

**CURRICULUM VITAE**  
**Sook-Lei Liew, PhD, OTR/L**  
**August 13, 2020**

**I. BIOGRAPHICAL INFORMATION**

PERSONAL INFORMATION:

|                 |  |
|-----------------|--|
| School/Division | Herman Ostrow School of Dentistry of USC<br>Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy |
| Office Address  | Mark and Mary Stevens Neuroimaging and Informatics Institute<br>2025 Zonal Avenue<br>Los Angeles, CA 90089           |
| Telephone       | 323-865-1755   |
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| E-mail          | sliew@usc.edu  |
| Website         | <a href="http://npnl.usc.edu">http://npnl.usc.edu</a>  |

UNIVERSITY EDUCATION:

Professional Education or Doctoral Education

|           |   |
|-----------|---|
| 2008-2012 | <b>Ph.D. in Occupational Science, concentration in Cognitive Neuroscience</b><br>Division of Occupational Science and Occupational Therapy<br>Brain and Creativity Institute, Dornsife College of Letters, Arts and Sciences<br>University of Southern California<br>Advisor: Dr. Lisa Aziz-Zadeh |
| 2006-2008 | <b>M.A. in Occupational Therapy</b><br>Division of Occupational Science and Occupational Therapy<br>University of Southern California   |

Undergraduate Education

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|-----------|--|
| 2002-2006 | <b>B.A. in Kinesiology, concentration in Sports Medicine; B.A. in English (magna cum laude)</b><br>Department of Kinesiology<br>Department of English<br>Rice University |
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POSTDOCTORAL TRAINING:

Training and Fellowships

- 2012-2014     **Postdoctoral Fellow**  
 Human Cortical Physiology & Stroke Neurorehabilitation Section  
 National Institute of Neurological Disorders and Stroke  
 National Institutes of Health  
 Advisor: Dr. Leonardo Cohen
- 2014           **Visiting Research Fellow**  
 Human Brain Physiology and Stimulation Laboratory  
 Department of Physical Medicine and Rehabilitation  
 Johns Hopkins School of Medicine  
 Advisor: Dr. Pablo Celnik
- 2013           **Visiting Research Fellow**  
 Applied Neurotechnology Laboratory  
 Institute of Medical Psychology and Behavioral Neurobiology  
 University of Tübingen  
 Advisor: Dr. Niels Birbaumer & Dr. Surjo Soekadar

ACADEMIC APPOINTMENTS:

- 2015-Present     **Assistant Professor**  
 Mrs. T.H. Chan Division of Occupational Science and Occupational Therapy,  
 Division of Biokinesiology and Physical Therapy,  
 Ostrow School of Dentistry  
 University of Southern California
- 2015-Present     **Director**  
 Neural Plasticity and Neurorehabilitation Laboratory  
 University of Southern California
- 2015-Present     **Assistant Professor (Training Faculty)**  
 Neuroscience Graduate Program  
 University of Southern California
- 2015-Present     **Assistant Professor (Courtesy Joint Appointment)**  
 Department of Neurology, Keck School of Medicine  
 University of Southern California
- 2018-Present     **Assistant Professor (Courtesy Joint Appointment)**  
 Department of Biomedical Engineering, Viterbi School of Engineering  
 University of Southern California

AFFILIATION APPOINTMENTS:

- 2015-Present     **Faculty Member Affiliate**  
 Mark and Mary Stevens Neuroimaging and Informatics Institute  
 University of Southern California

2016-Present

**Researcher**

Rancho Research Institute

Rancho Los Amigos National Rehabilitation Center

## II. SCHOLARLY ACTIVITIES

### GRANTS AWARDED:

#### External Grants (Federal/Corporate Funding)

Principal Investigator/Co-Principal Investigator

#### CURRENT

04/2020-04/2025

**National Institute of Neurological Disorders and Stroke (NINDS/NIH)**

Research Project Grant

*Award:* R01 NR105591

*Role:* Principal Investigator

*Title:* Effects of Global Brain Health on Sensorimotor Recovery After Stroke

*Percentage of Effort:* 25%

*Funding:* \$3,115,396

*Overall Aims:* The objective of this five-year research grant is to examine the neurobiology of post-stroke recovery within three weeks and three months after stroke. Specifically, this grant will examine the influence of measures of global brain health (e.g., structural atrophy, white matter hyperintensities, perivascular spaces) on stroke recovery using both retrospective data collected through my role as chair of the ENIGMA Stroke Recovery working group, and prospective data from N=144 collected across four geographically diverse research sites.

04/2017-12/2020

**National Institute for Child Health & Human Development (NICHD/NIH)**

Mentored Career Development Grant

*Award:* K01 HD091283

*Role:* Principal Investigator

*Title:* Big Data Neuroimaging to Predict Motor Behavior After Stroke

*Percentage of Effort:* 75%

*Funding:* \$532,764

*Overall Aims:* The objective of this four-year mentored career development award is to meta-analyze MRI and behavioral data from thousands of individuals after stroke by bringing together data from research and clinical sites worldwide as the chair of the ENIGMA Stroke Recovery consortium.

04/2018-12/2020

**National Institute of Aging (NIA/NIH)**

Administrative Supplement to K01 HD091283

*Role:* Principal Investigator

*Funding:* \$269,551

*Supplement Aims:* The goal of this administrative supplement is to apply the big data neuroimaging approach developed in my K01 to explore cross-disorder relationships between stroke recovery and Alzheimer's disease and related dementias.

## COMPLETED

09/2017-08/2019

### **US Army Research Office**

*Award:* W911NMF-14-D-0005

*Role:* Co-Principal Investigator (PI: D. Krum)

*Title:* Cortically Coupled Computing for Augmented Reality

*Percentage of Effort:* 5%

*Funding:* \$1,100,000

*Overall Aims:* This funding supported innovative work to develop and assess novel virtual and augmented reality platforms integrated with brain computer interfaces to enhance human military performance.

01/2016-12/2018

### **American Heart Association (AHA)**

National Innovative Research Grant

*Award:* 16IRG26960017

*Role:* Principal Investigator

*Title:* REINVENT: A Closed-Loop VR Neurofeedback System for Motor Recovery after Severe Stroke

*Percentage of Effort:* 20%

*Funding:* \$149,446

*Overall Aims:* This novel project aimed to develop and test a portable, affordable brain computer interface for individuals with severe stroke. It uses 3D-printed components for electroencephalography and electromyography and provides biological feedback via immersive virtual reality.

12/2016-06/2017

### **NIH Center for Large Data Research and Data Sharing in Rehabilitation (CLDR)**

Category 2 (Data Sharing and Archiving) Pilot Grant

*Award:* P2CHD065702

*Role:* Principal Investigator

*Title:* ATLAS: Anatomical Tracings of Lesions after Stroke

*Funding:* \$10,000

*Overall Aims:* The goal of this Category 2 Pilot award was to develop and archive an open source large dataset (N>300) of manually segmented lesions and T1-weighted MRI images from individuals after stroke.

09/2016-12/2016

### **NIH BD2K Centers Coordination Center Hackathon Grant**

*Role:* Principal Investigator

*Title:* Brainhack LA 2016: Big Data Tools for Connectomics

*Funding:* \$3,000

*Overall Aims:* This grant supported a neuroscience hackathon that I organized, which brought together two NIH BD2K centers (ENIGMA, Big Data to Knowledge) and one NIH P41 center (Center for Reproducible Neuroimaging) and focused on developing open source tools for managing big data connectomics research (genomics, neuroimaging connectomics, and more).

01/2015-03/2017

**National Institute for Child Health & Human Development (NICHD/NIH)**  
Rehabilitation Research Career Development (RRCDD) Program

*Award:* K12 HD055929

*Role:* Principal Investigator (*RRCDD K12 Principal Investigator: K. Ottenbacher*)

*Title:* Noninvasive Brain Stimulation and Neuroimaging to Characterize and Stimulate Recovery after Stroke

*Percentage of Effort:* 75%

*Funding Offered:* \$375,000

*Overall Aims:* The goals of this career development award were to use neuroimaging to identify potential neuroanatomical predictors of responsiveness to noninvasive brain stimulation after stroke. The award period was shortened due to my accepting and transitioning to an NIH K01 award in 04/2017.

05/2014-12/2014

**National Institute of Neurological Disorders and Stroke (NINDS/NIH)**  
Intramural Competitive Fellowship Award (F32 Equivalent)

*Role:* Principal Investigator

*Title:* Real-time fMRI Neurofeedback for Motor Recovery after Stroke

*Funding Offered:* \$147,660

*Overall Aims:* This three-year competitive postdoctoral fellowship supported my work testing a novel real-time fMRI connectivity-based brain computer interface for individuals with stroke. The award period was shortened due to my accepting and transitioning to a faculty position in 01/2015.

09/2013-10/2013

**German Academic Exchange Service (Deutscher Akademischer Austauschdienst; DAAD)**

Research Grant

*Role:* Principal Investigator

*Title:* Real-time fMRI Neurofeedback for Motor Recovery After Stroke

*Funding:* \$3,000

*Overall Aims:* This two-month competitive research award supported my ability to work in Germany on developing the methods for a novel real-time fMRI connectivity-based brain computer interface for individuals with stroke.

08/2009-07/2012

**National Science Foundation**  
Graduate Research Fellowship

*Award:* NSF 2009072048

*Role:* Principal Investigator

*Title:* Experience-dependent Modulations of the Action Observation Network using fMRI

*Funding:* \$124,000

*Overall Aims:* This work used functional MRI to explore changes in the action observation network (comprised of premotor and parietal motor regions) following motor, visual, and social experiences.

06/2008-09/2008

**National Science Foundation**

East Asia & Pacific Summer Institutes

*Award:* NSF 0813067

*Role:* Principal Investigator

*Title:* Cultural Effects on the Neural Substrates for Empathy

*Funding:* \$5,637

*Overall Aims:* This funding supported a summer research project in China, using fMRI to explore cultural effects on motor and social cognitive networks.

Co-Investigator, Collaborator, or Consultant

**CURRENT**

07/2017-03/2021

**National Institute for Child Health & Human Development and National Institute of Nursing Research (NICHD, NINR/NIH)**

*Award:* R01NR105591

*Role:* Co-Investigator and Site Principle Investigator (PIs: E.A. Holman, S.C. Cramer)

*Title:* Genetic Variations, Stress, and Functional Outcomes After Stroke Rehabilitation

*Anticipated Funding:* \$25,988

*Overall Aims:* This project aims to examine how stress and genetic makeup affect rehabilitation outcomes following stroke, using brain imaging, genetic analyses, and longitudinal behavioral assessments.

**COMPLETED**

07/2017-06/2018

**National Science Foundation**

SBIR Phase I

*Award:* NSF 1721266

*Role:* Consultant (PI: B. Moeinzadeh)

*Title:* Augmented Reality for Arm and Hand Rehabilitation Post-stroke

*Funding:* \$224,916

*Overall Aims:* This award supported the development and testing of novel commercial augmented reality systems to promote arm and hand rehabilitation after stroke.

## **Internal Grants (University Funding)**

### Principal Investigator

#### **CURRENT**

09/2019-08/2022

#### **USC Collaboration Award**

*Role:* Principal Investigator

*Title:* USC SensoriMotor Assessment and Rehabilitation Training in Virtual Reality Center (USC SMART-VR Center)

*Funding:* \$90,000 (\$30,000 per year)

*Overall Aims:* This grant supports the development and expansion the USC Center for SensoriMotor Assessment and Rehabilitation Training in Virtual Reality. This center brings together individuals from across the university for collaborative projects and center grant applications related to virtual technologies for healthcare.

#### **COMPLETED**

06/2008-07/2009

#### **University of Southern California Provost's Ph.D. Fellowship**

*Role:* Principal Investigator

*Funding Offered:* \$120,000

*Overall Aims:* This two-year fellowship supported work using functional MRI to explore changes in the action observation network (comprised of premotor and parietal motor regions) following motor, visual, and social experiences. The award period was shortened due to my accepting and transitioning to an NSF Graduate Research Fellowship on 08/2009.

### Co-Investigator, Collaborator, Consultant

#### **CURRENT**

08/2020-09/2021

#### **USC Provost New Strategic Directions for Research Award**

*Role:* Co-Investigator (PI: V. Patel)

*Title:* Developing Actionable Insights for Maintaining Brain Health through Artificial Intelligence

*Funding:* \$119,000

*Overall Aims:* This grant supports the development and application of deep learning methods to identify brain health measures across a clinically-diverse dataset of over 6,500 individuals.

