Last updated Mar. 17, 2020

Paul S. Scotti

scottibrain@gmail.com | www.paulscotti.com

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

SUMMARIZED WORK

Neuroimaging methods
- Developed an improved method for inverted encoding models (to present at CNS/VSS 2021)

Visual working memory
- Visual working memory items drift apart due to active, not passive, maintenance
  Scotti, Hong, Leber, & Golomb, *in press at JEP:G (PsyArXiv preprint available)*

Visual long-term memory
- Statistical regularities during object encoding induce swap errors and repulsion/attraction biases
  Scotti, Hong, Golomb, & Leber, 2021; *Attention, Perception, & Psychophysics*
- Recognition-induced forgetting can operate over perceptually distinct real-world objects
  Scotti, Janakiefski, & Maxcey, 2020; *Psychonomic Bulletin & Review*
- Recognition-induced forgetting is stronger than directed forgetting
  Scotti & Maxcey, 2020; *submitted*

Visual attention
- Attention scales according to inferred real-world object size
  Collegio, Nah, Scotti, & Shomstein, 2019; *Nature Human Behavior*
- Object-based attention is resilient to low-level or high-level object disturbances, but not both
  Scotti, Collegio, & Shomstein, 2019; *PsyArXiv*

Educational/open-source neuroscience tools
- EduCortex (www.paulscotti.com/educortex) Scotti, Kulkarni, Mazor, Klapwijk, Yarkoni, & Huth, 2020; *JOSE*
- Inverted Encoding Models python package (https://pypi.org/project/inverted-encoding/)

Science communication
- OnNeuro lead, facilitating international webinars & lecture repository (www.onneuro.com)

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
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
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
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

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

Under Review / Submitted

1. **Scotti, P.S.** & Maxcey, A. M. (under review). What do laboratory-forgetting paradigms tell us about use-inspired forgetting?

In Prep

1. **Scotti, P. S.,** Chen, J., & Golomb, J. D. (in prep.). An improved method for evaluating inverted encoding models.
2. Maxcey, A. M., Mancuso E., **Scotti, P. S.,** Spinelli, E., & Woodman, G. F. (in prep.). *Visual memory* (Eds. Bainbridge, W. & Brady, T.). Routledge.
3. Babu, A., **Scotti, P. S.,** & Golomb, J. D. (in prep.). 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 prep.). 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

TALK / POSTER PRESENTATIONS (talks marked with *)

1. **Scotti, P. S.,** Chen, J., & Golomb, J. D. (2021, May). An improved method for evaluating inverted encoding models. *To be presented as a poster at the 2022 Virtual Vision Sciences Society annual meeting.*
2. **Scotti, P. S.,** Chen, J., & Golomb, J. D. (2021, March). An improved method for evaluating inverted encoding models. *Cognitive Neuroscience Society*. Virtual conference.
3. Jones, C. M., **Scotti, P. S.,** & Golomb, J. D. (2020, May). Feature-binding errors during saccadic remapping may affect perception of real-world objects. *Vision Sciences Society*. Virtual conference.
4. **Scotti, P. S.,** Kulkarni, A., Mazor, M., Klapwijk, E., Yarkoni, T., Huth, A. G. (2019, December). EduCortex: browser-based 3D brain visualization of fMRI meta-analysis maps. **Awarded best poster,** *Center for Cognitive and Behavioral Brain Imaging Annual Research Days*, Columbus, OH.
5. ***Scotti, P. S.,** Hong, Y., Leber, A., B., & Golomb, J. D. (2019, November). Competition between similar visual working memory items underlies repulsion effects. *Object Perception, Attention, and Memory (OPAM),* Montreal, Quebec.
6. **Scotti, P. S.,** Janakiefski, L., & Maxcey, A. M. (2019, November). Recognition-Induced Forgetting Does Not Operate Over Superordinate Categories. *Psychonomic Society*, Montreal, Quebec.
7. **Scotti, P. S.,** Hong, Y., Leber, A., B., & Golomb, J. D. (2019, October). Competition Between Similar Visual Working Memory Items Produces Repulsion Effects. *Society for Neuroscience*, Chicago, IL.
8. **Scotti, P. S.,** Hong, Y., Golomb, J. D., Leber, A., B. (2019, May). Relational interactions between visual memory representations increase with maintenance duration. *Vision Sciences Society*, St. Pete Beach, FL.
9. Babu, A., **Scotti, P. S.,** Golomb, J. D. (2019, May). The dominance of spatial information in location judgments: A persistent congruency bias even amidst conflicting statistical regularities. *Vision Sciences Society*, St. Pete Beach, FL.
10. Janakiefski, L., Smerdell, M., **Scotti, P. S.**, Maxcey, A. (2019, March). Does recognition-induced forgetting operate over temporally-grouped objects? *CogFest*, Columbus, OH.
11. **Scotti, P. S.,** Hong, Y., Golomb, J. D., Leber, A., B. (2018, November). Statistical regularities during object encoding distort long-term memory. **Awarded best poster ($200)**, *Object Perception, Attention, and Memory (OPAM)*, New Orleans, LA.
12. **Scotti, P. S.,** Hong, Y., Golomb, J. D., Leber, A., B. (2018, September). Statistical regularities during object encoding distort long-term memory. *Center for Cognitive and Brain Sciences Fall Retreat*, Mt. Sterling, OH.
13. **Scotti, P. S.,** Hong, Y., Golomb, J. D., Leber, A., B. (2018, May). Statistical regularities during object encoding distort long-term memory. *Vision Sciences Society*, St. Pete Beach, FL.
14. Adamo, S., Nah, J., Collegio, A., **Scotti, P. S.,** Shomstein, S. (2018, May). The flux capacitor account: A new theoretical account of multiple target visual search errors. *Vision Sciences Society*, St. Pete Beach, FL.
15. *Collegio, A., Nah, J., **Scotti, P. S.,** Shomstein, S. (2017, November). Real-world object size affects attentional allocation. *Object Perception, Attention, and Memory (OPAM),* Vancouver, BC.
16. **Scotti, P. S.,** Collegio, A., & Shomstein, S. (2017, November). Task-irrelevant object category guides attentional allocation. *Object Perception, Attention, and Memory (OPAM)*, Vancouver, BC.
17. **Scotti, P. S.,** Adamo, S., Mitroff, S., Shomstein, S. (2017, May). Repetition priming preferentially benefits infrequent targets. *Vision Sciences Society*, St. Pete Beach, FL.
18. Adamo, S., Nah, J., Collegio, A., **Scotti, P. S.,** Shomstein, S. (2017, May). Does orientation matter? Same or differently oriented targets in a multiple target search. *Vision Sciences Society*, St. Pete Beach, FL.
19. Collegio, A., Nah, J., **Scotti, P. S.,** Shomstein, S. (2017, May). Real-world object size affects attentional allocation. *Vision Sciences Society*, St. Pete Beach, FL.
20. **Scotti, P. S.,** Adamo, S., Mitroff, S., Shomstein, S. (2017, April). Repetition priming preferentially benefits infrequent targets. **1st place Psychology poster**, *GW Research Days event*, Washington, D.C.
21. **Scotti, P. S.,** Malcolm, G.L., Peterson, M., & Shomstein, S. (2016, November). Reality vs. Simplicity: The effects of real-world objects on attentional selection. *Object Perception, Attention, and Memory (OPAM)*, Boston, MA.
22. **Scotti, P. S.,** Malcolm, G.L., Peterson, M., & Shomstein, S. (2016, May). Reality vs. Simplicity: The effects of real-world objects on attentional selection. *Vision Sciences Society*, St. Pete Beach, FL.

