effects of Mean and Variance of Expected Offers. *Frontiers in Psychology*, 9, 992.
- 23) Cheong, J.H., Jolly, E., Sul, S., & **Chang, L.J.** (2017). Computational models in social neuroscience. In *Computational Models of Brain and Behavior*, Moustafa, A (Ed), Wiley-Blackwell.
- 24) Sul, S., Guroglu, B., Crone, E.A., & **Chang, L.J.** (2017). Medial prefrontal cortical thinning mediates shifts in other-regarding preferences during adolescence. *Scientific Reports*, 7(8510), 1-10.
- 25) Shermohammed, M., Mehta, P.H., Zhang, J., Brandes, C., **Chang, L.J.**, & Somerville, L.H. (2017). Does psychosocial stress impact cognitive reappraisal? Behavioral and neural evidence. *Journal of Cognitive Neuroscience*.
- 26) Taylor, V., **Chang, L.J.**, Rainville, P., & Roy, M. (2017). Learned Expectations and Uncertainty Facilitate Pain during Classical Conditioning. *Pain*, 158(8), 1528-1537.
- 27) Ashar, J.Y., **Chang, L.J.**, & Wager, T.D. (2017). Brain mechanisms of the placebo effect: An affective appraisal account. *Annual Reviews of Clinical Psychology*.
- 28) Woo, C.W., **Chang, L.J.**, Lindquist, M., & Wager, T.D. (2017). Brain signatures and models in translational imaging. *Nature Neuroscience*, 20 (3), 365-377.
- 29) Eisenbarth, H., **Chang, L.J.**, & Wager, T.D. (2016). Multivariate brain prediction of heart rate and skin conductance responses to social threat. *Journal of Neuroscience*, 36(47):11987-11998.
- 30) De La Vega, A., **Chang, L.J.**, Banich, M.T., Wager, T.D., & Yarkoni, T. (2016). Meta-analytic functional analysis of human medial frontal cortex reveals tripartite organization. *Journal of Neuroscience*.
- 31) Krishan, A., Woo, C.W.\*, **Chang, L.J.\***, Ruzic, L., Jackson, P., Wager, T.D. (2016). Somatic and vicarious pain are represented by dissociable multivariate brain patterns. *eLife*. \*denotes equal contributions.
- 32) Wager, T.D., Atlas, L.Y., Botvinick, M., **Chang, L.J.**, Coghill, R.C., Davis, K.D., Iannetti, G.D., Poldrack, R.A., Shackman, A.J., & Yarkoni, T. Pain in the ACC? Commentary on Lieberman and Eisenberger. (2016). *Proceedings of the National Academy of Science*.
- 33) Lindquist, M.A., Krishnan, A., Lopez-Sola, M., Jepma, M., Woo, C.W., Roy, M., Atlas, L.Y., **Chang, L.J.**, Losin, L., Eisenbarth, H., Ashar, Y.K., Koban, L., Delk, Z., & Wager, T.D. (2015). Group-regularized individual prediction: Theory and application to pain. *Neuroimage*.
- 34) **Chang, L.J.** & Smith, A. (2015). Social emotions and psychological games. *Current Opinions in Behavioral Sciences*, 5:133-140.
- 35) Yu, H., Shen, B., Yin, Y., Blue, P., & **Chang, L.J.** (2015). Dissociating guilt- and inequity-aversion in cooperation and norm compliance. *Journal of Neuroscience*, 35(24), 8973-8975.