#### **COMPLETED**

11/2017-11/2018

#### **USC Division of Biokinesiology and Physical Therapy Seed Grant**

*Role:* Co-Investigator (PI: J. Finley)

*Title:* USC SensoriMotor Assessment and Rehabilitation Training in Virtual Reality Center (USC SMART-VR Center)

*Funding:* \$15,000

*Overall Aims:* This grant supported the creation and development of a new USC Center for SensoriMotor Assessment and Rehabilitation Training in Virtual Reality. This center brought together individuals from around the university together for collaborative projects and center grant applications, and formed the basis for the funded USC Collaboration Award (2019-2022).

## GRANTS PENDING:

### External Grants (Federal/Corporate Funding)

#### Co-Investigator, Collaborator, Consultant

04/2021-03/2025

#### **National Institute of Neurological Disorders and Stroke (NINDS/NIH)**

*Role:* Co-Investigator (PI: C. Velozo)

*Title:* Personalized PRO (Patient Reported Outcome) Measurement to Optimize Clinical Interventions for Neurological Patients

*Funding:* \$1,818,715

*Overall Aims:* This study will implement item response theory (IRT) and regression statistical analysis of the Stroke Impact Scale (SIS) patient reported outcomes (PROs) to personalize stroke rehabilitation treatment, accurately monitor patient-centered clinical change and explore the relationship of PROs and imaging biomarkers in patients with stroke.

## PUBLICATIONS:

*Single asterisk indicates direct student mentee; underline indicates senior author on publication; † denotes equal contributions.*

### Peer-Reviewed Journal Articles – Original Research

**2020**

1. Haugg, A., Sladky, R., Skouras, S., McDonald, A., Craddock, C., Kirschner, M., Herdener, M., Koush, Y., Keynan, J., Hendler, T., Kadosh, K.C., Zich, C., MacInnes, J., Adcock, A., Dickerson, K., Chen, N.-K., Young, K., Bodurka, J., SHuxia, Y., Becker, J., Auer, T., Schweizer, R., Emmert, K., Haller, V., Van De Ville, D., Blefari, M.-L., Kim, D.-Y., Lee, J.-H., Marins, T., Fukuda, M., Sorger, B., Kamp, T., Papoutsis, M., **Liew, S.-L.**, Veit, R., Spetter, M., Weiskopf, N., & Scharnowski, F. (2020) Can we predict real-time fMRI neurofeedback success from pre-training brain activity? *Human Brain Mapping*. doi: 10.1002/hbm.25089 (IF 4.421)
2. **Liew, S.-L.**, Zavaliangos-Petropulu, A.\*, Jahanshad, N., Lang, C. E., Hayward, K. S., Lohse, K., Juliano, J. M.\*, Assogna, F., Baugh, L. A., Bhattacharya, A. K., Borich, M. R., Boyd, L. A., Brodtmann, A., Buetefisch, C. M., Byblow, W. D., Cassidy, J. M., Conforto, A. B., Craddock, R. C.,



Dimyan, M. A., Dula, A. N., Ermer, E., Etherton, M. R., Fercho, K. A., Gregory, C. M., Hadidchi, S., Holguin, J. A., Hwang, D. H., Jung, S., Kautz, S. A., Khlif, M. S., Khoshab, N., Kim, B., Kim, H., Kuceyeski, A., Lotze, M., MacIntosh, B. J., Margetis, J. L., Mohamed, F. B., Piras, F., Ramos-Murguialday, A., Richard, G., Roberts, P., Robertson, A. D., Rondina, J. M., Rost, N. S., Sanossian, N., Schweighofer, N., Shiroishi, M. S., Soekadar, S. R., Spalletta, G., Stinear, C. M., Suri, A., Tang, W. K. W., Thielman, G. T., Vecchio, D., Villringer, A., Ward, N. S., Werden, E., Westlye, L. T., Winstein, C., Wittenberg, G. F., Wong, K. A., Yu, C., Cramer, S. C., & Thompson, P. M. (2020). The ENIGMA Stroke Recovery Working Group: Big data neuroimaging to study brain-behavior relationships after stroke. *Human Brain Mapping*. doi: 10.1002/hbm.25015 (IF 4.421)

3. Marin-Pardo, O.\* †, Laine, C.M.\* †, Rennie, M., Ito, K.L., & **Liew, S.-L.** (2020). A virtual reality muscle-computer-interface for neurorehabilitation in chronic stroke: A pilot study. *Sensors*, 20(13). (IF 3.031)
4. Juliano, J.M.\* & **Liew, S.-L.** (2020). Transfer of motor skill between virtual reality viewed using a head-mounted display and conventional screen environments. *Journal of NeuroEngineering and Rehabilitation*, 17(1), 1-13. (IF 4.632)
5. Juliano, J.M.\*, Spicer, R., Lefebvre, S.\*, Jann, K., Ard, T., Santarnecchi, E., Krum, D.M., & **Liew, S.-L.** (2020). Embodiment is related to better performance on an immersive brain computer interface in head-mounted virtual reality: A pilot study. *Sensors*, 20(4). (IF 3.031)

## 2019

6. Lefebvre, S.\*, Jann, K., Schmiesing, A.\*, Ito, K.\*, Jog, M., Schweighofer, N., Wang, D.J. & **Liew, S.-L.** (2019) Differences in high-definition transcranial direct current stimulation over the motor hotspot versus the premotor cortex on motor network excitability. *Scientific Reports*, 9, 17605. (IF 4.26)
7. Wang, Y., Juliano, J.\*, **Liew, S.-L.**, McKinney, A., Payabyash, S. (2019). Voxel-wise density-based clustering of infarct lesions topographic distribution: The first steps towards a stroke atlas for the brain. *Neuroimage: Clinical*, 24, 101981 (IF 3.943)
8. Kim, H., Irimia, A., Hobel, S., Castelo-Blanco, R.I.E., Duffy, B., Zhao, L., Crawford, K., **Liew, S.-L.**, Clark, K., Law, M., Mukherjee, P., Manley, G., Van Horn, J. D., & Toga, A. (2019). LONI QC system: A semi-automated, web-based and freely-available environment for the comprehensive quality control of neuroimaging data. *Frontiers in Neuroinformatics*, 13, 60. (IF 3.87)
9. Vourvopoulos, A.\* , Marin-Pardo, O.\* , Lefebvre, S.\* , Neureither, M.\* , Saldana, D.\* , Jahng, E.\* , & **Liew, S.-L.** (2019) Effects of brain-computer interface with virtual reality (VR) neurofeedback: A pilot study in chronic stroke patients. *Frontiers in Human Neuroscience*, 13, 210. (IF 2.87)
10. Ito, K.\* , Kim, H., & **Liew, S.-L.** (2019). A comparison of automated lesion segmentation approaches for chronic stroke T1-weighted MRI data. *Human Brain Mapping*. <https://doi.org/10.1002/hbm.24729> (IF 4.927)
11. Wathugala, M.\* , Saldana, D.\* , Anglin, J.M.\* , Chan, J.\* , & **Liew, S.-L.** (2019) Mindfulness meditation effects on post-stroke spasticity: A feasibility study. *Journal of Evidence-Based Integrative Medicine*, 24, 2515690X1985594.
12. Santarnecchi, E., Sprugnoli, G., Bricolo, E., Costantini, G., **Liew, S.-L.**, Musaeus, C., Salvi, C., Pascual-

Leone, A., Rossi, A., & Rossi, S. (2019) Gamma tACS over the temporal lobe increases the occurrence of Eureka! moments. *Scientific Reports*, 9(1), 5778. (IF 4.12)

## 2018

13. Ito, K.L.\*, Kumar, A.\*, Zavaliangos-Petropulu, A.\*, Cramer, S.C. & **Liew, S.L.** (2018). Pipeline for Analyzing Lesions After Stroke (PALS). *Frontiers in Neuroinformatics*, 12, 63. (IF 3.87)
14. **Liew, S.-L.**, Thompson, T., Ramirez, J., Butcher, P., Taylor, J.A., & **Celnik, P.A.** (2018). Variable neural contributions to explicit and implicit learning during visuomotor adaptation. *Frontiers in Neuroscience*, 12, 610. (IF 3.88).
15. Dayan, E. †, Lopez-Alonso, V.†, **Liew, S.-L.**, **Cohen, L.G.** (2018). Distributed cortical structural properties contribute to motor cortical excitability and inhibition. *Brain Structure and Function*, 223(8), 3801-3812. (IF 4.23).
16. **Liew, S.-L.**, Garrison, K.A., Ito, K.L., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C.J., & **Aziz-Zadeh, L.** (2018). Laterality of post-stroke cortical motor activity during action observation is related to hemispheric dominance. *Neural Plasticity*, vol. 2018, Article ID 3524960, 14 pages. (IF 3.05)
17. Lopez-Alonso, V.†, **Liew, S.-L.**†, Fernandez del Olmo, M., Cheeran, B., Sandrini, M., Abe, M., & **Cohen, L.G.** (2018). A preliminary comparison of motor learning across different noninvasive brain stimulation paradigms shows no consistent modulations. *Frontiers in Neuroscience*, 12, 253. (IF 3.57).
18. **Liew, S.-L.**†, Anglin, J.M\*†., Banks, N.W.\*, Sondag, M., Ito, K.L.\*, Kim, H., Chan, J.\*, Ito, J\*, Jung, C.\*, Khoshab, N., Lefebvre, S.\*, Nakamura, W.\* , Saldana, D.\* , Schmiesing, A.\* , Tran, C.\* , Vo, D.\* , Ard, T., Heydari, P., Kim, B., Aziz-Zadeh, L., Cramer, S.C., Liu, J., Soekadar, S., Nordvik, J.-E., Westlye, L.T., Wang, J., Winstein, C.J., Yu, C., Ai, L., Koo, B., Craddock, R.C., Milham, M., Lakich, M., Pienta, A., & Stroud, A. (2018). A large, open source dataset of stroke anatomical brain images and manual lesion segmentations. *Scientific Data*, 5, 180011. doi:10.1038/sdata.2018.11. (IF 4.84).
19. Vourvopoulos, A.\* , Marin-Pardo, O.\* , Neureither, M.\* , Saldana, D.\* , Jahng, E.\* , & **Liew, S.-L.** (2019). Multimodal head-mounted virtual-reality brain-computer interface for stroke rehabilitation: A clinical case study with REINVENT. In: Chen, J., Fragomeni, G. (eds) *Virtual, Augmented and Mixed Reality. Multimodal Interaction. HCII 2019. Lecture Notes in Computer Science*, vol 11574, p. 165-179. Springer, Cham.

## 2017

20. Sprugnoli, G., Rossi, S., Emmerdorfer, A., Rossi, A., **Liew, S.-L.**, Tatti, E., di Lorenzo, G., Pascual-Leone, A., & **Santarnecchi, E.** (2017). Neural correlates of Eureka moment. *Intelligence*, 62, 99-119, doi: 10.1016/j.intell.2017.03.004. (IF 2.98)
21. Anglin, J.\*, Sugiyama, T.\* , & **Liew, S.-L.** (2017). Visuomotor adaptation in head-mounted virtual reality versus conventional training. *Scientific Reports*, 7, doi: 10.1038/srep45469. (IF 4.26)

22. Spicer, R., Anglin, J.\*, Krum, D. M., & **Liew, S. L.** (2017). REINVENT: A low-cost, virtual reality brain-computer interface for severe stroke upper limb motor recovery. *Virtual Reality (VR), 2017 IEEE*. doi: 10.1109/VR.2017.7892338
23. Anglin, J.\*, Saldana, D.\*, Schmiesing, A. \*, & **Liew, S. L.** (2017). Transfer of a skilled motor learning task between virtual and conventional environments. *Virtual Reality (VR), 2017 IEEE*. doi: 10.1109/VR.2017.7892346

## 2016

24. **Liew, S.-L.**, Rana, M., Cornelsen, S., Furtunato de Barros Filho, M., Birbaumer, N., Sitaram, R., Cohen, L., & **Soekadar, S.** (2016). Improving motor cortico-thalamic communication after stroke using real-time fMRI connectivity-based neurofeedback. *Neurorehabilitation and Neural Repair, 30*(7), 671-675. (IF 4.11)

## 2013

25. **Liew, S.-L.**, Sheng, T., Margetis, J. & **Aziz-Zadeh, L.** (2013). Both novelty and expertise increase action observation network activity. *Frontiers in Human Neuroscience, 7*, 541. (IF 3.21)
26. Garrison, K.A., Wong, S., **Liew, S.-L.**, Aziz-Zadeh, L., & **Winstein, C.** (2013) Modulating the motor system by action observation after stroke. *Stroke*. doi: 10.1161/STROKEAHA.113.001105 (IF 6.03)
27. **Liew, S.-L.** Sheng, T. & **Aziz-Zadeh, L.** (2013). Experience with an amputee modulates one's own sensorimotor regions during action observation. *Neuroimage, 69*, 138-145. doi:10.1016/j.neuroimage.2012.12.028 (IF 5.84)

