

Priti Shah

Department of Psychology, 530 Church Street, University of Michigan, Ann Arbor, MI 48109

Email: priti@umich.edu | Mobile: 734-717-2679

<https://sites.lsa.umich.edu/shah-lab/>

Employment History

2023-	Psychology Department Chair, University of Michigan, Ann Arbor, MI
2022-	Arthur Thurnau Professor of Psychology, University of Michigan, Ann Arbor, MI
2020-	Professor of Educational Studies (Marsal Family School of Education; courtesy); Information (School of Education; courtesy); Faculty Associate Research Center for Group Dynamics (Institute for Social Research), University of Michigan, Ann Arbor, MI
2015-2020	Director of Psychology Honors Program, Director of Accelerated Masters' Degree Program, & Founder and Director of STAR Scholars Program, University of Michigan, Ann Arbor, MI
2013-	Professor of Psychology, University of Michigan, Ann Arbor, MI
2006-2013	Associate Professor of Psychology, University of Michigan, Ann Arbor, MI
1999-2006	Assistant Professor of Psychology, University of Michigan, Ann Arbor, MI
1997-1999	Assistant Professor of Psychology, University of Memphis, Memphis, TN
1995-1997	Postdoctoral Fellow, University of California, Santa Barbara, CA

Education

Carnegie Mellon University

Ph.D. in Cognitive Psychology, 1996

Dissertation: Cognitive Processes in Graph Comprehension

M.S. in Cognitive Psychology, 1992

Thesis: Conceptual Limitations in Comprehending Line Graphs

University of North Carolina at Chapel Hill

A.B. in Psychology and Mathematics with highest honors, 1990

Thesis: The relationship between spatial ability and mathematics ability

Fellowships and Honors

University of Michigan Arthur Thurnau Professorship, 2022

Amy L. & Kirk L. Wolfe Prize, 2022

John Swets Memorial Award, 2021 (with John Jonides, Han Zhang, Rick Lewis, Madison Fansher, Madelyn Quirk, Poortata Lalwani, & Tyler Adkins)

Rackham Master's Mentoring Award, 2021

University of Michigan Literature, Science, and the Arts Award for Individual Contribution to Undergraduate Education, 2018

Psychology Department Graduate Mentoring Award, 2015

Elected Fellow of the Association for Psychological Science, 2011

Rackham Faculty Fellowship, 2001

American Psychological Association Division of Experimental Psychology New Investigator Award for General Experimental Psychology, 1997

National Academy of Education/Spencer Foundation Postdoctoral Fellowship, 1997-1999

James S. McDonnell Foundation Postdoctoral Fellowship for Cognitive Studies in Educational Practice, 1995-1997

National Science Foundation Predoctoral Fellowship, 1990-1994

American Psychological Association Dissertation Award, 1995

British Psychological Association Travel Award, 1995

National Merit Scholarship, 1986-1990

Phi Beta Kappa; Psi Chi, 1990

Edited Volumes & Special Issues

Jaeggi, S., & Shah, P. (Eds.) (2018). *AERAOpen Special Topic on Learning, Neuroscience, and Education*.

Lovett, M., & Shah, P. (Eds.) (2007). *Thinking with data*. Mahwah, NJ: Erlbaum.

Shah, P., & Miyake, A. (Eds.) (2006). *The Cambridge handbook of visuospatial thinking*. New York: Cambridge University Press.

Miyake, A., & Shah, P. (Eds.) (1999). *Models of working memory: Mechanisms of active maintenance and executive control*. New York: Cambridge University Press.

Journal Articles and Book Chapters

Fansher, M., Walls, L., Hao, C., Subramonyam, H, Boduroglu, A., Shah, P., & Witt, J.K. (in press). Narrative Visualizations: Depicting Accumulating Risks and Increasing Trust in Data. *Cognitive Research: Principles and Implications*.

- Fansher, M., Lalwani, P., Adkins, T. J., Zhang, H., Quirk, M., Carlson, M., Boduroglu, A., Lewis, R.L., Jonides, J., & Shah, P. (in press). A brief intervention to improve reasoning about accumulation. *Journal of Applied Research in Memory and Cognition*.
- Hupfeld, K., Osborne, J., Tran, Q., Hyatt, H., Abagis, T., & Shah, P. (2024). Validation of the Dispositional Adult Hyperfocus Questionnaire (AHQ-D). *Scientific Reports, 14*, Article 19460
- Michal, A. L., & Shah, P. (2024). A Practical Significance Bias in Laypeople's Evaluation of Scientific Findings. *Psychological Science, 35*(4), 315-327.
- Dale, R., Byrne, R. M., Cohen, E., Deroy, O., Gershman, S. J., Hsiao, J. H., Li, P., Monaghan, P., Noelle, D. C., van Rooij, I., Shah, P., Spacey, M.J. & Varma, S. (2024). Introduction to Progress and Puzzles of Cognitive Science: Introduction to a Wiley Virtual Issue. *Cognitive Science, 48*(7), e13480.
- Shin, H., Shah, P., & Preston, S. D. (2024). The Reasoning through Evidence versus Advice (EVA) Scale: Scale Development and Validation. *Journal of Personality Assessment, 106*(5), 681-695.
- Subramonyam, H., Adar, E., Shah, P., & Seifert, C. M. (2024). Causal Pattern Diagrams in Science Texts Support Explanation. In *Proceedings of the 18th International Conference of the Learning Sciences-ICLS 2024*, pp. 1207-1210. International Society of the Learning Sciences
- Zhang, H., Miyake, A., Osborne, J., Shah, P., & Jonides, J. (2023). A d factor? Understanding trait distractibility and its relationships with ADHD symptomology and hyperfocus. *PLOS ONE, 18*, e0292215. doi.org/10.1371/journal.pone.0292215
- Osborne, J., Zhang, H., Carlson, M., Shah, P., & Jonides, J. (2023). The Association Between Different Sources of Distraction and Symptoms of Attention Deficit Hyperactivity Disorder. *Frontiers in Psychiatry, 14*, 1173989. [10.3389/fpsy.2023.1173989](https://doi.org/10.3389/fpsy.2023.1173989)
- Zengilowski, A., Maqbool, I., Deka, S. P., Niebaum, J.C., Placido, D. Katz, B., Shah, P., & Munakata, Y. (2023). Overemphasizing Individual Differences and Overlooking Systemic Factors Reinforces Educational Inequality. *npj Science of Learning, 8*, 13, doi.org/10.1038/s41539-023-00164-z
- Sun, X., Nancekivell, S., Shah, P., & Gelman, S. (2023). How essentialist reasoning about language acquisition relates to educational myths and policy endorsements. *Cognitive Research: Principles & Implications, 18*, 1-15.
- Witt, J., Hao, C., Shah, P. (2022). The impact of visualizing the process of disease spread on social distancing intentions and attitudes. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 66*, pages.
- Fansher, M., Adkins, T. J., Lalwani, P., Boduroglu, A., Carlson, M., Quirk, M., Lewis, R. L., Shah, P., Zhang, H., Jonides, J. (in press). Icon arrays reduce concern over COVID-19 vaccine side effects: A randomized control study. *Cognitive Research: Principle and Implications*.
- Michal, A., Fansher, M., Sun, X., Zhang, Z., & Shah, P. (2022). Cognitive Development: Applications to Education. In N. Barnes (Ed). *Handbook of Educational Psychology*.
- Devine, D., Ogletree, A. M., Shah, P., & Katz, B. (2022). Internet Addiction, Cognitive, and Dispositional Factors among US Adults. *Computers in Human Behavior Reports, 6*, 100180.

