

Vanessa R. Simmering

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EDUCATIONAL AND PROFESSIONAL HISTORY

Education

- 2008 **Ph.D.**, University of Iowa
Psychology, Developmental Science training area
- 2001 **B.S.**, University of Iowa
Psychology, with Honors

Professional Appointments

- 2022- **Assistant Director for Learning Maps**; Accessible Teaching, Learning, & Assessment Systems (ATLAS), Achievement & Assessment Institute (AAI), University of Kansas
- 2021-22 **Senior Research Associate in Learning Maps**; ATLAS, AAI, University of Kansas
- 2020- **Research Consultant**; Doctrina Consulting, LLC
- 2017-20 **Senior Research Scientist in Learning Solutions**; ACTNext, ACT, Inc.
- 2008-18 **Assistant Professor**; Department of Psychology, University of Wisconsin – Madison
(leave of absence for 2017-18 academic year)
- 2002-08 **Presidential Fellow / Graduate Research Assistant**; Spatial Perception, Action, & Memory Laboratory, University of Iowa (Supervisor: John P. Spencer, Ph.D.)
- 2001-02 **Laboratory Coordinator**; Spatial Perception, Action, & Memory Laboratory, University of Iowa (Supervisor: John P. Spencer, Ph.D.)

RESEARCH

External Research Funding

“Strengthening the Validity of the National Assessment of Educational Progress through Increased Student Engagement in Technology-Enhanced Assessments”, National Center for Education Statistics through American Institute of Research (Research & Development Contract), **co-PI** (PI: Yigal Rosen), 2019-2020, \$200,000 (total)

“Understanding Visual Memory Capacity using Neural Field Modeling over Development”, National Institute of Child Health & Human Development (1 R03 HD067481), **PI**, 2011-2013, \$100,000 (direct)

Publications

* Joint lead authors ° Laboratory manager / † Graduate trainee / ‡ Undergraduate trainee while primary work was done

Refereed Journal Articles

Kirkorian, H.L. & **Simmering, V.R.** (2023). Searching in the sand: Protracted video deficit in preschoolers' spatial recall using a continuous search space. *Developmental Science*, 26(4), e13376. <https://doi.org/10.1111/desc.13376>

Simmering, V.R., †Andrews, C.M., ‡Leuenberger, R., & Kovack-Lesh, K.A. (2022). Inconsistent flanker congruency effects across stimulus types and age groups: A cautionary tale. *Behavior Research Methods*. <https://doi.org/10.3758/s13428-022-01889-2>

†Miller-Goldwater, H.E., & **Simmering, V.R.** (2022). Examining the role of external language support and children's own language use in spatial development. *Journal of Experimental Child Psychology*, 215, 105317. <https://doi.org/10.1016/j.jecp.2021.105317> [Note: Hilary E. Miller-Goldwater published as Hilary E. Miller before 2021]

