

Amy Lynne Shelton, PhD

ADDRESS

Center for Talented Youth
Johns Hopkins University
5801 Smith Avenue
#400 McAuley Hall
Baltimore, Maryland 21209
ashelton@jhu.edu
<https://cty.jhu.edu/who-we-are/leadership/amy-shelton>

RESEARCH INTERESTS

Spatial Cognition--Learning and Memory; Learning Styles and Learner Profiles; Individual Differences; Spatial Reasoning & Academic Performance; Skill Development; Social and Spatial Skill Interactions; Functional Neuroimaging; Cognitive and Socio-cognitive development; Academic Potential in Underserved Populations.

EDUCATION

Stanford University, Postdoctoral Fellow, Department of Psychology, 1999-2001
Vanderbilt University, M.A. & Ph.D. in Cognitive Psychology, 1994-1999
Illinois State University, B.S. in Psychology (Chemistry minor) Summa Cum Laude, 1990-1993

UNIVERSITY EXPERIENCE

Current

Executive Director, Center for Talented Youth, Johns Hopkins University, Oct 2022
Professor, School of Education, Johns Hopkins University, July 2013

Past

Associate Dean for Research, School of Education, July 2014-Nov 2022
Sr. Director of Research, Center for Talented Youth, Johns Hopkins University, July 2013-Jan 2023
Interim Executive Director, Center for Talented Youth, Johns Hopkins University, Jan 2019-July 2020
PhD Program Director, School of Education, July 2014-July 2018
Steering Committee, Science of Learning Initiative, Johns Hopkins University, April 2013-June 2019
Associate Professor, Department of Psychological & Brain Sciences Johns Hopkins University, July 2008-June 2013
Visiting Faculty, Center for Talented Youth, Jan-June 2013
Director of Graduate Studies, Department of Psychological & Brain Sciences Johns Hopkins University, July 2008-June 2012
Joint Appointment, Department of Neuroscience, Johns Hopkins University, Jan. 2002-present
Faculty in Residence, Charles Commons, Johns Hopkins University, Aug. 2006-Dec. 2010
Assistant Professor, Department of Psychological & Brain Sciences, Johns Hopkins University, Jan. 2002-June 2008
Director of Undergraduate Studies, Department of Psychological & Brain Sciences, Johns Hopkins University, July 2004-Aug. 2006
Graduate Research Assistant, Department of Psychology, Vanderbilt University, 1994-1999
Teaching Assistant, Department of Psychology, Vanderbilt University, 1995-1999

Amy Lynne Shelton, PhD

EDITORIAL & PROFESSIONAL SERVICE

Academic Council, School of Nursing, 2021-present
JHURA Faculty Advisory Committee, 2017-2022
Co-Director, CTY Student Research Program, 2016-2019
Director, CTY Baltimore Emerging Scholars Program, 2015-2021 (Founding Director, 2021)
Doctor of Philosophy Board, Johns Hopkins University, Dec. 2014- Dec 2022
Research Oversight Committee, Johns Hopkins University, Oct. 2014-Dec 2022
Homewood Institutional Review Board, Johns Hopkins University, July 2013-present
Associate Editor, *Journal of Experimental Psychology: General*, Nov. 2011-2017
 Editorial Board Jan. 2011-2017
Editorial Board, *Spatial Cognition & Computation*, Jan 2014-present
NIH Panel reviewer
NSF Panel reviewer
NSF College of Reviewers
NSERC Ad-Hoc Reviewer, Jan. 2007
SDS/Meg Walsh Leadership Scholarship Selection Committee, JHU, Jan 2007
Fullbright Scholarship Panel, JHU, 2007-2010
Co-organizer *The 8th Annual Workshop on Object Perception and Memory*, Nov. 2000.
Ad Hoc Reviewer for a wide variety of education, psychology, and neuroscience journals

TEACHING EXPERIENCE

Mythbusters: Learning & Memory, CTY LIVE, Johns Hopkins University
Basic and Inferential Statistics, 855.601, Johns Hopkins University
Applied Multiple Regression Analysis, 883.602, Johns Hopkins University
Science of Learning, 855.815, Johns Hopkins University
Brain Myths & Folk Psychology, 200-214, Johns Hopkins University
Intro to Cognitive Psychology, 200-110, Johns Hopkins University
Intro to Developmental Cognitive Neuroscience, 200-155, Johns Hopkins University
Advanced Statistical Methods, 200-314, Johns Hopkins University
Advanced Research Design and Analysis, 200-315, Johns Hopkins University
Career Development Seminar, Johns Hopkins University
Core Topics in PBS, Johns Hopkins University
Cognitive Proseminar (Team-Taught Graduate Seminar), Johns Hopkins University
Graduate Seminar: Memory, Johns Hopkins University
Signal Detection Theory (Graduate Seminar), Johns Hopkins University
Structural Equation Modeling (Graduate Seminar), Johns Hopkins University
Brain, Mind, & Behavior: Conception through Childhood, PSYCH 124, Stanford University

ADVISORY EXPERIENCE

Postdoctoral Fellows
 Kathryn Thompson, Johns Hopkins (2023)
 Current: Director of Research, CTY
 Chen Sun, Johns Hopkins (2021-2022)
 Stephanie Guglielmo Lynch, Johns Hopkins (2021-2022)
 Emory Davis, Johns Hopkins (2020-2023)
 Sol Bee Jung, Johns Hopkins (2018-2021)

Amy Lynne Shelton, PhD

Current: Visiting Scholar, Johns Hopkins University
Cathryn Cortesa, Johns Hopkins (2016-2019)
Current: Behavioral Insight Research Manager, Ford Motor Company
Kinnari Atit, Johns Hopkins (2014-2015)
Current: Assistant Professor, UC-Riverside
Amy Clements-Stephens, Johns Hopkins (2013-2015)
Current: National Academies Program Officer

