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EMPLOYMENT

Maryland Neuroimaging Center
Faculty Research Scientist

College Park, MD
August 2018

Johns Hopkins University
Research Scientist

Baltimore, MD
2016-18

Johns Hopkins University
Post-Doctoral Fellow

Baltimore, MD
2012-16

EDUCATION

Georgetown University
Ph.D., Neuroscience (Advisor: Guinevere Eden, PhD)
Dissertation: The Neural Substrates Underlying Both Reading and Spelling

Washington, D.C.
2012

Michigan State University
B.S., *magna cum laude*, Physiology/Psychology

East Lansing, MI
2003

JOURNAL PUBLICATIONS: RESEARCH

In Review/Prep Articles

1. **Purcell, J.J.**, Litovsky, C., Wiley, R.W., and Rapp, Stroke induced damage leads to localized de-differentiation of neural representations. (In Prep)
2. **Purcell, J.J.**, Martin, R., Wiley, R.W., and Rapp, Left Perisylvian Cortex Damage Selectively Impairs Pseudoword Spelling (In Prep)
3. Callow, D., Won, J., Alfini, A., **Purcell, J.J.**, Weiss, L., Zhan, W., and J. Carson Smith J.C., Microstructural Plasticity in the Hippocampus of Healthy Older Adults After Acute Exercise (In Review) *Frontiers in Ageing Neuroscience*

Peer Reviewed Articles

1. **Purcell, J.J.**, Wiley, R.W., and Rapp, B. (2019) Re-Learning to Be Different: Increased Neural Differentiation Supports Post-stroke Language Recovery. *NeuroImage*. <https://doi.org/10.1016/j.neuroimage.2019.116145>
2. Ellenblum, G., **Purcell, J.J.**, Song, X., and Rapp, B. (In Press) How are reading and spelling networks different from other networks? Evidence from resting-state fMRI. *Cognitive Neuroscience*. https://doi.org/10.1162/jocn_a_01405
3. **Purcell, J.J.** and Rapp, B (2018) Using a novel Local Heterogeneity Regression method to index orthographic lexical representations. *Neuroimage*. <https://doi.org/10.1016/j.neuroimage.2018.07.063>
4. **Purcell, J.J.**, Sebastian, R., Leigh, R., Jarso, S., Davis, C., Posner, J., Wright, A., Hillis, A.E. (2017) Recovery of Orthographic processing in left PCA stroke: A longitudinal fMRI study. *Cortex*. <http://dx.doi.org/10.1016/j.cortex.2017.03.022>

5. **Purcell, J. J.**, Jiang, X., Eden G. F. (2017) Shared Neuronal Representations for Spelling and Reading. *Neuroimage*. <http://dx.doi.org/10.1016/j.neuroimage.2016.12.054>
6. Sebastian, R., Long, C., **Purcell, J. J.**, Faria, A. V., Lindquist, M., Jarso, S., Hillis, A. E. (2016). Imaging network level language recovery after left PCA stroke. *Restorative Neurology and Neuroscience*, 34 (4), 473-89. <https://doi.org/10.3233/RNN-150621>
7. Rapp, B., **Purcell, J. J.**, Hillis, A. E., Capasso, R., & Miceli, G. (2015). Neural bases of orthographic long-term memory and working memory in dysgraphia. *Brain*. <http://doi.org/10.1093/brain/awv348>
8. **Purcell, J. J.**, Shea, J., & Rapp, B. (2014). Beyond the visual word form area: the orthography-semantics interface in spelling and reading. *Cognitive Neuropsychology*, 31(5-6), 482–510. <http://doi.org/10.1080/02643294.2014.909399>
9. **Purcell, J. J.**, & Rapp, B. (2013). Identifying functional reorganization of spelling networks: an individual peak probability comparison approach. *Frontiers in Psychology*, 4:964. <http://doi.org/10.3389/fpsyg.2013.00964>
10. **Purcell, J. J.**, Turkeltaub, P. E., Eden, G. F., & Rapp, B. (2011). Examining the central and peripheral processes of written word production through meta-analysis. *Frontiers in Psychology*, 2:239. <http://doi.org/10.3389/fpsyg.2011.00239>
11. **Purcell, J. J.**, Napoliello, E. M., & Eden, G. F. (2011). A combined fMRI study of typed spelling and reading. *Neuroimage*, 55(2), 750–762. <http://doi.org/10.1016/j.neuroimage.2010.11.042>

