

# STEVEN M. WEISBERG, PHD

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## ACADEMIC APPOINTMENTS

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- 2019-Present    Assistant Professor  
Department of Psychology  
**University of Florida**
- 2015-Present    Postdoctoral Fellow  
Center for Cognitive Neuroscience  
**University of Pennsylvania**  
Advisor: Dr. Anjan Chatterjee

## EDUCATION

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- 2015            PhD in Psychology  
Brain and Cognitive Sciences  
**Temple University**  
Advisor: Dr. Nora Newcombe
- 2008            BA in Psychology, *cum laude*  
Minor in Mathematics  
**College of William and Mary**  
Advisor: Dr. Jeanine Stefanucci

## FELLOWSHIPS

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- 2016-2018    Ruth L. Kirschstein Postdoctoral NRSA F32DC015203: *Neural representations of spatial directions in language, schemas, and images*. Sponsors: Anjan Chatterjee and Russell Epstein
- 2010-2012    University Fellowship, Temple University

## AWARDS AND HONORS

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- 2018            Biomedical Postdoctoral Program Travel Award, University of Pennsylvania
- 2017            Collaborative Symposium Award, Psychonomic Society
- 2017            Postdoctoral Fellow Award, Cognitive Neuroscience Society
- 2016            Biomedical Postdoctoral Program Travel Award, University of Pennsylvania
- 2014            College of Liberal Arts Travel Award, Temple University
- 2013            Training in fMRI Fellowship, University of Michigan, NIH
- 2013            Visiting Fellowship, Martinos Center for Biomedical Imaging, Massachusetts General Hospital
- 2013            Collaboration Grant, Science Across Virtual Institutes, Thematic Network

2012 in Spatial Cognition, NSF  
Department of Psychology Travel Award, Temple University  
2004-2008 Dean's List, College of William and Mary

## PEER-REVIEWED PUBLICATIONS

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**Weisberg, S.M.**, & Chatterjee, A. (submitted). Reference frames in spatial communication for navigation and sports: An empirical study in ultimate frisbee players. [[Preprint](#)] [[Data and Pre-reg](#)] [[Tweeprint](#)]

Nazareth, A., Newcombe, N.S., Shipley, T.F., Velazquez, M., & **Weisberg, S.M.** (2019). Beyond small-scale spatial skills: Navigational skills and geoscience education. *Cognitive Research: Principles and Implications*. [[Preprint](#)] [[Paper](#)]

**Weisberg, S.M.**, Newcombe, N.S., & Chatterjee, A. (2019). Everyday taxi drivers: Do gifted navigators have larger hippocampi? *Cortex*. [[Preprint](#)] [[Data and Code](#)] [[Paper](#)]

**Weisberg, S.M.**, Marchette, S.A., & Chatterjee, A. (2018). Behavioral and neural representations of spatial directions across words, schemas, and images. *Journal of Neuroscience*, 38(21), 4996-5007 [[Paper](#)] [[Behavioral Data and Code](#)]

**Weisberg, S.M.**, & Newcombe, N.S. (2018). Cognitive maps: Some people make them, some people struggle. *Current Directions in Psychological Science*. 27(4), 220-226. [[Preprint](#)] [[Paper](#)]

**Weisberg, S.M.**, Badgio, D., & Chatterjee, A. (2018). Feel the way with a vibrotactile compass: Does a navigational aid aid navigation? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 44(5), 667-679. [[Paper](#)] [[Data](#)]

Nazareth, A., **Weisberg, S.M.**, Margulis, K., & Newcombe, N.S. (2018). Charting the development of cognitive mapping. *Journal of Experimental Child Psychology*, 170, 86-106. [[Paper](#)]

Galati, A., **Weisberg, S.M.**, Newcombe, N.S., & Avraamides, M.N. (2018). When gestures show us the way: Self-generated gestures selectively facilitate navigation and spatial memory. *Spatial Cognition and Computation*. [[Paper](#)]