Graduate Students

Ashley Flynn, Johns Hopkins University (2020-2024)
Jodi Miller, Johns Hopkins University (2018-2019)
Deborah Rappaport, Johns Hopkins University (2017-2023)
Rebecca Godwin, Johns Hopkins University (2015-2018)
Kerry O'Grady, Johns Hopkins University (2014-2015)
Christopher Wrightson, Johns Hopkins University (2013-2019)
Current: Private industry consultant
Benjamin Nelligan, Johns Hopkins (2011-2016)
Current: Postdoctoral Fellow, Notre Dame
Navaneethan Santhanam, Johns Hopkins University (2012-2014)
Current: Data Scientist, KISSmetrics
Amy Clements-Stephens, Johns Hopkins (2007-2013)
Andrew J. Furman, Johns Hopkins (2010-2013)
Last known position: Research Assistant, University of Maryland
Arnold Bakker (co-advised), Johns Hopkins (2009-2011)
Current: Assistant Professor, Johns Hopkins Medical Institution
Steven Marchette, Johns Hopkins (2006-2011)
Current: Data Scientist, Compass Medical
Megan Walsh, Johns Hopkins (2008-2010)
Current: Research Associate, Global Evaluation & Applied Research Solutions, Inc.
Naohide Yamamoto, Johns Hopkins (2002-2007)
Current: Senior Lecturer, Queensland University of Technology
Alexa Fields, Johns Hopkins (2003- 2005)
Current: Lawyer
Jean-Marie Maddux, Johns Hopkins (2002-2004)
Current: Assistant Professor, Lake Forest College

Undergraduate Research Award Advisees:

David S. Olton Awards:
Scott Clark (2010-2011)
Wai Yim Lam (2006-2007)
Provost Undergraduate Research Awards:
Manuel Brockman, Summer 2012
Ashok Yerramsetti, Spring 2010
Diana Pak, Summer 2007
Wai Yim Lam, Summer 2006
Woodrow Wilson Fellows:
Alexandra Murray (2008-present)
Jason Yoon, Johns Hopkins (2003-2005)
Howard Hughes Summer Research Fellow:

Amy Lynne Shelton, PhD

Wai Yim Lam, Johns Hopkins (2006)
Gisselle Spence, Johns Hopkins (2002-2004)

Honors Students:

Wade Reiner (2008-2010)
Diana Pak (2007-2008)
Wai Yim Lam (2006-2007)
Jennifer Burrows, Psychology, Stanford University (2000-2001)
Krista Pelisari, Psychology, Stanford University (2000-2001)

High School

CTY Student Research Interns

Ella Flood, Summer 2018
Lauren Maytin, Summer 2018
Anney Tuo, Summer 2017
Brianna Harris, Summer 2017
Zoe Beckman, Summer 2016
Eunnie Lee, Summer 2015

Women in Science and Engineering

Serena Shafer, 2017-2018
Kelly Zhang, 2017-2018
Wendy Wen, 2016-2017

Baltimore Polytech High School Ingenuity Project: Joseph Schwartz, 2007-2009

Towson High School Honors Research Internship, Anna Schwarz, 2014-2015

FUNDING

CURRENT

Dynamic Spatial Assessment: Transforming Testing (PI: Shelton)

Private donor 2/2022-present

COMPLETED SINCE 2015

CTY-BES Academic Advising (PI: Shelton)

Jack Kent Cooke Foundation 6/1/2020-5/31/2022

Creating Cognitive and Motivational Profiles of Advanced Learners

American Psychological Foundation Ester Katz Rosen Fund 01/15/2021 – 01/14/2022

Building spatial skills in the 21st century (PI: Shelton, Landau, Hager)

NSF 1561278 6/15/2016-5/31/2021

Developing a Spatially-enhanced Elementary Curriculum and Teacher Training Series to Improve Science Achievement (PI: Fisher) IES R305A170411 07/01/2017 - 06/30/2021

CTY BES 4th & 5th Grade Expansion (PI: Shelton)

Abell Foundation 6/1/2019-5/31/2020

CHS: Small: Collaborative Research: Improving Wayfinding and Navigation in Immersive Virtual

Amy Lynne Shelton, PhD

Environments (JHU PI: Shelton)
NSF 1421542 11/1/2015-10/31/2018

Teacher Priorities, Differentiation, and Teaching to “the Bubble” (PI: Shelton)
Overdeck Foundation 2/2015-6/2017

PUBLICATIONS

(List of articles under submission available upon request.)

- Landau, B., Davis, E. E., Cortesa, C. S., Wang, Z., Jones, J. D., & **Shelton, A. L.** (in press). Young children's copying of block constructions: Significant constraints in a highly complex task. *Cognitive Development*. <https://doi.org/10.31234/osf.io/tjb6f>
- Jung, S. B., & Shelton, **A. L.** (2023). Good News! New is Good: Novelty as a Key Feature of Advanced Academic Programs that Create Positive Learner Experiences. *Gifted Child Today*, 46(1), 38-47. <https://doi.org/10.1177/10762175221131067>
- Shelton, A.L.**, Davis, E.E., Cortesa, C.S., Jones, J.J., Hager, G.D., Khudanpur, S., Landau, B. (2022) Characterizing the Details of Spatial Construction: Cognitive Constraints and Variability. *Cognitive Science*. <https://doi.org/10.1111/cogs.13081>
- Flynn, A. S., & Shelton, A. L. (2022). [Solving the Right Problem: The Need for Alternative Identification Measures in Gifted Education](#). *Gifted Child Quarterly*, 66(2), 144–145.
- Jones, J., Cortesa, C., **Shelton, A.**, Landau, B., Khudanpur, S., & Hager, G. (2021) [Fine-grained activity recognition for assembly videos](#). *IEEE Robotics and Automation Letters*, 6, 3728-3735. doi: 10.1109/LRA.2021.3064149.
- Hardiman, M., JohnBull, R., Carran, D., **Shelton, A.** (2019). [The effects of arts-integrated instruction on memory for science content](#). *Trends in Neuroscience and Education*, 14, 25-32.
- Kuliga, S. F., Nelligan, B., Dalton, R. C., Marchette, S., **Shelton, A. L.**, Carlson, L., & Hölscher, C. (2019). [Exploring Individual Differences and Building Complexity in Wayfinding: The Case of the Seattle Central Library](#). *Environment and Behavior*.
- Cortesa, C. S., Jones, J. D., Hager, G. D., Khudanpur, S., Landau, B., & **Shelton, A. L.** (2018) [Constraints and Development in Children’s Block Construction](#). *CogSci 2018 Proceedings*, 246-251.
- Cortesa, C. S., Jones, J. D., Hager, G. D., Khudanpur, S., **Shelton, A. L.**, & Landau, B. (2017). [Characterizing spatial construction processes: Toward computational tools to understand cognition](#). *CogSci 2017 Proceedings*, 246-251.
- Shelton, A. L.** (2017). Conducting cognitive neuroscience research. In M. C. Makel & J. A. Plucker (Eds.) [Toward a more perfect psychology: Improving trust, accuracy, and transparency in research](#) (pp.). Washington, DC, American Psychological Association.
- O'Reilly, C., **Shelton, A. L.**, & Apostolou, A. (2017). Out-of-school programmes for gifted students using a talent search identification model. In J. R. Cross, C. O'Reilly & T. Cross (Eds.), *Providing for the Special Needs of Students with Gifts and Talents*. Dublin: CTYI Press.
- Shelton, A. L.**, Marchette, S. A., Hölschler, C., Nelligan, B., Shipley, T., & Carlson, L. (2017). Why people get lost in the Seattle Public Library. In R. C. Dalton & C. Hölscher (Eds.), [Take One Building: Interdisciplinary Research Perspectives of the Seattle Public Library](#) (pp. 157-166). New York: Routledge.
- Shelton, A.L.**, & Zacks, J.M. (2015). Spatial Transformations of Scene Stimuli: It’s an Upright World. In S. J. Gero (Ed.), [Studying Visual and Spatial Reasoning for Design Creativity](#) (pp. 245-266). Dordrecht: Springer Netherlands.
- Plucker, J.A., & **Shelton, A.L.** (2015). General Intelligence (g): Overview of a Complex Construct and Its Implications for Genetics Research. *Hastings Center Report*, 45(5), S21-S24. www.thehastingscenter.org/Publications/HCR/Detail.aspx?id=7590#ixzz3qghV1g8z