## 2012

28. **Aziz-Zadeh, L.**, **Liew, S.-L.**, & Dandekar, F. (2012). Exploring the neural correlates of visual creativity. *Social Cognitive Affective Neuroscience, 8*(4), 475-80. (IF 3.94)

## 2011

29. Aziz-Zadeh, L., Sheng, T., **Liew, S.-L.**, & **Damasio, H.** (2011). Understanding otherness: The neural basis of action understanding and empathy in a congenital amputee. *Cerebral Cortex, 22*(4), 811-9. doi:10.1093/cercor/bhr139 (IF 6.56)
30. **Liew, S.-L.**, & **Aziz-Zadeh, L.** (2011). The neuroscience of language in occupations: A review of findings from brain and behavioral sciences. *Journal of Occupational Science, 18*(2), 97-114.
31. **Liew, S.-L.**, Ma, Y., Han, S., & **Aziz-Zadeh, L.** (2011). Who's afraid of the boss: Cultural differences in social hierarchies modulate self-face recognition in Chinese and Americans. *PLoS ONE 6*(2): e16901. doi:10.1371/journal.pone.0016901 (IF 2.81)
32. **Liew, S.-L.**, Han, S., & **Aziz-Zadeh, L.** (2011). Familiarity modulates mirror neuron and mentalizing regions during intention understanding. *Human Brain Mapping, 32*, 1986-1997. doi: 10.1002/hbm.21164 (IF 4.53)

## Peer-Reviewed Journal Articles – Other (Reviews, Perspectives)

2020

33. Saldana, D.\* †, Neureither, M.\* †, Schmiesing, A.\* †, Jahng, E.\* †, Kysh, L., Roll, S., & **Liew, S.-L.** (2020). Applications for head-mounted display virtual reality in adult physical rehabilitation: A scoping review. *American Journal of Occupational Therapy*, 74(5), 7405205060p1-15. (IF 2.868)
34. **Thompson, P.**, Jahanshad, N., Ching, C.R.K., Salminen, L., Thomopoulos, S.I., Bright, J., Baune, B.T., Bertolín, S., Bralten, J., Bruin, W.B., Bülow, R., Chen, J., Chye, Y., Dannlowski, U., de Kovel, C.G., Donohoe, G., Eyler, L., Faraone, S.V., Favre, P., Filippi, C., Frodl, T., Garijo, D., Gil, Y., Grabe, H.J., Grasby, K.L., Hajek, T., Han, L.K.M., Hatton, S.N., Hilbert, K., Ho, T.C., Holleran, L., Homuth, G., Hosten, N., Houenou, J., Ivanov, I., Jia, T., Kelly, S., Klein, M., Kwon, J.S., Laansma, M.A., Leerssen, J., Lueken, U., Nunes, A., O'Neill, J., Opel, N., Piras, F., Piras, F., Postema, M., Pozzi, E., Shatkhina, N., Soriano-Mas, C., Spalletta, G., Sun, D., Teumer, A., Tilot, A.K., Tozzi, L., van der Merwe, C., Van Someren, E., van Wingen, G., Völzke, H., Walton, E., Wang, L., Winkler, A.M., Wittfeld, K., Wright, M.J., Yun, J.-Y., Zhang, G., Zhang-James, Y., Adhikari, B.M., Agartz, I., Aghajani, M., Aleman, A., Althoff, R.R., Altmann, A., Andreassen, O.A., Baron, D.A., Bartnik-Olson, B.L., Bas-Hoogendam, J.M., Baskin-Sommers, A., Bearden, C.E., Berner, L.A., Boedhoe, P.S.W., Brouwer, R.M., Buitelaar, J., Caeyenberghs, K., Cecil, C.A.M., Cohen, R.A., Cole, J., Conrod, P.J., De Brito, S.A., de Zwarte, S.M.C., Dennis, E.L., Desrivieres, S., Dima, D., Ehrlich, S., Esopenko, C., Fairchild, G., Fisher, S., Fouche, J.-P., Francks, C., Frangou, S., Franke, B., Garavan, H., Glahn, D.C., Groenewold, N.A., Gurholt, T.P., Gutman, B.A., Hahn, T., Harding, I., Hernaes, D., Hibar, D.P., Hillary, F., Hoogman, M., Pol, H.E.H., Jalbrzikowski, M., Karkashadze, G.A., Klapwijk, E., Knickmeyer, R.C., Kochunov, P., Koerte, I.K., Kong, X.-Z., **Liew, S.-L.**, Lin, A.P., Logue, M.W., Luders, E., Macciardi, F., Mackey, S., Mayer, A.R., McDonald, C.R., McMahon, A.B., Medland, S.E., Modinos, G., Morey, R.A., Mueller, S.C., Mukherjee, P., Namazova-Baranova, L., Nir, T.M., Olsen, A., Paschou, P., Pine, D., Pizzagalli, F., Rentería, M.E., Rohrer, J.D., Sämann, P.G., Schmaal, L., Schumann, G., Shiroishi, M.S., Sisodiya, S.M., Smit, D.J.A., Sønderby, I.E., Stein, D.J., Stein, J.L., Tahmasian, M., Tate, D.F., Turner, J., van den Heuvel, O.A., van der Wee, N., van der Werf, Y.D., van Erp, T.G.M., van Haren, N., van Rooij, D., van Velzen, L.S., Veer, I., Veltman, D.J., Villalon-Reina, J.E., Walter, H., Whelan, C.D., Wilde, E.A., Zarei, M., Zelman, V. (2019). ENIGMA and global neuroscience: a decade of large-scale studies of the brain in health and disease across more than 40 Countries. *Translational Psychiatry*, 10(1), 1-28. (IF 5.182)

2019

35. **Liew, S.-L.**, Schmaal, L., & **Jahanshad, N.** (2019). Collaborative efforts for understanding the human brain. *Frontiers in Neuroinformatics*, 13, 38. (IF 3.87)

2017

36. **Sainburg, R.**, **Liew, S.-L.**, Frey, S., & Clark, F. (2017). Promoting translational research between movement science, occupational science, and occupational therapy. *Journal of Motor Behavior*, 49(1), 1-7. (IF 1.33)
37. Lefebvre, S.\* †, & **Liew, S.-L.** (2017). Anatomical parameters of tDCS to modulate the motor system after stroke: A review. *Frontiers in Neurology*, 8, doi: 10.3389/fneur.2017.00029. (IF 3.55)

38. Sugiyama, T.\*, & **Liew, S.-L.** (2017). The effects of sensory manipulations on motor behavior: From basic science to clinical rehabilitation. *Journal of Motor Behavior*, 49(1), 67-77. (IF 1.33)

## 2016

39. **Craddock R**, Margulies D, Bellec P, Nolan Nichols B, Alcauter S, A. Barrios F, Burnod Y, J. Cannistraci C, Cohen-Adad J, De Leener B, Dery S, Downar J, Dunlop K, R. Franco A, Seligman Froehlich C, J. Gerber A, S. Ghosh S, J. Grabowski T, Hill S, Sólón Heinsfeld A, Matthew Hutchison R, Kundu P, R. Laird A, **Liew S-L**, J. Lurie D, G. McLaren D, Meneguzzi F, Mennes M, Mesmoudi S, O'Connor D, H. Pasaye E, Peltier S, Poline J-B, Prasad G, Fraga Pereira R, Quirion P-O, Rokem A, S. Saad Z, Shi Y, C. Strother S, Toro R, Q. Uddin L, D. Van Horn J, W. Van Meter J, C. Welsh R, Xu T. (2016) Brainhack: A collaborative workshop for the open neuroscience community. *GigaScience* 5:1-8. (IF 7.46)
40. Buch, E.†, **Liew, S.-L.**†, & **Cohen, L.** (2016). Plasticity of sensorimotor networks: Multiple overlapping mechanisms. *The Neuroscientist*, doi:10.1177/1073858416638641 (IF 7.39)

## 2014

41. **Liew, S.-L.**, Santarnecchi, E., Buch, E. & **Cohen, L.** (2014). Noninvasive brain stimulation (NIBS) in neurorehabilitation: Local and distant effects for motor recovery. *Frontiers in Human Neuroscience*, 8, 378. [Special Issue on Neurorehabilitation & Neuroplasticity edited by Dr. Edward Taub] (IF 3.21)

## 2013

42. **Liew, S.-L.**, Agashe, H., Bhagat, N., Paek, A., & Bulea, T.C. (2013). A clinical roadmap for brain neural machine interfaces: Trainees Perspectives on the 2013 International Workshop. *Pulse IEEE*, 4(5), 44-48. (IF 0.50)

## 2012

43. **Liew, S.-L.**, Garrison, K., Werner, J., & **Aziz-Zadeh, L.** (2012). The mirror neuron system: Innovations and implications for occupational therapy. *OTJR: Occupation, Participation, and Health*. doi: 10.3928/15394492-20111209-01 (IF 0.52)

## **Books, Chapters, and Practice Guidelines**

1. **Liew, S.-L.**, Lin, D.J., & Cramer, S.C. (In press). Interventions to improve recovery after stroke. In: *Stroke: Pathophysiology, Diagnosis and Management, 7<sup>th</sup> Edition*. Editors: Grotta, Albers, Broderick, Kasner, Lo, Sacco, & Wong. Philadelphia: Elsevier.
2. **Liew, S.-L.** & **Aziz-Zadeh, L.** (2012). The mirror neuron system, social control, and language. In: *Handbook of Neurosociology*. Editor: Franks & Turner. New York: Springer.
3. **Liew, S.-L.** & **Aziz-Zadeh, L.** (2011). The mirror neuron system and social cognition. In: *From DNA to Social Cognition*. Editors: Ebstein, Shamay-Tsoory, & Chew. Hoboken: Wiley & Sons.

## **Published Abstracts**

1. Marin-Pardo, O.\* , Vourvopoulos, A.\* , Neureither, M.\* , Saldana, D.\* , Jahng, E.\* , & **Liew, S.-L.** (2019). Electromyography as a suitable input for virtual reality-based biofeedback in stroke rehabilitation. In: Stephanidis, C. (eds) *HCI International 2019 – Posters. Communications in Computer and Information Science*, vol 1032. Springer, Cham.
2. **Liew, S.-L.**, Jahanshad, N., Anglin, J.\* , Khoshab, N., Kim, B., Nakamura, W.\* , Nhoung, H., Rondina, J., Tran, C.\* , Borich, M., Boyd, L., Byblow, W., Craddock, R.C., Dimyan, M., Ermer, E., Goud, A., Kuceyeski, A., Lang, C., Li, J., Nichols, T., Roberts, P., Sanossian, N., Soekadar S., Stinear, C., Ward, N., Westlye, L. T., Winstein, C., Liu, J., Nicolas, T., Ramos, A., Roberts, P., Sanossian, N., Soekadar, S., Sondag, M., Stinear, C., Ward, N., Wang, J., Westlye, L.T., Winstein, C.J., Wittenberg, G. F., Yu, C., Cramer, S. C., & **Thompson, P. M.** (2018). Subcortical volumes associated with post-stroke motor performance vary across impairment severity, time since stroke, and lesion laterality: An ENIGMA Stroke Recovery analysis. *Stroke*, 49, Issue Suppl 1,49:ATMP48. (IF 6.03)
3. Ito, K.\* , **Liew, S.-L.**, Garrison, K., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C., & **Aziz-Zadeh, L.** (2017) Does the side of stroke matter? An fMRI study on the role of stroke laterality on the action observation network. *American Journal of Occupational Therapy*, 71, 7111505148p1. doi: [10.5014/ajot.2017.71S1-PO6105](https://doi.org/10.5014/ajot.2017.71S1-PO6105) (IF 2.32)
4. **Liew, S.-L.**, Jahanshad, N., Anglin, J.\* , Borges, V., Heydari, P., Aziz-Zadeh, L., Birbaumer, N., Borich, M., Boyd, L., Byblow, W., Craddock, C., Dimyan, M., Ermer, E., Goud, A., Lang, C.E., Li, J., Liu, J., Nichols, T., Ramos, A., Roberts, P., Sanossian, N., Stinear, C., Ward, N., Wang, J., Westlye, L.T., Kuceyeski, A., Winstein, C.J., Wittenberg, G.F., Yu, C., Cramer, S.C., & **Thompson, P.M.** (2017). Effects of lesion laterality on post-stroke motor ability: An ENIGMA Stroke Recovery analysis. *Stroke*, 48, Issue Suppl 1, A14. (IF 6.03)
5. Ito, K.\* , & **Liew, S.-L.** (2016). Calculating the laterality index using FSL for stroke neuroimaging data. *GigaScience*, 5, 14-15. doi: [10.1186/s13742-016-0147-0-n](https://doi.org/10.1186/s13742-016-0147-0-n) (IF 7.46)
6. Kan, E., Anglin, J.\* , Borich, M., Jahanshad, N., Thompson, P, & **Liew, S.-L.** (2016). Facilitating big data meta-analyses for clinical neuroimaging through ENIGMA wrapper scripts. *GigaScience*, 5, 17-19. doi: [10.1186/s13742-016-0147-0-p](https://doi.org/10.1186/s13742-016-0147-0-p) (IF 7.46)

## **Dissertations and Theses**

- 2012 **Liew, S.-L.** Experience modulates neural activity during action understanding: Exploring sensorimotor and social cognitive interactions. PhD Dissertation, University of Southern California.