Blacker, K.J., **Weisberg, S.M.**, Newcombe, N.S., & Courtney, S.M. (2017). Navigation ability, relational and location working memory. *Visual Cognition*, 25(7-8), 691-702. [[Paper](#)]

**Weisberg, S.M.**, Badgio, D., & Chatterjee, A. (2017). A CRISPR new world: Public attitudes towards innovations in genetic modification. *Frontiers in Public Health: Public Health Policy*. [[Paper](#)]

Atit, K., **Weisberg, S.M.**, Newcombe, N.S., & Shipley, T.F. (2016). Learning to interpret topographic maps: Understanding layered spatial information. *Cognitive Research: Principles & Implications*. [[Paper](#)]

Cromley, J.G., **Weisberg, S.M.**, Dai, T., Newcombe, N.S., Schunn, C.D., Massey, C., & Merlino, F.J. (2016). Improving middle school science learning using diagrammatic reasoning. *Science Education* 100(6), 1184-1213. [[Paper](#)]

**Weisberg, S.M.**, & Newcombe, N.S. (2016). How do (some) people make a cognitive map? Routes, places, and working memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 42(5), 768-785. [[Paper](#)]

Ngo, C., **Weisberg, S.M.**, Newcombe, N.S., & Olson, I.R. (2016). The relation between navigation strategy and associative memory: An individual differences approach. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 42(4), 663-670. [[Paper](#)]

Holmes, C.A., Nardi, D.N., Newcombe, N.S., & **Weisberg, S.M.** (2015)\*. Children's use of slope to guide navigation: Sex differences relate to spontaneous slope perception. *Spatial Cognition and Computation*, 15(3), 170-185. [[Paper](#)]

**Weisberg, S.M.** & Newcombe, N.S. (2014). A slippery directional slope: Individual differences in using slope as a directional cue. *Memory & Cognition*, 42, 648-661. [[Paper](#)]

**Weisberg, S.M.**, Nardi, D.N., Newcombe, N.S., & Shipley, T.F. (2014). Up by upwest: Is slope like north? *Quarterly Journal of Experimental Psychology*. 67(10), 1959-1976. [[Paper](#)]

**Weisberg, S.M.**, Schinazi, V.R., Newcombe, N.S., Shipley, T.F., & Epstein, R.A. (2014). Variations in cognitive maps: Understanding individual differences in navigation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40(3), 669-682. [[Paper](#)]

#### **CHAPTERS, PROCEEDINGS, COMMENTARIES, REPORTS, ETC.**

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**Weisberg, S.M.** & Newcombe, N.S. (2017). Embodied cognition and STEM learning: Overview of a topical collection in CR:PI. *Cognitive Research: Principles and Implications* ,2(38). [[Paper](#)]

**Weisberg, S.M.**<sup>1</sup>, Newcombe, N.S.<sup>1</sup>, Atit, K., Jacovina, M.E., Ormand, C.J., & Shipley, T.F. (2015). The lay of the land: Sensing and representing topography. *Baltic International Yearbook of Cognition, Logic and Communication: Vol. 10*. [[Paper](#)]

Nardi, D.N., Holmes, C.A., Newcombe, N.S., & **Weisberg, S.M.** (2015)\*. Sex differences and errors in the use of terrain slope for navigation. *Cognitive Processing*, 16(1), 323-326. [[Paper](#)]

**Weisberg, S.M.**, & Newcombe, N.S. (2013). Are all types of vertical information created equal? *Behavioral and Brain Sciences*, 36, 568-569. [[Paper](#)]

**Weisberg, S.M.** (2012). Embodied cognition approaches in integrated science, technology, engineering, and mathematics (iSTEM) education. Commissioned report for the National

Academy of Engineering Committee on Integrated STEM Education. Published in *Toward Integrated STEM Education: Developing A Research Agenda* (2014).

\*After first author, authorship order is alphabetical.

<sup>1</sup>Co-first authors.