Amy Lynne Shelton, PhD

- Hansen, E., Gluck, S., & **Shelton, A.L.** (2015). Obligations and Concerns of an Organization Like the Center for Talented Youth. *Hastings Center Report*, 45(5), S66-S72.
www.thehastingscenter.org/Publications/HCR/Detail.aspx?id=7601#ixzz3qgi7uKFx
- Marchette, S.A., Sever, M.W., Flombaum, J.I., & **Shelton, A.L.** (2015). Individual Differences in Representational Precision Predict Spatial Working Memory Span. *Spatial Cognition & Computation*, 15(4), 308-328.
www.tandfonline.com/doi/full/10.1080/13875868.2015.1078334
- Furman, A. J., Clements-Stephens, A. M., Marchette, S. A., & **Shelton, A.L.** (2014). Persistent and Stable Biases in Spatial Learning Mechanisms Predict Navigational Style. *Cognitive, Affective & Behavioral Neuroscience*, 14(4), 1375-1391.
<http://link.springer.com/article/10.3758/s13415-014-0279-6>
- Shelton, A.L.**, Marchette, S.A., & Furman, A.J. (2013). A Mechanistic Approach to Individual Differences in Spatial Learning, Memory, and Navigation. In B. H. Ross (Ed.), *Psychology of Learning and Motivation* (Vol. 59, pp. 223-259). Waltham, MA: Academic Press.
- Clements-Stephens, A. M., Vasiljevic, K., Murray, A. J., & **Shelton, A.L.** (2013). The Role of Potential Agents in Making Spatial Perspective Taking Social. [Original Research]. *Frontiers in Human Neuroscience*, 7.
<http://www.frontiersin.org/Journal/10.3389/fnhum.2013.00497/abstract>
- Yerramsetti, A., Marchette, S.A., & **Shelton, A.L.** (2012). Accessibility vs. accuracy in retrieving spatial memory: Evidence for suboptimal assumed headings. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 39(4), 1106 - 1114.
<http://dx.doi.org/10.1037/a0030905>
- Gurari N., Wheeler J., **Shelton A.**, Okamura A.M. (2012) Discrimination of Springs with Vision, Proprioception, and Artificial Skin Stretch Cues. In: Isokoski P., Springare J. (eds) Haptics: Perception, Devices, Mobility, and Communication. EuroHaptics 2012. *Lecture Notes in Computer Science*, vol 7282. Springer, Berlin, Heidelberg.
https://doi.org/10.1007/978-3-642-31401-8_15
- Bakker, A., Krauss, G., Albert, M.S., Speck, C.L., Jones, L.R., Stark, C.E., Yassa, M.A., Bassett, S.S., **Shelton, A.L.**, & Gallagher, M. (2012). Levetiracetam treatment attenuates excess hippocampal activity with cognitive benefit in patients with amnesic mild cognitive impairment. *Neuron*, 74(3), 467-474.
<http://www.sciencedirect.com/science/article/pii/S089662731200325X>
- Shelton, A.L.**, Clements-Stephens, A.M., Lam, W.Y., Pak, D.M., & Murray, A.J. (2012). Should social savvy equal good spatial skills? The interaction of social skills with spatial perspective taking. *Journal of Experimental Psychology: General*, 141(2), 199-205.
<http://dx.doi.org/10.1037/a0024617>
- Walsh, M. K., Montojo, C. A., Sheu, Y.-S., Marchette, S. A., Harrison, D. M., Newsome, S. D., Zhou, F., **Shelton, A. L.**, & Courtney, S. M. (2011). Object working memory performance depends on microstructure of the frontal-occipital fasciculus. *Brain Connectivity*, 1, 317-329.
[doi: 10.1089/brain.2011.0037](https://doi.org/10.1089/brain.2011.0037)
- Marchette, S.A., Bakker, A., & **Shelton, A.L.** (2011). Cognitive Mappers to Creatures of Habit: Differential Engagement of Place and Response Learning Mechanisms Predicts Human Navigational Behavior. *The Journal of Neuroscience*, 31(43), 15264-15268.
<http://www.jneurosci.org/content/31/43/15264.abstract>
- Clements-Stephens, A.M., McKell-Jeffers, G.O., Maddux, J.-M., & **Shelton, A.L.** (2011). Strategies for spatial organization in adults and children. *Visual Cognition*, 19(7), 886-909.
<http://dx.doi.org/10.1080/13506285.2011.595742>
- Marchette, S., Yerramsetti, A., Burns, T., & **Shelton, A.L.** (2011). Spatial memory in the real world: long-term representations of everyday environments. *Memory & Cognition*, 39(8), 1401-1408.
<http://dx.doi.org/10.3758/s13421-011-0108-x>