- Fansher, M., Adkins, T. J., Lewis, R. L., Boduroglu, A., Lalwani, P., Quirk, M., Shah, P., & Jonides, J., (2022). How well do ordinary Americans forecast the growth of COVID-19?, *Memory & Cognition*, 1-18.
- Fansher, M., Shah, P., & Helie, S. (2022). The effect of mode of presentation of Tower of Hanoi Problem Solving. *Cognition.*, 224, 105041.
- Fansher, M., Adkins, T., & Shah, P. (2022). Graphs do not lead people to infer causation from correlations. *Journal of Experimental Psychology: Applied*.
- Uttal, D., Sotelo, J., & Shah, P. (2022). Development of Working Memory and Spatial Representation: How are they Related. In M. Courage & N. Cowan (Eds). *Development of Memory in Infancy and Childhood* (pp. 146-167). NY: Routledge.
- Hupfeld, K.E., Abagis, T. R., Osborne, J.B., Tran, Q. T., & Shah, P. (2022). Hyperfocus: the ADHD Superpower. *Frontiers for Young Minds: Neuroscience*.
- Seifert, C., Harrington, M., Michal, A., & Shah, P. (2022). Causal theory error in college students' understanding of science studies. *Cognitive Research: Principles and Implications*, 74, 1-22. <https://doi.org/10.1186/s41235-021-00347-5>
- Posilico, C., Stillwell, S., Quigley, J., Carr, C., Chadwick, S., Lustig, C., & Shah, P. (2021). Extending the Reach of the STARS (Students Tackling Advanced Research and Scholarship). *Teaching of Psychology*. <https://doi.org/10.1177/009862832111056021>
- Franconeri, S., Hullman, J., Padilla, L., Shah, P., & Zacks, J. (2021). The science of visual data communication: What works. *Psychological Science in the Public Interest*, 22, 110-161. <https://doi.org/10.1177/15291006211051956>
- Nancekivell, S., Sun, X., Gelman, S., & Shah, P. (2021). A slippery myth: How learning style beliefs shape reasoning about multimodal instruction and related scientific evidence. *Cognitive Science*, 10, <https://doi.org/10.1037/edu0000366>
- Endres, M., Fansher, M., Shah, P., and Weimer, W. (2021) To read or to rotate? Comparing the effects of technical reading training and spatial skills training on novice programming ability. In *ESEC/FSE 2021 Research Papers*. <https://doi.org/10.1145/3468264.3468583>
- Sun, X., Nancekivell, S., Gelman, S., & Shah, P. (2021). Growth mindset and academic outcomes: A comparison of US and Chinese students. *Nature Science of Learning*, 6, 1-9. <https://doi.org/10.1038/s41539-021-00100-z>
- Michal, A. L., Zhong, Y., & Shah, P. (2021) When and why do people act on flawed science? Effects of anecdotes and prior beliefs on evidence-based decision-making. *Cognitive Research: Principles and Implications*, 6, 1-23.
- Sun, X., Nancekivell, S., Shah, P., & Gelman, S. A. (2020). Perceptions of the malleability of fluid and crystallized intelligence. *Journal of Experimental Psychology: General*, 150, 815–827. doi.org/10.1037/xge0000980
- Jaeggi, S. M., Buschkuhl, M., Parlett-Pelleriti, C. M., Moon, S. M., Evans, M., Kritzmacher, A., Reuter-Lorenz, P., Shah, P. & Jonides, J. (2020). Investigating the effects of spacing on working memory training outcome: A randomized, controlled, multisite trial in older adults. *The Journals of Gerontology: Series B*, 75(6), 1181-1192

- Moffett, L., Flannagan, C., & Shah, P. (2020). The influence of environmental reliability in the marshmallow task: An extension study. *Journal of experimental child psychology, 194*, 104821.
- Subramonyam, H., Seifert, C., Shah, P., & Adar, E. (2020). texSketch: Active diagramming through pen-and-ink annotations. *ACM Proceedings*.
- Jones, M. R., Katz, B., Buschkuehl, M., Jaeggi, S. M., & Shah, P. (2020). Exploring N-Back cognitive training for children with ADHD. *Journal of attention disorders, 24*(5), 704-719.
- Katz, B., Jones, M. R., Shah, P., Buschkuehl, M., & Jaeggi, S. M. (2020). Individual Differences in Cognitive Training Research (updated). In *Cognitive Training* (pp. 107-123). Springer, Cham.
- Nancekivell, S. E., Shah, P., & Gelman, S. A. (2020). Maybe they're born with it, or maybe it's experience: Toward a deeper understanding of the learning style myth. *Journal of Educational Psychology, 112*(2), 221.
- Katz, B., & Shah, P. (2020). Logical and methodological factors in cognitive training research. In M. Bunting, J. Novick, M. Dougherty, & R. Engle (Eds). *Cognitive and Working Memory Training: Perspectives from Psychology, Neuroscience, and Human Development* (pp.455 -486). New York: Oxford University Press.
- White, H., & Shah, P. (2020). ADHD and Autism Spectrum Disorder. *Encyclopedia of Creativity*.
- White, H.A., Shah, P. (2019). Focus: in urban and natural environments. *Yale Journal of Biology and Medicine, 92*, 115
- Hupfeld, K., Abagis, T., & Shah, P. (2019). "Living in the zone:" Hyperfocus in adult ADHD. *Attention Deficit Hyperactivity Disorders, 11*, 191-208.
- Katz, B., Shah, P., & Meyer, D. (2018). How to play 20 questions with nature and lose: Reflections on 100 years of brain-training research. *Proceedings of the National Academy of Sciences, 115*, 9897-9904.
- Tsai, N., Buschkuehl, M., Kamarsu, S., Shah, P., Jonides, J., (2018). (Un)Great Expectations: The Role of Placebo Effects in Working Memory Training. *Journal of Applied Research in Memory & Cognition*.
- Katz, B., Jaeggi, S., Busckhuel, M., Shah,P., & Jonides, J. (2018). The effect of monetary compensation on cognitive training outcomes. *Learning and Motivation, 63*, 77-90.
- Jaeggi, S., & Shah, P. (2018). Editorial Special Topic; Neuroscience, Learning, and Educational Practices—Challenges, Promises, and Applications. *AERA Open, 1*.
- Katz, B., & Shah, P. (2017). The role of child socioeconomic status in cognitive training outcome. *Journal of Applied Developmental Psychology, 53*, 139-150.
- Boduroglu, A. & Shah, P. (2017). Cultural differences in attentional breadth and resolution. *Culture and Cognition, 5*, 169-181.
- Buschkuehl, M., Jaeggi, S., Mueller, S., Shah, P., & Jonides, J. (2017). Training on Change Detection Leads to Substantial Task-Specific Improvements. *Journal of Cognitive Enhancement, 1*, 419-433.

- Shah, P., Michal, A., Ibrahim, A., Rhodes, R., & Rodriguez, F. (2017). What makes everyday scientific reasoning so challenging? B. Ross (Ed). *The Psychology of Learning and Motivation*, 66, 251-299.
- Rodriguez, F., Ng, A., & Shah, P. (2016). Do college students notice errors in evidence when evaluating research findings? *Journal of Excellence in College Teaching*, 27, 63-68.
- Rodriguez, F., Rhodes, R., Miller, K., & Shah, P. (2016). Examining the influence of anecdotal stories and the interplay of individual differences on reasoning. *Thinking and Reasoning*, 22, 274-296.
- Katz, B., Jones, M., Shah, P., Buschkuehl, M., & Jaeggi, S.M. (2016). Individual differences and motivational effects in cognitive training research. In T. Strobach & J. Karbach & (Eds). *Cognitive training: An overview of features and activations* (pp. 157-166). New York: Springer.
- White, H., & Shah, P. (2016). Scope of semantic activation and innovative thinking in college students with ADHD. *Creativity Research Journal*, 3, 275-282.
- Michal, A., Uttal, D., Shah, P., & Franconeri, S. (2016). Visual routines for extracting magnitude relations. *Psychonomic Bulletin & Review*, 23, 1802–1809
- Kupitz, C., Buschkuehl, M. Jaeggi, S. Jonides, J., Shah, P., & Vandekerckhove, J. (2015). A diffusion model account of the transfer-of-training effect. *Proceedings of the Cognitive Science Society*, 1219-1224.
- Wang, Z., Zhou, R., & Shah, P. (2014). Spaced cognitive training promotes training transfer. *Frontiers in Human Neuroscience*, 8, 217.
- Katz, B., Jaeggi, S., Buschkuehl, M., Stegman, A., & Shah, P. (2014). Differential effect of motivational features on training improvements in school-based cognitive training. *Frontiers in human neuroscience*, 8, 242. <http://doi.org/10.3389/fnhum.2014.00242>
- Wang, Z., Katz, B., & Shah, P. (2014). New Directions in Intelligence Research: Avoiding the Mistakes of the Past. *Journal of Intelligence*, 2(1), 16-20.
- Boduroglu, A., & Shah, P. (2014). Configural representations in spatial working memory. *Visual Cognition*, 22(1), 102-124.
- Rhodes, R., Rodriguez, F., & Shah, P. (2014). Explaining the alluring influence of neuroscience in scientific reasoning. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 40, 1432-1440.
- Jaeggi, S. M., Buschkuehl, M., Shah, P., & Jonides, J. (2014). The role of individual differences in cognitive training and transfer. *Memory & Cognition*, 42(3), 464-480.
- Wang, Z., & Shah, P. (2014). The effect of pressure on high- and low- working-memory students: An elaboration of the choking under pressure hypothesis. *British Journal of Educational Psychology*, 84, 226-238.
- Shah, P., & Rhodes, R. (2012). Educational interventions, socioeconomic status, and the brain. Technical Report, *Sesame Workshop*.

