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ACADEMIC APPOINTMENTS

2018-present Faculty Research Scientist, Maryland Neuroimaging Center, College Park, MD
2016-18 Research Scientist, Johns Hopkins University, Baltimore, MD
2012-16 Post-Doctoral Fellow Johns Hopkins University, Baltimore, MD

EDUCATION

2012 Ph.D., Neuroscience, Georgetown University, Washington, D.C.
Advisor: Guinevere Eden, PhD,
Dissertation: The Neural Substrates Underlying Both Reading and Spelling
2003 B.S. Physiology/Psychology, Michigan State University, MI

JOURNAL PUBLICATIONS: RESEARCH

In Review

1. Wiley, R. W., Baig, Y., Key, K. and **Purcell, J. J.** Toolkits for Indexing English Sound-Spelling Consistency (In Review).
2. **Purcell, J. J.**, Martin, R., Wiley, R.W., and Rapp, Left Perisylvian Cortex Damage Selectively Impairs Pseudoword Spelling (In Review)
3. Graves, W., Levinson, H., Staples, R., Boukrina, O., Rothlein, D., and **Purcell, J. J.** An inclusive multivariate approach to neural localization of language components (In Review)

Peer Reviewed/In Press Articles

1. Wiley, R. W., Key, K. and **Purcell, J. J.** (2023) Pseudoword Spelling: Insights into Sublexical Representations and Lexical Interactions. *Cognitive Neuropsychology* <https://doi.org/10.1080/02643294.2023.2270210>
2. **Purcell, J. J.**, Won, J., Weiss, L., Alfini, A., Callow, D., Wiley, R., Wei, Y. and Smith, J., (2023) Increased Neural Differentiation after a Single Session of Aerobic Exercise in Older Adults. *Neurobiology of Aging*. <https://doi.org/10.1016/j.neurobiolaging.2023.08.008>
3. Won., J., Callow, D., **Purcell, J. J.**, and Smith, J. (2023) Hippocampal Functional Connectivity Mediates the Association between Cardiorespiratory Fitness and Cognitive Function in Healthy Young Adults. *Journal of the International Neuropsychological Society*. <https://doi.org/10.1017/S1355617723000498>
4. Graves, W.W, **Purcell, J.J.**, Rothlein, D., Bolger, D.J., Rosenberg-Lee, M., Staples, R. (2023) Correspondence between cognitive and neural representations for phonology, orthography, and semantics in supramarginal compared to angular gyrus. *Brain Structure and Function*. <https://doi.org/10.1007/s00429-022-02590-y>
5. Won., J., Zaborszky, L., **Purcell, J. J.**, Ranadive, S. M., Gentili, R.J., and Smith J., (2023) Basal forebrain functional connectivity as a mediator of associations between cardiorespiratory fitness and cognition in healthy older adults. *Brain Imaging and Behavior*. <https://doi.org/10.1007/s11682-023-00784-4>
6. Kommula, Y., **Purcell, J. J.**, Callow, D., Won, J., Pena, G.S., and Smith, J., (2023) Emotional Processing and Positive Affect After Acute Exercise in Healthy Older Adults. *Psychophysiology*. <https://doi.org/10.1111/psyp.14357>