BOOK CHAPTER PUBLICATIONS: RESEARCH

1. Martin, R., Rapp, B., & **Purcell, J.J.**, Domain-Specific Working Memory: Perspectives from Cognitive Neuropsychology (In Review). Logie, R., (Ed.) in *Working Memory: State of the Science*.
2. **Purcell, J. J.** & Rapp, B. Disorder of Written Expression (2017). In Wenzel, A. E. (Ed.) *The SAGE Encyclopedia of Abnormal and Clinical Psychology*. Thousand Oaks, CA: SAGE Publications.
3. Rapp, B. & **Purcell, J. J.** Understanding how we produce written words: Lessons from the brain (2016). In Rueschemeyer, S. & Gaskell, M. G. (Ed.). *The Oxford Handbook of Psycholinguistics* (1st ed.). New York, NY: Oxford University Press
4. **Purcell, J. J.**, Schubert, T. M., Hillis, A. E. (2015). Acquired Impairments in Reading. In Hillis, A. E (Ed.). *Integrating Cognitive Neuropsychology, Neurology, and Rehabilitation*. (pp. 3-23) New York, NY: Psychology Press. ISBN 1317498348

PRESENTATIONS: RESEARCH

Oral Presentations

1. **Purcell, J. J.** (2018). Using local neural heterogeneity to quantify learning in the brain. Lab of Alfonso Caramazza, PhD, Harvard, Boston, MA
2. **Purcell, J. J.**, and Rapp, B. (2018). Using local neural heterogeneity to both predict and track in language recovery. Academy of Aphasia 56th Annual Meeting, Montreal, Canada
3. **Purcell, J. J.**, and Rapp, B. (2016). Using a novel Local Heterogeneity Regression method to index orthographic lexical representations. The Society for Neuroscience, San Diego, CA, USA
4. **Purcell, J. J.**, Wiley, B, and Rapp, B. Using the local heterogeneity of neural responses to index the integrity of representations and track recovery of function (2016). Academy of Aphasia 54th Annual Meeting, Llandudno, Wales, UK
5. **Purcell, J. J.**, Capasso, R., Miceli, G., and Rapp, B. (2014). Distinct neuroanatomical correlates for orthographic working memory and orthographic long term memory. The Society for Neuroscience, Washington D.C., USA

6. **Purcell, J. J** and Rapp, B. (2013). Functional reorganization of the orthographic processing network subsequent to neural injury: evidence from fMRI. The Academy of Aphasia, Lucerne, Switzerland

Poster Presentations (Select)