- Jaeggi, S. M., Buschkuohl, M., Jonides, J., & Shah, P. (2012). Cogmed and working memory training- Current challenges and the search for underlying mechanisms. *Journal of Applied Research in Memory and Cognition, 1*, 211-213.
- Shah, P., Buschkuohl, M., Jaeggi, S.M., & Jonides, J. (2012). Cognitive training for ADHD: The importance of individual differences. *Journal of Applied Research in Memory and Cognition, 1*, 204-205.
- Jonides, J., Jaeggi, S., Buschkuohl, M., & Shah, P. (2012). Building better brains. *Scientific American Mind. Scientific American Mind, 23*, 59-63.
- Buschkuohl, M., Jaeggi, S.M., Shah, P., & Jonides, J. (2012). Working Memory Training and Transfer. In R. Subotnik, A. Robinson, C. Callahan & P. Johnson (Eds.), *Malleable Minds. Translating Insights from Psychology and Neuroscience to Gifted Education*: National Center for Research on Giftedness and Talent, Institute for Education Science.
- Hullman, J., Rhodes, R., Rodriguez, F., & Shah, P. (2012). Research on Graph Comprehension: Implications for Score Reporting. R. Zwick & D. Zapata (Eds). *ETS Volume on Score Reporting*.
- Hullman, J., Adar, E., & Shah, P. (2011). Benefitting InfoVis with Visual Difficulties. *IEEE Transactions on Visualization and Computer Graphics, 17*, 2213-2222.
- Hullman, J., Adar, E., & Shah, P. (2011). The impact of social information on visual judgments. *Proceedings of the 2011 annual conference on Human factors in computing systems* (pp. 1461–1470). ACM.
- Shah, P., & Freedman, E. G. (2011). Bar and Line Graph Comprehension: An Interaction of Top-Down and Bottom-Up Processes. *Topics in Cognitive Science*.
- Jaeggi, S. M., Buschkuohl, M., Jonides, J., & Shah, P. (2011). Short- and long-term benefits of cognitive training. *Proceedings of the National Academy of Sciences*.
- White, H. A., & Shah, P. (2011). Creative style and achievement in adults with attention-deficit/hyperactivity disorder. *Personality and Individual Differences, 50*(5), 673-677.
- Lustig, C., Shah, P., Seidler, R., & Reuter-Lorenz, P. (2009). Aging, training, and the brain: A review and future directions. *Neuropsychology Review, 19*, 504-522.
- Boduroglu, A., & Shah, P. (2009). Effects of spatial configurations on visual change detection: an account of bias changes. *Memory & Cognition, 37*(8), 1120-1131.
- Boduroglu, A., Shah, P., & Nisbett, D. (2009). Cross-cultural differences in contextual processing in visuospatial short-term memory. *Journal of Cross-Cultural Psychology, 40*, 349-360.
- Minear, M., & Shah, P. (2008). Task switching training and transfer in two switching paradigms: Transferable improvement in global, but not local switch costs. *Memory & Cognition, 36*, 1470-1483
- Burrage, M. S., Cameron, C. E., McCreedy, E., Sims, B., Jewkes, A. M., Shah, P., & Morrison, F. J. (2008). A natural experiment of schooling effects on executive functions. *Child Neuropsychology, 14*, 510-524.
- Boduroglu, A., Minear, M., & Shah, P. (2007). Working memory applied (pp. 55-82). In F. Durso, R. Nickerson, S. Dumais, S. Lewandowsky, & T. Perfect (Eds). *Handbook of Applied Cognition*. NY: Wiley.

- Burrage, M., Epstein, M., & Shah, P. (2007). Learning and making decision about data (pp. 441-452). In M. Lovett & P. Shah (Eds). *Thinking with data*. Mahweh, NJ: Erlbaum.
- Boduroglu, A. & Shah, P (2006). Configural representations in spatial working memory. *Cognitive Processes*, 7,160-162.
- Minear, M., & Shah, P. (2006). Sources of working memory deficits in children and possibilities for remediation. In S. Pickering (Ed). *Working memory and education* (pp. 274-307). Elsevier Press.
- White, H., & Shah, P. (2006). Training attention-shifting in adults ADHD. *Journal of Attention Disorders*, 10, 44-53.
- Chua, H. F., Yates, J. F., & Shah, P. (2006). Risk avoidance: Pictures vs. numbers. *Memory & Cognition*. 34, 399-410.
- White, H., & Shah, P. (2006). The uninhibited imagination: Creativity and attention deficit hyperactivity disorder. *Personality and Individual Differences*, 40, 1121-1131.
- Shah, P., Freedman, E., & Vekiri, I. (2006). The comprehension of quantitative information in graphical displays. In P. Shah and A. Miyake, (Eds.). *The Cambridge handbook of visuospatial thinking* (pp. 426-476). New York: Cambridge University Press.
- Wu, H., & Shah, P. (2004). Exploring visuospatial thinking in chemistry. *Science Education*, 88, 465-492.
- Shah, P. & Freedman, E. (2003). Visuospatial thinking in e-learning. *Journal of Educational Computing Research*, 29, 315-324.
- Shah, P. (2003) Memory for graphics, diagrams, and videos. In J. Guthrie (Ed.) *Encyclopedia of education* (Vol 5, pp. 1594-1596), New York: Macmillan.
- Freedman, E., & Shah, P. (2002). Toward a model of knowledge-based graph comprehension. In M. Hegarty & B. Meyer & H. Narayanan (Eds). *Diagrammatic representation and inference* (pp. 18-31). Berlin: Springer-Verlag.
- Shah, P., & Hoeffner, J. (2002). Review of graph comprehension research: Implications for instruction. *Educational Psychology Review*, 14, 47-69.
- Shah, P. (2001). Graph comprehension: The role of format, content, and individual differences. In M. Anderson, B. Meyer, & P. Olivier. (Eds.) *Diagrammatic representation and reasoning* (pp. 173-185). Berlin: Springer Verlag.
- Miyake, A., Friedman, N. P., Rettinger, D. A., Shah, P., & Hegarty, M. (2001). Visuospatial working memory, central executive functioning, and psychometric visuospatial abilities: How are they related? *Journal of Experimental Psychology: General*, 130, 621-640.
- Hegarty, M., Shah, P. & Miyake, A. (2000). Constraints on using the dual task methodology to specify the degree of central executive involvement in cognitive tasks, *Memory & Cognition*, 28, 376-385.
- Shah, P., & Miyake, A. (1999). Models of working memory: An introduction. In A. Miyake & P. Shah (Eds.), *Models of working memory: Mechanisms of active maintenance and executive control* (pp. 1-26). New York: Cambridge University Press.

- Miyake, A., & Shah, P. (1999). Toward unified theories of working memory: Emerging general consensus, unresolved theoretical issues, and future research directions. In A. Miyake & P. Shah (Eds.), *Models of working memory: Mechanisms of active maintenance and executive control* (pp. 442-481). New York: Cambridge University Press.
- Shah, P., Mayer, R. E., & Hegarty, M. (1999). Graphs as aids to knowledge construction: Signaling techniques for guiding the process of graph comprehension. *Journal of Educational Psychology*, *91*, 690-702.
- Carpenter, P. A., & Shah, P. (1998). A model of the perceptual and conceptual processes in graph comprehension. *Journal of Experimental Psychology: Applied*, *4*, 75-100.
- Shah, P. (1997). A model of the cognitive and perceptual processes in graphical display comprehension. In M. Anderson (Ed.), *Reasoning with diagrammatic representations II* (pp. 94-101). Menlo Park, CA: AAAI Press.
- Shah, P., & Miyake, A. (1996). The separability of working memory resources for spatial thinking and language processing: An individual differences approach. *Journal of Experimental Psychology: General*, *125*, 4-27.
- Shah, P., & Carpenter, P. A. (1995). Conceptual limitations in comprehending line graphs. *Journal of Experimental Psychology: General*, *124*, 43-61.

Book Reviews, Letters to Editor, & Brief Commentaries

- Dale, R., Byrne, R. M., Cohen, E., Deroy, O., Gershman, S. J., Hsiao, J. H., Li, P., Monaghan, P., Noelle, D.C., van Rooij, I., Shah, P., Spivey, M.J., & Varma, S. (2024). Introduction to Progress and Puzzles of Cognitive Science: Introduction to a Wiley Virtual Issue. *Cognitive Science*, *48*(7), e13480.
- Michal, A., & Shah, P. (2018) Bar Graphs. *The Sage Encyclopedia of Educational Research, Measurement, and Evaluation* (168-169).
- Katz, B., & Shah, P. (2016). The jury is still out on working memory training. *Journal of the American Medical Association: Pediatrics*, *170*, 907-908.
- Shah, P. (2001). Improving statistical reasoning: An impressive feat, but what does it mean? [Review of the book *Improving statistical reasoning*]. *Applied Cognitive Psychology*, *15*, 696-697.
- Shah, P. (1996). [Review of the book *Exploiting mental imagery with computers in mathematics education*]. *Journal of Educational Computing Research*, *14*, 199-204.