Amy Lynne Shelton, PhD

- Adamson, M.M., Hutchinson, J.B., **Shelton, A.L.**, Wagner, A.D., & Taylor, J.L. (2011). Reduced hippocampal activity during encoding in cognitively normal adults carrying the APOEepsilon 4 allele. *Neuropsychologia*, 49, 2448-2455.
<http://www.sciencedirect.com/science/article/pii/S0028393211002223>
- Shelton, A.L.**, & Marchette, S.A. (2010). Where do you think you are? Effects of conceptual current position on spatial memory performance. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 36, 686-698
<http://dx.doi.org/10.1037/a0018713>
- Cherrier, M.M., Borghesani, P.R., **Shelton, A.L.**, & Higano, C.S. (2010). Changes in neuronal activation patterns in response to androgen deprivation therapy: A pilot study. *BMC Cancer*, 10: 1.
<http://www.biomedcentral.com/1471-2407/10/1>
- Marchette, S. A., & Shelton, A. L. (2010). Object properties and frame of reference in spatial memory representations. *Spatial Cognition & Computation*, 10(1), 1-27.
<http://www.informaworld.com/10.1080/13875860903509406>
- Ray, R.D., **Shelton, A.L.**, Hollon, N.G., Matsumoto, D., Frankel, C.B., Gross, J.J., & Gabrieli, J.D.E. (2009). Interdependent self-construal and neural representations of self and mother. *Social, Cognitive and Affective Neuroscience*.
<http://scan.oxfordjournals.org/content/early/2009/10/12/scan.nsp039.abstract>
- Ray, R.D., **Shelton, A.L.**, Michel, B.D., Hollon, N.G., Frankel, C.B., Gross, J.J., & Gabrieli, J.D.E. (2009). Cognitive and neural development of individuated self-representation in children. *Child Development*, 80(4), 1232-1242.
<http://dx.doi.org/10.1111/j.1467-8624.2009.01327.x>
- Yamamoto, N., & **Shelton, A.L.** (2009). Sequential versus simultaneous viewing of an environment: Effects of focal attention to individual object locations on visual spatial learning. *Visual Cognition*, 17, 457-483.
<http://www.informaworld.com/smpp/ftinterface~content=a790587484~fulltext=713240930>
- Yamamoto, N., & **Shelton, A.L.** (2009). Orientation dependence of spatial memory acquired from auditory experience. *Psychonomic Bulletin & Review*, 16, 301-305.
<http://dx.doi.org/10.3758/PBR.16.2.301>
- Shelton, A. L.**, & Yamamoto, N. (2009). Visual memory, spatial representation, and navigation. In J. R. Brockmole (Ed.), *The visual world in memory* (pp. 140-177). Hove, UK: Psychology Press.
- Shelton, A.L.**, & Greenberg, A.S. (2009). Statistical tests and inferences. In L. R. Squire (Ed.), *Encyclopedia of Neuroscience* (Vol. 9, pp. 393-400). Oxford: Academic Press.
- Borghesani, P.R., Johnson, L.C., **Shelton, A. L.**, Peskind, E.R., Aylward, E.H., Schellenberg, G.D., et al. (2008). Altered medial temporal lobe responses during visuospatial encoding in healthy APOE*4 carriers. *Neurobiology of Aging*, 29 (7), 981-991.
<http://www.sciencedirect.com/science/article/B6T09-4N74HSX-1/2/00347c4b0e180e830b0745c79b26945a>
- Shelton, A., Lau, Y., Zacks, J., & Yoon, B. C. (2008). The opportunistic use of reference frames for rotating scene stimuli. *Journal of Vision*, 8, 739.
<http://www.journalofvision.org/content/8/6/739.abstract>
- Yamamoto, N., & **Shelton, A.L.** (2008). Integrating object locations in the memory representation of a spatial layout. *Visual Cognition*, 16, 140-143.
<http://www.informaworld.com/10.1080/13506280701692097>
- Yamamoto, N., & **Shelton, A.L.** (2007). Path information effects in visual and proprioceptive spatial learning. *Acta Psychologica*, 125, 346-360.
<http://dx.doi.org/10.1016/j.actpsy.2006.09.001>

Amy Lynne Shelton, PhD

- Shelton, A.L.**, & Pippitt, H.A. (2007). Fixed versus dynamic orientations in environmental learning from ground-level and aerial perspectives. *Psychological Research*, 71, 333-346.
<http://www.springerlink.com/content/070773517463717w/>
- Shelton, A.L.**, & Pippitt, H.A. (2006). Motion in the mind's eye. *Cognitive, Affective, & Behavioral Neuroscience*. 6, 323-332
<http://link.springer.com/article/10.3758%2FCABN.6.4.323>
- Lappin, J.S., **Shelton, A.L.**, & Rieser, J.J. (2006). Visually perceived space depends on the environmental setting. *Perception & Psychophysics*, 68, 571-581.
- Fields, A.W., & **Shelton, A.L.** (2006). Individual Skill Differences and Large-Scale Environmental Learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 32, 506-515.
<http://dx.doi.org/10.1037/0278-7393.32.3.506>
- Yamamoto, N., & **Shelton, A.L.** (2005). Visual and proprioceptive representations in spatial memory. *Memory & Cognition*, 33, 140-150.
<http://www.ingentaconnect.com/content/psocpubs/mrc/2005/00000033/00000001/art00012>
- Shelton, A.L.**, & Gabrieli, J. D. E. (2004). Neural correlates of individual differences in spatial learning strategies. *Neuropsychology*, 18, 442-449.
<http://psycnet.apa.org/journals/neu/18/3/442/>
- Shelton, A.L.**, & McNamara, T.P. (2004). Spatial memory and perspective taking. *Memory & Cognition*, 32, 416-426.
- Shelton, A.L.**, & McNamara, T.P. (2004). Orientation and perspective dependence in route and survey learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 30, 158-170.
- Shelton, A.L.** (2004). Putting spatial memory into perspective: Brain and behavioral evidence for representational differences. In G. L. Allen (Ed.), *Human Spatial Memory: Remembering Where*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- McNamara, T.P., & **Shelton, A.L.** (2003). Cognitive maps and the hippocampus. *Trends in Cognitive Science*, 7, 333-335.
- Shelton, A.L.**, & Gabrieli, J.D.E. (2002). Neural mechanisms for encoding route and survey information. *Journal of Neuroscience*, 22, 2711-2717.
<http://www.jneurosci.org/cgi/content/abstract/22/7/2711>
- Shelton, A.L.**, & McNamara, T.P. (2001). Systems of spatial reference in human memory. *Cognitive Psychology*, 43, 274-310.
<http://dx.doi.org/10.1006/cogp.2001.0758>
- Shelton, A.L.**, & McNamara, T.P. (2001). Visual memories from nonvisual experiences. *Psychological Science*, 12, 343-347.
- Roskos-Ewoldsen, B., McNamara, T.P., **Shelton, A.L.**, & Carr, W.S. (1998). Mental representations of large and small spatial layouts are orientation dependent. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 24, 215-226.
- Shelton, A.L.**, & McNamara, T.P. (1997). Multiple views of spatial memory. *Psychonomic Bulletin and Review*, 4, 102-106.