- 36) Fareri, D.S.\*, **Chang, L.J.\***, Delgado, M.R. (2015). Neural and computational mechanisms underlying interpersonal collaboration. *Journal of Neuroscience*, 35(21), 8170-8180. \*denotes equal contributions.
- 37) **Chang, L.J.**, Gianaros, P., Manuck, S., Krishnan, K., & Wager, T.D. (2015). A sensitive and specific neural signature for picture induced affect. *PLoS Biology*, 13(6), 1-28.
- 38) **Chang, L.J.**, Reddan, M., Ashar, Y.K., Eisenbarth, H., & Wager, T.D. (2015). The challenges of forecasting resilience. *Behavioral Brain Sciences Commentary*, 38, 26-27.
- 39) Sanfey, A.G., Stallen, M., & **Chang, L.J.** (2014). Norms and expectations in social decision-making. *Trends In Cognitive Science*, 18(4), 172-174.
- 40) **Chang, L.J.** & Koban, L. (2013). Modeling emotion and learning of norms in social interactions. *Journal of Neuroscience*, 33(18), 7615-7617.
- 41) **Chang, L.J.**, Yarkoni, T., Khaw, M.W., & Sanfey, A.G. (2013). Decoding the role of the human insula in human cognition: Functional parcellation and large-scale reverse inference. *Cerebral Cortex*, 23(3), 739-749.
- 42) **Chang, L.J.**, & Sanfey, A.G. (2013). Great expectations: Neural computations underlying the use of social norms in decision-making. *Social Cognitive Affective Neuroscience*, 8(3), 277-284.
- 43) Brown, A.D., Root, J.C., Romano, T., **Chang, L.J.**, & Hirst, W. (2013). The limits of memory and imagination: Overgeneralized autobiographical Memory and future thinking in combat veterans with posttraumatic stress disorder. *Behavior Therapy and Experimental Psychiatry*, 44(1), 129-134.
- 44) Fareri, D.S., **Chang, L.J.**, Delgado, M.R. (2012). Effects of experienced social information on trust decisions and neural reward circuitry. *Frontiers in Decision Neuroscience*, 6, 1- 17.
- 45) Kahnt, T., **Chang, L.J.**, Park, S.Q., Heinzle, J., Haynes, J.D. (2012). Connectivity based parcellation of the human orbitofrontal cortex. *Journal of Neuroscience*, 32(8), 6240-6250.
- 46) Harle, K.M., **Chang, L.J.**, van't Wout, M., & Sanfey, A.G. (2012). The neural underpinnings of mood-driven biases in social economic decision-making. *Neuroimage*, 61(1), 32-40.
- 47) **Chang, L.J.**, Smith, A., Dufwenberg, M., & Sanfey, A.G. (2011). Triangulating the neural, psychological, and economic bases of guilt aversion. *Neuron*, 70, 560-572.
- 48) Van't Wout, M, **Chang, L.J.**, & Sanfey, AG. (2010). Emotion regulation and social interactive decision-making. *Emotion*, 10(6), 815-821.
- 49) **Chang, L. J.**, Doll, B., Van't Wout, M., Frank, M., Sanfey, A.G. (2010). Seeing is believing: Trustworthiness as a dynamic belief. *Cognitive Psychology*, 61(2), 87-105.
- 50) **Chang, L.J.**, & Sanfey, A.G. (2009). Unforgettable Ultimatums? Expectation violations promote enhanced social memory following economic exchange. *Frontiers in Behavioral Neuroscience*, 3, 1-12.
- 51) **Chang, L.J.** & Sanfey, A.G. (2008). Emotion, decision-making, and the brain. In D. Houser & K. McCabe (Eds.), *Neuroeconomics*. Elsevier, 31-53.

- 52) Sanfey, A.G. & **Chang, L.J.** Multiple systems in decision-making. (2008). In W.T. Tucker, S. Ferson, A. Finkel, T.F. Long, D. Slavin, P. Wright (Eds.), *Strategies for risk communication: Evolution, evidence, experience. New York: Annals of the New York Academy of Science*, 1128, 53-62.
- 53) Protopopescu, X., Pan, H., Tuescher, O., Root, J., **Chang, L.**, Altemus, M., Polanecsky, M., McEwen, B., Stern, E., & Silbersweig, D. (2008). Toward a Functional Neuroanatomy of Premenstrual Dysphoric Disorder: Differential Amygdalar, Orbitofrontal and Ventral Striatal Activity. *Journal of Affective Disorders*, 108, 87-94.
- 54) Butler, T., Pan, H., Tuescher, O., Engelen, A., Goldstein, M., Epstein, J., Weisholtz, D., Protopopescu, X., Root, J. C., Cunningham-Bussell, A.C., **Chang, L.**, Xie, X.H., Chen, Q., Phelps, E.A., Ledoux, J.E., Stern, E., Silbersweig, D.A. (2007). Human fear-related motor neurocircuitry. *Neuroscience*, 150 (1) 1-7.
- 55) Butler, T., Imperato-McGinley, J., Pan, H., Voyer, D., Cunningham-Bussell, A. C., **Chang, L.**, Zhu, Y. S., Cordero, J., Stern, E., Silbersweig, D. (2007). Sex specificity of ventral anterior cingulate cortex suppression during a cognitive task. *Human Brain Mapping*, 28 (11), 1206-12.
- 56) Root, J.C., Robbins, R., **Chang, L.**, & Van Gorp, W.G. (2006). Detection of suboptimal effort on the California Verbal Learning Test, Second Edition: analysis and normative data for forced choice recognition. *Journal of the International Neuropsychological Society*, 12 (5), 688-96.