Conferences & Symposia Organized

Getting Smart about Getting Smarter, June 2015 at the University of Michigan. This one-day multidisciplinary workshop brought together scientists interested the improvement of cognitive abilities via cognitive training, physical exercise, and other interventions (with John Jonides and graduate students Ben Katz & Rebecca Rhodes).

Thinking with data, June, 2004 at Carnegie Mellon University. This symposium, part of the Carnegie Symposium series, brought together researchers from developmental and cognitive psychology, statistics, philosophy, and science education who are interested in how people represent, reason with, and make decisions based on quantitative data (with Dr. Marsha Lovett).

Benefits (or Pitfalls?) of Multimedia, April 1999 at the Meeting of the American Educational Research Association in Montreal, CA. This symposium brought together a set of leading researchers in cognition and education who have developed multimedia educational tools that demonstrate exactly how, when, and for whom such technology can be used to help students learn.

Individual differences in multimedia processing: Mechanical drawings, animations, graphs, maps, and web pages, July, 1999 at the Society for Applied Research in Memory and Cognition in Boulder, CO. This symposium included a set of researchers interested in cognitive models of multimedia processing, and, in particular, the role of individual differences (with Dr. Arthur C. Graesser).

Information Visualization Workshop, June 1999 at the University of Memphis. This workshop brought together leading computer scientists and cognitive scientists interested in information display/visualization and data comprehension from academia and industry (with Dr. Jonathan Maletic).

Models of Working Memory Symposium, July, 1997 at the University of Colorado, Boulder. This symposium brought together prominent working memory researchers from the United States, Europe, and Japan (with Dr. Akira Miyake).

Conference Presentations/Abstracts

*Michal, A.L. & Shah, P. (2023). A practical significance bias in laypeople's evaluation of scientific findings. Poster presented at the Annual Meeting of the Society for Judgment and Decision Making, San Francisco, CA.

Fansher, M., Santhapur, A. & Shah, P. (2023, November). Judgment and Decision-Making Based on Numerical Precision: An Exploratory Investigation. Annual Meeting of the Psychonomic Society, San Francisco, CA.

Zengilowski et al. (2023, August). Making Math Fun: Developing Executive Function Strategies and Math-Positivity Through Gameplay. Annual Meeting of the American Psychological Association.

Osborne, J., Zhang, H., Carlson, M., Shah, P., Jonides, J. (2023, January). Modeling Psychological Networks of Distraction in Attention Deficit Hyperactivity Disorder. Poster presented at the American Society for Professional of ADHD and Related Disorders (APSARD) 2023 Conference, Orlando, FL.

Michal, A., & Shah, P. (2022, November). Reasoning about effect size in everyday contexts. Annual Meeting of the Psychonomic Society, Boston, MA.

- Ibrahim, A., McKeller, S. E., & Shah, P. (2022, July). Differences in Studying: Quantitative Courses, Math Anxiety, and Study Strategies. Poster Presentation, International Mind, Brain, and Education Conference, Montreal, CA.
- Fansher, M., Lalwani, P., Adkins, T., Carlson, M., Quirk, M., Boduroglu, A., Lewis, R., Jonides, J., & Shah, P. (2021, November). Flatten what curve? Helping people make sense of COVID-19 graphs when public health messaging. Poster Presentation, Annual Meeting of the Psychonomic Society, virtual.
- Michal, A., Seifert, C., & Shah, P. (2021, November). Effects of prior beliefs on correlation-causation discrimination. Poster Presentation, Annual Meeting of the Psychonomic Society, virtual.
- Quirk, M., Jonides, J., Fansher, M., Lalwani, P., Adkins, T., Shah, P., Lewis, R., Boduroglu, A., & Carlson, M. (2021, November). Conservatism, Caution, and the COVID-19 Pandemic: A Bayesian Latent Variable approach to Misestimation. Poster Presentation, Annual Meeting of the Psychonomic Society, virtual.
- Michal, A., Zhong, Y., & Shah, P. (2020, November). Ignoring the Evidence in Evidence-based Decision-making. Poster presentation, Annual Meeting of the Psychonomic Society, virtual
- Michal, A.L., Seifert, C., & Shah, P. (2019, November). Diagramming causal models improves correlation-causation discrimination. Oral presentation, Annual Meeting of the Psychonomic Society, Montreal, CA.
- Sun, X., Shah, P., & Zhang, H. (2019, May). When Do Students Suffer from Mind Wandering? The Role of Individual Differences and Learning Context. Poster presented at SARMAC XIII, Cape Cod, June 2019.
- Sun, X., Shah, P., Nancekivell, S., & Gelman, S. (2019, March). Perceptions about the Malleability of Fluid Versus Crystallized Intelligence: When Intelligence Is Dissected. Poster to be presented at the 3rd Biennial International Convention of Psychological Science, Paris, France.
- Zhang, H., & Shah, P. (2019). What Can iPhone's Screen Time Tell about Your Cognitive Functioning? Poster presented at the Association for Psychological Science Annual Meeting, Washington DC, May 2019.
- Fansher, M., Heile, S. & Shah, P. (2019). The influence of internal and external representations on strategy selection in the Tower of Hanoi. Paper presented at the Society for Applied Research in Memory & Cognition.
- *Michal, A.L. & Shah, P. (2018). Can reasoning about salient alternative explanations reduce causality bias? Poster presentation, Annual Meeting of the Psychonomic Society, New Orleans, LA.
- Michal, A., Franconeri, S., & Shah, P. (2018, July). Improving graph comprehension with a visuospatial intervention. Poster presented at the Cognitive Science Society. Madison, WI.
- Ibrahim, A., & Shah, P. (2018, July) Working Memory, Mathematics Anxiety, and Learning. Talk at the Cognitive Science Society. Madison, WI.
- Nancekivell, S., Shah, P. & Gelman, S. (2018, May). What does it mean to believe? Understanding the role of essentialism in the learning style myth. Poster presented at Development 2018. Brock University, Ontario, CA.

- Jones, M. R., Katz, B., Wu, M., Trane, F., Ozbardokci, N., Burt S., Turchian, M., Buschkuel, M., Jaeggie, S., & Shah, P. (2018, April). Motivational intervention for children with ADHD: A Pilot Study. Association for Psychological Science, San Francisco, CA.
- Katz, B., Jones, M., Glazier, J., Buschkuehl, M., Jaeggi, S., Jonides, J., & Shah, P. (2018, January). Improving attention in ADHD children with computerized lure-adaptive working memory training. Poster presented at the 2018 Annual IES Principle Investigators Meeting.
- Caple, A., & Shah P. (2017, November). Correcting false beliefs: Antivaxxers beliefs about the cause of autism. Poster presented at the Annual meeting of the Psychonomic Society, Boston, MA.
- Shah, P. (2017, August). Everyday Scientific Reasoning and Visualizations. Gordon Conference on Visualization. Lewiston, MA.
- Jones et al., (2016, November). Working memory training improves inhibition and ADHD symptoms. Poster presented at the Annual Meeting of the Psychonomic Society, Boston, MA.
- Katz, B. et al. (2016, November). The Role of Lures in Working Memory Training. Poster presented at the Annual Meeting of the Psychonomic Society, Boston, MA.
- Ibrahim, A. F. A., & Shah, P. (2016, April). Practice makes perfect? The effects of practice techniques and individual differences on math learning. Poster presented at the American Association for Educational Research. Washington, DC.
- Katz, B., & Shah, P. (2016, April). Socioeconomic status and cognitive plasticity in adolescents. Poster presented at the American Association for Educational Research. Washington, DC.
- Michal, A. L., Shah, P., & Franconeri, S. (2015, November). An investigation of reasoning errors coordinating theory with data.
- Katz, B., & Shah, P. (2015, November). The unity and diversity of executive functions across the lifespan. Poster presented at the Annual Meeting of the Psychonomic Society.
- Ibrahim, A., & Shah, P. (2015). *“Enough for Some, Too Much for Others: The role of working memory in math learning.”* Poster to be presented at the EARLI 2015 Conference, Cypress, Greece.
- Katz, B., Park, I., Janz, T., Brink, K., Buchanan, A., & Shah, P. (2015). The influence of childhood leisure activities on cognitive dispositions toward thinking. Poster presented at the Society for Research in Child Development.
- Ibrahim, A., & Shah, P. (2015, November). Keeping Track of the Numbers: The Effects of Math Anxiety and Working Memory Load on Mathematics Performance and Learning. Talk presented at the Society for Research in Child Development.
- Ibrahim, A., & Shah, P. (2014, November). Practice makes perfect? The role of working memory load and individual differences during math learning. Poster presented at the Annual Meeting of the Psychonomic Society, Long Beach, CA.
- Katz, B., & Shah, P. (2014, November). Socioeconomic status as a moderator of improvements in executive functions following cognitive training in adolescents. Poster presented at the Society for Neuroscience, Washington, DC.
- Wang, Z., Zhou, R., & Shah, P. (2014, May). Spaced cognitive training promotes training transfer. Poster presented at the American Psychological Society.