## **News Releases**

- 2020 “A trio of faculty members explore how VR can help combat neurological diseases.” USC News. Available as of 08/04/2020 at: <https://news.usc.edu/173412/neurological-diseases-vr-virtual-reality-alzheimers-parkinsons-stroke-usc-research/>

- 2020 “The Keck School secures millions for new research on the aging brain.” USC Health Science Campus News. Available as of 06/02/2020 at: <https://hscnews.usc.edu/the-keck-school-secures-millions-for-new-research-on-the-aging-brain>
- 2020 “Smart Squad.” USC Provost News. Available as of 05/27/2020 at: <https://www.provost.usc.edu/smart-squad/>
- 2019 “Virtual reality changes your brain.” Verizon News: Fourth Industrial Revolution. Available as of 12/03/2019 at: <https://www.verizon.com/about/our-company/fourth-industrial-revolution/virtual-reality-changes-your-brain>
- 2019 “How virtual reality may help stroke patients move their limbs.” Voice of America. Available as of 11/06/2019 at: <https://www.voanews.com/episode/how-virtual-reality-may-help-stroke-patients-move-their-limbs-4083196>
- 2019 “Bailey Ballinger finds out how brains work.” GoldiBlox and Fast Forward Girls. Available as of 08/28/2019 at: <https://www.youtube.com/watch?v=oMUOaKZLq8E> (799,905+ views)
- 2019 “Virtual reality research team earns USC Collaboration Fund grant.” HSC News. Available as of 06/24/2019 at: <https://hscnews.usc.edu/virtual-reality-research-team-earns-usc-collaboration-fund-grant/>”
- 2018 “How virtual avatars help stroke patients improve motor function.” PC Magazine. Available as of 3/8/2018 at: <https://www.pcmag.com/news/359198/how-virtual-avatars-help-stroke-patients-improve-motor-funct>
- 2018 “Largest open-source data set of brain MR exams of stroke patients now available for download.” DOTmed Healthcare Business News. Available as of 02/23/2018 at: <https://www.dotmed.com/news/story/41743>
- 2018 “USC releases MRI stroke dataset to spur AI research.” Health Data Management. Available as of 02/21/2018 at: <https://www.healthdatamanagement.com/news/usc-releases-mri-stroke-dataset-to-spur-ai-research>
- 2017 “VR could trick stroke victims’ brains towards recovery.” CNET. Available as of 10/15/2017 at: <https://www.cnet.com/news/vr-could-trick-stroke-victims-brains-toward-recovery/>
- 2017 “REINVENT: Leveraging virtual reality and neurofeedback to help with motor rehabilitation.” IEEE Xplore Innovation Spotlight. Available as of 08/16/2017 at: <http://ieeexplore-spotlight.ieee.org/article/motor-rehabilitation-virtual-reality-feedback/>
- 2017 “Using virtual reality – and mom’s sewing machine – for stroke rehab.” USC News. Available as of 06/12/2017 at: <https://news.usc.edu/122574/usc-researcher-uses-virtual-reality-and-her-mothers-sewing-machine-to-treat-stroke-survivors/>
- 2017 “Patients can teach the next generation of doctors, experts at Stanford Medicine X say.” Stanford University SCOPE Blog. Available as of 04/22/2017 at: <http://scopeblog.stanford.edu/2017/04/22/working-together-in-health-care-why-its-hard-and-what-works/>

- 2017 “Working together in health care: Why it’s hard and what works.” Santa Cruz Sentinel. Available as of 04/23/2017 at: <http://www.santacruzsentinel.com/article/NE/20170423/NEWS/170429874>
- 2017 “As the world of VR descends on SXSW, here are six must-see experiences.” Forbes. Available as of 03/08/2017 at: <https://www.forbes.com/sites/sethporges/2017/03/08/6-must-see-virtual-reality-experiences-at-this-years-sxsw/#7d63701f1bf3>
- 2017 “Tech’s new frontier: The human brain.” Campaign. Available as of 03/17/2017 at: <https://www.campaignlive.co.uk/article/techs-new-frontier-human-brain/1427743>
- 2013 “All in the mind: Hone movement skills just by thinking.” New Scientist. Available as of 11/15/2013 at: <https://www.newscientist.com/article/dn24576-all-in-the-mind-hone-movement-skills-just-by-thinking/>
- 2013 “Exercise for stroke patients’ brains.” Science Daily. Available as of 06/11/2013 at: <https://www.sciencedaily.com/releases/2013/06/130611130953.htm>
- 2012 “Too important to smile back: The ‘Boss Effect’” Wall Street Journal. Available as of 10/15/2012 at: <https://www.wsj.com/articles/SB10000872396390443624204578058854229152678>
- 2012 “Avatars and the Mirrorbox: Can humans hack empathy?” KQED Quest. Available as of 07/31/2012 at: <https://ww2.kqed.org/quest/2012/07/31/avatars-and-the-mirrorbox-can-humans-hack-empathy/>

## MAJOR PUBLIC PRESENTATIONS:

### Invited, International

1. **Liew, S.-L.** (forthcoming 2021, June). Personalized rehabilitation: Big data neuroimaging and personalized treatments. Distinguished Seminar Series, Imperial College London Biomedical Engineering Department. London, UK.
2. **Liew, S.-L.** (2020, May). Machine learning for MRI analyses in stroke rehabilitation. World Stroke Organization and European Stroke Organization Joint Meeting. Vienna, Austria. \*postponed to a virtual presentation in November due to COVID-19
3. **Liew, S.-L.** (2020, February). Moderator: How to identify target patient groups in stroke recovery and rehabilitation trials. ENIGMA Stroke Recovery Updates. International Stroke Conference. Los Angeles, CA
4. **Liew, S.-L.** (2019, June). ENIGMA Stroke Recovery Updates. ENIGMA Chairs Annual Meeting, Rome, Italy.
5. **Liew, S.-L.** (2017, September). Motor learning strategies and measurement. 7<sup>th</sup> International Symposium on Gait & Balance in Multiple Sclerosis: Neuroplasticity and Rehabilitation in MS. Portland, OR.



6. **Liew, S.-L.** (2017, June). Chair, Oral session on Neuroinformatics. Organization for Human Brain Mapping, Vancouver, Canada.
7. **Liew, S.-L.** (2017, June). ENIGMA Stroke Recovery Updates. ENIGMA Chairs Annual Meeting – Data Blitz, Vancouver, Canada.
8. **Liew, S.-L.** (2017, April). Occupational therapy, virtual reality and the brain. Medicine X | ED. Stanford, CA.
9. **Liew, S.-L.** (2016, June). ENIGMA Stroke Recovery. ENIGMA Leaders Planning Meeting, Geneva, Switzerland.
10. **Liew, S.-L.** (2016, June). Brain imaging, noninvasive brain stimulation and virtual reality for stroke rehabilitation. MindMaze, Lausanne, Switzerland.

### **Invited, National**

11. **Liew, S.-L.** (forthcoming 2020, October). Data Science. Co-presented with Scott Delp. NIH Rehabilitation Research 2020: Envisioning a Functional Future Meeting. Virtual platform.
12. **Liew, S.-L.** (2020, January). A large, open source dataset of stroke anatomical brain images and manual lesion segmentations (ATLAS). Center for Large Data Research and Data Sharing in Rehabilitation (CLDR) Annual Meeting. Galveston, TX.
13. **Liew, S.-L.** (2019, May). Big data neuroimaging for stroke recovery – ENIGMA Stroke Recovery. American Society for Neuroradiology. Boston, MA.
14. **Liew, S.-L.** (2019, May). Big data neuroimaging approaches for stroke rehabilitation research. Massachusetts General Hospital (MGH) Stroke Research Center. Boston, MA.
15. **Liew, S.-L.** (2018, November). Virtual reality for neurorehabilitation. AOTA Speciality Conference – Adult Rehabilitation. Los Angeles, CA.
16. **Liew, S.-L.** (2018, November). Keynote panel: Creating synergies between clinicians and researchers for knowledge mobilization. AOTA Speciality Conference – Adult Rehabilitation. Los Angeles, CA.
17. **Liew, S.-L.** (2018, November). Panel on big data approaches to power trials in StrokeNet. Stroke Recovery Workshop: Bridging the translational gap in stroke recovery and rehabilitation research. Bethesda, MD.
18. **Liew, S.-L.** (2018, October). Big data brain imaging and virtual reality for stroke rehabilitation. Core for Advanced Magnetic Resonance Imaging (CAMRI) seminar. Baylor College of Medicine, Houston, TX.
19. **Liew, S.-L.** (2018, October). Big data brain imaging for stroke: ICPSR data depositors tell all. ICPSR Data Fair Webinar.
20. **Liew, S.-L.** (2018, July). Large data to identify neural substrates of post-stroke motor behavior. Progress in Clinical Motor Control I: Neurorehabilitation. State College, PA.

21. **Liew, S.-L.** (2018, May). A large, open source dataset of stroke anatomical brain images and manual lesion segmentations (ATLAS). NIH NCMRR MR3 Network Bi-Monthly Webinar.
22. **Liew, S.-L.** (2018, March). Big data neuroimaging, virtual reality, and neuromodulation for stroke rehabilitation. Shirley Ryan Ability Lab, Chicago, IL.
23. **Liew, S.-L.** (2018, January). Big data neuroimaging, virtual reality, and neuromodulation for stroke rehabilitation. Clinically Applied Rehabilitation Research and Engineering (CARE) Seminar. University of Texas at Austin, Austin, TX.
24. **Liew, S.-L.** (2016, September). Big data neuroimaging and neuromodulation to promote motor recovery after stroke. Medical University of South Carolina, Charleston, SC.
25. **Liew, S.-L.** (2015, February). Neuromodulation of the human motor system to enhance learning. Center of Excellence for Visual and Neurocognitive Rehabilitation, Emory University/Atlanta VA, Atlanta, Georgia.
26. **Liew, S.-L.** (2014, February). Modulating the motor network in healthy individuals and after stroke. Washington University School of Medicine, St. Louis, MO.
27. **Liew, S.-L.** (2013, December). Modulating the motor network in healthy individuals and after stroke. University of Washington, Seattle, WA.
28. **Liew, S.-L.** (2013, August). Modulating the motor network in healthy individuals and after stroke. The Ohio State University, Columbus, OH.
29. **Liew, S.-L.** (2013, April). Engaging the action observation network in healthy controls and individuals with stroke. Johns Hopkins University, Baltimore, MD.
30. **Liew, S.-L.** (2011, October). Experience-dependent modulations of action observation networks in healthy and clinical populations. Virginia Tech Carillion Research Institute, Roanoke, VA.
31. **Liew, S.-L.** (2010, April). The EAPSI experience. Chair, Alumni Panel, National Science Foundation's East Asia & Pacific Summer Institutes. Washington, DC.
32. **Liew, S.-L.** (2009, April). EAPSI China. National Science Foundation's East Asia & Pacific Summer Institutes, Washington, DC.

**Invited, State/Regional/Local**

33. **Liew, S.-L.** (2019, September). Big data brain imaging, brain stimulation and virtual reality for stroke rehabilitation. USC Occupational Science Symposium. Los Angeles, California.
34. **Liew, S.-L.** (2019, September). Innovation through collaboration for stroke rehabilitation. USC Inauguration of President Carol L. Folt. Los Angeles, California.
35. **Liew, S.-L.** (2018, November). Virtual reality and the brain. In.flux Reality Mixer. Los Angeles, California.