## UNDER REVIEW

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Nazareth, A., Newcombe, N.S., Shipley, T.F., Velazquez, M., & **Weisberg, S.M.** (in revision). Beyond small-scale spatial skills: Navigational skills and geoscience education. [[Preprint](#)]

## IN PREPARATION

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**Weisberg, S.M.**, & Chatterjee, A. (in prep). Reference frame preference differs in sports and space.

## SPOKEN PRESENTATIONS

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**Weisberg, S.M.** (2017). How to get the point: Spatial language and gesture can help teach topographic maps. Talk presented at the meeting of the *European Society for Cognitive Psychology (ESCoP)*. Potsdam, Germany.

Galati, A., **Weisberg, S.M.**, Newcombe, N.S., & Avraamides, M.N. (2015). Effects of gesturing strategies on navigation performance and spatial memory. Talk presented at *Psychonomic Society*. Chicago, IL.

**Weisberg, S.M.**, & Newcombe, N.S. (2015). It's not can but how: Navigation aptitude and strategy. Talk presented at *International Conference on Spatial Cognition*. Rome, Italy.

**Weisberg, S.M.** (2014). I get around, how do you? Individual differences in navigation aptitude. Invited Colloquium, ETH-Zurich, Switzerland.

**Weisberg, S.M.**, & Newcombe, N.S. (2014). Remembering what and where: The relation between components of navigation ability and working memory. Paper presented at the 1<sup>st</sup> annual *Pennsylvania Spatial Cognitive Symposium*. University Park, PA.

**Weisberg, S.M.**, Epstein, R.A., Newcombe, N.S., Schinazi, V.R., & Shipley, T.F. (2012). Where do you think you are: A virtual environment assessment of navigation ability. Doctoral colloquium at *Spatial Cognition 2012*. Bavaria, Germany.

**Weisberg, S.M.**, Brakoniecki, E., & Newcombe, N.S. (2012). The other side of the mountain: Slope as a cue in navigation. Paper presented at the *International Conference on Spatial Cognition*. Rome, Italy.

**Weisberg, S.M.**, Brakoniec, E., & Newcombe, N.S. (2012). The other side of the mountain: Slope as a cue in navigation. Paper presented at *Cognitive Science Society*. Sapporo, Japan.

**Weisberg, S.M.** (2012). Structural alignment approach to contour map interpretation. Colloquium, Northwestern University. Evanston, IL.

**Weisberg, S.M.** & Newcombe, N. S. (2011). Slope and navigation: All downhill? *Graduate Fellows Research Symposium*, Temple University. Philadelphia, PA.

## POSTERS

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**Weisberg, S.M.**, Newcombe, N.S., & Chatterjee, A. (2018). Everyday taxi drivers: Do gifted navigators have larger hippocampi? Poster presented at *iNav*, Mt. Tremblant, Canada.

**Weisberg, S.M.**, Newcombe, N.S., & Chatterjee, A. (2018). Everyday taxi drivers: Do gifted navigators have larger hippocampi? Poster presented at *Cognitive Neuroscience Society*. Boston, MA.

**Weisberg, S.M.**, Marchette, S.A., & Chatterjee, A. (2017). Which way: Neural decoding of spatial directions in images, schemas, and words. Poster presented at *Cognitive Neuroscience Society*. San Francisco, CA. Awarded the Postdoctoral Fellow Award.

Nazareth, A., **Weisberg, S.M.**, Margulis, K., Do, A., Haj, R., & Newcombe, N.S. (2016). Age-related differences in cognitive mapping during spatial navigation. Poster presented at *Psychonomic Society*. Boston, MA.

**Weisberg, S.M.**, Badgio, D., & Chatterjee, A. (2016). Feel the way: Does a vibrotactile compass help you learn a space? Poster presented at *Interdisciplinary Navigation Symposium (iNav)*. Bad Gastein, Austria.

**Weisberg, S.M.**, Trinh, S., & Chatterjee, A. (2016). Recalculating...Processing words, schemas, and images of spatial directions. Poster presented at *Cognitive Neuroscience Society*. New York, NY.