- Rhodes, R., Rodriguez, F., & Shah, P. (2014, April). The impact of neuroscience information on scientific reasoning. Poster presented at the American Educational Research Association, Philadelphia, PA.
- Greenberg, R., & Shah, P. (2014, January). A tutorial for teaching students to interpret interaction data. National Institute for the Teaching of Psychology, St. Petersburg Beach, FL.
- Katz, B., Jaeggi, S., Buschkuhl, M., Shah, P., & Jonides, J. (2013, November). The role of intrinsic and extrinsic motivation in cognitive training. Poster presented at the Annual Meeting of the Psychonomic Society, Toronto, ON.
- Rhodes, R., Rodriguez, F., & Shah, P. (2013, November). Explaining the alluring influence of neuroscience on scientific reasoning. Poster presented at the Annual Meeting of the Psychonomic Society, Toronto, ON.
- Pan, X., & Shah, P. (2013, October). De-biasing the tendency to over-interpret small numerical differences: A brief intervention. Poster presented at the LIFE Academy, Marbach, Germany.
- Shah, P. (2013, September). Visual Presentation of Educational Research Data. IES grantee meeting, Washington, DC.
- Shah, P. (2013, June). Graph comprehension in middle school science. Talk at the Conference on Cognitive Science in Science Education, Washington, DC.
- Greenberg, R., & Shah, P. (2013, June). The role of desirable difficulties and individual differences in graph comprehension. Poster presented at the Conference on Cognitive Science in Science Education, Washington, DC.
- Pan, X., Shah, P., & Miller, K. (2012, November). Is 99>98: Number Absolutism in Decision Making. Poster presented at the Annual Meeting of the Psychonomic Society, Minneapolis, MN.
- Katz, B., & Shah, P. Socioeconomic status as a moderator of improvements in executive function following cognitive training in adolescents. Poster session presented at: Determinants of Executive Function and Dysfunction Conference; 2013 Jan 17-18th; Boulder, CO.
- Rhodes, R., & Shah, P. (2012, November). The role of prior beliefs and alluring information in scientific reasoning and decision-making. Poster presented at the Annual Meeting of the Psychonomic Society, Minneapolis, MN.
- Wang, Z. & Shah, P. (2012, May). The effect of pressure on high and low working memory individuals: An elaboration of the choking under pressure hypothesis. Poster presented at the Annual Convention of the Association for Psychological Science, Chicago, IL.
- Shah, P. (2012, May). Training Executive Functions in Typically-Developing and ADHD children. Presented at the Berlin Life Meeting, Berlin, Germany.
- Shah, P., Hullman, J., Adar, E., Miyake, A., & Freedman, E. (2012, April). Desirable difficulties in graph and visual display design. Presented at the American Educational Research Association, Vancouver, BC.
- Shah, P. (2012, March). Training Executive Functions in Typically-Developing and ADHD children. Presented at the Meeting at the NIMH Center on the study of early life stress and its effects on cognitive and social outcomes, Evanston, IL.

- Hullman, J., Adar, E., & Shah, P. (2011, October). Benefitting InfoVis with Visual Difficulties. Presented at IEEE Information Visualization Conference, Providence, RI.
- Shah, P. (2011, August) Training working memory in ADHD and non-ADHD children. Presented at the First International Workshop on Cognitive and Working Memory Training.
- Shah, P. (2011, June) Training working memory in ADHD Children. Presented at the meeting of the Cognitive Science Society, Boston, MA.
- Shah, P. (2011, May). Experience and executive functions. Presented at the meeting of the Socioeconomic status and cognitive development conference, Ann Arbor, MI.
- Shah, P. (2011, April). Experience and executive functions, Center for Human Growth and Development.
- Shah, P. (2011, April). Graph Comprehension and Score Reporting. Presented at Workshop on Score Reporting, Educational Testing Services, Princeton, NJ.
- Shah, P. (2011, April). Participant in Think Tank on Science Learning Enablers, Pittsburgh, PA.
- Jaeggi, S., Buschmuehl, M., Shah, P., & Jonides, J. (2011, November). Working memory training and transfer to Gf: Evidence for Domain Specificity? Presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, WA.
- Jaeggi, S., Buschmuehl, M., Jonides, J., & Shah, P. (2011, March). Working Memory Training in Typically Developing Children and Children with Attention Deficit Hyperactivity Disorder: Evidence for Plasticity in Executive Control Processes. Presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Buschmuehl, M., Jaeggi, S., Jonides, J., & Shah, P. (2010, November). Training and transfer of working memory in children. Posted presented at the Annual Meeting of the Psychonomic Society, St. Louis, MO.
- Boduroglu, A., Shah, P., & Ng, A. (2010, November). Individual Differences Capacity and Resolution of Representations in Visual and Spatial Short-term Memory. Posted presented at the Annual Meeting of the Psychonomic Society, St. Louis, MO.
- White, H. A., & Shah, P. (2010, November) What Box?! Unconstrained Creative Thinking in Adults with ADHD. Posted presented at the Annual Meeting of the Psychonomic Society, St. Louis, MO.
- Shah, P. (2010, May). Spatial Working Memory Representations. Invited Presentations at the Conference on Spatial cognition and Learning, Harvard University, Boston, MA.
- Rodriguez, F., Shah, P., & Ng, A. (2010, March). What reasoning strategies do novice undergraduates use to evaluate evidence. Society for Research on Adolescents Annual Meeting, Philadelphia, PA.
- Shah, P. (2010, January). Making Lipstick out of Bricks: Creativity and ADHD, Invited Presentation at the University of Chicago Cognitive Brownbag series, Chicago, IL.
- Shah, P. (2010, January). Experience and Executive functions: Evidence from Correlational, Naturalistic, and Experimental Studies. Invited Presentation at the Genetic and Environmental Influences on Executive Function Conference, Boulder, CO.

- Davis-Kean, P., Shah, P., Sexton, H., & Huston, A. (2009, April). Explaining Socio-Economic Influences on Parenting and Children's Cognitive Development. Presented at the Society for Research in Child Development.
- Minear, M., & Shah, P. (2009, November). Aging and Task-switching. Annual Meeting of the Psychonomic Society, Boston, MA.
- Shah, P. (2009, October). Creativity and ADHD. Invited Presentation, Washtenaw Community College
- Boduroglu, A., & Shah, P., Gonzalez, R., Bilge, T., & Ozdez, C. (2009, November). Resolution of representations in spatial working memory. Annual Meeting of the Psychonomic Society, Boston, MA.
- Shah, P., & Boduroglu, A. (2009, June). Representation of Information in Spatial Working Memory, Invited Presentation at the Army Research Institute, Phoenix, AZ.
- Shah, P. (2009, June). Invited Panel Participant, Symposium on Media Multitasking, Stanford, CA.
- Shah, P. (2009, January). Visual representations in teaching. Presentation at the Center for Research on Teaching and Learning, University of Michigan
- Shah, P. (2009, January). Affect and Cognition. Presentation at the Center for Research on Teaching and Learning, University of Michigan
- Lan, X., Boduroglu, A., & Shah, P. (2008, November). East-West Differences in Inhibition. Annual Meeting of the Psychonomic Society, Chicago, IL.
- White, H. A., & Shah, P. (2008, November). Innovation and Imagination in Adults with Attention-Deficit/Hyperactivity Disorder. Annual Meeting of the Psychonomic Society, Chicago, IL.
- Boduroglu, A., Lan, X., & Shah, P. (2008, November). Cultural Differences in Functional Field of View. Annual Meeting of the Psychonomic Society, Chicago, IL.
- Shah, P. (2007, December). Experience and executive functions: Evidence from training, schooling, and culture. Paper presented at the Symposium on Executive function in the mind, Kyoto, Japan.
- Shah, P. (2007, June). The cognitive science of data depiction. Paper presented at the Annual meeting of the James S. McDonnell Foundation, Wellesley, MA.
- Burrage, M. S., Cameron, C. E., McCready, E., Sims, B., Jewkes, A. M., Shah, P., & Morrison, F. J. (2007, April). A natural experiment of schooling effects on executive functions. Poster presented at the SRCD biennial meeting.
- White, H.A., & Shah, P. (2006, November). Poster presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX
- Boduroglu, A. & Shah, P. (2006, November). Poster presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX
- Potworowski, G., Vath, R., & Shah, P. (2006, June). Insights into Teaching Decision Making From the Learning Sciences. 10th Biennial Behavioral Decision Research in Management Conference. Santa Monica, CA.
- Burrage, M. S., Shah, P., & Boduroglu, A. (2006, May). Inhibition Training Produces Transfer in College Students With Attention Deficit Hyperactive Disorder. Association for Psychological Science

Annual Meeting, New York, NY.