36. **Liew, S.-L.** (2018, November). Big data brain imaging, brain stimulation and virtual reality for stroke rehabilitation. Orange County Stroke Workshop. Orange, California.
37. **Liew, S.-L.** (2018, September). Virtual reality for stroke rehabilitation. USC SMART-VR Symposium on Virtual Technologies for Health. University of Southern California, Los Angeles, CA.
38. **Liew, S.-L.** (2018, April). Big data neuroimaging, virtual reality, and neuromodulation for stroke rehabilitation. Neurorehabilitation Seminar. University of Southern California, Los Angeles, CA.
39. **Liew, S.-L.** (2017, July). Neuroimaging and neuromodulation to promote motor recovery after stroke. Grand Rounds. Cedars Sinai Medical Center, Los Angeles, CA.
40. **Liew, S.-L.** (2017, May). Neuroimaging and neuromodulation to promote motor recovery after stroke. Grand Rounds. Rancho Los Amigos, Downey, CA.
41. **Liew, S.-L.** (2017, February). Large scale neuroimaging and neuromodulation to promote motor recovery after stroke. USC Biomedical Engineering Department Seminar, Los Angeles, CA.
42. **Liew, S.-L.** (2016, July). New and emerging technologies for clients with motor impairments due to neurological injury. Keynote speaker. California Board of Occupational Therapy Annual Practice Forum, Los Angeles, CA.
43. **Liew, S.-L.,** (2016, June). Brain imaging, noninvasive brain stimulation and virtual reality for stroke rehabilitation. Payoff, Irvine, California.
44. **Liew, S.-L.** (2015, March). Neuromodulation of the human motor system and implications for stroke rehabilitation. Keynote Speaker, School of Dentistry Research Day, University of Southern California, Los Angeles, CA.
45. **Liew, S.-L.** (2014, April). New and emerging technologies for clients with motor impairments due to neurological injury. Invited speaker for Occupational Therapy Lunch with a Scholar, Johns Hopkins University, Baltimore, MD.
46. **Liew, S.-L.** (2014, February). Modulating the motor network in healthy individuals and after stroke. University of Southern California, Los Angeles, CA.
47. **Liew, S.-L.** (2013, March). New advances in stroke research. UCLA Southern California Stroke Recovery Group, Los Angeles, CA.
48. **Liew, S.-L.** (2012, September). Action observation and motor-related networks in chronic stroke patients. National Rehabilitation Hospital & Georgetown University, Washington D.C.
49. **Liew, S.-L.** (2011, November). Experience-dependent modulations of action observation networks in healthy and clinical populations. National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD.
50. **Liew, S.-L.** (2011, October). Experience and the action observation network. Social Cognitive Neuroscience Laboratory, Dr. Matthew Lieberman, UCLA, Los Angeles, CA.
51. **Liew, S.-L.** (2011, September). Who's the Boss: Cross-cultural differences in the workplace.

Mindshare LA, general public audience of over 350. Los Angeles, CA.

52. **Liew, S.-L.** & Aziz-Zadeh, L. (2010, March). The neuroscience of daily social interactions. USC Occupational Science 22<sup>nd</sup> Annual Symposium, Los Angeles, CA.

### **Refereed, International**

1. Vourvopoulos, A.\* , Marin-Pardo, O.\* , Neureither, M.\* , Saldana, D.\* , Jahng, E.\* , & **Liew, S.-L.** (July 2019). Multimodal head-mounted virtual reality training and brain-computer interaction for stroke rehabilitation: A clinical case study with REINVENT. 21<sup>st</sup> International Conference on Human-Computer Interaction, Orlando, FL.
2. **Liew, S.-L.** (2017, December). Immersive biologically-relevant neurofeedback in head-mounted virtual reality improves bci performance in healthy individuals. 3<sup>rd</sup> Real-Time Functional Imaging and Neurofeedback Conference. Nara, Japan.
3. **Liew, S.-L.** (2017, March). Virtual Reality and the brain. Panel discussion. South By Southwest (SXSW). Austin, TX.
4. **Liew, S.-L.** (2017, March). Virtual Reality and the brain. Panel discussion. IEEE Virtual Reality Conference. Los Angeles, CA.
5. **Liew, S.-L.**, Jahanshad, N., Anglin, J.\* , Borges, V., Heydari, P., Aziz-Zadeh, L., Birbaumer, N., Borich, M., Boyd, L., Byblow, W., Craddock, C., Dimyan, M., Ermer, E., Goud, A., Lang, C.E., Li, J., Liu, J., Nichols, T., Ramos, A., Roberts, P., Sanossian, N., Stinear, C., Ward, N., Wang, J., Westlye, L.T., Kuceyeski, A., Winstein, C.J., Wittenberg, G.F., Yu, C., Cramer, S.C., & Thompson, P.M. (2017, February). Effects of lesion laterality on post-stroke motor ability: An ENIGMA Stroke Recovery analysis. International Stroke Conference, Houston, TX.
6. **Liew, S.-L.** (2010, July). Action understanding of physically different others and empathy correlations. Riken Brain Science Institute Summer Program, Tokyo, Japan.

### **Refereed, National**

7. **Liew, S.-L.** (forthcoming 2020, October). Big data brain imaging and virtual reality for stroke rehabilitation. Refereed talk as part of symposium: Motor recovery after stroke. American Congress of Rehabilitation Medicine. Virtual platform.
8. **Liew, S.-L.** (2019, October). Reliability and reproducibility in neurorehabilitation research. Refereed symposium chair and speaker. American Society for Neurorehabilitation. Chicago, IL.
9. **Liew, S.-L.** (2019, October). Machine learning for the large-scale segmentation of MRI images after stroke. Refereed talk as part of symposium: Structure in complexity: Using machine learning in neurorehabilitation research. American Society for Neurorehabilitation. Chicago, IL.
10. Zavaliangos-Petropulu, A.\* & **Liew, S.-L.** (2018, September). Large-scale stroke lesion analysis with the ATLAS dataset. American Congress of Rehabilitation Medicine. Dallas, Texas.
11. Lefebvre, S.\* , Jann, K., Schmiesing, A.\* , Ito, K.\* , Jog, M., Qiao, Y., Cabeen, R., Shi, Y., Schweighofer, N., Wang, D.J. & **Liew, S.-L.** (2018, August). Exploring tDCS-induced changes in motor network

connectivity using HD-tDCS over primary motor versus premotor cortex. NYC Neuromodulation Conference and NANS Summer Series. New York, New York.

12. Ito, K.\*, Kim, H. & **Liew, S.-L.** (2018, June). Facilitating big data rehabilitation research: A comparison of automated lesion segmentation approaches for stroke MRI data. Occupational Therapy Summit of Scholars. Kansas University Medical Center, Kansas City, Kansas.
13. Ito, K.L.\*, **Liew, S.L.**, Garrison, K.A., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C.J., & Aziz-Zadeh, L. (April 2017). Does the side of stroke matter? An fMRI study on the role of stroke laterality on the action observation network. Selected for oral presentation as a Young Researcher at the American Occupational Therapy Association Annual Conference, Philadelphia, PA.
14. **Liew, S.-L.** (2016, November). 'Big data' for rehabilitation: Promises, pitfalls, and future potential. Refereed symposium chair and speaker. American Society for Neurorehabilitation. San Diego, CA.
15. **Liew, S.-L.** (2016, May). ENIGMA Stroke Recovery: Using big data neuroimaging to predict motor recovery. OT Summit of Scholars, Pittsburgh, PA.
16. **Liew, S.-L.**, Thompson, T., Ramirez, J.J., Butcher, P., Cohen, L., Taylor, J.A., & Celnik, P.A. (2015, May). Anodal transcranial direct current stimulation of dorsolateral prefrontal cortex and cerebellum enhance visuomotor adaptation. OT Summit of Scholars, Los Angeles, CA.
17. **Liew, S.-L.**, Gonzalez-Castillo, J., Horovitz, S., Roopchansingh, V., Tinaz, S., Hallett, M., & Cohen, L.G. (2014, May). Using neurofeedback from real-time fMRI connectivity patterns to enhance skilled motor performance. OT Summit of Scholars, Philadelphia, PA.
18. **Liew, S.-L.**, Soekadar, S., & Cohen, L. (2014, April). Brain computer interfaces (BCIs) for neurorehabilitation: Evidence and applications for occupational therapy. Refereed short course, American Occupational Therapy Association Annual Meeting, Baltimore, MD.
19. **Liew, S.-L.** (2013, April). Stroke and the action observation network. Refereed research presentation, American Occupational Therapy Association Annual Meeting, San Diego, CA.
20. **Liew, S.-L.** & Aziz-Zadeh, L. (2009, October). Playing with words: The active role of language in everyday occupations. Society for the Study of Occupations: USA Annual Meeting, New Haven, CT.

### **Refereed, State/Regional/Local**

21. **Liew, S.-L.**, Thompson, T., Ramirez, J.J., Butcher, P., Cohen, L., Taylor, J.A., & Celnik, P.A. (2014, December). Anodal tDCS of prefrontal cortex and cerebellum enhance different aspects of motor learning in a visuomotor adaptation task. Invited oral presentation, *Sensorimotor Research Day*, Johns Hopkins University, Baltimore, MD.

### **Peer-Reviewed Conference Posters**

1. Zavaliangos-Petropulu, A.\*, Tubi, M.A., Haddad, E., Zhu, A., Jahanshad, N., Thompson, P.M., & **Liew, S. L.** (2020, July). Automated hippocampal segmentation improved by convolutional neural network

approach in participants with history of cerebrovascular accident. *Alzheimer's Association International Conference*. Virtual platform.

2. Ito, K.L.\*, Cao, L., Reinberg, R.\*, Keller, B., Monterosso, J., Schweighofer, N., & **Liew, S.-L.** (2020, June). Imbalanced dual systems of decision making in stroke. *Organization for Human Brain Mapping Conference*. Virtual platform.
3. Zavaliangos-Petropulu, A.\*, Tubi, M.A., Haddad, E., Zhu, A., Braskie, M., Jahanshad, N., Thompson, P.M., & **Liew, S.-L.** (2020, June). Hippocampal segmentation accuracy in a stroke population improves with a deep convolutional neural network approach. *Organization for Human Brain Mapping Conference*. Virtual platform.
4. **Liew, S.-L.**, Kumar, A.\*, Suri, A.\*, Notter, M.P., Ito, K.\*, Raamana, P., & Keshavan, A. (2019, October). Braindrles: A crowd-sourcing tool for stroke lesion segmentation quality control. *Society for Neuroscience*. Chicago, IL.
5. Zavaliangos-Petropulu A\*, Bhattacharya AK, Bigjahan B, Borich MR, Brown TR, Buetefisch CM, Byblow WD, Conforto AB, Craddock RC, Cramer SC, Dula AN, Gill k, Goud A, Hadidchi S, Holguin JA, Hwang DH, Khoshab N, Kim H, Kuceyeski A, Lang CE, Lotze M, MacIntosh BJ, Manzano M, Margetis JL, Ramos-Murguialday A, Roberts P, Robertson AD, Rondina JM, See K, Shiroishi MS, Stinear CM, Thielman G, Ward NS, Winstein C, Wittenberg GF, Wong KA, Jahanshad N, Thompson PM, **Liew, S.-L.** (2019, October). Ipsilesional hippocampal volume is directly associated with motor performance in chronic stroke patients: An ENIGMA Stroke Recovery analysis. *Society for Neuroscience (SfN) Annual Meeting 2019*, Chicago, IL.
6. Zavaliangos-Petropulu, A.\*, Jahanshad, N., Thompson, P.M., **Liew S.-L.** (2019, October). Corticospinal tract lesion load, but not lesion volume, improves hippocampal volume prediction model in chronic stroke patients. *American Society for Neurorehabilitation (ASNR) Annual Meeting 2019*, Chicago, IL.
7. Marin-Pardo, O.\*, Vourvopoulos, A.\*, Neureither, M.\*, Jahng, E.\*, Saldana, D.\*, & **Liew, S.-L.** (2019, October) Feasibility of electromyography biofeedback in stroke rehabilitation: A case series. *American Society for Neurorehabilitation (ASNR) Annual Meeting 2019*, Chicago, IL.
8. Marin-Pardo, O.\*, Vourvopoulos, A.\*, Neureither, M.\*, Saldana, D.\*, Jahng, E.\*, & **Liew, S.-L.** (2019, July). Electromyography as a suitable input for virtual reality-based biofeedback in stroke rehabilitation. *21<sup>st</sup> International Conference on Human-Computer Interaction*, Orlando, FL.
9. Juliano J.M.\*, Saldana D.\*, Schmiesing A.\*, **Liew S.-L.** (2019, July). Experience with head-mounted virtual reality (HMD-VR) predicts transfer of HMD-VR motor skills. *Int. Conference for Virtual Rehabilitation*, Tel Aviv, Israel.
10. Zavaliangos-Petropulu A.\*, Jahanshad N., Thompson P.M., **Liew S.-L.** (2019, June). Evaluating stroke lesion overlap with subcortical structures and post-stroke motor performance. *Organization for Human Brain Mapping Annual Meeting*, Rome, Italy.
11. Ito, K.L.\*, Zavaliangos-Petropulu, A.\*, Cramer, S.C. & **Liew, S.-L.** (2019, June). Corticospinal tract lesion load from various motor origins predict motor outcome. *Organization for Human Brain Mapping Annual Meeting*, Rome, Italy.