7. Callow, D., **Purcell, J. J.**, Won, J., and Smith, J., (2022) Neurite Dispersion and Density Mediates the Relationship between Cardiorespiratory Fitness and Cognition in Healthy Younger Adults. *Neuropsychologia* <https://doi.org/10.1016/j.neuropsychologia.2022.108207>
8. Won, J., Callow, D., **Purcell, J. J.**, and Smith, J. (2022) Differential associations of regional cerebellar volume with gait speed and working memory. *Scientific Reports*. <https://doi.org/10.1038/s41598-022-06180-0>
9. **Purcell, J. J.**, Rapp, B., and Martin, R. (2021) Separate Neural Substrates for Orthographic and Phonological Working Memory. *Frontiers in Neurology*. <https://doi.org/10.3389/fneur.2021.681141>
10. Callow, D., Won, J., Alfini, A., **Purcell, J.J.**, Weiss, L., Zhan, W., and J. Carson Smith J.C., (2021) Microstructural Plasticity in the Hippocampus of Healthy Older Adults After Acute Exercise. *Medicine & Science in Sports & Exercise*. <https://doi.org/doi:10.1249/MSS.0000000000002666>
11. Gray, K.M., Namgyal, D., **Purcell, J.J.**, Samphel, T., Sonam, T., Tenzin, K., Tsering, D., Worthman, C., and Eisen, A. (2020) Found in Translation: Collaborative contemplations of Tibetan Buddhism and Western science. *Frontiers in Communication*. <https://doi.org/10.3389/fcomm.2019.00076>
12. **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>
13. 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
14. **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>
15. **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>
16. **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>
17. 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>
18. 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>
19. **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>
20. **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>
21. **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>
22. **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. Smith, J., Callow, D., Alfinie, A., Pena, G. S., and **Purcell, J. J.**, Exercise brain stimulation for cognitive function and mental health (In Review). Schousboe, A. (Ed.) in *Advances in Neurobiology*
2. Martin, R., Rapp, B., & **Purcell, J.J.**, Domain-Specific Working Memory: Perspectives from Cognitive Neuropsychology (2020). Logie, R., (Ed.) in *Working Memory: State of the Science*.
3. **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.

4. 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
5. **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

PROFESSIONAL & GRANT AWARDS

Research

- | | |
|-------------|--|
| 2023-2024 | 1R56AG078366 Grant (Active): Neural Mechanisms for Longitudinal Associations Between Fitness and Cognition in Aging. National Institute of Aging
Role: Co-Investigator
Award Amount: \$642,493 |
| 2022-2024 | 1R21HD107511-01A1 Grant (Active): A Novel Approach to Measuring Neural Tuning to Written Words. National Institute of Childhood and Development
Role: Co-Principal Investigator
Award Amount: \$441,313 |
| 2021 - 2022 | Broadening Research Participation Grant, University of Maryland, Psychology
Role: Principal Investigator
Amount: \$10,000 |
| 2019 - 2021 | Loan Repayment Grant, National Institute of Aging
Role: Principal Investigator
Amount: \$10,000 |
| 2009 - 2012 | Ruth L. Kirschstein Pre-Doctoral National Research Service Award (F31), National Institute of Deafness & Other Communication Disorders, National Institutes of Health
Role: Principal Investigator
Amount: 3-years of graduate student stipend |
| 2005 - 2007 | Graduate tuition & stipend fellowship, Georgetown University Interdisciplinary Program in Neuroscience
Role: Student |

Teaching

- | | |
|-------------|--|
| 2023 | Developing In-class and Virtual Experiential Neuroscience Educational Resources and Activities, University of Maryland, Teaching and Learning Transformation Center
Role: Co-Principal Investigator
Amount: \$20,000 |
| 2019 & 2023 | Teaching Neuroscience to Tibetan Monastics in India, Emory Tibet Science Initiative, Emory University
Role: Instructor
Amount: \$4,000 |
| 2017 - 2018 | Deans Science Post-Doctoral Teaching Fellowship, Johns Hopkins University, Krieger School of Arts and Sciences
Role: Instructor
Amount: \$4,000 |

2018 Teaching Technology Fellowship, Johns Hopkins University, Krieger School of Arts and Sciences
 Role: Principal Investigator
 Amount: \$5,000

Travel

2009 Graduate Student Travel Fellowship, Neuroethics, Legal, & Social Issues workshop. Santa Ana Pueblo, New Mexico
 Role: Student
 Amount: \$1000

PRESENTATIONS: RESEARCH**Oral Presentations**

1. **Purcell, J. J.**, (2021). Increased Neural Heterogeneity and Executive Function after a Single Session of Aerobic Exercise in Older Adults. UMD College Park, MD
2. **Purcell, J. J.** (2018). Using local neural heterogeneity to quantify learning in the brain. Lab of Alfonso Caramazza, PhD, Harvard, Boston, MA
3. **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
4. **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
5. **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
6. **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
7. **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.**, Wiley, B, Shea, J., Rosenberg, S., Martin, R., and Rapp, B (2023). Lesion Mapping of the Spelling System's Sub-lexical, Lexical and Working Memory Functions. Seeing and Action Conference (SAW), Coimbra, Portugal
2. **Purcell, J. J.**, Won, J., Weiss, L., Alfini, A., Callow, D., Wiley, R., and Smith, J., (2023). Increased Neural Heterogeneity after a Single Session of Aerobic Exercise in Older Adults. Dallas Aging and Cognition Conference. Dallas, Texas
3. Graves, W.W, **Purcell, J.J.**, Rothlein, D., Bolger, D.J., Rosenberg-Lee, M., Staples, R. (2022) Correspondence between cognitive and neural representations for phonology, orthography, and semantics in supramarginal compared to angular gyrus. Society for the Neurobiology of Language, Philadelphia, PA, USA
4. **Purcell, J. J.**, Won, J., Weiss, L., Alfini, A., Callow, D., Wiley, R., and Smith, J., (2021). Increased Neural Heterogeneity and Executive Function after 30 minutes of Aerobic Exercise in Older Adults. Society for Neuroscience, Chicago, IL, USA
5. **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
6. **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
7. **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
8. **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

