Paul S. Scotti

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EXPERIENCE & SUMMARIZED WORK

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*

- 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, 2020; *PsyArXiv*
- Visual long-term memory
  - Statistical regularities during object encoding induce swap errors and repulsion/attraction biases
    Scotti, Hong, Golomb, & Leber, 2018; *PsyArXiv*
  - Recognition-induced forgetting can operate over perceptually distinct real-world objects
    Scotti, Janakiefski, & Maxcey, 2020; *Psychonomic Bulletin & Review*
  - Distinct mechanisms underlie recognition-induced forgetting & directed forgetting
    Scotti & Maxcey, 2020; *submitted*
- Educational neuroscience tools
  - Created EduCortex (www.paulscotti.com/educortex)
    Scotti, Kulkarni, Mazor, Klapwijk, Yarkoni, & Huth, 2020; *Journal of Open Source Education*
- Science communication
  - Founder of OnNeuro, facilitating international webinars & lecture repository (www.onneuro.com)

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*

- Object-based attention
  - Attention scales according to inferred real-world object size
    Collegio, Nah, Scotti, & Shomstein, 2019; *Nature Human Behavior*
  - OBA is resilient to low-level or high-level object disturbances, but not both
    Scotti, Collegio, & Shomstein, 2019; *PsyArXiv*
- Visual search
  - Examined repetition priming using "big data" from Airport Scanner mobile app

EDUCATION

The Ohio State University   **Columbus, OH**
Ph.D. in Cognitive Psychology (M.A. acquired in 2020)   *exp. May 2022*

George Washington University   **Washington, DC**
B.A. in Psychology   *May 2017*
- Distinguished/Honors scholar, magna cum laude, 2017 commencement speaker

SKILLS & INTERESTS

Relevant skills
- Python, MATLAB, R
- FMRI (designing experiments, collecting data, pre-/post-processing; SPM, Nipype, Freesurfer, Fmriprep)
- Amazon Mechanical Turk (built experiments using GitHub hosted HTML / CSS / JavaScript)
- Supercomputing / cloud computing (Ohio Supercomputer Center and Amazon Web Services)
- Hierarchical Bayesian Modeling (PyMC3, JAGS)
- Eye-tracking (experience using/designing experiments for EyeLink 1000 Plus)

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

PUBLICATIONS

1. **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, https://doi.org/10.21105/jose.00075
2. **Scotti, P. S.,** Janakiefski, L., & Maxcey, A. M. (2020). Recognition-induced forgetting of schematically related pictures. Psychonomic Bulletin & Review 27, 357–365 (2020). https://doi.org/10.3758/s13423-019-01693-8
3. 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. https://doi.org/10.1038/s41562-018-0485-2

Under Review / Submitted:
1. **Scotti, P. S.,** Hong, Y., Leber, A., B., & Golomb, J., D. (under review). Visual working memory items drift apart due to active, not passive, maintenance.
2. **Scotti, P. S.,** Kulkarni, A., Mazor, M., Klapwijk, E., Huth, A. G. (under review). Interactive 3d brain helps you learn how the brain is organized.
3. **Scotti, P. S.,** Hong, Y., Golomb, J. D., & Leber, A., B. (submitted). Statistical regularities during object encoding induce swaps in long-term memory.
4. **Scotti, P. S.,** Collegio, A., & Shomstein, S. (submitted). The relative contribution of high-level (semantic) and low-level (boundary) Information to object-based attentional guidance.
5. **Scotti, P.S.** & Maxcey, A. M. (submitted). Comparing the robustness of laboratory-induced forgetting across paradigms.

In Prep:
1. **Scotti, P. S.,** Malcolm, G.L., Peterson, M., & Shomstein, S. (in preparation). Reality vs. Simplicity: The effects of real-world objects on attentional selection.
2. 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.

TALK / POSTER PRESENTATIONS (talks marked with *)

1. **Scotti, P. S.,** Kulkarni, A., Mazor, M., Klapwijk, E., Yarkoni, T., Huth, A. G. (2019, Dec). 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.

2. ***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.

3. **Scotti, P. S.,** Janakiefski, L., & Maxcey, A. M. (2019, November). Recognition-Induced Forgetting Does Not Operate Over Superordinate Categories. *Psychonomic Society*, Montreal, Quebec.

4. **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.

5. **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.

6. 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.

7. Janakiefski, L., Smerdell, M., **Scotti, P. S.**, Maxcey, A. (2019, March). Does recognition-induced forgetting operate over temporally-grouped objects? *CogFest*, Columbus, OH.

8. **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.

9. **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.

10. **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.

11. 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.

12. ***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.

13. **Scotti, P. S.,** Collegio, A., & Shomstein, S. (2017, November). Task-irrelevant object category guides attentional allocation. *Object Perception, Attention, and Memory (OPAM)*, Vancouver, BC.

14. **Scotti, P. S.,** Adamo, S., Mitroff, S., Shomstein, S. (2017, May). Repetition priming preferentially benefits infrequent targets. *Vision Sciences Society*, St. Pete Beach, FL.

15. 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.

16. 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.

17. **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.

18. **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.

19. **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.

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

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 2020
  Led a team of researchers to create EduCortex, an educational brain viewer
- Guest Lecturer   Fall 2019
  Introduction to Psychology (PSYCH 1001)
- Course Assistant
  Introduction to Social Psychology (PSYCH 3325)   Autumn 2018
  Cognitive Psychology Laboratory (PSYCH 4510)   2018 – 2019
  Sensation and Perception (PSYCH 3310)   Spring 2019
- 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