12. Lefebvre, S.\*, Jann, K., Schmiesing, A.\*, Ito, K.\*, Jog, M., Qiao, Y., Cabeen, R., Shi, Y., Schweighofer, N., Wang, D.J. & **Liew, S.-L.** (2018, Nov) Changes in motor network physiology and complexity with HD-tDCS and fMRI. *Society for Neuroscience*. San Diego, CA.
13. Juliano, J.\*, Spicer, R., Saldana, D.\*, Finnegan, C.\*, Lefebvre, S.\*, Jann, K., Ard, T., Santarnecchi, E., Krum, D., & **Liew, S.-L.** (2018, Nov) Embodiment improves performance on an immersive brain computer interface in head-mounted virtual reality. *Society for Neuroscience*. San Diego, CA.
14. Saldana, D.\*, Wathugala, M.\*, Anglin, J.\*, Chan, J.\*, & **Liew, S.-L.** (2018, October) Mindfulness meditation effects on stroke survivors: A pilot study. *Occupational Therapy Association of California Annual Conference and Expo*. Pasadena, CA.
15. Vourvopoulos, A.\*, Marin-Pardo, O.\*, Neureither, M.\*, Singh, H.\*, & **Liew, S.-L.** (2018, Sept) REINVENT 3.0: Multimodal virtual reality and brain-computer interfacing for stroke rehabilitation. *USC SMART-VR Symposium on Virtual Technologies for Health*. Los Angeles, CA.
16. Marin-Pardo, O.\*, Vourvopoulos, A.\*, Singh, H.\*, Neureither, M.\*, & **Liew, S.-L.** (2018, Sept) Flexible architecture for EMG acquisition for a virtual reality-based brain computer interface. *USC SMART-VR Symposium on Virtual Technologies for Health*. Los Angeles, CA.
17. Lefebvre, S.\*, Jann, K., Schmiesing, A.\*, Ito, K.\*, Jog, M., Qiao, Y., Cabeen, R., Shi, Y., Schweighofer, N., Wang, D.J. & **Liew, S.-L.** (2018, Aug) Exploring tDCS-induced changes in motor network connectivity using HD-tDCS over primary motor versus premotor cortex. *NYC Neuromodulation Conference and NANS Summer Series*. New York, New York. \*Selected for an oral highlight presentation.
18. Ito, K.\*, Garrison, K., Heydari, P., Sobhani, M., Werner, J., Winstein, C., Aziz-Zadeh, A., & **Liew, S.-L.** (2018, June) Effective connectivity of the ipsilesional action observation network after stroke. *Organization for Human Brain Mapping*. Singapore.
19. Lefebvre, S.\*, Jog, M., Schweighofer, N., Wang, D.J., & **Liew, S.-L.** (2018, June) Exploring tDCS-induced changes in brain network connectivity when targeting M1 or PMD using HD-tDCS. *Organization for Human Brain Mapping*. Singapore
20. Ito, K.\*, Kim, H. & **Liew, S.-L.** (2018, Apr) Evaluating automated lesion segmentation approaches for stroke MRI data. *USC School of Dentistry Research Day*. Los Angeles, CA. \*Awarded 2<sup>nd</sup> place.
21. Saldana, D.\*, Wathugala, M.\*, Anglin, J.\*, Chan, J.\*, & **Liew, S.-L.** (2018, Apr) Mindfulness meditation effects on stroke survivors: A pilot study. *USC School of Dentistry Research Day*. Los Angeles, CA.
22. Marin-Pardo, O.\*, Anglin, J.\*, Spicer, R., Krum, D.M., & **Liew, S.-L.** (2018, Mar) A new flexible architecture for a virtual reality-based brain computer interface. *Grodins USC Engineering Symposium*. Los Angeles, CA.
23. Hayward, K.S., Ferris, J.K., Lohse, K.R., Cramer, S.C., Borich, M.R., Steward, J.C., Borstad, A., Cassidy, J., Dukelow, S., Findlater, S., Neva, J.L., **Liew, S.-L.**, & **Boyd, L.A.** (2017, Nov) Regional diffusion differences in people with severe upper limb impairment post-stroke: A preliminary neuroimaging mega-analysis. *Society for Neuroscience*. Washington, D.C.

24. Ito, K.\* , Kim, H., & **Liew, S.-L.** (2017, Nov) A comparison of automated lesion segmentation approaches for stroke MRI data. *American Society of Neurorehabilitation*, Baltimore, MD.
25. Zavaliangos-Petropulu, A.\* , Jahanshad, N., Ching, C.R.K., Isaev, D., Ragothaman, A., Gutman, B., Kim, B., Robertson, A.D., Rondina, J.M., Aziz-Zadeh, L., Byblow, W.D., Cramer, S.C., Domin, M., Kautz, S.A., Kuceyeski, A., Lang, C.E., Liu, J., Lotze, M., MacIntosh, B.J., Ramos- Murguialday, A., Roberts, P., Stinear, C.M., Thielman, G., Wang, J., Winstein, C., Wittenberg, G., Yu, C., Thompson, P.M., & **Liew, S.-L.** (2017, Nov) Subcortical brain shape differences relate to post-stroke motor behavior. *American Society of Neurorehabilitation*, Baltimore, MD.
26. Anglin, J.M.\* , Banks, N.W.\* , Sondag, M., Ito, K.L.\* , Kim, H., Chan, J.\* , Ito, J\* , Jung, C.\* , Lefebvre, S.\* , Nakamura, W.\* , Saldana, D.\* , Schmiesing, A.\* , Tran, C.\* , Vo, D.\* , Ard, T., Heydari, P., Kim, B., Aziz-Zadeh, L., Cramer, S.C., Liu, J., Soekadar, S., Nordvik, J.-E., Westlye, L.T., Wang, J., Winstein, C.J., Yu, C., Ai, L., Koo, B., Craddock, R.C., Milham, M., Lakich, M., Pienta, A., Stroud, A., & **Liew, S.-L.** (2017, Nov). The Anatomical Tracings of Lesions After Stroke (ATLAS) Dataset – Release 1.1. *Society for Neuroscience*, Washington D.C.
27. Ito, K.\* , Garrison, K., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C., & Aziz-Zadeh, L., & **Liew, S.-L.** (2017, June). Functional interhemispheric connectivity is decreased after stroke during action observation. *Organization for Human Brain Mapping*, Vancouver, Canada.
28. Ito, K.\* , Garrison, K., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C., & Aziz-Zadeh, L., & **Liew, S.-L.** (2017, June). Interhemispheric connectivity is decreased during action observation after stroke. *OT Summit of Scholars*, Boston, MA. Awarded Best Student Poster.
29. Spicer, R., Anglin, J.\* , Krum, D., & **Liew, S.-L.** (2017, March). REINVENT: A low-cost, virtual reality brain-computer interface for severe stroke upper limb motor recovery. *IEEE Virtual Reality Conference*. Los Angeles, CA.
30. Anglin, J.\* , Saldana, D.\* , Schmiessing, A.\* , & **Liew, S.-L.** (2017, March). Transfer of a skilled motor learning task between virtual and conventional training environments. *IEEE Virtual Reality Conference*. Los Angeles, CA.
31. **Liew, S.-L.**, Jahanshad, N., Anglin, J.\* , Khoshab, N., Kim, B., Nakamura, W.\* , Nhoung, H., Rondina, J., Tran, C.\* , Borich, Mc., Boyd, L., Byblow, W., Dimyan, M., Ermer, E., Lang, C., Li, J., Nichols, T., Roberts, P., Sanossian, N., Soekadar S., Stinear, C., Ward, N., Westlye, L. T., Winstein, C., Wittenberg, G. F., Cramer, S. C., & **Thompson, P. M.** (2016, Nov). ENIGMA Stroke Recovery: Big data neuroimaging to predict motor recovery. *Society for Neuroscience*, San Diego, CA.
32. Anglin, J.M.\* , Sugiyama, T.\* , & **Liew, S.-L.** (2016, Nov.). Visuomotor adaptation in head-mounted virtual reality versus conventional training. *Society for Neuroscience*, San Diego, CA. Selected for Hot Topics.
33. **Liew, S.-L.**, Jahanshad, N., Anglin, J.\* , Khoshab, N., Kim, B., Nakamura, W.\* , Nhoung, H., Rondina, J., Tran, C., Borich, Mc., Boyd, L., Dimyan, M., Ermer, E., Lang, C., Li, J., Nichols, T., Roberts, P., Sanossian, N., Soekadar S., Ward, N., Westlye, L. T., Winstein, C., Wittenberg, G. F., Cramer, S. C., & **Thompson, P. M.** (2016, June). ENIGMA Stroke Recovery: Big data neuroimaging to predict motor recovery. *Organization for Human Brain Mapping Annual Meeting*, Geneva, Switzerland.



34. Ito, K.\*, **Liew, S.-L.**, Garrison, K., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C., & Aziz-Zadeh, L. (2016, June). Laterality in the action observation network after stroke. *Organization for Human Brain Mapping*, Geneva, Switzerland.
35. Heydari, P., **Liew, S.-L.**, Damasio, H., Winstein, C., & Aziz-Zadeh, L. (2016, June). Activity patterns in motor regions of chronic stroke patients for action observation, execution and imitation. *Organization for Human Brain Mapping*, Geneva, Switzerland.
36. **Liew, S.-L.**, Jahanshad, N., Anglin, J.\*, Khoshab, N., Kim, B., Nakamura, W.\*, Nhoung, H., Rondina, J., Tran, C., Borich, M., Boyd, L., Dimyan, M., Ermer, E., Lang, C., Li, J., Nichols, T., Roberts, P., Sanossian, N., Soekadar S., Ward, N., Westlye, L. T., Winstein, C., Wittenberg, G. F., Cramer, S. C., & Thompson, P. M. (2016, May). ENIGMA Stroke Recovery: Big data neuroimaging to predict motor recovery. *NCMRR Moving Rehabilitation Forward Meeting*, Bethesda, MD.
37. Ito, K.L.\*, **Liew, S.L.**, Garrison, K.A., Heydari, P., Sobhani, M., Werner, J., Damasio, H., Winstein, C.J., & Aziz-Zadeh, L. (2016, March). Lateralization of action observation network activity after stroke. *USC Herman Ostrow School of Dentistry Research Day*, Los Angeles, CA. Awarded Second Place in division.
38. **Liew, S.-L.**, Thompson, T., Ramirez, J.J., Butcher, P., Taylor, J.A., & Celnik, P.A. (2015, October). Difficulty of visual transformation modulates the contributions of explicit and implicit learning with and without tDCS. *Society for Neuroscience*, Chicago, IL.
39. Dayan, E., Lopez-Alonso, V., **Liew, S.-L.**, & Cohen, L.G. (2015, October). Distributed anatomical substrates identified by pattern classification predict cortical excitability and inhibition. *Society for Neuroscience*, Chicago, IL.
40. Dayan, E., **Liew, S.-L.**, & Cohen, L.G. (2015, June). Modular organization of reward networks in the human brain. *Organization for Human Brain Mapping*, Honolulu, HI.
41. **Liew, S.-L.**, Rana, M., Cornelsen, S., Furtunato de Barros Filho, M., Birbaumer, N., Sitaram, R., Cohen, L., & Soekadar, S. (2015, February). Improving cortico-subcortical communication after stroke. *Real-time functional imaging and neurofeedback*, Gainesville, FL.
42. **Liew, S.-L.**, Ramirez, J.J., Butcher, P., Cohen, L., Taylor, J.A., & Celnik, P.A. (2014, November). Anodal tDCS of prefrontal cortex and cerebellum enhance different aspects of motor learning in a visuomotor adaptation task. *Society for Neuroscience*, Washington, D.C.
43. **Liew, S.-L.**, Gonzalez-Castillo, J., Horovitz, S., Roopchansingh, V., Tinaz, S., Hallett, M., & Cohen, L.G. (2013, November). Using neurofeedback from real-time fMRI connectivity patterns to enhance skilled motor performance. *Society for Neuroscience*, San Diego, CA. Selected for Neuroscience 2013 Hot Topics.
44. **Liew, S.-L.**, Garrison, K., Winstein, C., Cohen, L. & Aziz-Zadeh, L. (2013, June). Functional connectivity of the action observation network after stroke. *Organization of Human Brain Mapping*, Seattle, WA.
45. **Liew, S.-L.**, Sheng, T., & Aziz-Zadeh, L. (2012, June). Observing actions performed by a congenital amputee activates one's own sensorimotor regions. *Organization of Human Brain Mapping*, Beijing, China.