1. **Purcell J. J.**, Shea, J., Petrozzino, G., Wiley, B, and Rapp, B (2019). Left Perisylvian Cortex Damage Selectively Impairs Pseudoword Spelling. Society for Neuroscience, Chicago, IL, USA
2. **Purcell, J. J.** and Rapp B. (2019). Re-Learning to Be Different: Increased Neural Differentiation Supports Post-stroke Language Recovery. Cognitive Neuroscience Society, San Francisco, MA, USA
3. **Purcell, J. J.** and Rapp B. (2017). Using a novel Local Heterogeneity Regression method to index orthographic representations in reading. Academy of Aphasia 55th Annual Meeting. Baltimore, MD, USA
4. **Purcell, J. J.** and Rapp B. (2015). The neural basis of learning to spell again: An fMRI study of spelling training in acquired dysgraphia. Front. Psychol. Academy of Aphasia 53rd Annual Meeting. Tucson, AZ, USA
5. **Purcell, J. J.** and Rapp, B. (2015). Recovering orthographic knowledge: Contributions of the ventral and dorsal components of the orthographic processing network. Society for the Neurobiology of Language 7th Annual Meeting. Chicago, IL, USA
6. **Purcell, J. J.** and Rapp, B. (2013). Identifying functional reorganization of spelling networks: An Individual Peak Probability Comparison Approach. The Society for the Neurobiology of Language, San Diego, CA, USA
7. **Purcell, J. J.**, Jiang, X. and Eden, G. (2012). Shared Neuronal Representations for Spelling and Reading. Human Brain Mapping, Beijing, China
8. **Purcell J. J.**, Rapp B, Turkeltaub P, and Eden G (2011). Activation Likelihood Estimation (ALE) Meta-analysis of Written Spelling. Human Brain Mapping, Quebec City, Canada
9. **Purcell J. J.**, Napoliello E, Jiang X and Eden G (2010). Shared neural representations for word reading and spelling in the VWFA. Society for Neuroscience/Neurobiology of Language, San Diego, CA, USA
10. **Purcell J. J.**, Napoliello E and Eden G (2009). Functional neuroanatomical co-localization for reading and spelling: An fMRI study. Society for Neuroscience/Neurobiology of Language, Chicago, IL, USA

EXPERIENCE: TEACHING

University of Maryland

Course organizer & Instructor: [Introduction to fMRI Pattern Based Analyses](#)
Description: Hands on workshop for analyzing fMRI data using advanced multi-variate methods. This involved working and processing data on computers in class.

College Park, MD
Summer 2019

Emory-Tibet Science Initiative

Course Instructor: [Cognitive Neuroscience](#) and [Neuroscience](#)
<https://tibet.emory.edu/emory-tibet-science-initiative/index.html>
Description: Teach cognitive neuroscience (through lecture and interactive sessions) to Tibetan monks at a Tibetan monastery in India (3 weeks).

Drepung Gomang Monastery, India
Summer 2019

Johns Hopkins University

Course Co-organizer & Instructor: [Cognitive Neuroscience: Exploring the Living Brain](#)
Description: Undergraduate flipped-classroom course with pre-recorded lectures for on-line viewing and small-classroom interactive sessions.

Baltimore, MD
Spring 2016/17/18

Course Organizer & Instructor: [Windows to the Mind: A Survey of Neuroimaging Methods](#)
Description: Undergraduate small-classroom course with in-class lectures and computer based interactive exercises.

Fall 2017

Georgetown UniversityGuest Lecturer: Written Language and the Brain

Description: Invited lecture for graduate-level Neurobiology of Language Course

Course Organizer & Instructor: Intro to Human Cognitive Psych. Experimental Design

Description: Graduate-level interactive computer lab class.

Course Organizer & Instructor: Gross Human Neuroanatomy 3-day Workshop

Description: Graduate-level interactive gross neuroanatomy lab class.

Teaching assistant: Gross Human Neuroanatomy

Description: Medical School and graduate-level interactive gross neuroanatomy lab class.

Washington, D.C.

Spring 2012/14

Spring 2009-11

Summer 2008-11

Spring 2006-11

JOURNAL PUBLICATIONS: TEACHING***In Review/Prep Articles***Gray, K.M., Namgyal, D., **Purcell, J.J.**, Samphel, T., Sonam, T., Tenzin, K., Tsering, D., Worthman, C., and Eisen, A. Found in

Translation: Collaborative contemplations of Tibetan Buddhism and Western science (In Review)

PRESENTATIONS: TEACHING***Oral Presentations*****Purcell, J. J.**, Lessons learned Concerning Active Learning: From Johns Hopkins to Tibetan Monastics. Michigan State University Med Ed eForum Webinar***Poster Presentation***Rapp, B, Park, S, **Purcell, J. J.**, Reese, M. (2017). Teaching cognitive neuroscience: Transformation from large lecture class to small active learning groups. Cognitive Neuroscience Society Annual Meeting. San Francisco, CA, USA**PROFESSIONAL AWARDS****NIH Loan Repayment Grant**