## Manuscripts Under Review

- Chang, L.J.**, Jolly, E., Cheong, J.H., Chen, P.H.A., Rapuano, K., & Manning, J.R. Endogenous variation in ventromedial prefrontal cortex state dynamics reflects affective experience in naturalistic viewing. Manuscript Under Revision at Science Advances
- Jolly, E. & **Chang, L.J.** Gossip drives vicarious learning and facilitates robust social connections. Manuscript Under Revision at Current Biology.
- Fox, A.S., **Chang, L.J.**, Gorgolewski, K., & Yarkoni, T. Bridging genetics and psychology using large-scale spatial analysis of neuroimaging and neurogenetic data. Manuscript Under Revision at Nature Neuroscience
- Bujarski, K., Song, Y, Xie, T., Kolankiewicz, S., Aronson, J., **Chang, L.J.**, Jobst, B. Modulation of affective valence via amygdala stimulation in humans. Manuscript Under Review.
- Shvil, E., Papini, S., Markowitz, J.C., Schafer, S., Sullivan, G.M., **Chang, L.J.**, Rusch, H.L., van der Hoorn, K.R., Milad, M.R., Wager, T.D., & Neria, Y. Impaired hippocampal-dependent context modulation in posttraumatic stress disorder. Manuscript Under Review.
- Weaverdyck, M.E., Du, M., Li, Y.C., **Chang, L.J.** & Parkinson, C. Homophily serves as a social prior: The assumption that “birds of a feather flock together” shapes social decisions and relationship beliefs. Manuscript Under Review.
- Gao, X., Jolly, E., Yu, H., Liu, H., Zhou, X.\*, & **Chang, L.J.\*** The hidden cost of receiving help: A theory of indebtedness. Manuscript Under Review. \*denotes equal contributions. Manuscript Under Revision at Nature Communications.

## Manuscripts In Preparation

- Chen, P.Y., Fareri, D., Güroğluj, B., Delgado, M.R., & **Chang, L.J.** Towards a neurometric-based construct validity of trust. Manuscript in Preparation.
- Jolly, E., Smith, A., & **Chang, L.J.** Guilt-aversion motivates harm minimization in surrogate decision-making. Manuscript in Preparation.
- Gonzalez, B., van Baar, J. & **Chang, L.J.** Modeling mentalizing using inverse reinforcement-learning. Manuscript in preparation.
- Brandt, A., Smith, A.C., & **Chang, L.J.** Guilt-aversion motivates returning lost wallets. Manuscript in preparation.
- Xie, T.K., Cheong, J.H., Brandt, A.M., Aronson, J., Jobst, B., Bujarski, K., & **Chang, L.J.** *Cross-modal synchronization of ventromedial prefrontal cortex during natural movie viewing*. Manuscript in Preparation.
- van Baar, J., **Chang, L.J.**, & Sanfey, A.G. Diffusion of responsibility affects amends-making after harmful group decisions. Manuscript in preparation.
- Jolly, E., Farrens, M., Greenstein, N., Eisenbarth, H., Reddan, M., Andrews, E., Wager, T.D, & **Chang, L.J.** Recovering sparse emotional ratings with collaborative filtering. Manuscript in Preparation.
- Chang, L.J.**, Burnashev, A., & Wager, T.D. Crowd sourced training and validation of multivariate models of psychological states with neuro-learn. Manuscript in Preparation.
- Chang, L.J.**, Gianaros, P.J., Gross, J., Manuck, S., & Wager, T.D. Reappraisal alters the construction of negative affect. Manuscript in Preparation.
- Chang, L.J.**, Robustelli, B., Whisman, M., & Wager, T.D. The analgesic effects of relationship. Manuscript in Preparation.
- Yarkoni, T, De La Vega, A., & **Chang, L.J.** Fully automated meta-analytic clustering and decoding of human brain activity. Manuscript in Preparation.
- Rossi, F., Fasel, I., Bartlett, M., Sanfey, A.G & **Chang, L.J.** Affective mechanisms of reinforcement-learning in social and non-social decision-making.