46. **Liew, S.-L.**, Garrison, K.A., Haldar, J., Winstein, C.J., Damasio, H., & Aziz-Zadeh, L. (2012, April). The mirror neuron system: Implications for occupational therapy and stroke rehabilitation. *American Occupational Therapy Association Annual Meeting*, Indianapolis, IN.
47. **Liew, S.-L.**, Garrison, K.A., Haldar, J., Roh, A., Winstein, C.J., Damasio, H., & Aziz-Zadeh, L. (2012, February). Structural neuroanatomy of lesioned brains in chronic stroke patients and correlations with functional activation of motor-related neural networks. *USC Herman Ostrow School of Dentistry Research Day*, Los Angeles, CA. Awarded First Place in division.
48. **Liew, S.-L.**, Garrison, K.A., Haldar, J., Winstein, C.J., Damasio, H., & Aziz-Zadeh, L. (2011, November). Structural neuroanatomy of lesioned brains in chronic stroke patients and correlations with functional activation of motor-related neural networks. *Society for Neuroscience Annual Meeting*. Washington, D.C.
49. **Liew, S.-L.**, Seckin, M., & Aziz-Zadeh, L. (2011, April). The effects of experience on the observation of novel effectors and empathy correlations. *Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA.
50. **Liew, S.-L.**, Seckin, M., Johnson, A. & Aziz-Zadeh, L. (2011, February). The role of experience in understanding physically different others. *USC Herman Ostrow School of Dentistry Research Day*, Los Angeles, CA. Awarded First Place in division.
51. **Liew, S.-L.**, Dandekar, F., Epstein, D., & Aziz-Zadeh, L. (2010, November). The neural correlates of visual creativity. *Society for Neuroscience Annual Meeting*. San Diego, CA.
52. **Liew, S.-L.**, Sheng, T., & Aziz-Zadeh, L. (2010, April). The neural correlates of stigma for physical differences. *Cognitive Neuroscience Society Annual Meeting*, Montreal, Canada.
53. **Liew, S.-L.**, Sheng, T., & Aziz-Zadeh, L. (2010, February). The neural correlates of observing physical differences and empathy correlations. *USC Herman Ostrow School of Dentistry Research Day*, Los Angeles, CA. Awarded Second Place in division.
54. **Liew, S.-L.**, Han, S., & Aziz-Zadeh, L. (2009, October). Activation of mirror neuron and theory of mind systems is modulated by familiarity and individual differences in empathy. *Society for Neuroscience Annual Meeting*, Chicago, IL.
55. **Liew, S.-L.**, Aziz-Zadeh, L., & Han, S. (2009, April). Out of hand: How experience and race modulate neural correlates of gesture observation. *Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA.
56. Aziz-Zadeh, L., Sheng, T., **Liew, S.-L.**, Bukowski, H., Damasio, H., & Damasio, A. (2009, April). Understanding and empathizing with dissimilar others: A case study of a congenital amputee. *Cognitive Neuroscience Society Annual Meeting*, San Francisco, CA.
57. **Liew, S.-L.**, Sheng, T., & Aziz-Zadeh, L. (2009, February). Mission impossible: An fMRI study of motor empathy for impossible actions in a woman with congenital limb deficiencies. *USC Herman Ostrow School of Dentistry Research Day*, Los Angeles, CA. Awarded Second Place in division.

## MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

**Member,** Institute of Electrical and Electronics Engineers (IEEE)  
**Member,** Society for Neuroscience (SNF)  
**Member,** Organization for Human Brain Mapping (OHBM)  
**Member,** American Occupational Therapy Association (AOTA)  
**Member,** American Society for Neurorehabilitation (ASNR)  
**Member,** The NeuroBureau

## HONORS, AWARDS, FELLOWSHIPS:

2020 **Fellow,** ReproNim/INCF Fellowship Program jointly sponsored by ReproNim: A Center for Reproducible Neuroimaging Computation (ReproNim) and the International Neuroinformatics Coordinating Facility (INCF)

2017 **Award,** Special Jury Recognition for Innovative Use of Virtual Reality Technology in the Field of Health, South by Southwest (SXSW) Interactive VR Festival

2016 **Fellow,** American Heart Association Research Leaders Academy

2015 **Mentee,** Training in Grantsmanship for Rehabilitation Research (TIGRR) Workshop

2015-2020 **Award,** NIH Loan Repayment Program Awardee/Renewal Awardee for Clinical Research

2012 **Award,** USC Penelope Louise Richardson Award for outstanding potential in fulfilling the role of a faculty member

2012 **Award,** USC Provost PhD Travel Award

2012 **Award,** OT Division Leadership Travel Award

2011 **Trainee,** FENS-IBRO Imaging Training Center, Lausanne/Geneva, Switzerland

2011 **Trainee,** UCLA Advanced Neuroimaging Training Program (NITP) Summer Course, Los Angeles, CA

2010 **Trainee,** Riken Brain Science Institute Summer Program, Tokyo, Japan

2011, 2012 **First Place,** USC School of Dentistry Research Day, Occupational Science Division

2009, 2010 **Second Place,** USC School of Dentistry Research Day, Occupational Science Division

2009 **Fellow,** Summer Institute in Cognitive Neuroscience, Santa Barbara, CA

2008 **Fellow,** National Science Foundation East Asia and Pacific Summer Institutes

2008 **Award,** USC Elizabeth June Yerxa Award for Excellence in Research

2008-2009 **Award,** USC Graduate Professionalism Initiative

2006-2008 **Scholarships & Honors (Masters Degree),** Asia Pacific Occupational Therapy Congress (APOTC) Travel Award, Hong Kong, 2008; International Society of Occupational Science Student Delegate, 2007; Phi Theta Epsilon (National Occupational Therapy Honor Society), 2007-2008

2002-2006 **College Scholarships & Honors (Bachelors Degree),** National Merit Scholarship, Freeman ASIA Scholarship, Target All-Around Scholarship, Rice University Humanities Scholarship, Rice University President's Honor Roll, Rice Academic Fellow, National Society of Collegiate Scholars

### III. TEACHING ACTIVITIES

#### COURSES PRESENTED:

##### Courses at USC

Fall 2016                    **Instructor**  
                                  **OT 515: Neuroscience of Behavior**

Spring 2012                **Instructor**  
                                  **OT 441: Foundation – Neuroscience**

#### GUEST LECTURES PRESENTED:

2017- present              **USC OT 579: Occupational Therapy in Adult Neurorehabilitation**  
Spring                        “Emerging technologies for clients with motor impairments due to neurological injury”

2017 - present              **USC OT 250: Introduction to Occupational Science and Occupational Therapy**  
Fall                            “Large scale neuroimaging and neuromodulation to promote motor recovery after stroke”

2018 - present              **USC NSCI 525: Advanced Overview of Neurosciences II**  
Spring                        “The parietal cortex”

2016, 2020                 **USC OT 405: Foundations of Occupation**  
Fall                            “Emerging technologies for clients with motor impairments due to neurological injury”

Summer 2020               **Emory University DPT 805: Principles of Motor Learning**  
                                  “Virtual reality and imaging for motor learning and stroke rehabilitation”

Fall 2019                    **USC OT 500: Clinical Problems in Occupational Therapy: Special Topics and Emerging Practices**  
                                  “Use of technology in occupational therapy: Augmented and virtual reality”

Fall 2018                    **USC BKN 553: Experimental Methods for the Analysis of Human Movement**  
                                  “Neuroimaging”

Fall 2018                    **USC Biokinesiology Survival Series**  
                                  “Tools and platforms for reproducible and open science”

Fall 2017                    **USC Chan Occupational Science Seminar**  
                                  “Virtual reality for stroke rehabilitation”

Spring 2017                **USC Biomedical Engineering Seminar Series**  
                                  “Large scale neuroimaging and neuromodulation to promote motor recovery after stroke”

Fall 2016                    **USC NIIN 596: Current Topics in Neuroinformatics**  
                                  “Neuroimaging and neuromodulation to promote motor recovery after stroke”

- Spring 2016      **USC OT 599: Occupation-Based Adult Neurorehabilitation**  
 “Emerging technologies for clients with motor impairments due to neurological injury”
- 2015-2018  
 Summer      **USC Chan Summer Occupational Therapy Immersion Program**  
 “Emerging technologies for clients with motor impairments due to neurological injury”
- Fall 2015      **USC BKN 553: Experimental Methods for the Analysis of Human Movement**  
 “Magnetic Resonance Imaging”
- Fall 2015      **University of Missouri OC\_THR 4970: Occupational Therapy Research Methods**  
 “Emerging technologies for clients with motor impairments due to neurological injury”
- Fall 2015      **USC NIIN 510: Fundamentals of Human Neuroimaging**  
 “Brain computer interfaces and real-time fMRI for neurorehabilitation”

MENTORING ACTIVITIES:

**Research Assistant Professors Mentored:**

- 2019-present      **Christopher Laine, PhD**, Biofeedback of Muscle Activity in Stroke

**List of Postdoctoral Scholars Mentored:**

- 2018-2019      **Athanasios Vourvopoulos, PhD**, Virtual Reality Brain Computer Interface for Stroke
- 2016-2019      **Stephanie Lefebvre, PhD**, Neural Predictors of Noninvasive Brain Stimulation

**Graduate Students Mentored:**

**PhD Students, Committee Chair:**

- 2019-      **Miranda Rennie**, PhD in Occupational Science, concentration in Neuroscience  
*Current Position:* PhD Student, USC Chan Division of OS/OT  
*Research Interests:* Clinical uses of virtual reality for individuals after stroke
- 2018-      **Julia (Anglin) Juliano**, PhD in Neuroscience  
*Current Position:* PhD Student, USC Neuroscience Graduate Program  
*Research Interests:* Motor learning in virtual reality in healthy individuals and after stroke
- 2017-      **Octavio Marin-Pardo**, PhD in Biomedical Engineering  
*Current Position:* PhD Student, USC Biomedical Engineering Program  
*Research Interests:* Muscle biofeedback in virtual reality for stroke rehabilitation
- 2016-      **Artemis Zavaliangos-Petropulu**, PhD in Neuroscience (Co-PI with Dr. Paul Thompson)  
*Current Position:* PhD Student, USC Neuroscience Graduate Program  
*Research Interests:* Neuroinformatics and big data neuroimaging for stroke/Alzheimer’s disease
- 2016-      **Kaori Ito**, PhD in Occupational Science, concentration in Neuroscience

*Current Position:* PhD Student, USC Chan Division of OS/OT  
*Research Interests:* Neural mechanisms of stroke recovery

PhD Students, Committee Chair/Member:

- 2020- **Buwen Yao**, PhD in Occupational Science (PI: Dr. Shawn Roll), Qualifying Committee Member  
*Current Position:* PhD Student, USC Chan Division of OS/OT  
*Research Interests:* Research in hand injuries and rehabilitation
- 2018- **Aram Kim**, PhD in Biokinesiology (PI: Dr. James Finley), Committee Member  
*Current Position:* PhD Student, USC Division of Biokinesiology and Physical Therapy  
*Research Interests:* Improving locomotion in individuals with Parkinson's disease using virtual reality
- 2018- **Sandy Takata**, PhD in Occupational Science (PI: Dr. Shawn Roll), Committee Member  
*Current Position:* PhD Student, USC Chan Division of OS/OT  
*Research Interests:* Novel use of sonography for hand tendon injuries
- 2016- **Rini Varghese**, PhD in Biokinesiology (PI: Dr. Carolee Winstein), Committee Member  
*Current Position:* PhD Student, USC Division of Biokinesiology and Physical Therapy  
*Research Interests:* Examining hemisphere-specific deficits in the control of bimanual movements after stroke
- 2015-2020 **Sonja Fenske**, PhD in Neuroscience (PI: Dr. Jason Kutch), Committee Chair  
*Current Position:* PhD Student, USC Neuroscience Graduate Program  
*Research Interests:* Neuroinformatics and machine learning to identify neural mechanisms of chronic pelvic pain
- 2016-2019 **Alaa Albishi**, PhD in Biokinesiology (PI: Dr. Beth Fisher), Committee Member  
*Dissertation:* Are there neuroanatomical and functional substrates associated with different representations of a single muscle?  
*Current Position:* Faculty, Department of Rehabilitation Sciences – Physical Therapy Division, College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia
- 2018 **Brandalyn Riedel**, PhD in Neuroscience (PI: Dr. Paul Thompson), Committee Chair  
*Dissertation:* Using neuroinformatics to identify genomic and proteomic markers of suboptimal aging and Alzheimer's disease  
*Current Position:* Postdoctoral fellow, Indiana University, PI: Dr. Andrew Saykin
- 2017-2018 **Akira Nagamori**, PhD in Biokinesiology (PI: Dr. Francisco Valero-Cuevas), Qualifying Committee Member  
*Current Position:* PhD Student, USC Division of Biokinesiology and Physical Therapy  
*Research Interests:* Contributions of musculotendon contraction dynamics to human force control and effects on tendinopathy