- Burrage, M. S., Sims, B., & Shah, P. (2006, April) A Natural Experiment of Schooling Effects on Executive Functions. Conference on Human Development, Louisville, KY.
- Minear, M. & Shah, P. (2005, November). The effect of the cue-to-stimulus interval on transferable improvement in task switching. Poster presented at the 46th Annual Meeting of the Psychonomic Society, Toronto, ON.
- Boduroglu, A., & Shah, P. (2005, November). Effects of complexity on the recall of Spatial configurations. Poster presented at the 2005 meeting of the Psychonomic Society, Toronto, ON.
- Boduroglu, A., & Shah, P. (2005, November). The influence of spatial configurations on visual change detection: An account of bias changes. Poster presented at the 2005 meeting of Object Perception, Attention, and Memory Conference, Toronto, ON.
- Minear, M. & Shah, P. (2005, June). Sources of transferable improvement in task switching performance. Poster presented at 17th annual meeting of the American Psychological Society, Los Angeles, CA.
- Boduroglu, A., Shah, P. & Nisbett, R. (2005, May). Cultural differences in visuospatial working memory and attention. Paper presented at the annual Midwestern Conference for Culture, Language, and Cognition, Northwestern University, Evanston, IL.
- Boduroglu, A., Shah, P., & Nisbett, R. (2004, November). Cross-cultural differences in contextual processing In visuospatial short-term memory. Poster presented at the 2004 meeting of the Psychonomic Society, Minneapolis, MN.
- Chua, H., Yates, J. F., & Shah, P. (2004, November). Risk avoidance: Graphs vs. numbers; Cognitive and affective influences of the pictorial nature of graphs. Poster presented at the 2004 meeting of the Society for Judgment and Decision Making, Minneapolis, MN.
- Shah, P. (2004, June). Learning and making decisions based on data. Paper presented at the 34th annual Carnegie Symposium: Thinking With Data, Pittsburgh, PA.
- Boduroglu, A., & Shah, P. (2004, April). Orientation-specific configuration-based representations in spatial working memory. Poster presented at the annual meeting of the Vision Sciences Society, Sarasota, FL. [published abstract]
- Sims, B.C., Shah, P., Connor, C., Cameron, C., Slominski, L. (2004, April). Instructional implications of executive functioning in early childhood: Relations between inhibition, sustained attention and self-regulation. Poster presented at the 2004 annual meeting of the American Education Research Association, San Diego, CA.
- Chua, H., Yates, J. F., & Shah, P. (2003, November). Risk avoidance: Pictures vs. numbers. Paper presented at the 2003 annual meeting of the Psychonomic Society, Vancouver, BC, Canada
- Boduroglu, A., & Shah, P. (2003, November). Visuospatial working memory: Serial recall and configuration strategies. Poster presented at the 2003 annual meeting of the Psychonomic Society, Vancouver, BC, Canada

- Shah, P., & Freedman, E., (2003, June,). A constraint-satisfaction model of the comprehension of graphs depicting quantitative data. Paper presented at the ONR Workshop on Attention, Perception, and Modeling for Complex Displays. Troy, NY
- Shah, P., Freedman, E., & Watkins, P. (2003, April). The influence of prior content knowledge and graphical literacy skills on data interpretation. Paper presented at the 2003 annual meeting of the American Educational Research Association, Chicago, IL.
- White, H., & Shah, P. (2002, November). Training of task-switching in adults with ADHD. Poster presented at the 2002 annual meeting of the Psychonomic Society, Orlando, FL.
- Shah, P., & Freedman, E. G. (2002, July). The role of prior knowledge in complex data comprehension. In J. G. Trafton (Chair), *The Cognition of Complex Visualization*. Symposium presented at the 24th annual meeting of the Cognitive Science Society, Fairfax, VA.
- Shah, P. (2002, April). Invited speaker, final panel discussion session, Paper presented at the Diagrams 2002 Conference, Callaway Gardens, GA.
- Freedman, E., & Shah, P. (2002, April). Toward a model of knowledge-based graph comprehension. Paper presented at the Diagrams 2002 Conference, Callaway Gardens, GA.
- Shah, P. (2002, April). Discussant: Advances in text comprehension research. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Minear, M., Shah, P., Park, D. (2002, April). Training task-shifting skills in older adults. Poster presented at the 2002 meeting of the Cognitive Aging Conference, Atlanta, GA.
- Biangardi, U. Shah, P., Asquith, R., & Martin, L. (2002, April). Improving working memory. Poster presented at the 2000 annual meeting of the American Educational Research Association, New Orleans, LA.
- Biangardi, U. & Shah, P. (2001, November). The trainability of working memory skills. Poster presented at the 2001 annual meeting of the Psychonomic Society, Orlando, FL.
- Freedman, E., & Shah, P. (2001, November). Individual differences in domain knowledge, graph reading skills, and explanatory skills during graph comprehension. Poster presented at the 2001 annual meeting of the Psychonomic Society, Orlando, FL.
- Shah, P., Hoeffner, J. H., Gergle, D., Shellhammer, D., & Anderson, N. (2000, November). A Construction-integration approach to graph comprehension. Poster presented at the 2000 annual meeting of the Psychonomic Society, New Orleans, LA.
- Shah, P., & Miyake, A. (2000, November). Individual differences in simple and complex dual-task performance. Poster presented at the 2000 annual meeting of the Psychonomic Society, New Orleans, LA.
- Shah, P., Yetman, H., & Miyake, A. (1999, November). The trainability of task-switching skill. Presented at the 1999 annual meeting of the Psychonomic Society, Los Angeles, CA.
- Emerson, M., Miyake, A., & Shah, P. (1999, November). Task-shifting and specificity of training. Presented at the 1999 annual meeting of the Psychonomic Society, Los Angeles, CA.
- Shah, P., & Shellhammer, D. (1999, June). *The Role of Domain Knowledge and Graph Reading Skills in Graph Comprehension*. Presented at the 1999 meeting of the Society for Applied Research in Memory and Cognition, Boulder, CO.

- Shah, P. (1999, May). Graph comprehension: Cognitive processes and practical implications. Paper presented at the Information Visualization Workshop, Memphis, TN.
- Varma, S., Shah, P., & Varma, K. (1999, April). The effect of domain experience on strategy selection and estimation when solving fermi problems. Presented at the 1999 annual meeting of the American Educational Research Association, Montreal, CA.
- Shah, P., Hegarty, M., & Miyake, A. (1997, November). Working memory and spatial abilities: Limitations of dual-task methodology. Poster presented at the 1997 annual meeting of the Psychonomic Society, Philadelphia, PA.
- Shah, P., Mayer, R., & Hegarty, M. (1997, April). Which graphs are better? Textbook graphs as aids to knowledge construction. Paper presented at the 1997 annual meeting of the American Educational Research Association, Chicago, IL.
- Shah, P., Mayer, R., & Hegarty, M. (1996, September). The interpretation of graphs as a constructive process. Presented at the 1996 annual meeting of the McDonnell Foundation, St. Louis, MO.
- Shah, P., & Carpenter, P. A. (1996, November). Cognitive and perceptual factors in graph comprehension. Presented at the 1996 annual meeting of the Psychonomic Society, Chicago, IL.
- Miyake, A., Rettinger, D., Shah, P., & Hegarty, M. (1996, November). A reinterpretation of psychometric visuospatial abilities in terms of a multi-component model of working memory. Presented at the 1996 annual meeting of the Psychonomic Society, Chicago, IL.
- Shah, P. (1995, September). The interpretation of graph in context: Applications to high school social science education. Presented at the 1995 annual meeting of the McDonnell Foundation, Nashville, TN.
- Shah P., & Carpenter, P.A. (1994, November). Conceptual limitations in comprehending graphs. Presented at the 1994 annual meeting of the Psychonomic Society, St. Louis, MO.
- Miyake, A., Shah, P., Carpenter, P. A., & Just, M. A. (1994, November). Individual differences in spatial and verbal working memory. Presented at the 1994 annual meeting of the Psychonomic Society, St. Louis, MO.
- Shah, P. & Miyake, A. (1994, July). Individual differences in spatial working memory. Presented at the International Conference on Working Memory, Cambridge, England.
- Furman, L., Barron, B., Montavon, E., Vye, N. J., Bransford, J. D., & Shah, P. (1989, April). The effects of problem formulation training and type of feedback on math handicapped students' problem-solving abilities. Presented at the 1989 annual meeting of the American Educational Research Association, San Francisco, CA.