- †Cochrane, A.K., **Simmering, V.R.**, & Green, C.S. (2021). Modulation of compatibility effects in response to experience: Two tests of initial and sequential learning. *Attention, Perception, & Psychophysics*, 83, 837-852. <https://doi.org/10.3758/s13414-020-02181-1>
- Perone, S., **Simmering, V.R.**, & Buss, A.T. (2021). A dynamical reconceptualization of executive function development. *Perspectives in Psychological Science*, 16, 1198-12018. <https://doi.org/10.1177/1745691620966792>
- †Cochrane, A.K., **Simmering, V.R.**, & Green, C.S. (2020). Load effects in attention: Comparing tasks and age groups. *Attention, Perception, & Psychophysics*, 82, 3072-3084. <https://doi.org/10.3758/s13414-020-02055-6>
- †Miller, H.E., †Andrews, C.M., & **Simmering, V.R.** (2020). Speech and gesture production provide unique insights into young children's spatial reasoning. *Child Development*, 91, 1934-1952. <https://doi.org/10.1111/cdev.13396> [Note: Hilary E. Miller published as Hilary E. Miller-Goldwater beginning in 2021]
- †Miller, H.E., Kirkorian, H., & **Simmering, V.R.** (2020). Using eye-tracking to understand relations between visual attention and language in children's spatial skills. *Cognitive Psychology*, 117, 1001264. <https://doi.org/10.1016/j.cogpsych.2019.101264>
- Rosen, Y., Stoeffler, K. & **Simmering, V.R.** (2020). Imagine: Design for creative thinking, learning, and assessment in schools. *Journal of Intelligence*, 8(2), 16. (Special Issue: Cognitive and Non-Cognitive Processing in Future-Focused Learning; J. Lee & L. Stankov, Eds.) <https://doi.org/10.3390/jintelligence8020016>
- Arieli-Attali, M., Ou, L., & **Simmering, V.R.** (2019). Understanding test takers' choices in a self-adapted test: Hidden Markov modelling of process data. *Frontiers in Psychology: Quantitative Psychology and Measurement*, 10, 83. (Research Topic: Process Data in Educational and Psychological Measurement; H. Jiao, Q. He & B. Veldkamp, Eds.) <https://doi.org/10.3389/fpsyg.2019.00083>
- †Cochrane, A.K., Green, C.S., & **Simmering, V.R.** (2019). Fluid intelligence is related to capacity in memory as well as attention: Evidence from middle childhood and adulthood. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0221353>
- Perone, S. & **Simmering, V.R.** (2019). Connecting the dots: Finding continuity across visuospatial tasks and development. *Frontiers in Psychology: Developmental Psychology*, 10: 1685. <https://doi.org/10.3389/fpsyg.2019.01685>
- Simmering, V.R.**, Ou, L., & Bolsinova, M. (2019). What technology can and cannot do to support assessment of non-cognitive skills. *Frontiers in Psychology: Quantitative Psychology and Measurement*, 10: 2168. (Research Topic: Advancements in Technology-Based Assessment: Emerging Item Formats, Test Designs, and Data Sources; F. Goldhammer, R. Scherer, & S. Greiff, Eds.) <https://doi.org/10.3389/fpsyg.2019.02168>
- †Miller, H.E. & **Simmering, V.R.** (2018). Children's attention to task-relevant information accounts for relations between language and spatial cognition. *Journal of Experimental Child Psychology*, 172, 107-129. <https://doi.org/10.1016/j.jecp.2018.02.006>
- †Miller, H.E., Vlach, H.A., & **Simmering, V.R.** (2017). Producing spatial words is not enough: Understanding the relation between language and spatial cognition. *Child Development*, 88, 1966-1982. <https://doi.org/10.1111/cdev.12664>
- Simmering, V.R.** & †Wood, C.M. (2017). The importance of real-time stability for visual working memory performance: Young children's feature binding can be improved through perceptual structure. *Developmental Psychology*, 53, 1474-1493. <https://doi.org/10.1037/dev0000358> [Note: Chelsey M. Wood published as Chelsey M. Patterson before 2010]