2016-2017 **Emily Kilroy**, PhD in Biokinesiology (PI: Dr. Lisa Aziz-Zadeh), Qualifying Committee Member  
*Current Position:* PhD Student, USC Chan Division of OS/OT  
*Research Interests:* Examination of the action observation network in children with autism and developmental disabilities

OTD Students, Faculty Mentor/Residency Supervisor:

2020-2021 **Julie Lutz**, OTD Resident [Faculty mentor and residency supervisor]  
*Capstone project:* Virtual reality for stroke rehabilitation

2018-2019 **Meghan Neureither**, OTD Resident [Faculty mentor and residency supervisor]  
*Capstone project:* Novel technologies for stroke rehabilitation

Master's and Professional Students, Advising and Research Mentorship:

2020- **Jessica Jeong**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2019- **Renee Reinberg**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2019- **Tyler Isa**, Doctor of Physical Therapy, DPT Mentee  
 2018-2019 **Esther Jahng**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2018-2019 **Amit Kumar**, Master of Science, Computer Science, Research Assistant  
 2018-2019 **Harmeet Singh**, Master of Science, Computer Science, Research Assistant  
 2017- **Kira Luzzo**, Doctor of Physical Therapy, DPT Mentee  
 2017-2019 **David Saldana**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2017 **Faisal Rashid**, Master of Science, Neuroimaging and Informatics, Research Assistant  
 2016-2018 **Melanie Wathugalu**, Keck School of Medicine, Medical Research Project Mentee  
 2016-2018 **Allie Schmiesing**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2016-2017 **Jennifer Chan**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2016-2019 **Harrison Ma**, Doctor of Physical Therapy, DPT Mentee  
 2015-2018 **Cristi Magracia**, Doctor of Physical Therapy, DPT Mentee  
 2016-2017 **Nicholas Banks**, Master of Science, Stem Cell Biology, Research Assistant  
 2015-2016 **Catherine Tran**, Master of Science, Neuroimaging and Informatics, Research Assistant  
 2015-2016 **Kaori Ito**, Master of Arts, Occupational Therapy, Graduate Research Assistant  
 2015-2016 **William Nakamura**, Master of Arts, Occupational Therapy, Graduate Research Assistant

SELECTED HONORS AND AWARDS OF MENTEES:

2020-2021 Julia (Anglin) Juliano, Link Foundation Fellowship in Modeling, Simulation and Training  
 2019-2021 Sandy Takata, NIH F31 Ruth L. Kirchstein Predoctoral Individual National Research Service Award  
 2019-2020 Julia (Anglin) Juliano, NIH T32 Institutional Predoctoral Fellowship  
 2018-2019 Stephanie Lefebvre, USC Provost's Postdoctoral Scholar Research Grant  
 2019-2021 Rini Varghese, NIH F31 Ruth L. Kirchstein Predoctoral Individual National Research Service Award  
 2018 David Saldana, Allie Schmiesing, USC OT Division OTAC Student Leadership Award

2018 Kaori Ito, Neurohackademy Fellow (60 out of 400 applicants selected)

2018 Kaori Ito, 2<sup>nd</sup> Place Poster in OS/OT, USC School of Dentistry Research Day

2018 Stephanie Lefebvre, Research selected for Oral Highlight, NYC NANS Summer Series

2018-2019 Julia (Anglin) Juliano, USC Rose Hills PhD Fellowship

2018 Artemis Zavaliangos-Petropulu, Center for Large Data Research and Data Sharing in Rehabilitation Travel Award for Secondary Data Analysis of Archived Studies

2018 Julia (Anglin) Juliano, 1<sup>st</sup> Place, American Heart Association Hackathon

2018 David Saldana, Allie Schmiesing, USC OT Division AOTA Travel Award

2018 David Saldana, Albert Schweitzer Fellowship

2018 David Saldana, Hispanic Scholarship Fund Award

2018 Julia (Anglin) Juliano, National Science Foundation Graduate Research Fellowship Honorable Mention

2018 David Saldana, USC Latino Alumni Association Scholarship

2018-2019 Aram Kim, Link Foundation Modeling, Simulation, and Training Fellowship

2017-2021 Octavio Marin-Pardo, USC-CONACyT PhD Fellowship

2017 Allie Schmiesing, Albert Schweitzer Fellowship

2017 David Saldana, USC Occupational Therapy Tony Pompelio Memorial Scholarship

2017 Julia (Anglin) Juliano, National Science Foundation Graduate Research Fellowship Honorable Mention

2017 Kaori Ito, James and Patricia Plumtree Scholarship

2017 Kaori Ito, AOTA Young Researcher Award

2017 Kaori Ito, 1st Place Poster at Occupational Therapy Summit of Scholars

2017 Kaori Ito, Occupational Therapy Summit of Scholars Student Travel Award

2016 Kaori Ito, USC Occupational Therapy Division “Distinguished Contribution to Research in Occupational Science and Occupational Therapy” Award

2016 Kaori Ito, Michelle Berro AOTA Travel Award

2016 Kaori Ito, 2<sup>nd</sup> Place Poster in OS/OT, USC School of Dentistry Research Day

#### IV. ADMINISTRATIVE AND SERVICE ACTIVITIES

##### UNIVERSITY SERVICE:

##### Chan Division of Occupational Science and Occupational Science

2020- **Member**, Health and Safety Task Force (COVID-19)

2019- **Member**, Assistant/Associate Professor Search Committee

2019- **Organizer**, Chan Innovation Bootcamp

2018- **Member**, Associate/Full Professor Search Committee

2018 **Member**, Strategic Planning Steering Committee

2017- **Committee Member and Judge**, Mark and Semira Moshayedi Innovation Award

2017 **Judge**, USC School of Dentistry Research Day



2016            **Judge**, USC School of Dentistry Research Day

Keck School of Medicine

2016-            **Executive Committee Member**, Center for Image Acquisition, Stevens Neuroimaging and Informatics Institute

2017-2018      **Assistant Professor Search Committee Member**, Center for Image Acquisition, Stevens Neuroimaging and Informatics Institute

2016-2017      **Director Search Committee Member**, Center for Image Acquisition, Stevens Neuroimaging and Informatics Institute

Viterbi School of Engineering

2017            **Judge**, Grodins Biomedical Engineering Research Symposium

USC Neuroscience Graduate Program

2016-            **Faculty Advisor**, Computational Motor Control and Learning Journal Club

2017-2019      **Faculty Advisor**, Distinguished Lecturer Series

University of Southern California

2020            **Reviewer**, USC Collaboration Fund Program

2020            **Reviewer**, USC Stevens Technology Advancement Grant

2019            **Reviewer**, USC Stevens Technology Advancement Grant

2018-            **Co-Director**, USC Sensorimotor Assessment and Rehabilitation Training in Virtual Reality Center (SMART-VR Center)

2018            **Co-Organizer**, 1<sup>st</sup> Annual USC Virtual Technologies for Health Symposium

2017-            **Faculty Advisory Committee Member**, Stevens Center for Innovation, USC

PROFESSIONAL SERVICE:

Professional Organizations

American Society for Neurorehabilitation

2019-2021      **Board of Directors**

2019-2021      **Education Committee**

Human Brain Mapping Student and Postdoc Executive Group

2015-2016      **Immediate Past Chair**

2014           **Chair**  
2013           **Vice Chair**  
2012-2013   **Social Coordinator**

EDITORIAL AND NATIONAL GRANT REVIEW ACTIVITIES:

Editor/ Associate Editor/ Academic Editor

2019-           **Associate Editor**, *Frontiers in Virtual Reality, Virtual Reality in Medicine Section*  
2017-2019   **Editor**, *Special Issue: Collaborative Efforts for Understanding the Human Brain, Frontiers in Neuroinformatics*  
2015-2016   **Executive Editor**, *Special Issue: Neural Enhancement for Independent Living, Journal of Motor Behavior*

Editorial Review Board

2016-           *Journal of Motor Behavior*

Scientific Review for Journals

2020-           *Neurology*  
2020-           *Expert Review of Medical Devices*  
2019-           *IEEE Journal of Biomedical and Health Informatics*  
2018-           *Neural Plasticity*  
2018-           *Journal of Clinical Neuroscience*  
2017-           *eNeuro*  
2017-           *Transactions on Neural Systems and Rehabilitation Engineering*  
2016-           *Neurorehabilitation and Neural Repair*  
2016-           *NeuroImage: Clinical*  
2016-           *Archives of Physical Medicine and Rehabilitation*  
2015-           *Cerebral Cortex*  
2015-           *Neuromodulation: Technology at the Neural Interface*  
2015-           *Journal of Neurophysiology*  
2015-           *Journal of Neural Engineering*  
2015-           *Brain Imaging and Behavior*  
2015-           *Frontiers in Cellular Neuroscience*  
2015-           *Journal of Motor Behavior*  
2014-           *Biological Psychiatry*  
2014-           *Frontiers in Neuroscience*  
2014-           *Journal of Cognitive Neuroscience*  
2014-           *Frontiers in Human Neuroscience*  
2013-           *Social Cognitive and Affective Neuroscience*  
2012-           *Human Brain Mapping*  
2012-           *Journal of Occupational Science*  
2011-           *NeuroImage*

## National Grant Review

- 2020 National Institutes of Health (NIH)  
National Institute of Child Health and Human Development (NICHD)  
Special Emphasis Review Panel ZHD1 DSR-G(50) for NCMRR Early Career Research Awards (R03)
- 2020 VA Rehabilitation Research and Development Service (RR&D)  
Scientific Merit Review Board subcommittee, Musculoskeletal/Orthopedic Rehabilitation
- 2019 National Institutes of Health (NIH)  
National Institute of Child Health and Human Development (NICHD)  
CHHD-K Function, Integration and Rehabilitation Sciences Subcommittee Review Panel
- 2018 National Institutes of Health (NIH)  
National Institute of Neurological Disorders and Stroke (NINDS)  
Special Emphasis Panel ZNS1 SRB-L (13) for Training and Career Development
- 2018 VA Rehabilitation Research and Development Service (RR&D)  
Scientific Merit Review Board subcommittee, Musculoskeletal/Orthopedic Rehabilitation
- 2017 VA Rehabilitation Research and Development Service (RR&D)  
Scientific Merit Review Board subcommittee, Musculoskeletal/Orthopedic Rehabilitation

## OTHER SERVICE ACTIVITIES:

- 2018-2019** **Program Committee**, *11th International Conference on Virtual Worlds and Games for Serious Applications*
- 2016** **Instructor**, *Noninvasive Brain Stimulation Methods*, Continuing Ed Course
- 2014, 2015, 2016** **Chair**, Brainhack Los Angeles (November 2016), Brainhack Los Angeles, part of Brainhack Americas (2015), and Brainhack DC, part of Brainhack EDT (2014)
- 2008, 2009, 2011** **Chairperson of Judging Committee**, *Los Angeles County Science & Engineering Fair*
- 2007, 2011** **5<sup>th</sup> Grade Science Fair Mentor**, *USC Health Sciences Campus Science Fair*  
Mentored 5<sup>th</sup> graders in an underprivileged elementary school on a science project
- 2011** **NeurOnline Champion**, *Society for Neuroscience NeurOnline Communities*  
Facilitated and contributed to Society for Neuroscience's online communities
- 2007-2016** **Rice Alumni Regional Coordinator & Young Alumni Ambassador**, *Association of Rice University Alumni*.  
Initiated, planned, and executed Rice alumni community events in LA and DC

## OTHER PREVIOUS EMPLOYMENT:

- 2010-2012 **Occupational Therapist (OTR/L)**, *Supplemental Health Care, Los Angeles, CA*

Level I Per Diem Occupational Therapist specializing in adult neurology and physical disabilities, geriatrics, and skilled nursing, with an emphasis on providing care as part of an interdisciplinary team.

- 2006-2012            **Graduate Research Assistant**  
Brain and Creativity Institute  
University of Southern California  
Advisor: Dr. Lisa Aziz-Zadeh
- 2006-2009            **Personal Trainer / Group Fitness Instructor**  
Bally Total Fitness

BOARD CERTIFICATION AND/OR LICENSURE:

Specialty Certification

**Certified Strength and Conditioning Specialist**

National Strength and Conditioning Association (NSCA) #200733611 (2007-Current)

**Healthcare Provider CPR/AED Certified (2007-Current)**

American Heart Association (AHA)

State Licensure

**Licensed Occupational Therapist**

California Board of Occupational Therapy (CBOT) #11066 (2009-Current)

National Licensure

**Registered Occupational Therapist**

National Board for Certification in Occupational Therapy (NBCOT) #259263 (2009-Current)