Invited Talks and Presentations

Department of Psychology, Northwestern University Winter 2022

Department of Psychology, Purdue University Fall 2021

Teachers College Department of Human Development, Columbia University December 2021
University of Michigan Star Scholars Program Winter 2021
University of Michigan Honors Program Winter 2021
Columbia University & Barnard Departments of Psychology, February 2021
Colorado State University, February 2021
Beijing Normal University, Beijing, China, May 2018
Shaangxi Normal University, Xi'an, China, May 2018
AADL Psychology in the Community Presentation, March 2018
Ann Arbor Open Conference, March 2018
Central Michigan University, March 2018
Northwestern University Cognitive Science Program, October 2016
Connor O'Neils, Science in the Community, UM Natural History Museum Spring 2016
White House Office of Science and Technology Policy Workshop: Bridging Neuroscience and Learning, January 2015
Dartmouth University Department of Education, October 2014
Purdue University Department of Psychology, April 2014
Learning and the Brain meeting, New York City, May 2014
Michigan Technological University, Houghton, MI, Winter 2014
University of Michigan Combined Program in Education and Psychology brownbag, Winter 2013
University of Michigan Developmental Psychology Brownbag, Winter 2013
Sesame Workshop, December 2012
Institute for Educational Sciences Panel on Transfer, Winter 2012
Northwestern University Meeting of Early Experience, Stress, and Neurobehavioral Development Center, Winter 2012
University of Michigan Conference on Socioeconomic Status and Cognitive Development, 2011
University of Maryland Center for the Advanced Study of Language, 2011
University of Michigan Provost's Seminar on Teaching 2011
University of Michigan Center for Human Growth and Development 2011
Harvard University, Conference on Spatial Cognition & Learning, 2010
University of Chicago, Winter 2010
University of Colorado, Boulder, Psychology Department, Winter 2010

University of Michigan, Flint Department of Psychology, 2009
Washtenaw Community College, 2009
Stanford University, Symposium on Media Multitasking, Summer 2009
James S. McDonnell Foundation 2007 Meeting
University of Colorado, Boulder, Institute of Cognitive Science
University of Memphis Department of Psychology
University of Oklahoma Department of Psychology
Kent State University Department of Psychology
University of Michigan Department of Psychology
University of Michigan, Tribute to Paul Pintrich

Current Grant Support

Navigating Scientific and Statistical Reasoning in Adolescence, Institute for Educational Sciences, US Department of Education, 2017-2022, \$1,400,000 (PI)
Spark Math, New Schools Venture Fund, 2020-2023, \$198,307 UM, (Co-I; PI of Michigan subcontract)
Beliefs about Learning, Cognitive Abilities, and Individual Difference, 14,000, LSA Research Award. (PI, with Susan Gelman)
RAPID: COVID-19 Information Visualizations, NSF, 2020-2021, \$200,000 (PI)
RAPID: PREDICTING THE SPREAD OF THE COVID-19 VIRUS, NSF, \$200,000 (co-I, Jonides PI)
Exploring evidence-based reasoning, 2019-2021, Martin Jaffe Fund (co-I; Preston PI)

Previous Grant Support

The STAR Scholars Program. LSA New Initiatives/New Instruction (NINI) DEI Grant, \$44,596.80, Cultural context, age, and decision making in the coronavirus pandemic, University of Michigan Mcubed., 2020-2021 (Co-I with Twila Tardif and Eytan Adar)
Combined Cognitive and Motivational Interventions for ADHD Children: Achievement and Classroom Behavior Outcomes, Institute for Educational Sciences, US Department of Education, 1,600,000 (PI)
Working Memory Training in Older Adults, National Institute of Aging, \$278,563, (co-I of Subcontract to Michigan)
Improving everyday scientific reasoning in middle school students. University of Michigan Office of Research, DATE, \$24,000 (PI)

Psychology Path to PhD Scholars Program, University of Michigan Office of the Provost Diversity, Equity, and Innovation Grant, \$8,000 (PI).

Transcranial Direct Current Stimulation Intervention for ADHD, University of Michigan Mcubed. (Co-PI with John Jonides & Chandra Sripada)

Teaching Perceptual and Conceptual Processes in Graph Interpretation. Institute for Educational Sciences, US Department of Education, \$1,600,000 (co-I; PI of Michigan Subcontract; 2012-2016).

Addressing Individual and Group Biases with Data Visualization, M-Cubed. (Co-I with Eytan Adar & Colleen Seifert)

Rackham Seminar Series (Getting smarter about getting smarter), \$10,000, 2015 (PI)

Training working memory and executive control in ADHD children. Institute for Educational Sciences, US Department of Education, \$917,317 (PI; 2008-2013).

Individual Differences in Critical Thinking, UM Office of the Vice President of Research and LSA, \$12,000. (PI).

East-West Differences in Attention, UM-China Grant, \$5,000 (PI).

Risk Communication: A Tamoxifen prophylaxis decision aid (Co-I, Peter Ubel, PI), National Institute of Cancer, \$7,637,298, 2003-2008

Mentoring Undergraduate Women in Basic and Applied Cognitive Science, Principal Investigator, University of Michigan Center for the Education of Women, \$2,000.

General and specific training of executive function in older adults, Principal Investigator, University of Michigan Office of the Vice President of Research, \$18,000, 2003-2005.

33rd Carnegie Symposium on Cognition: Thinking with Data, Co-Investigator (Marsha Lovett, PI), National Science Foundation, \$37,000, 2004-2005.

Thinking with Data Symposium, Co-Investigator (Marsha Lovett, PI), Office of Naval Research, \$10,000, 2004-2005.

Facilitating decision-making based on complex data, Principal Investigator, The Office of Naval Research, \$160,000, 2002-2003.

Training executive control skills in ADHD and non-ADHD groups, Principal Investigator, University of Michigan Rackham Faculty Award, \$14,800, 2002-2003.

Task-switching training and transfer in older adults and younger adults, Principal Investigator, The Roybal Center on Aging and Cognition: Health, Education, and Training (CACHET) seed grant, \$5,000, 2002-2004.

Cognitive studies of complex data visualization, Principal Investigator, Office of Naval Research, \$71,385, 1998-2001.

Cognitive aspects of visual information filtering for force management, Principal Investigator, Office of Naval Research, \$7,638, 1998-1999.

Workshop on data visualization, Principal Investigator, Office of Naval Research and National Science Foundation, \$19,426, 1999-2000.

Expert-novice studies of graph interpretation: Implications for teaching graphical literacy, Principal Investigator, National Academy of Education, \$40,000, 1997-1999.

Models of working memory conference, Co-Investigator (Akira Miyake, PI), Office of Naval Research, \$10,000, 1997-1998.

The comprehension of graphs in context: Applications to high school social science education, Principal Investigator, James S. McDonnell Foundation Postdoctoral Fellowship for Cognitive Studies in Educational Practice Program, \$52,000, 1995-1997.

Teaching Experience

Undergraduate courses

Introduction to Educational Psychology (Michigan)

Honors/Senior Thesis Seminar (Michigan)

Topics in Cognitive Psychology (Cognition, Neuroscience, and Education; Michigan)

Learning and Thinking: Implications for College and Beyond (First-year seminar; Michigan)

Psychological Perspectives on the College Experience (First-year seminar; Michigan)

Responsible Conduct of Research (Michigan)

Comprehensive Studies Summer Bridge Program (Michigan)

Psychology of Thinking (Michigan)

Learning to Learn (with Dr. Bill McKeachie) (Michigan)

Honors Mind, Brain, & Intelligence (Memphis)

Thinking and Cognitive Processes (Memphis)

Graduate courses

Proseminar in Complex Cognition Seminar (with David Meyer) (Michigan)

Accelerated Master's Degree Program Seminar (Michigan)

First Year Proseminar in Education and Psychology (Michigan)

Professional Development (Michigan)

The Learning Sciences (with Stephanie Teasley and Barry Fishman, Michigan)

Learning, Thinking, and Problem Solving (Michigan)

Visuospatial Cognition (Michigan)

Cognitive Methods for Instructional Research (Michigan)

Cognition and Instruction (Michigan)

Models of Thought (Michigan)

Responsible Conduct of Research (Michigan)

Professional Affiliations (occasionally lapsed)

Psychonomic Society (Fellow; Governing Board Member 2020-present)

American Psychological Society (Fellow)

SPARK Society (Member)

Cognitive Science Society
Women in Cognitive Science
American Educational Research Association
Sigma Xi