9. **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
10. **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
11. **Purcell, J. J.**, Jiang, X. and Eden, G. (2012). Shared Neuronal Representations for Spelling and Reading. Human Brain Mapping, Beijing, China
12. **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
13. **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
14. **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, College Park, MD

- 2022/23/24 Winter Course: Introduction to Human Brain Mapping
 Role: Organizer and Instructor
 Description: Virtual undergraduate winter term course with hands on exercises to learn about human brain mapping.
- 2022/23 Summer Course: Psych 202 Introduction to Neuroscience
 Role: Organizer and Instructor
 Description: Asynchronous course introducing neuroscience. Implemented innovative virtual workshops for brain navigation and meta-analysis that I developed.
- 2020 Winter Workshop: Introduction to fMRI Connectivity Analyses
 Role: Organizer and Instructor
 Description: Virtual 3-day workshop for analyzing fMRI data using connectivity approaches.

Drepung Monastery, Karnataka, India

- 2019/22/23
 Summer Course: Introduction to Neuroscience as part of Emory-Tibet Science Initiative
 (<https://tibet.emory.edu/>)
 Role: Instructor
 Description: Organize and teach neuroscience and cognitive neuroscience to Tibetan monastics at a monastery in India (2 weeks).

Johns Hopkins University, Baltimore, MD

- 2016/17/18
 Spring Course Cognitive Neuroscience: Exploring the Living Brain
 Role: Co-organizer & Instructor:
 Description: A full semester, undergraduate flipped-classroom course with pre- recorded lectures and small-classroom interactive sessions
 (<https://magazine.krieger.jhu.edu/v14n2/flipped-learning/>).
- 2017 Fall Course: A Survey of Neuroimaging Methods
 Role: Organizer & Instructor

Georgetown University, Washington DC

2009-11 Spring	Course: Intro to Human Cognitive Psychology Experimental Design Role: Organizer & Instructor Description: 1-day graduate-level interactive computer lab class.
2008-11 Sum.	Course: Gross Human Neuroanatomy Workshop Role: Organizer & Instructor Description: 3-day graduate-level interactive gross neuroanatomy lab class.
2008-11 Sum.	Course: Gross Human Neuroanatomy Workshop Role: Teaching Assistant Description: Medical School and graduate-level interactive gross neuroanatomy lab class.

PRESENTATIONS: TEACHING

1. (Oral) **Purcell, J. J.**, (2020) Transforming Curriculum into Active Learning with Jeremy Purcell. Michigan State University Med Ed Podcast. <https://open.spotify.com/episode/5TeUsbjh0cJeAaCkNGyyzS>
2. (Oral) **Purcell, J. J.**, (2020) Lessons learned Concerning Active Learning: From Johns Hopkins to Tibetan Monastics. Michigan State University Med Ed eForum Webinar
3. (Poster) 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

STUDENT MENTOR EXPERIENCE:

Graduate

1. Michaela Brooks (Co-Thesis Advisor)	2022 (Sum.)-present
2. Yash Kommula (year 2 qualifying exam committee)	2021 (Fall)-present
3. Jade Dunstan (master's thesis committee)	2022 (Spring)
4. Jun Won (thesis committee; defense Spring 22), University of Maryland	2020-22
5. Daniel Callow (thesis committee; defense Spring 23), University of Maryland	2018 (Fall)-present
6. Leslie Jordan (year 2 qualifying exam committee), University of Maryland	2021 (Fall)-present
7. Ben Rickles (year 2 qualifying exam committee), University of Maryland	2019 (Fall)-present

