

Jennifer T. Legault

455 Moore Building
Pennsylvania State University
State College, PA 16803
Phone: (281) 323-3140
Email: jlegault12@gmail.com
Website: <http://blclab.org/jennifer-legault/>

Research Interests

Language acquisition and processing, learning and memory, multimodal neuroimaging

Educational Degrees

Ph.D Candidate in Neuroscience <i>The Pennsylvania State University</i> Supervisor: Dr. Ping Li, Professor of Psychology, Linguistics, and Information Sciences and Technology	2012-present
Master Degree of Science-Neuroscience <i>Tulane University of Louisiana</i> Supervisor: Dr. Harry Howard, Associate Professor of Theoretical Linguistics	2010-2011
Bachelor Degree of Science-Neuroscience <i>Tulane University of Louisiana</i> Minor in Studio Art	2007-2010

Publications

- Legault, J.**, Fang, S., Lan, Y., Li, P. (2018). Structural brain changes as a function of second language vocabulary training: Effects of learning context. *Brain and Cognition* (accepted)
- Grant, A., **Legault, J.**, & Li, P. (in press). What do bilingual models tell us about the neurocognition of multiple languages? In Schwieter, J.W.(Ed). *The Handbook of the Neuroscience of Multilingualism*.
- Li, P., Chaby, L. E., **Legault, J.**, & Braithwaite, V. A. (2015). *Brain 3M--A New Approach to Learning about Brain, Behavior, and Cognition*. International Association for the Development of the Information Society.
- Lan, Y., Fang., S., **Legault, J.**, Li, Ping. (2015). Second language acquisition of Mandarin Chinese vocabulary: Context of learning effects. *Educational Technology Research & Development*, 63, 5, 671-690.
- Li, P., **Legault, J.**, & Litcofsky, K. A. (2014). Neuroplasticity as a function of second language learning: Anatomical changes in the human brain. *Cortex*, 58, 301-324.
- Feng, S., **Legault, J.**, Yang, L., Zhu, J., Shao, K., & Yang, Y. (2014). Differences in grammatical processing strategies for active and passive sentences: An fMRI study. *Journal of Neurolinguistics*, 33, 104-117.

Manuscripts Submitted or In Preparation

Legault, J., Grant, A., Fang, S., Li, P. (2018). How individual differences mediate structural brain changes during second language learning. *Brain Structure and Function* (submitted)

Legault, J., Zhao, J., Chi, Y-A., Chen, W., Klippel, A., Li, P. (2018). Immersive virtual reality as an effective tool for second language vocabulary learning. *Languages* (under review)

Grants and Awards

Outstanding Student Leadership Award	2016
Center for Brain, Behavior, and Cognition Travel Award	2016
Graduate Advisor to the Huck Institutes Fellowship	2015-2016
J. Lloyd Huck Graduate Dissertation Research Award	2014
Supplemental Educational Opportunity Grant (SEOG)	2010-2011
Distinguished Scholars Award	2007-2010
Phi Theta Kappa Achievement Award	2006-2007

Lab Experience

The Pennsylvania State University 2012 – present
Graduate Researcher: Brain, Language, and Computation Lab *Advisor: Dr. Ping Li*

Effects of L2 learning context on behavioral performance and neural structure

- Comparison of virtual environment and picture-word Chinese vocabulary training
- Comparison of virtual reality versus word-word association Chinese vocabulary training
 - Methods: Behavioral, sMRI, and fMRI
 - Software/Equipment: E-Prime, Freesurfer, HPC systems, HTC Vive, MATLAB, SPM 8 & 12, SPSS, Unity

Individual differences in classroom-based L2 learning and brain structure

- Individual differences that mediate intermediate Spanish classroom training-related brain structure changes
 - Methods: sMRI
 - Software/Equipment: Freesurfer, HPC systems, MATLAB

Effects of learning context on neuroanatomy learning

- Comparison of online Brain3M platform to classroom training
- Comparison of high immersive virtual reality and low immersive virtual environment neuroanatomy learning
 - Methods: Behavioral
 - Software/Equipment: E-Prime, HTC Vive, Steam VR Desktop, SPSS, Unity

Effects of bilingualism on math processing

- Functional and Structural Neural Correlates of Mathematical Processing in Bilinguals
 - Methods: sMRI

- Software/Equipment: Freesurfer, HPC systems, MarsBar, MATLAB

White matter microstructure examination in children with Autism Spectrum Disorders

- Examination of individual differences in ASD severity and white matter measures before and after intervention training
 - Methods: DTI
 - Software/Equipment: FSL, DSI Studio, DTI Studio, HPC systems, Trackvis

Tulane University of Louisiana

2010-2011

Graduate Researcher: Human Language Technology Lab Advisor: Dr. Harry Howard

Neural processing of newly learned L2 words

- Neural processing for newly learned Spanish L2 nouns and verbs
 - Methods: EEG
 - Software/Equipment: Geodesics EEG 128 Channel system

Teaching Experience

The Pennsylvania State University

Teaching Assistant

Fall 2018

Psych 253: Introduction to Psychology of Perception

Course Instructor

Spring 2017-Fall 2017

Psych 260: Neurological Bases of Human Behavior

Teaching Assistant

Fall 2016

Psych 260: Neurological Bases of Human Behavior

Invited Lecture

Spring 2015

FMRI Analyses of Second Language Learning

Lab Instructor

Fall 2013 - Spring 2015

Psych 301W-Basic Research Methods in Psychology

Curriculum Development

Psych 260: Neurological Bases of Human Behavior

Invited Talks

Legault., J. (August, 2015). Structural MRI Analyses Tutorial. Collaborative Innovation Center for Language Ability, Jiangsu Normal University, China.