**Weisberg, S.M.**, Atit, K., Newcombe, N.S., & Shipley, T.F. (2015). How to get the point: Spatial language interacts with gesture in learning topographic maps. Poster presented at *Psychonomic Society*. Chicago, IL.

Blacker, K., **Weisberg, S.M.**, Newcombe, N.S., & Courtney, S.M. (2015). How working memory for spatial locations versus spatial relations predicts navigation ability. Poster presented at *Psychonomic Society*. Chicago, IL.

Ngo, C., **Weisberg, S.M.**, Newcombe, N.S., & Olson, I.R. (2015). The relation between navigation strategy and associative memory: An individual differences approach. Poster presented at *International Conference on Spatial Cognition*. Rome, Italy.

**Weisberg, S.M.**, Beswick, M., & Chatterjee, A. (2015). Vento-medial Prefrontal Cortex and Stability in Art Preference. Poster presented at *Cognitive Neuroscience Society*. San Francisco, CA.

Galati, A., **Weisberg, S.M.**, Newcombe, N.S., & Avraamides, M.N. (2014). Self-generated gestures selectively influence navigation performance and spatial memory. Poster presented at *Psychonomic Society*. Long Beach, CA.

Ngo, C., Newcombe, N.S., Olson, I.R., & **Weisberg, S.M.** (2014). The relation between navigation strategy and associative memory: An individual differences approach. Poster presented at *Psychonomic Society*. Long Beach, CA.

**Weisberg S.M.** & Newcombe, N.S. (2014). Remembering what and where: The relation between components of navigation ability and working memory. Poster presented at *Psychonomic Society*. Long Beach, CA.

**Weisberg, S.M.**, & Newcombe, N.S. (2014). Remembering what and where: The relation between components of navigation ability and working memory. Poster presented at *Spatial Cognition 2014*. Bremen, Germany.

**Weisberg, S.M.**, Newcombe, N.S., & Shipley, T.F. (2013). What predicts understanding of topographic maps? Poster presented at *Psychonomic Society*. Toronto, CA.

Holmes, C.A., Nardi, D., Newcombe, N.S., & **Weisberg, S.M.** (2013). Hitting the slopes: The strength of gradient cues in child navigation. Poster presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Seattle, WA.

**Weisberg, S.M.**, Newcombe, N.S., & Shipley, T.F. (2013). Using analogical learning to improve contour map reading. Poster presented at the 6<sup>th</sup> annual *inter-Science of Learning Center*. Philadelphia, PA.

Holmes, C., Newcombe, N.S., **Weisberg, S.M.**, & Nardi, D.N. (2013). Hitting the slopes: Children's use of gradient cues for reorientation. Poster presented at the 6th annual *inter-Science of Learning Center*. Philadelphia, PA.

**Weisberg, S.M.**, Nardi, D., Newcombe, N.S. & Shipley, T.F. (2012). Sensing the slopes: Sensory modality effects on a goal location task. Poster presented at *Psychonomic Society*. Minneapolis, MN.

**Weisberg, S.M.**, Epstein, R.A., Newcombe, N.S., Schinazi, V.R., & Shipley, T.F. (2012). Developing a virtual environment assessment of navigation ability. Poster presented at *Association for Psychological Science Convention*. Chicago, Illinois.

**Weisberg, S.M.**, Newcombe, N.S., & Shipley, T.F. (2012). Teaching contour maps using analogical learning. Poster presented at the 5<sup>th</sup> annual *inter-Science of Learning Center Conference*. San Diego, CA.

**Weisberg, S.M.** & Newcombe, N.S. (2011). The role of slope as a navigational cue. Poster presented at the 4<sup>th</sup> annual *inter-Science of Learning Center Conference*. Washington, D.C.