## White Papers

- Chang, L.J.** (2017). The science of trust. Commission on Trust, Media, and American Democracy. The Aspen Institute.

## Online Books

- Chang, L.J.**, Huckins, J., Cheong, J.H., Brietzke, S., Lindquist, M.A., & Wager, T.D. (2020, June). DartBrains: An online open access resource for learning functional neuroimaging analysis methods in Python (Version 1.0). Zenodo. <http://doi.org/10.5281/zenodo.3909718>
- Chang, L.J.**, Manning, J.R., Baldassano, C., de la Vega, A., Fleetwood, G., Geerligs, L., Haxby, J., Lahnakoski, J., Parkinson, C., Shappell, H., Shim, W.M., Wager, T.D., Yarkoni, T., Yeshurun, Y. & Finn, E. (2020,

July). Naturalistic-Data: An online open access resource for learning how to analyze naturalistic neuroimaging data (Version 1.0). Zenodo. <http://doi.org/10.5281/zenodo.3937849>

## Selected Open-Source Software Packages

**nltools**. A suite of Python tools for conducting multivariate analysis of neuroimaging data  
<https://github.com/cosanlab/nltools>

**neuro-learn**. Cloud-based predictive modeling of neuroimaging  
<http://neuro-learn.org>

**emotionCF**. A Python toolbox for performing collaborative filtering on emotion datasets  
<https://github.com/ljchang/emotionCF>

**py-feat**. A Python toolbox for analyzing and visualizing facial expression data  
<https://github.com/cosanlab/feat>

**facesync**. A Python toolbox for synchronizing videos based on audio features.  
<https://github.com/cosanlab/facesync>

## Chaired Symposia, Workshops, & Summer Schools

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| 2020 | <b>Co-Director</b> of 9-day Methods in Neuroscience at Dartmouth Computational Summer School on “Interacting Minds”, Hanover, NH  |
| 2020 | <b>Co-Organizer</b> of SANS preconference workshop on “Computational Social and Affective Neuroscience” (Cancelled due to Covid-19)   |
| 2019 | <b>Co-Chair</b> 8 <sup>th</sup> Annual Affective Computing and Intelligent Interaction Meeting Special Session “Neural & Psychological Models of Affect”, Cambridge, UK                   |
| 2019 | <b>Co-Director</b> of 9-day Methods in Neuroscience at Dartmouth Computational Summer School on “Cognitive Maps”, Hanover, NH   |
| 2019 | <b>Co-Director</b> of 14-day Summer Institute in Cognitive Neuroscience Summer School on “Computational Social Neuroscience: Advances, Challenges, and New Directions”, Santa Barbara, CA |
| 2019 | <b>Co-Organizer</b> of SANS preconference workshop on “Computational Social and Affective Neuroscience”   |
| 2018 | <b>Co-Director</b> of 9-day Methods in Neuroscience at Dartmouth Computational Summer School of “Narratives and Natural Contexts”, Hanover, NH,   |
| 2017 | <b>Co-Director</b> of 8-day Methods in Neuroscience at Dartmouth Computational Summer School of “Multiscale Network Dynamics”, Hanover, NH  |
| 2017 | <b>Co-Organizer</b> of Dartmouth BrainHack (4-day department neuroscience hackathon), Hanover, NH   |
| 2016 | <b>Co-Chair</b> Society for Neuroscience Nanosymposium “Insights into human cognition and emotion using large-scale neuroinformatics” Nanosymposium, San Diego, CA                        |
| 2016 | <b>Co-Chair</b> for “Dartmouth Affective Neuroscience Symposium”, Hanover, NH   |
| 2014 | <b>Co-Chair</b> for “Computational approaches to social affective neuroscience” at the 7th Annual Social Affective Neuroscience Society Meeting, Denver, CO                               |
| 2010 | <b>Co-Organizer</b> of a 3-day workshop, University of Arizona School, Tucson, AZ, “Introduction to the R statistical language”   |