Conference Presentations

Legault, J., Zhao, J., Klippel, A., Li, P. Virtual Reality as an Effective Tool to Train Second Language Vocabulary. Poster presented at the International Workshop on Advanced Learning Sciences, June 2018.

Legault, J., Zhao, J., Chi, Y-A., Chen, W., Klippel, A., Li, P. Enhancing Second Language Vocabulary Learning with Virtual Reality. Poster presented at the Thinking from Within Symposium, December 2, 2017.

- Legault, J.,** Grant, A., Fang, S., Li, P. (2017). Individual Difference-Related Neuroplasticity during Second Language Training. Poster presented at the Society for Neurobiology of Language, November 8, 2017.
- Legault, J.,** Fang, S-Y., Lan, Y-J., Li, P. Effects of Learning Context on Neuroplasticity during Second Language Vocabulary Training. Poster presented at the Connecting Language, Interaction and Education in Digital Environments Workshop, September 27, 2017.
- Legault, J.,** Fang, S-Y., Ahmed, Y., Lan, Y-J., Li, P. Cortical Thickness Changes with Short-term Second Language Vocabulary Learning. Poster presented at the Society for Neurobiology of Language, August 18, 2016.
- Legault, J.,** Litcofsky, K.A., Li, P. Structural Brain Correlates of Mathematical Processing in Bilinguals. Poster presented at the Cognitive Neuroscience Society conference, April 2016.
- Legault, J.,** Fang, S., Lan, Y., Li, P. Gray Matter Changes as a Function of Second Language Vocabulary Learning. Poster presented at the Cognitive Neuroscience Society conference, March 30, 2015.
- Scherf, S., **Legault, J.,** Turney, I., Elbich, D., Minshew, N., Berhmann, M. Axial Diffusivity in the ILF and IFOF is Related to Autism Symptom Severity. Poster presented at the Vision Sciences Society, March 27, 2015.
- Legault, J.,** Fang, S., Wang, S., Lan, Y., Li, P. Functional and Anatomical Changes in Second Language Learning. Poster presented at the Society for the Neurobiology of Language, September 28, 2014.

Departmental and University Services

- | | |
|--|-----------|
| Co-President of the Life Science Symposium Committee | 2016-2017 |
| • Led a committee in planning, budgeting for, and implementing the 2017 Life Science Symposium, including 200 registrants from over 25 departments, geared towards promoting inter-departmental collaboration and professional development for graduate students and postdocs | |
| Chair of the Huck Graduate Student Advisory Committee | 2015-2016 |
| • Led a committee in planning, budgeting for, and implementing biweekly events geared towards providing a voice for graduate students and career and professional development opportunities, while fostering collaboration across various Penn State organizations and departments and aiding in diversity recruitment | |
| Vice President of Neuroscience Student Society | 2014-2015 |
| Co-Coordinator of the student Center for Brain, Behavior, and Cognition group | 2013-2016 |
| Co-editor of the Neuroscience Newsletter | 2013-2015 |

Mentorship

Undergraduate Research Advisees

- | | |
|---|--------------|
| Nokrane Ahamadi (Received Millennium Scholars Award) | Summer 2018 |
| Ying-An Chi (co-authored a manuscript) | 2017-present |
| Weitao Chen (Graduated; co-authored a manuscript, currently at LSE) | 2017-2018 |
| Yumna Ahmed (Graduated, applying for NIH IRTA Fellowship) | 2015-2017 |

Tyler Snider (Graduated, current lab intern at UCFS)

2015-2017

Journal Ad Hoc Reviewer

Bilingualism: Language and Cognition	Fall 2018
Journal of Neurolinguistics	Summer 2016
Brain Structure and Function	Spring 2016
Journal of Neurolinguistics	Spring 2015
Journal of Neurolinguistics	Fall 2014

Membership in Professional Societies and Organizations

The Cognitive Neuroscience Society	2015- present
The Society for Neurobiology of Language	2014-present
The Center for Language Science	2014-present
Psi Chi-International Honor Society in Psychology	2013- present

Language Experience

English	Native
French	Native

References

Dr. Ping Li, Professor of Psychology, Linguistics, and Information Sciences and Technology
Dissertation Adviser
Department of Psychology
Pennsylvania State University
452 Moore Building
University Park, PA 16802
(814) 863-3921
pul8@psu.edu

Dr. Suzy Scherf, Associate Professor of Psychology
Dissertation Committee member
Department of Psychology
Pennsylvania State University
113 Moore Building
University Park, PA 16802
(814) 867-2921
kss23@psu.edu

Dr. Greg Loviscky, Associate teaching professor
TA Course Professor
Department of Psychology
Pennsylvania State University

622 Moore Building
University Park, PA 16802
(814) 863-1116
gel102@psu.edu