SKILLS & INTERESTS

Relevant skills

- Python, MATLAB, R
- FMRI (designing experiments, collecting data, pre-/post-processing; SPM, Nipype, Freesurfer, Fmriprep)
- HTML / CSS / JavaScript / Node.js (experience building Amazon Mechanical Turk experiments)
- Hierarchical Bayesian modeling (PyMC3, JAGS)
- Neural networks (PyTorch)
- Supercomputing / cloud computing (Ohio Supercomputer Center and Amazon Web Services)
- Eye-tracking (experience using/designing experiments for EyeLink 1000 Plus)

Interests

- Board games (founded GWU Tabletop Gaming Society; can lead gaming to promote workplace bonding)
- Murder mysteries (developed the mobile app "Popcorn, Soda … Murder?" for Android/iOS)

MENTORSHIP

- Anisha Babu (now Ph.D. student working with Dr. Brice Kuhl at Univ. of Oregon) Sep. 2018 – May 2020
- Molly McKinney (now lab manager of Dr. Andy Leber's lab at OSU) Sep. 2018 – May 2019

PROFESSIONAL DEVELOPMENT / TEACHING

- OnNeuro (www.OnNeuro.com), Founder 2017 – Present
  Head of a live communication platform across researchers and the public, allowing those who may not have easy access to scientific discussions to participate in the fields of psychology and neuroscience
- Center for Cognitive and Behavioral Brain Imaging Student Org, Technical Director 2017 – Present
  Leadership role where I organize interdisciplinary workshops and guest speaker presentations related to neuroimaging. Role also includes A/V support in cooperation with OnNeuro
- CCBBI Annual Research Day, Student Organizer Fall 2020
  Set up talk presentations, invited photographers, worked with A/V team
- NeuroHackademy Summer 2019
  Led a team of researchers to create EduCortex, an educational brain viewer
- Guest Lecturer Fall 2019
  Introduction to Psychology (PSYCH 1001)
- Course Assistant
  Sensation and Perception (PSYCH 3310) Spring 2019
  Cognitive Psychology Laboratory (PSYCH 4510) 2018 – 2019
  Introduction to Social Psychology (PSYCH 3325) Autumn 2018
- Center for Cognitive and Brain Sciences Undergraduate Summer Institute (CUSI) Summer 2018/2019
  Gave lectures on lab organization and pre-registration
- Career Development Grant Judge (Council of Graduate Students) Spring 2018
- York University Centre for Vision Research Summer School (Toronto, ON) Summer 2016
- Cold Spring Harbor Laboratory Summer Course, "DNA Science" (Long Island, NY) Summer 2012