## Professional Service



|                |  |
|----------------|--|
| 2020 – Present | Editorial Board - Current Opinions in Behavioral Science   |
| 2020           | NSF CAREER Panel, Dartmouth College  |
| 2020           | NSF Adhoc Reviewer   |
| 2020           | NIH Computational Psychiatry Special Review Panel  |
| 2019 – Present | Affective Computing & Intelligent Interactions Program Committee                                       |
| 2019 - Present | Editorial Board - Affective Science  |
| 2019 - Present | Max Planck Center for Language, Music, & Emotion Affiliate   |
| 2019           | NIH Computational Psychiatry Special Review Panel  |
| 2018           | NIH MESH Review Panel  |
| 2018 - Present | Society for Affective Science Journal Advisory Board   |
| 2018 - 2020    | Program Committee Social Affective Science Meeting   |
| 2018 - Present | Scientific Advisory Board for Mind Trace <a href="https://mind-trace.com/">https://mind-trace.com/</a> |
| 2016           | Reviewer Cosyne Meeting  |
| 2016 – Present | Review Editor for Emotion  |
| 2015- 2016     | Organizing Committee Social Affective Neuroscience Meeting   |
| 2014 – 2016    | Review Editor Frontiers in Emotion Science   |
| Summer 2013    | Guest Lecturer in University of Colorado Science Discovery Program for adolescents                     |
| 2008           | Psychology Department Mini-Convention Organizer  |
| 2006 – 2008    | Psychology Department Graduate Student Representative  |

## Invited Talks

|           |  |
|-----------|--|
| Sep 2021  | <b>Computational Properties of Prefrontal Cortex</b> , Oxford, UK                          |
| Oct 2020  | <b>Technology in Psychiatry Summit</b> , Boston, MA  |
| May 2020  | <b>Nilearn Machine Learning Workshop</b> , Montreal, Quebec (Withdrew)                     |
| Mar 2020  | <b>Transforming the Practice of Mental Health Care</b> , NIMH Panel                        |
| Mar 2020  | <b>Program in Placebo Studies &amp; Therapeutic Encounters</b> , Harvard Medical School    |
| Jun 2020  | <b>Organization for Human Brain Mapping</b> , Montreal, Quebec                             |
| Jun 2020  | <b>Interdisciplinary Symposium on Decision Neuroscience</b> , Philadelphia, PA (Cancelled) |
| Mar 2020  | <b>University of Southern California</b> , Los Angeles, CA                                 |
| Feb 2020  | <b>Brown University</b> , Providence, RI   |
| Feb 2020  | <b>Johns Hopkins University</b> , Baltimore, MD  |
| Jan 2020  | <b>Columbia University</b> , New York, NY  |
| Dec 2019  | <b>New York University</b> , New York, NY  |
| Dec 2019  | <b>Princeton University</b> , Princeton, NJ  |
| Nov 2019  | <b>Max Planck</b> , Frankfurt, Germany   |
| Sept 2019 | <b>Affective Computing and Intelligent Interactions</b> , Cambridge, UK                    |
| July 2019 | <b>Reinforcement Learning &amp; Decision-Making</b> , Montreal, Quebec                     |
| June 2019 | <b>Summer Institute in Cognitive Neuroscience</b> , Santa Barbara, CA                      |
| May 2019  | <b>Association for Psychological Science</b> , Washington DC                               |
| Mar 2019  | <b>Victoria University</b> , Wellington, NZ  |
| Mar 2019  | <b>Brain functional organization and connectivity workshop</b> , Noosa, Australia          |
| Feb 2019  | <b>Center for Healthy Minds</b> , Madison, WI  |
| Feb 2019  | <b>University of Wisconsin Madison Colloquium</b> , Madison, WI                            |
| Nov 2018  | <b>Society for Neuroscience Nanosymposium</b> , San Diego, CA                              |
| Nov 2018  | <b>Society for Neuroscience Minisymposium</b> , San Diego, CA                              |
| Sep 2019  | <b>Austen Riggs Computational Neuroscience Workshop</b> , The Berkshires, MA               |
| Aug 2018  | <b>Dartmouth Hitchcock Medical Center Department of Neurology</b> , Lebanon, NH            |
| May 2018  | <b>Association for Psychological Science</b> , San Francisco, CA                           |
| Apr 2018  | <b>Society for Affective Science</b> , Los Angeles, CA                                     |
| Mar 2018  | <b>Computational Systems Neuroscience Meeting</b> , Breckenridge, CO                       |
| Mar 2018  | <b>Society for Personality and Social Psychology</b> , Atlanta, GA                         |