National Institute Ageing, National Institutes of Health

2019-21

Teaching Technology Fellowship "Building Interactive Online Resources for Active Learning in Cognitive Neuroscience"

Johns Hopkins University, Krieger School of Arts and Sciences

2018

Deans Science Post-Doctoral Teaching Fellowship

Johns Hopkins University, Krieger School of Arts and Sciences

2017

Ruth L. Kirschstein Pre-Doctoral National Research Service Award

National Institute of Deafness & Other Communication Disorders, National Institutes of Health

2009-2012

Graduate Student Travel Fellowship

Neuroethics, Legal, & Social Issues workshop. Santa Ana Pueblo, New Mexico

2009

Graduate tuition & stipend fellowship

Georgetown University Interdisciplinary Program in Neuroscience

2005-2007

STUDENT MENTOR EXPERIENCE: Undergraduate (U) and Graduate (G)

- Mahshad Farnoush (Post-bacc), University of Maryland 2019 (Fall)-present
- Olivia Ragheb (U), University of California, Berkeley 2019/20 (Summer)
- Ben Rickles (G), University of Maryland 2019 (Fall)-present
- Erica Varga (U), University of Maryland 2019 (Fall)-present

- Kyriaki Neophytou (G), Johns Hopkins University 2019 (Fall)
- Gianni Petrozzino (U), Johns Hopkins University 2019 (Spring)
- Daniel Callow (G), University of Maryland 2018-19 (Fall/Spring)
- Delaney Ubellacker (U), Undergraduate, Johns Hopkins University 2017-19 (Fall/Spring)
- Natalie Moss (U), Undergraduate, Johns Hopkins University 2017-18 (Fall/Spring)
- Ting Yu Wu (U), Undergraduate, Johns Hopkins University 2016-17 (Fall/Spring)
- Ian McCandliss (U), Undergraduate, Johns Hopkins University 2016 (Summer)
- Chloe Haviland (U), Undergraduate, Johns Hopkins University 2015-16 (Fall/Spring)
- Noel Turner (U), Undergraduate, Johns Hopkins University 2013 (Fall/Spring)

PROFESSIONAL SERVICE

Requested Reviewer for the following journals (22 reviews in total): Cortex; Human Brain Mapping; Frontiers in Psychology; Cerebral Cortex; PLOS ONE; NeuroImage; Brain and Language; Developmental Science

PUBLIC OUTREACH TALKS

University of Maryland

Talk: Teaching Cognitive Neuroscience to Tibetan Buddhist Monks & Nuns

College Park, MD

August 15, 2019

Calvert Library

Participated in a Dyslexia Expert Panel.

Prince Frederick, MD

May 8, 2019

University of Virginia

Participated in a workshop with the "The Tribe" a group of nonspeaking autistic adults.

Charlottesville, VA

November 3, 2018

Baltimore Polytechnic Institute High School

Multiple classroom presentations: Introduction to Human Cognition and Brain

Baltimore, MD

March, 18, 2016

Edward A. Myerberg Senior Center

Talk: How to foster neuro-cognitive health in the ageing brain.

Baltimore, MD

November 11, 2015

PRESS RELEASES

1. <https://gradschool.umd.edu/newsroom/4832>
2. <https://bsos.umd.edu/featured-content/neuroscience-101-buddhist>
3. <https://www.baltimoresun.com/health/bs-hs-stroke-spelling-20160223-story.html>

REFERENCES

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Georgetown University
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4000 Reservoir Road, NW
Washington, DC 20007
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edeng@georgetown.edu

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3400 N. Charles Street
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Argye Hillis, MD

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Johns Hopkins School of
Medicine
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600 N. Wolfe Street
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Soojin Park, PhD

Visual Cognitive
Neuroscience Lab
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