**Paul S. Scotti**

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**EXPERIENCE**

**Vision and Cognitive Neuroscience Lab** (PI: Dr. Julie Golomb) **Oct. 2017 – Present**

**Cognitive Control Lab** (PI: Dr. Andy Leber)

*Ph.D. candidate (co-advised) at The Ohio State University Columbus, OH*

**Attention and Cognition Lab** (PI: Dr. Sarah Shomstein)  **Sep. 2014 – May 2017**

**Visual Cognition Lab** (PI: Dr. Steve Mitroff)  **Sep. 2016 – May 2017**

*Undergraduate researcher at George Washington University Washington, DC*

**EDUCATION**

**The Ohio State University Columbus, OH**

*M.A. in Cognitive Psychology (Ph.D. expected May 2022) May 2020*

**George Washington University Washington, DC**

*B.A. in Psychology May 2017*

Distinguished/Honors scholar, magna cum laude, [2017 commencement speaker](https://youtu.be/3TJ65YCrBms?t=1950)

**SUMMARIZED WORK**

**Neuroimaging methods**

* Developed an improved method for inverted encoding models (to present at CNS/VSS 2021)
* Python-based online textbook of fMRI analysis methods [(Scotti, Zhang, Chen, & Golomb, in-prep)](http://paulscotti.com/navigateFMRI)

**Educational/open-source neuroscience tools**

* EduCortex ([www.paulscotti.com/educortex](http://www.paulscotti.com/educortex)) [Scotti, Kulkarni, Mazor, Klapwijk, Yarkoni, & Huth, 2020; *JOSE*](https://jose.theoj.org/papers/10.21105/jose.00075.pdf)
* Inverted Encoding Models -- Python package (<https://pypi.org/project/inverted-encoding/>)

**Science communication**

* OnNeuro lead, facilitating international webinars & lecture repository ([www.onneuro.com](http://www.onneuro.com))

**Visual attention**

* Attention scales according to inferred real-world object size

[Collegio, Nah, Scotti, & Shomstein, 2019; *Nature Human Behavior*](https://www.nature.com/articles/s41562-018-0485-2)

* Object-based attention is resilient to low-level or high-level object disturbances, but not both

[Scotti, Collegio, & Shomstein, 2019; *PsyArXiv*](https://psyarxiv.com/yxqju/)

**Visual working memory**

* Visual working memory items drift apart due to active, not passive, maintenance

[Scotti, Hong, Leber, & Golomb, *in-press; Journal of Experimental Psychology: G*](https://psyarxiv.com/md5h4/)*eneral*

**Visual long-term memory**

* Statistical regularities during object encoding induce swap errors and repulsion/attraction biases

[Scotti, Hong, Golomb, & Leber, 2021;](https://rdcu.be/cdOa2) *Attention, Perception, & Psychophysics*

* Recognition-induced forgetting can operate over perceptually distinct real-world objects

[Scotti, Janakiefski, & Maxcey, 2020; *Psychonomic Bulletin & Review*](https://link.springer.com/article/10.3758%2Fs13423-019-01693-8)

* Distinct mechanisms underlie directed forgetting & induced forgetting

Scotti & Maxcey, 2020; *under revision*

**PUBLICATIONS**

1. **Scotti, P. S.,** Hong, Y., Leber, A., B., & Golomb, J., D. (in-press). Visual working memory items drift apart due to active, not passive, maintenance. *Journal of Experimental Psychology: General.*
2. **Scotti, P. S.,** Kulkarni, A., Mazor, M., Klapwijk, E., Huth, A. G. (in-press). Interactive 3d brain helps you learn how the brain is organized. *Frontiers for Young Minds*.
3. **Scotti, P. S.,** Hong, Y., Golomb, J. D., & Leber, A., B. (2021). Statistical regularities as a reference point for memory distortions: Swap and shift errors. *Attention, Perception, & Psychophysics,* (), 1-21. [doi.org/10.3758/s13414-020-02236-3](http://doi.org/10.3758/s13414-020-02236-3)
4. **Scotti, P. S.,** Kulkarni, A., Mazor, M., Klapwijk, E., Yarkoni, T., Huth, A. G. (2020). EduCortex: browser-based 3D brain visualization of fMRI meta-analysis maps. *Journal of Open Source Education*, 3(26), 75. [doi.org/10.21105/jose.00075](http://doi.org/10.21105/jose.00075)
5. **Scotti, P. S.,** Janakiefski, L., & Maxcey, A. M. (2020). Recognition-induced forgetting of schematically related pictures. *Psychonomic Bulletin & Review*, 27, 357–365. [doi.org/10.3758/s13423-019-01693-8](http://doi.org/10.3758/s13423-019-01693-8)
6. Collegio, A., Nah, J., **Scotti, P. S.,** & Shomstein, S. (2019). Attention scales according to inferred real-world object size. *Nature Human Behavior*, 3(1), 40-47. [doi.org/10.1038/s41562-018-0485-2](http://doi.org/10.1038/s41562-018-0485-2)

*Preprints*

1. **Scotti, P. S.**, Collegio, A., & Shomstein, S. (2019). Object-based attention is resilient to low-level (boundary) or high-level (semantic) disturbances, but not both. *PsyArXiv.* [doi.org/10.31234/osf.io/yxqju](http://doi.org/10.31234/osf.io/yxqju)

*Under Review*

1. **Scotti, P.S.** & Maxcey, A. M. (under review). Comparing the robustness of laboratory-induced forgetting across paradigms.

*In Prep*

1. **Scotti, P. S.,** Chen, J., & Golomb, J., D. (in preparation). An improved method for evaluating inverted encoding models.
2. **Scotti, P. S.,** Zhang, X., Chen, J., & Golomb, J., D. (in preparation). Navigating fMRI analysis techniques: a practical guide.
3. Babu, A., **Scotti, P. S.,** & Golomb, J. D. (in preparation). The dominance of spatial information in location judgments: A persistent congruency bias even amidst conflicting statistical regularities.
4. **Scotti, P. S.,** Malcolm, G.L., Peterson, M., & Shomstein, S. (in preparation). Task-irrelevant semantic grouping weakens object-based effects in the two-rectangle paradigm.

**SCHOLARSHIPS, FELLOWSHIPS, & AWARDS**

* NSF Graduate Research Fellowship ($102,000) 2019-2022
* CCBBI Student Neuroimaging Research Award ($3000) 2018
* OSU University Fellowship ($26,316) 2017
* GW CCAS Distinguished Scholar 2017
* Luther Rice Undergraduate Research Fellowship ($5000) 2016
* Sigelman Undergraduate Research Enhancement Award ($500) 2016
* GW Presidential Academic Scholarship Recipient 2013

**SKILLS**

* Python, MATLAB, R, JavaScript, HTML/CSS, Node.js (experience building MTurk experiments)
* FMRI (designing experiments, collecting data, pre-/post-processing; SPM, Nipype, Freesurfer, Fmriprep)
* Neural networks (PyTorch) and hierarchical Bayesian modeling (PyMC3, JAGS)
* Supercomputing / cloud computing (Ohio Supercomputer Center and Amazon Web Services)