|           |   |
|-----------|---|
| Feb 2018  | Templeton Roundtable, Hanover, NH   |
| Jan 2018  | Science Pub, Lebanon, NH  |
| Oct 2017  | Dartmouth Hitchcock Medical Center Department of Psychiatry, Lebanon, NH        |
| Oct 2017  | Princeton University, Princeton, NJ   |
| Oct 2017  | New York University, NY, NY   |
| Sep 2017  | Harvard University, Boston, MA  |
| Aug 2017  | Social Neuroeconomics Summer School, Duke University, Durham, NC                |
| July 2017 | Beyond the Lab Psychonomics Workshop, Madison, WI                               |
| May 2017  | Dartmouth 21 <sup>st</sup> Annual Neuroscience Day, Hanover, NH                 |
| May 2017  | Multimodal Neuroimaging Training Program, Pittsburgh, PA                        |
| May 2017  | New England Research Decision-Making Group (Brown University)                   |
| May 2017  | Boston Area Moral Cognition Group, Harvard University, Boston, MA               |
| May 2017  | Affectiva, Boston, MA   |
| Apr 2017  | Dartmouth Interdisciplinary Network Research Group, Hanover, NH                 |
| Apr 2017  | Society for Affective Neuroscience, Boston, MA                                  |
| Mar 2017  | Society for Social and Affective Neuroscience, Los Angeles, CA                  |
| Jan 2017  | Society for Social and Personality Psychology, San Antonio, TX                  |
| Nov 2016  | Society for Neuroscience Nanosymposium, San Diego, CA                           |
| Jun 2016  | Dartmouth Affective Neuroscience Symposium                                      |
| May 2016  | Hanover Rotary Club, Hanover, NH  |
| Nov 2015  | Yale University, New Haven, CT  |
| Oct 2015  | Harvard University, Cambridge, MA   |
| Oct 2015  | Society for Neuroscience Nanosymposium, Chicago, IL                             |
| Sep 2015  | University of New Hampshire, Durham, NH   |
| May 2015  | University of College London, London, UK  |
| May 2014  | American Psychological Science, SF, CA  |
| Apr 2014  | Social Affective Neuroscience Society, Denver,                                  |
| Jan 2014  | University of California Santa Barbara, Santa Barbara, CA                       |
| Dec 2013  | Princeton University, Princeton, NJ   |
| Nov 2013  | University of Colorado, Boulder, CO   |
| Nov 2013  | Dartmouth College, Hanover, NH  |
| Oct 2013  | Harvard University, Cambridge, MA   |
| Sep 2013  | University of Amsterdam, Amsterdam, The Netherlands                             |
| Sep 2013  | Donders Institute for Brain, Cognition, and Behavior, Nijmegen, The Netherlands |
| Aug 2013  | European Society for Cognitive Psychology, Budapest, Hungary                    |
| Apr 2013  | University of Denver, Denver, CO  |
| Jan 2013  | University of Colorado, Boulder, CO   |
| May 2012  | UCLA, Department of Psychiatry, Los Angeles, CA                                 |
| Apr 2012  | Duke University, Durham, NC   |
| Apr 2012  | Virginia Tech Carilion Research Institute, Roanoke, VA                          |
| Mar 2012  | University of Colorado, Boulder, CO   |
| Feb 2012  | Stanford University, Palo Alto, CA  |
| Jun 2010  | Leiden University, Leiden, Netherlands  |
| Sep 2009  | Society for Neuroeconomics, Evanston, IL.                                       |
| Nov 2006  | Clinical Psychology Datablitz, Tucson, AZ.                                      |