Administrative Experience

University of Michigan/Outside Psychology

University of Michigan Junior Women Faculty Network Advisory Committee (2003-2005)
University of Michigan Center for the Education of Women (CEW) Graduate Scholarship Committee, 2007, 2009
University of Michigan Faculty Senate Assembly (2011-2012; 201X-20XX)
University of Michigan Department of Education Search Committee (1999-2000, 2000-2001, 2001-2002, 2014-2015, 2022-2023)
University of Michigan Center for Research on Teaching and Learning Science of Learning Series Presenter (2009-2011)
University of Michigan Provost's Seminar on Teaching (2011)
Faculty Mentor, Knight Wallace Fellowship (2012-2013)
University of Michigan Rackham Committee on the Responsible Conduct of Research (2010-2011)
University of Michigan Center for Research on Teaching and Learning Faculty Advisory Board (2012-2014)
University of Michigan Center for Research on Teaching and Learning Faculty Internal Review Committee (2013-2014)
University of Michigan Reevaluating Teaching Ratings Committee (2014-2015)
Responsible Conduct on Research committee (Rackham) (2014-2015)
University of Michigan Cognitive Science Program Undergraduate Committee (2014-present)
University of Michigan Rackham Integrity Board (2014-present)
University of Michigan Digital Innovation Greenhouse Faculty Committee (2016-2018)
University of Michigan Academic Affairs Advisory Committee (2019-2023); Chair 2022-2023
University of Michigan ADVANCE faculty launch committee (mentoring new faculty) (2016-2020; launch convener 2017-2018; 2019-2020, 2023-2024-2025)
University of Michigan ADVANCE STRIDE Committee (2021-present)
University of Michigan Grading Policy Committee (2021-2022)
University of Michigan ADVANCE Director Search committee (2022)
University of Michigan AI Institute Exploratory Faculty Working Group (2024)

Psychology Department

University of Michigan Department of Psychology Undergraduate Committee, 2005-2008

University of Michigan Department of Psychology Annual Review Committee (2012)
University of Michigan Department of Psychology Augmented Executive Committee (2001, 2006, 2009)
University of Michigan Department of Psychology Executive Committee (2010-2011; 2013-2015; 2022-2024)
University of Michigan Department of Psychology Quantitative Psychology Search Committee
University of Michigan Department of Psychology Student Academic Affairs Committee (2015-2017)
University of Michigan Department of Psychology Search Committee (2022)
University of Michigan Psychology Department: Numerous 3rd year review, tenure, promotion, and mentoring committees (at least 2 of these per year)

Area (Cognition & Cognitive Neuroscience and Combined Program in Education and Psychology)

University of Michigan Combined Program in Education and Psychology Executive Committee (1999-present)
University of Michigan CCN Curriculum Committee (2017-2018)
University of Michigan CCN Admissions Committee (many times)
University of Michigan Combined Program in Education and Psychology Curriculum Committee (2007-2009; Chair 2008-2009)
University of Michigan Combined Program in Education and Psychology Admissions Committee (2004-2007, 2012-2013; Chair 2007; 2014-present)
University of Michigan Combined Program in Education and Psychology Colloquium Committee (2014-2016)
University of Michigan Combined Program in Education and Psychology Student Recruitment/Publicity Committee (2000-2004; Chair 2004-2005)
University of Michigan Cognition & Perception/CCN Forum (Brownbag Series) Organizer (2006-2007)
University of Michigan Cognition & Perception/CCN Recruitment Weekend Committee Chair (1999-2002; 2010-2011); Member (2016, 2017)
University of Michigan Cognition & Perception Admissions Committee (2000-2001; 2002-2003; 2009; 2017-2018)
University of Michigan CPEP Diversity Committee (2020-2021)
University of Michigan CPEP Social Committee (2021-2022)
University of Michigan CCN Student Well-being committee (2020-2021)
University of Michigan School of Education search committee (2018?; 2022)

Previous Institutions

University of Memphis Biopsychology Search Committee (1998-1999)
University of Memphis General Education Program Coordinator (1998-1999)
University of Memphis Psychology Department Undergraduate Curriculum Committee (1997-1999)

University of Memphis Department of Psychology Cognitive and Social Speaker Series Organizer
(Spring 1998-1999)

CMU Psychology Department Colloquium committee (1990-1992)

CMU Psychology Department *Science Meets the Profession* seminar committee (1991-1993)

CMU Psychology Department Graduate Student representative to faculty meetings (1994-1995)

CMU Psychology department representative to *Women in Non-Traditional Graduate Studies*
(WINGS) (1990-1992)

Professional Activities

Senior Editor, *Cognitive Science* (2021-present)

Associate Editor, *Memory & Cognition* (2020)

Editorial Board, *Journal of Experimental Psychology: Applied* (2012-2016); *Journal of Educational Psychology* (2020-2021)

Ad-hoc reviewer, ACM Transactions on Human-Computer Interaction; Aging, Neuropsychology, and Cognition; Applied Cognitive Psychology; Canadian Journal of Experimental Psychology; Cognition; Cognition and Instruction; Cognitive Psychology Cognitive Science, Current Directions in Psychological Science, Developmental Cognitive Neuroscience, Developmental Psychology, Educational Psychologist, Elementary School Journal, European Journal of Cognitive Psychology Journal of Applied Research in Memory & Cognition, Journal of Behavioral Decision Making Journal of Cognitive Psychology, Journal of Educational Psychology, Journal of Educational Computing Research, Journal of Experimental Psychology: Applied, Journal of Experimental Psychology: General, Journal of Experimental Psychology: Learning, Memory, & Cognition, Journal of the Learning Sciences, Journal of Research in Mathematics Education, Memory & Cognition, Neuroscience, Proceedings of the National Academy of Sciences, Psychology & Aging, Psychological reports/Perceptual and Motor Skills, Psychological Science, Psychonomic Bulletin & Review, Quarterly Journal of Experimental Psychology, Research in Developmental Disabilities, Spatial Cognition & Computation, Thinking and Reasoning, TopiCS in Cognitive Sciences Trends in Cognitive Sciences, (no longer keeping track)

Proposal and Grant Reviews

Department of Education/Institute for Educational Studies Review Panel, March 2004; 2008-2011 3-year term of 2 panels/year); 2013-2016; 2017-2019 (3-year term)

Sage Books, 2012

British Academy Small Research Grants (UK grant) ad-hoc reviewer, 2011

Air Force Office of Scientific Research
Macmillan 2010
Oxford University Press 2010
NIH NCI reviewer, 2013, 2014
NIH ad-hoc reviewer 2008
NSF Site visit panel, 2007
NSF ad-hoc reviewer, 2006, 2007, 2010, 2020, 2021
NSF Perception Action Cognition Panel, 2008
NSF-ROLE (Research on Learning and Education) Review panel, April 2005
Cambridge University Press Reviewer
Cognitive Science Society Annual Meeting reviewer (various years)
Society for Research in Child Development review committee (2003 annual meeting)
Handbook of Applied Cognition reviewer
Conference on Spatial Information Theory Scientific review committee, 2001
Diagrams 2002 & 2004 (conference jointly sponsored by the American Association for Artificial Intelligence and the Cognitive Science Society) program committees
American Educational Research Association reviewer (1996, 2002, 2003 annual meetings)
Cognitive Science Society Program Committee (2011, 2012)
(no longer keeping track)
Governing Board member, Psychonomics Society

Professional Community Service

Professional Development Speaker, East Jasper Schools, Heidelberg, MS 2022
Professional Development Speaker, Middletown Schools, Middletown, OH 2021
Professional Development Speaker, Open School Conference, 2017, 2018
Consultant, ACT (2016-2017)
Consultant, Concord Consortium
Board of Advisors, Ann Arbor Academy (2009-2012)
Professional Development Speaker, Monroe Public Schools (2008)
Consultant, Sesame Workshop (2012)
Presentations to Teachers and Administrators: Eaton Academy (Eastpointe, MI); Summers Knoll School (Ann Arbor, MI), Ann Arbor Academy (Ann Arbor, MI) (2010)
Consultant, Educational Testing Service
Coach, Washtenaw Intermediate School District Science Olympiad (Estimania and Map Reading) (2009-2012)
Presentation to high school students with special needs, Washtenaw Community College (Ypsilanti, MI) (2011)
Presentation to parents: Metro Charter Academy (Romulus, MI; 2013)

Presentations to mental health professionals: Ann Arbor Mental Health Rounds (2012)
Presentation to Community: ScienceCafe (2015)
Presentation to Community: Ann Arbor District Library (2018)
Presentation to Ann Arbor Open Education Conference (2018 & 2019)

Selected Media Attention for Lab Research

Intellihealth, United Press International: visuospatial abilities, 2001
Media Multitasking Seminar, 2008
Daily Beast, Science Daily, Times of India, Toronto Star, Wall Street Journal and more: creativity and ADHD work, 2011
LA Times, Discover Magazine, Wall Street Journal, Time Magazine, and more: cognitive training with children, 2011
Visual Business Intelligence Newspaper: Desirable difficulties in visual displays, 2012
Medical News Today, Additude, other news outlets, Hyperfocus, 2018
Discover Magazine, Ann Arbor News, South China Morning Post, Learning styles, 2019