INVITED PRESENTATIONS & COLLOQUIA

- Exploring Equitable Identification*. Plenary talk. Summer Mathematics Programs Consortium annual meeting, Atlanta, GA, September 2024.
- Why Identify? Rethinking Purposeful & Equitable Identification of Advanced Learners*. Keynote Speech. European Council on High Ability Conference, Thessaloniki, Greece, August 2024.
- Why Spatial? Spatial Reasoning Skills, Achievement, and Learning Potential*. Maryland Educators of Gifted Students Annual Awards Dinner, April 2018

Amy Lynne Shelton, PhD

Science Around the Dinner Table: Engaging Kids in Everyday STEM, JHU Rising to the Challenge Course, April 2018.

Understanding Gifted Children, CTYI Conference 2014, October 2014

New York University. Cognitive Neuroscience Colloquium. Jan. 2014

University of Delaware. Cognitive Area Colloquium. Sept. 2012

UIUC Neuroscience Program Seminar, Beckman Institute, University of Illinois at Urbana-Champaign. Feb. 2012

NSF Spatial Intelligence Learning Center seminar. Temple University, Philadelphia, PA. March 2011

Department of Psychology Colloquium, Vanderbilt University, Nashville, TN. March 2011

Spatial Learning Conference. NSF Spatial Intelligence Learning Center, Boston, MA. May 2010

Department of Psychology Colloquium, George Mason University, Fairfax, VA. April 2009

What Defines a Space in Human Spatial Memory? *Invited Symposium at 20th Annual Convention of the Association for Psychological Science*, Chicago, IL. May 2008

NSF Spatial Intelligence Learning Center Spatial Cognition Seminar. University of Pennsylvania and Temple University, Philadelphia, PA. March 2008

What does error tell us about spatial representations? Department of Applied Math & Statistics Seminar Series. Johns Hopkins University. Sept. 2007

Investigating cognitive maps in the human brain. Interdisciplinary neuroscience speaker series. St. Mary's College of MD. Sept. 2006

Cognitive maps of everyday space: How encoding affects representation. Distinguished Alumni Lecture, Illinois State University. Oct. 2004

Large scale spatial representation: Cognitive map or maps? Center for Cognitive Neuroscience, University of Pennsylvania. Oct. 2004

Departmental Colloquium Series, Department of Psychology, Miami University, Oxford, OH. Jan. 2004

Developmental Colloquium Series, Temple University, Philadelphia, PA. Sept. 2003

Contrasting Maps and Navigation: brain, behavioral, and psychological differences. *Paper presented at invited symposium on large-scale spatial cognition at 7th Annual meeting of the Cognitive Science Association for Interdisciplinary Learning*. Hood River, OR. August 2002

Departmental Cognitive Colloquium Series, Department of Psychology, University of California, Santa Barbara, CA. Feb. 2001

REPRESENTATIVE CONFERENCE PRESENTATIONS & WORKSHOPS

Shelton, A.L. (2024, November). Building a Better Identification Toolkit. Maryland Educators of Gifted Students, Annual Virtual Conference.

Shelton, A.L., & Jung, S.B. (2023, November). Why New Is Good: Using Novelty to Engage Advanced Learners. Maryland Educators of Gifted Students, Annual Virtual Conference.

Shelton, A. L. (2021, November). Are Cognitive Skills a Key to More Equitable Identification? Presentation at the 68th Annual Convention of the National Association for Gifted Children. (Denver, CO + Virtual)

Davis, E., Jones, J., McKee, K. K., Shelton, A. L., & Landau, B. (2021, July). The importance of stability in children's and adults block-building. Poster presented at CogSci 2021 virtual conference.

Flynn, A., Lymer, R., Jutras, J., & Shelton, A. L. (2020, November). Partnership for Equity and Excellence in Baltimore City Public Schools. Presentation for the National Association for Gifted Children's Virtual 2020 Annual Conference.

Cortesa, C. S., Yang, M., Shelton, A. L., Landau, B. (2019, November 15) Mental Simulation of Block Construction Aligns with Physical Construction Biases. Paper presented at the 60th Annual Meeting of the Psychonomic Society. Montréal, Québec, Canada.