## Teaching

Principles of fMRI Data Analysis, Dartmouth College  
[http://cosanlab.com/static/syllabi/PSYC60\\_Syllabus.pdf](http://cosanlab.com/static/syllabi/PSYC60_Syllabus.pdf)  
<https://dartbrains.org/>

**Social and Affective Motivations in Decision-Making**, Dartmouth College

[http://cosanlab.com/static/syllabi/PSYC53\\_Syllabus.pdf](http://cosanlab.com/static/syllabi/PSYC53_Syllabus.pdf)

**Experimental Study of Social Behavior**, Dartmouth College

[http://cosanlab.com/static/syllabi/PSYC63\\_Syllabus.pdf](http://cosanlab.com/static/syllabi/PSYC63_Syllabus.pdf)

<https://github.com/ljchang/psyc63>

**The Power of Beliefs**, Dartmouth College

[http://cosanlab.com/static/syllabi/PSYC84\\_Syllabus.pdf](http://cosanlab.com/static/syllabi/PSYC84_Syllabus.pdf)

**Research Methods in Psychology**, University of Arizona

**Graduate Statistics**, University of Arizona

## Mentoring & Research Advising

### Postdoctoral Trainees

|              |   |
|--------------|---|
| 2015-2016    | Sunhae Sul (Faculty: Pusan National University)           |
| 2015-2018    | Seth Frey (Faculty: University of California Davis)       |
| 2016-2019    | Pin-hao (Andy) Chen (Faculty: National Taiwan University) |
| 2019-Present | Eshin Jolly   |

### Primary Doctoral Students

|              |  |
|--------------|--|
| 2015-2019    | Eshin Jolly (Postdoc: Dartmouth College)               |
| 2017-2019    | Daisy Burr (Transferred to Duke University)            |
| 2017-2018    | Kristina Rapuano (Postdoc: Yale University)            |
| 2015-Present | Jin Cheong   |
| 2016-Present | Emma Templeton (co-advised with Thalia Wheatley)       |
| 2017-Present | Bryan Gonzalez   |
| 2018-Present | Marissa Clark  |
| 2019-Present | Tiankang Xie (Quantitative Behavioral Science Program) |
| 2021-Present | Wasita Mahaphanit                                      |

### Visiting Students

|             |                                     |
|-------------|-------------------------------------|
| Fall 2013   | Hongbo Yu (Peking University)       |
| Spring 2017 | Jeroen van Baar (Donders Institute) |
| Fall 2017   | Xiaoxue Gao (Peking University)     |

### Dissertation Committee

|             |   |
|-------------|---|
| 2019 – Pres | Dae Houlihan, MIT (Advisor: Rebecca Saxe)                                 |
| 2018 – Pres | Yu Han, University of Vermont (Advisor: Patricia Prelock)                 |
| 2016 – 2019 | Feilong Ma, Dartmouth College (Advisor: James Haxby)                      |
| 2016 – 2018 | Beau Sievers, Dartmouth College (Advisor: Thalia Wheatley)                |
| 2016 – 2017 | Rachel Pizzie, Dartmouth College (Advisor: David Kraemer)                 |
| 2016 – 2017 | Sam Nastase, Dartmouth College (Advisor: James Haxby)                     |
| 2015 – 2017 | Briana Robustelli, University of Colorado Boulder (Advisor: Mark Whisman) |

### Specialist Committee

|      |   |
|------|---|
| 2020 | Chris Welker (Advisor: Thalia Wheatley) |
| 2020 | Caroline Lee (Advisor: Jeremy Manning)  |
| 2019 | Kirsten Ziman (Advisor: Jeremy Manning) |

|      |  |
|------|--|
| 2019 | Mira Nenchev (Advisor: Thalia Wheatley)    |
| 2018 | Sophie Wohltjen (Advisor: Thalia Wheatley) |
| 2018 | Lucy Owen (Advisor: Jeremy Manning)        |
| 2017 | Feilong Ma (Advisor: James Haxby)          |
| 2017 | Vassiki Chauhan (Advisor: Ida Gobbin)      |