Undergraduate/Post-bacc (p=paid, v = volunteer)

1. v/p: Samuel Rosenberg, University of Maryland	2021 (Spring)-present
2. v/p: Sophia Hall, University of Maryland	2022 (Spring)-present
3. v/p: Tarun Gunaseelan, University of Maryland	2022 (Spring)-present
4. v: Laney Rodgers, University of Maryland	2022 (Sum.)-present
5. v: Raksha Bellary, University of Maryland	2022 (Sum.)-present
6. v: Steven Hadad, University of Maryland	2022 (Sum.)-present
7. v: Faith Acuesta, University of Maryland	2023 (Sum.)-present
8. v: Aakash Pamnani, University of Maryland	2023 (Sum.)-present
9. v: Emma Martin, University of Maryland	2023 (Sum.)-present
10. v: Harsimar Ahuja, University of Maryland	2023 (Sum.)-present
11. v: Pramati Kandyala, University of Maryland	2022 (Fall)-present
12. v: Hana Tujjr, University of Maryland	2023 (Winter)-present
13. v: (Tara) Alexandra Close, University of Maryland	2023 (Winter)-present
14. v: Sabrina Chen, University of Maryland	2022 (Fall)-present
15. v: Stuti Khanna, University of Maryland	2022 (Fall)-present
16. v: Arshin Mohammadi, University of Maryland	2022 (Fall)-present
17. v: Yi Wei, University of Maryland	2022 (Fall)-present
18. v: Jaylen Worthy, University of Maryland	2022 (Fall)-present
19. v: Audrey Lyu, University of Maryland	2022/23 (Spring)
20. v: Emre Derin, University of Maryland	2021- 22
21. v: Ishita Chatterjee, University of Maryland	2021 (Fall)
22. v: Tu Pham, University of Maryland	2022 (Spring)
23. v: Shreya Gunda, University of Maryland	2022 (Spring)

24. p: Mina Hughs, University of Maryland,	2021 (Fall)
25. p: Sriparna Sen, University of Maryland	2021-22 (Fall/Spring)
26. v: Alyssa Lucero, University of Maryland	2021 (Fall)
27. v: Mahshad Farnoush, University of Maryland	2019 (Fall)
28. v: Amman Kudrolli, University of Illinois Champaign-Urbana	2021 (Sum.)
29. v: Jasmine Shinault, University of Maryland	2021 (Spring/Sum.)
30. v: Erica Varga, University of Maryland	2019-21 (Fall/Spring)
31. v: Olivia Ragheb, University of California, Berkeley	2019/20 (Sum.)
32. p: Delaney Ubellacker, Undergraduate, Johns Hopkins University	2017-19 (Fall/Spring)
33. v: Ting Yu Wu, Undergraduate, Johns Hopkins University	2016-17 (Fall/Spring)
34. v: Ian McCandliss, Undergraduate, Johns Hopkins University	2016 (Sum.)
35. v: Chloe Haviland, Undergraduate, Johns Hopkins University	2015-16 (Fall/Spring)
36. v: Noel Turner, Undergraduate, Johns Hopkins University	2013 (Fall/Spring)

PROFESSIONAL SERVICE

Requested Reviewer for the following journals (39 reviews in total): Cortex, Human Brain Mapping, Frontiers in Psychology, Cerebral Cortex, PLOS ONE, NeuroImage, Brain and Language, Developmental Science, Neuropsychologia, Brain Structure and Function, Neuroscience, Behavior Research Methods

PUBLIC OUTREACH TALKS

2019, August 15	Talk: Teaching Cognitive Neuroscience to Tibetan Buddhist Monks & Nuns, University of Maryland, College Park, MD
2019, May 8	Participated in a Dyslexia Expert Panel, Calvert Library, Prince Frederick, MD
2018, November 3	Participated in a workshop with the "The Tribe" a group of nonspeaking autistic adults. University of Virginia, Charlottesville, VA
2016, March 18	Multiple classroom presentations: Introduction to Human Cognition and Brain, Baltimore Polytechnic Institute High School, Baltimore, MD
2015, November 11	Talk: How to foster neuro-cognitive health in the ageing brain. Edward A. Myerberg Senior Center, Baltimore, MD

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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