Shelton, A. L., Cortesa, C. S., Hager, G. D., Jones, J. D., Khudanpur, S., & Landau, B. (2018, November 17) Action

Amy Lynne Shelton, PhD

- and Cognition in Block Building. Paper presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA.
- Cortesa, C. S., Shelton, A. L., Landau, B., Malpani, A., & Hager, G. D. (2018, November 16) Intuitive Knowledge of Children's Expertise in Block Building. Poster presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA.
- Shelton, A. L., Cortesa, C. S., Hager, G. D., Jones, J. D., Khudanpur, S., Landau, B., & (2018, November 16) Intuitive Knowledge of Children's Expertise in Block Building. Paper presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA.
- Shelton, A.L., Landau, B., Hager, G., & Cortesa, C. (2018, May). Block Building as a Promising Tool for Early Spatial Cognitive Assessment. Presentation at Wallace Research Symposium on Talent Development. Baltimore, MD.
- Flynn, A. & Shelton, A.L. (2018, March). Under the Radar: Innovations in Identifying Students from Underrepresented Populations. Presentation for Shining a Light on Gifted Education, California Association for the Gifted, San Diego, CA.
- Shelton, A.L., Flynn, A., & Kasim, L. (2017, February). Access from East to West: Context Matters. Presentation for Equity Summit on Gifted Education, Robinson Center for Young Scholars, Seattle, WA.
- Nelligan, B.J., Lee, J., & Shelton, A.L. (2016, November). Understanding the interplay between self-reflection and navigation performance. Poster presented at the 57th Annual Meeting of the Psychonomic Society, Boston, MA.
- Shelton, A.L., Saxton, L., & Gluck, S. (2016, November). How Effective Is Accelerated Science Instruction for Educating High Achievers? Paper presented at NAGC 63rd Annual Meeting, Orlando, FL.
- Atit, K., & Shelton, A.L. (2015, November). Recognizing Academic Talent in Historically Underrepresented Minority Students. Round table presented at the National Association for Gifted Children 62nd Annual Meeting, Phoenix, AZ.
- Stephens, A.M., Ferrara, K., Shelton, A.L., Scheinerman, E. (2015, March) A Hands-on Approach: Spatial Reasoning Training and Retention within Engineering. Poster presented at the 2015 Society for Research in Child Development Biennial Meeting, Philadelphia, PA.
- Stephens, A.M., & Shelton, A.L. (2015, March) Social Skills and Spatial Perspective Taking: Exploring Cross-Domain Interactions in Children. Poster presented at the 2015 Society for Research in Child Development Biennial Meeting, Philadelphia, PA.
- Gluck, S., & Shelton, A.L. (2014, November). Age and Grade as Factors in Academic Talent Identification. Paper presented at the National Association for Gifted Children 61st Annual Meeting, Baltimore, MD.
- Nelligan, B.D., Carlson, L.A., Shelton, A.L. (2013, November). Categorizing Individual Differences in Navigation: Insights from a Comparison of Paradigms. Poster presented at the 54nd Annual Meeting of the Psychonomic Society, Toronto, ON.
- Shelton, A.L., Furman, A.J., Marchette, S.A., & Brockman, M.A. (2012, November). Distinguishing Preference from Ability in Selecting Navigational Solutions. Paper presented at the 53rd Annual Meeting of the Psychonomic Society, Minneapolis, MN
- Furman, A.J., Clements-Stephens, A.M., Marchette, S.A., & Shelton, A.L. (2012, October). Navigational styles: Neural mechanisms at encoding and retrieval predict behavior. Paper presented at the 42nd Annual Meeting of the Society for Neuroscience. New Orleans, LA.
- Murray, A.J., Clements-Stephens, A.M., Vasiljevic, K., & Shelton, A.L. (2011, November). Spatial Perspective Taking, Agency and Social Skill Interactions. Poster presented at the 41st Annual Meeting of the Society for Neuroscience, Washington, DC.
- Clements-Stephens, A.M., Marchette, S.A., & Shelton, A.L. (2011, November). Characterizing Visuospatial Skills in a Dorsal/Ventral Processing Framework. Poster presented at the 41st

Amy Lynne Shelton, PhD

- Annual Meeting of the Society for Neuroscience, Washington, DC.
- Marchette, S.A., Yerramsetti, A., Shelton, A.L. (2011, November). Humans Assume Predictable “Default” Headings When Recalling Familiar Spaces. Poster presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, WA.
- Shelton, A.L., Marchette, S.A., Bakker, A., & Furman, A.J. (2011, May). Spatial Learning, Brain Mechanisms, & Individual Differences. Association for Psychological Science 23rd Annual Convention, Washington, DC.
- Clements-Stephens, A.M., & Shelton, A.L. (May, 2011). Spatial organization and configural processing strategies: From perception to memory. Poster presented at the 11th Annual Meeting of the Vision Sciences Society, Naples, FL.
- Shelton, A.L., Marchette, S.A., Furman, A.F., Bakker, A., Clark, S.R., Lachewitz, J. (2011, April). Shifting spatial learning strategies: Place and response mechanisms for different navigational priorities. Poster presented at the 18th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Marchette, S.A., Yerramsetti, A., Burns, T., & Shelton, A.L. (2010, November). Spatial memory in the real world: Long-term representations of everyday environments. Poster presented at the 51st Annual Meeting of the Psychonomic Society, St. Louis, MO.
- Marchette, S.A., Bakker, A., Lachewitz, J., Clark, S., & Shelton, A.L. (2010, August). Spatial learning mechanisms that underlie encoding strategies, memory performance, and navigational preferences. Poster presented at Spatial Cognition 2010, Mt. Hood, OR.
- Walsh, M., Gmeindl, L., Shelton, A.L., & Flombaum, J. I. (2010, May). Spatial working memory is limited by fixed resolution representations of location. Abstract for the meeting of the Vision Sciences Society, Naples, Florida.
- Shelton, A.L., Lam, W.-Y., Pak, D., Clements-Stephens, A.M., & Murray, A.J. (November, 2009). Should miss congeniality have good spatial skills? Social and spatial skill interactions. Paper presented at the 50th Annual Meeting of the Psychonomics Society, Boston, MA.
- Clements-Stephens, A.M., Landau, B., Palomares, M., Marchette, S.A., & Shelton, A.L. (October, 2009). Tipping the balance of dorsal and ventral stream processing in visuospatial skills. Paper presented at the 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Marchette, S.A., Marchette, D.J., Ma, Z., Cardinal-Stakenas, A., Shelton, A.L., & Priebe, C.E. (2009, August). Combining distance and angle judgments for inference from spatial memory. Paper presentation at the 57th Annual Meeting of the International Statistics Institute, Durban, South Africa.
- Shelton, A.L., & Marchette, S.A. (2008, November). Bridging human and animal models of spatial learning: place and response mechanisms. *Paper presented at the 38th Annual Meeting of the Society for Neuroscience*, Washington, DC
- Marchette, S.A. & Shelton, A.L. (2008, November). What Can Pointing Errors Really Tell Us About Spatial Representation? *Poster presented at the 49th Annual Meeting of the Psychonomic Society*, Chicago, IL.
- Shelton, A.L., Lau, Y., Zacks, J., & Yoon, B.C. (2008, May). The Opportunistic Use of Reference Frames for Rotating Scene Stimuli. *Poster presented at the 8th Annual Meeting of the Vision Sciences Society*, Naples, FL.
- Shelton, A.L., Marchette, S.M., & Yamamoto, N. (2007, November). Place and response mechanisms in human environmental learning. *Paper presentation at the 48th Annual Meeting of the Psychonomic Society*. Long Beach, CA.
- Yamamoto, N., & Shelton, A.L. (2007, November). Integrating object locations in the memory representation of a spatial layout. *Paper presentation at the 15th annual workshop on Object Perception, Attention, & Memory*, Long Beach, CA. [Summary published in 2008: *Visual*