#### Undergraduate Thesis & Independent Research Project

|      |  |
|------|--|
| 2021 | Anthony Milne (QSS Independent Research Project)   |
| 2021 | Maryam Iqbal (Neuroscience Thesis)   |
| 2021 | Liza Begunova (Neuroscience Thesis)  |
| 2021 | Emily Chen (Neuroscience Thesis)   |
| 2021 | Kenny Ngyuen (Neuroscience Independent Research Project)   |
| 2021 | Xiao Li (Neuroscience Independent Research Project)  |
| 2020 | Paige Whittemore (Psychology Thesis) – won Benjamin G. Benner 1969 Award for Excellence in Psychology                                  |
| 2020 | Hailey Scherer (Cognitive Science Thesis)  |
| 2020 | Sophie Byrne (Psychology Thesis) – won Lt. William Brewster Nickerson 1964 Psychology and Brain Sciences Prize                         |
| 2020 | Max Farrens (Neuroscience Thesis) – won Robert N Leaton Prize for Best Neuroscience Thesis   |
| 2020 | Julia Potter (Psychology Thesis)   |
| 2020 | Jessica Kobsa (Senior Fellowship Examining Committee)  |
| 2019 | Madeleine Waters (Psychology Thesis w/ Sarah Lord)   |
| 2019 | Tucker Brown (QSS Thesis)  |
| 2019 | Karina Lopez (Neuroscience Independent Research Project)   |
| 2019 | Nathan Greenstein (Cognitive Science Independent Research Project)   |
| 2019 | Samantha Milne (Cognitive Science Independent Research Project)  |
| 2019 | Caitlyn Lee (Psychology/Computer Science w/ Thalia Wheatley)   |
| 2019 | Paxton Fitzpatrick (Psychology Thesis w/ Jeremy Manning) – won Lt. William Brewster Nickerson 1964 Psychology and Brain Sciences Prize |
| 2018 | Arati Gangadharan (Neuroscience Thesis)  |
| 2018 | Sushmita Sadhukha (Neuroscience Independent Research Project)  |
| 2018 | Zohra Aslami (Neuroscience Thesis w/ Wilder Doucette)  |
| 2018 | Elizabeth Reynolds (Psychology Thesis w/ Thalia Wheatley)  |
| 2017 | Dawit Workie (QSS Thesis)  |
| 2017 | Hirsh Elhence (Neuroscience Independent Research Project)  |
| 2017 | Helen Schlactenhafen (Psychology Independent Research Project)   |
| 2016 | Dan Whitcomb (Computer Science Independent Research Project)   |

#### Ad-hoc Reviewing (Papers, Grants, Proposals)

Behavioral Sciences, Brain and Cognition, Brain Research, Cerebral Cortex, Cognitive Affective Behavioral Neuroscience, Cognitive Computation, DFG – German Research Federation, eLife, Emotion, Rotterdam School of Management, Erasmus University, Evolution and Human Behavior, Frontiers in Neuroscience, Journal of Cognitive Neuroscience, Journal of Neuroscience, Journal of Economic Psychology, Human Brain Mapping, Nature Communications, Nature Human Behavior, Nature Neuroscience, Neuroimage, Neuron, NSF – National Science Foundation, Perspectives in Psychological Science, PLoS One, PLoS Computational Biology, Proceedings for the National Academy of Science, Psychological Science, Science Advances, Psychological Review, Science, Scientific Reports, Social Cognitive Affective Neuroscience, Trends in Cognitive Science, University of Trento, Vermont Genetic Network

Software/Programming Skills (<http://github.com/ljchang>)

Scientific Computing (Python, Matlab, Bash), Statistics (R, Stan, SAS), Brain Imaging (Nipy, FSL, SPM), Web Development (Flask, Meteor)

## Professional Memberships

Society for Neuroscience, Society for Affective Neuroscience, Society for Social Neuroscience, Society for Social Affective Neuroscience, Association for the Advancement of Affective Computing, Society for Social and Personality Psychology, Society for Neuroeconomics, Organization for Human Brain Mapping, Cognitive Neuroscience Society, American Psychological Society