## **SYMPOSIA**

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2015 Organizer and Presenter: *Individual Differences in Navigating*, International Conference on Spatial Cognition, Rome, Italy. Speakers: Steven Weisberg, Steven Marchette, James Negen, Tim McNamara

## **SERVICES AND LEADERSHIP**

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2016 Local Planning Committee, Spatial Cognition Conference, Philadelphia, PA

2013 Local Planning Committee, inter-Science of Learning Center Conference, Philadelphia, PA

2012 SILC Planning Representative: Co-Chair, Networking Committee, inter-Science of Learning Center Conference, San Diego, CA

General Public Dissemination:

2014 Presenter, Quadrangle Sunrise Senior Living Services, Social Issues Committee Presentation Series

Presenter, Philadelphia Science Festival, Spatial Intelligence and Learning Center

2013 Guest Lecture, Conestoga High School AP Psychology

2012 Presenter, Philadelphia Science Festival, Spatial Intelligence and Learning Center

Students Mentored (\*Honors Student; **Published Peer-reviewed work**):

*Temple University* – Ryan Barnett, Edward Brakoniecki\*, James Callahan, Chelsa Clofer, Brian Hickman, Benjamin Van Son, Kelsey Decker, Stephany Wilson, David Spain, Jon Bento, Hayley Van Duyn, Chrystyna Colon, Emily Auerbach, Dominique Losen, Vladislav Mendelson  
*University of Pennsylvania* – Sam Trinh\*, **Daniel Badgio**, Antonio Nicosia

Ad Hoc Reviewer (peer-reviewed journals, verified record on [Publons](#)):

*American Journal of Psychology*

*Attention, Perception, & Psychophysics*

*Behavioral and Brain Sciences*

*Behavioral Research Methods*

*Child Development*

*Cognition*

*Cognitive Processing*

*Cognitive Psychology*

*Cognitive Research: Principles & Implications*

*Frontiers in Psychology: Developmental*

*Journal of Experimental Education*

*Journal of Experimental Psychology: Applied*

*Journal of Experimental Psychology: Learning, Memory, and Cognition*

*Journal of Visualized Experiments*  
*Learning and Individual Differences*  
*Memory*  
*Memory & Cognition*  
*Quarterly Journal of Experimental Psychology*  
*Spatial Cognition and Computation*  
*Scientific Reports*

Ad Hoc Reviewer (other):

Cognitive Science Society Conference (2018)  
International Conference of Spatial Cognition (2012, 2015)  
inter-Science of Learning Center Conference (2011, 2012)  
Spatial Cognition Conference (2016, 2018)  
Special Issue, Spatial Cognition X Proceedings (2017)

### **TEACHING EXPERIENCE**

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2014 Guest Lecturer, Spatial Cognition, Sensation & Perception  
2013 Primary Instructor, Foundations in Cognitive Psychology

### **PRESENT POSITIONS**

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2015-Present Post-doctoral Fellow, University of Pennsylvania  
*Advisor: Dr. Anjan Chatterjee*  
2015-Present [Digital Associate Editor](#), Psychonomic Society

### **PAST POSITIONS**

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2016 Guest Editor, Special issue of *Cognitive Research: Principles & Implications, Embodied Cognition and STEM Education*  
2010-2014 Graduate Student, Temple University, Spatial Intelligence and Learning Center  
*Advisor: Dr. Nora Newcombe*  
2013 Primary Instructor, Foundations in Cognitive Psychology, Temple University  
2010 Research Assistant, Temple University, Spatial Intelligence and Learning Center  
*Advisor: Dr. Nora Newcombe*  
2007-2008 Research Assistant, College of William and Mary, Psychology Department  
*Advisor: Dr. Jeanine Stefanucci*

### **PROFESSIONAL MEMBERSHIPS**

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2015-Present, Member, Cognitive Neuroscience Society  
2012-Present, Member, Psychonomic Society  
2010-Present, Member, Spatial Intelligence and Learning Center  
2010-2012, Member, Cognitive Science Society  
2010-2012, Member, Association for Psychological Science