Amy Lynne Shelton, PhD

- Cognition*, 16, 140-143.]
- Shelton, A.L., Yamamoto, N., Marchette, S. (2007, August). Spatial Representation at the Intersection of Perception, Attention, Reasoning, and Memory. *Paper presentation at the 13th Meeting of the Cognitive Science Association for Interdisciplinary Learning*, Hood River, OR.
- Shelton, A.L. (2007, May). Linking neural correlates to learning mechanisms in spatial learning. *Poster presented at the 19th Annual Meeting of the Association for Psychological Science*, Washington, DC.
- Shelton, A.L. (2007, May). Do men and women use different strategies for large-scale environmental learning? *Poster presented at the 12th Annual Meeting of the Cognitive Neuroscience Society*. New York City.
- Shelton, A.L., Yamamoto, N., & Fields, A.W. (2006, April). Out of Order: Sequence Effects on Spatial Learning in the Brain. *Poster Presented at the 11th Annual Meeting of the Cognitive Neuroscience Society*, San Francisco.
- Yoon, B.C., & Shelton, A.L. (2005, November). What's up? Reference Frames and Spatial Transformations. *Poster Presented at the 46th Annual Meeting of the Psychonomic Society*, Toronto, ON.
- Shelton, A.L., & Zacks, J.M. (2004, November). Putting things in perspective: The role of point of view in spatial reasoning. *Symposium at the 45th Annual Meeting of the Psychonomic Society*, Minneapolis, MN.
- Shelton, A.L. (2004, July). Using neuroimaging to investigate individual differences. *Paper presented at the 10th Annual meeting of the Cognitive Science Association for Interdisciplinary Learning*. Hood River, OR.
- Shelton, A.L., Fields, A.W., & Yamamoto, N. (2004, April). Differential Effects of Disrupting Sequential Information in Route and Survey Spatial Learning. *Poster presented at the 11th Annual Meeting of the Cognitive Neuroscience Society*, San Francisco.
- Shelton, A.L., & Clark, D. M. (2003, November). Individual differences mediate route and survey learning. *Poster presented at the 44th Annual Meeting of the Psychonomic Society*, Vancouver, BC.
- Shelton, A.L., & Pippitt, H.A. (2003, March). Distinguishing maps and navigation: Fixed versus dynamic orientation in route and survey learning. *Poster presented at the 10th Annual Meeting of the Cognitive Neuroscience Society*, New York
- Shelton, A. L., & Turner, K. C. (2002, November). Children's use of route and survey learning in virtual environments. *Poster presented at the 43rd Annual Meeting of the Psychonomic Society*, Kansas City, MO.
- Shelton, A. L., Lappin, J. S., Rieser, J. J., & Williams, D. M. (2002, November). Environmental context affects distance perception. *Paper presented at the 43rd Annual Meeting of the Psychonomic Society*, Kansas City, MO.
- Shelton, A. L., & Gabrieli, J.D. E. (2002, November). Effects of individual differences on the neural Correlates of spatial learning. *Paper presented at the 32nd Annual Meeting of the Society for Neuroscience*, Orlando
- Shelton, A. L. (2002, June). Mental rotation in the brain: Individual differences and development. Paper presented at the American Psychological Society 14th Annual Convention, New Orleans.
- Christoff, K., Shelton, A.L., Whitfield, S.L., Gabrieli, J.D.S. (2002). RT-convolved modeling: Distinguishing between novel and shared processes in event-related studies of complex cognition. *Human Brain Mapping Abstracts*.
- Christoff, K., Whitfield, S.L., Shelton, A.L., Panitz, D.A., Gabrieli, J.D.E. (2002) Comparison of BOLD hemodynamic responses across different brain regions. *Human Brain Mapping Abstracts*.
- Christoff, K., Shelton, A.L., & Gabrieli, J. D. E. (2001, November). Dissociating different sources of

Amy Lynne Shelton, PhD

- activation in event-related studies of complex cognition: *Paper presented at the 31st Annual Meeting of the Society for Neurosciences*, San Diego..
- Shelton, A. L., Christoff, K., Burrows, J. J., Pelisari, K. B., & Gabrieli, J. D. E. (2001, November). Brain activation during mental rotation: Individual and Developmental differences. *Paper presented at the 31st Annual Meeting of the Society for Neurosciences*, San Diego.
- Shelton, A. L., & Gabrieli, J. D. E. (2001, July). How source affects representation in human spatial memory. *Paper presented at the 3rd International Conference on Memory*. Valencia, Spain.
- Shelton, A. L., Tverksy, B., & Gabrieli, J. D. E. (2001, March). Switching between route and survey perspectives in spatial memory. *Poster presented at the 8th Annual Meeting of the Cognitive Neuroscience Society*, New York
- Shelton, A. L., Burrows, J. J., Tverksy, B., & Gabrieli, J. D. E. (2000, November). Effects of Route and Survey Perspectives on Brain Activation During Scene Recognition. *Paper presented at the 30th Annual Meeting of the Society for Neurosciences*, New Orleans, Louisiana.
- Shelton, A. L., McNamara, T. P., & Gabrieli, J. D. E. (2000, November). Exploring route and survey knowledge of virtual environments. *Poster presented at 41st Annual Meeting of the Psychonomic Society*, New Orleans, Louisiana.
- Shelton, A. L. & McNamara, T. P. (2000, November). Systems of spatial reference in human memory. *Paper presented at the 41st Annual Meeting of the Psychonomic Society*, New Orleans, Louisiana. November.
- Shelton, A. L., & McNamara, T. P. (1999, November). Egocentric orientation in spatial memory for route and survey learning. *Poster presented at the 40th Annual Meeting of the Psychonomic Society*, Los Angeles, California.
- Shelton, A. L., & McNamara, T. P. (1999, November). Spatial representation from description and taction. *Paper presented at the 40th Annual Meeting of the Psychonomic Society*, Los Angeles, California.
- Shelton, A. L., & McNamara, T. P. (1998, November). Memory for spatial layout from visual and tactile experience. *Paper presented at the Sixth Annual Workshop on Object Perception and Memory*, Dallas, Texas.
- Shelton, A. L., & McNamara, T. P. (1998, May). Reference frame competition in spatial memory. *Paper presented at the 70th Annual Meeting of the Midwestern Psychological Association*, Chicago, Illinois.
- Shelton, A. L., & McNamara, T. P. (1996, May). The role of multiple views in spatial memory. *Paper presented at the 68th Annual Meeting of the Midwestern Psychological Association*, Chicago, Illinois.

Professional Affiliations

American Educational Research Association
National Association for Gifted Children
Society for Research in Child Development
Psychonomic Society, Fellow
Society for Neuroscience
American Psychological Association
Association for Psychological Science
Cognitive Neuroscience Society
Vision Sciences Society
Spatial Intelligence Learning Center

Amy Lynne Shelton, PhD

SYNERGISTIC ACTIVITIES

Professional Development Series on *Tips & Tools for Parents & Educators*

Spatial 101 workshop for Nazarbayev Independent Schools, Kazakhstan, one-week introduction to spatial skills and academics.

Presentation for NYC Gifted & Talented Symposium, Professional Development Thread

Science Around the Dinner Table, Parent Workshops

Professional Development Workshop Coordinator: *Spatializing the K-5 Curriculum*

Baltimore County Public Schools

Maryland State Department of Education, Elementary STEM Certification Network

Various County & Local Schools

Maryland State Gifted Coordinators

JHU STEM Collaboration Committee, K-12 STEM outreach

Symposium Organizer & Co-Chair: *Wayfinding in the Seattle Public Library: What can we learn about navigational styles?* Annual Meeting of the Psychonomic Society, Seattle, WA, Nov. 2011.

Symposium Organizer & Co-Chair: *Where are we now? Understanding Spatial Skills, Strategies, and Navigation*, Association for Psychological Science 23rd Annual Convention. Washington, DC, May 2011

Symposium Organizer & Co-Chair: *Putting Perspective in Things: The role of point of view in spatial reasoning*. Annual Meeting of the Psychonomic Society, Nov. 2004.

Organizer: Annual Brain Awareness Week Presentations & Demos, Baltimore Polytechnic High School, March 2004-2014

Brain Myths: Discover Hopkins Pre-college Course, July 2007

Bryn Mawr High School, Exploring the Brain for high school students. April 2009, April 2010

Presentation for Carnegie Institutes Women Serious About Science series, Baltimore Polytechnic High School, January 2004, October 2006, April 2009, Dec. 2011

HONORS/AWARDS/RECOGNITION

Invited Scholar for "Celebrating Honors" at Arizona State University. April, 2011

Science Nation Feature: *BPS: Brain Positioning System*, September 13, 2010

http://www.nsf.gov/news/special_reports/science_nation/bpsbrain.jsp

Student Government Association 2009 George T. Owens Teaching Award, JHU

Outstanding Young Alumni Award 2005, Illinois State University

Department of Psychology, Alumnus of the Year 2004, Illinois State University

SELECT MEDIA

6 things every parent needs to remember this school year

Sept. 2, 2020

<https://medium.com/brightnow/6-things-every-parent-needs-to-remember-this-school-year-cd5aadbff3b4>

Mining for Gifted Students in Untapped Places

Dec. 12, 2019

<https://www.edweek.org/leadership/mining-for-gifted-students-in-untapped-places/2019/12>

Identifying advanced learners in Baltimore. *Baltimore Sun*

Amy Lynne Shelton, PhD

May 15, 2019

<https://www.baltimoresun.com/opinion/op-ed/bs-ed-op-0516-baltimore-gifted-20190515-story.html>

Neuro-Education, Educational Neuroscience, and the Research-Practice Gap

Feb 5, 2018

https://youtu.be/6VqKtsb7_f0

Blocks & Brains: Early Learning Skills

Feb 17, 2016

<https://www.youtube.com/watch?v=XBS2JrXEmqM>

Do U.S. students on the bubble get the most attention?

Nov 20, 2018

<https://www.youtube.com/watch?v=YBWu3vU2DuE>

Science at the Dinner Table: Getting Kids Excited About STEM

Aug 21, 2018

<https://www.youtube.com/watch?v=vfF6p0Yjhdw>

The Excellence Gap - The State of Gifted and Talented Education

Jan 12, 2016

<https://www.youtube.com/watch?v=yFqOvA0oYEw>

The G Word

Documentary forthcoming

<http://www.thegwordfilm.com/>

Novelty is Essential to Keeping Advanced Learners Engaged

May 10, 2023

https://youtu.be/gdyzbjxUqFc?si=1_1cKMZEctkri1vn

Advanced Learners 101

Feb 22, 2024

<https://youtu.be/QzdOXtKKKdo?si=LLPh86xAzTRYAjOT>

My Child is Academically Advanced. Now What?

April 26, 2024

https://youtu.be/7_u1RH0XrvA?si=xiAZIWcG3kYTYQG2

Advanced Learners' Education: Dr. Amy Shelton, Johns Hopkins' Center For Talented Youth

Ettan Ehsan Podcast

July 2024

<https://youtu.be/hE-BUtwxKVw?si=xPNa8xl3tK7bBr8g>

Surprising Factors for Fostering Success in Advanced Learners

September 26, 2024

<https://youtu.be/p-COPMx8xzo?si=LzaKmZzahPFbQCIS>