- †Miller, H.E., °Patterson, R., & **Simmering, V.R.** (2016). Language supports young children's use of spatial relations to remember locations. *Cognition*, 150, 170-180. <https://doi.org/10.1016/j.cognition.2016.02.006>
- Simmering, V.R.** (2016). Working memory capacity in context: Modeling dynamic processes of behavior, memory, and development. *Monographs of the Society for Research in Child Development*, 81(3), 7-148. <https://doi.org/10.1111/mono.12202>
- Simmering, V.R.** & †Miller, H.E. (2016). Developmental improvements in visual working memory resolution and capacity share a common source. *Attention, Perception, & Psychophysics*, 78, 1538-1555. <https://doi.org/10.3758/s13414-016-1163-y>
- Horst, J.S. & **Simmering, V.R.** (2015). Category learning in a dynamic world. *Frontiers in Psychology: Cognition*, 6, 46. (Research Topic: The Impact of Context on Category Learning; R. Hammer & V. Sloutsky, Eds.) <https://doi.org/10.3389/fpsyg.2015.00046>
- Simmering, V.R.**, †Miller, H.E., & Bohache, K. (2015). Different developmental trajectories across visual feature types support a dynamic field model of visual working memory development. *Attention, Perception, & Psychophysics*, 77, 1170-1188. <https://doi.org/10.3758/s13414-015-0832-6>
- *Johnson, J.S., ***Simmering, V.R.**, & Buss, A.T. (2014). Beyond slots and resources: Grounding cognitive concepts in neural dynamics. *Attention, Perception, & Psychophysics*, 76, 1630-1654. (Special Issue: The Structure of Visual Working Memory; J. Wolfe, Ed.) <https://doi.org/10.3758/s13414-013-0596-9>
- Simmering, V.R.** & Perone, S. (2013). Working memory capacity as a dynamic process. *Frontiers in Psychology: Developmental Psychology*, 3:567. <https://doi.org/10.3389/fpsyg.2012.00567>
- Simmering, V.R.** (2012). The development of visual working memory capacity in early childhood. *Journal of Experimental Child Psychology*, 111, 695-707. <https://doi.org/10.1016/j.jecp.2011.10.007>
- Simmering, V.R.** & °Patterson, R. (2012). Models provide specificity: Testing a proposed mechanism of visual working memory capacity development. *Cognitive Development*, 27, 419-439. (Invited contribution to Special Issue: The Potential Contribution of Computational Modeling to the Study of Cognitive Development: When, and for What Topics? S. Marcovitch & P.D. Zelazo, Eds.) <https://doi.org/10.1016/j.cogdev.2012.08.001>
- Perone, S., **Simmering, V.R.**, & Spencer, J.P. (2011). Stronger neural dynamics capture changes in infants' visual working memory capacity over development. *Developmental Science*, 14, 1379-1392. <https://doi.org/10.1111/j.1467-7687.2011.01083.x>
- Schutte, A.R., **Simmering, V.R.**, & Ortmann, M.R. (2011). Keeping behavior in context: A dynamic systems account of a transition in spatial recall biases. *Spatial Cognition and Computation*, 11, 313-342. <https://doi.org/10.1080/13875868.2011.579212>
- Lipinski, J., **Simmering, V.R.**, Johnson, J.S., & Spencer, J.P. (2010). The role of experience in location estimation: Target distributions shift location memory biases. *Cognition*, 115, 147-153. <https://doi.org/10.1016/j.cognition.2009.12.008>
- Simmering, V.R.**, Triesch, J., Deák, G.O., & Spencer, J.P. (2010). A dialogue on the role of computational modeling in developmental science. *Child Development Perspectives*, 4, 152-158. <https://doi.org/10.1111/j.1750-8606.2010.00134.x>
- Simmering, V.R.**, Peterson, C., Darling, W., & Spencer, J.P. (2008). Location memory biases reveal the challenges of coordinating visual and kinesthetic reference frames. *Experimental Brain Research*, 184, 165-178. <https://doi.org/10.1007/s00221-007-1089-7>
- Simmering, V.R.**, Schutte, A.R., & Spencer, J.P. (2008). Generalizing the dynamic field theory of spatial cognition across real and developmental time scales. *Brain Research*, 1202, 68-86. (Invited

contribution to Special Issue: Computational Cognitive Neuroscience; S. Becker, Ed.)
<https://doi.org/10.1016/j.brainres.2007.06.081>

Simmering, V.R. & Spencer, J.P. (2008). Generality with specificity: The dynamic field theory generalizes across tasks and time scales. *Developmental Science*, *11*, 541-555.
<https://doi.org/10.1111/j.1467-7687.2008.00700.x>

Simmering, V.R. & Spencer, J.P. (2007). Carving up space at imaginary joints: Can people mentally impose spatial category boundaries? *Journal of Experimental Psychology: Human Perception and Performance*, *33*, 871-894. <https://doi.org/10.1037/0096-1523.33.4.871>

Simmering, V.R., Spencer, J.P., & Schöner, G. (2006). Reference-related inhibition produces enhanced position discrimination and fast repulsion near axes of symmetry. *Perception and Psychophysics*, *68*, 1027-1046. <https://doi.org/10.3758/BF03193363>

Spencer, J.P., **Simmering, V.R.**, & Schutte, A.R. (2006). Toward a formal theory of flexible spatial behavior: Geometric category biases generalize across pointing and verbal response types. *Journal of Experimental Psychology: Human Perception and Performance*, *32*, 473-490.
<https://doi.org/10.1037/0096-1523.32.2.473>

Invited Chapters and Conference Proceedings

Arieli-Attali, M., Ward, S.J., **Simmering, V.R.**, Rosen, Y., & von Davier, A.A. (2022). Leveraging ideas from adaptive testing to adaptive learning: The HERA showcase. In H. Jiao & R.W. Lissitz (Series Eds.) *The MARCES Book Series: Enhancing Effective Instruction and Learning Using Assessment Data* (Vol. 10, pp. 215-236). Information Age Publishing, Inc.

Rosen, Y., Stoeffler, K., **Simmering, V.R.**, Hao, J., & von Davier, A.A. (2021). Development of scalable assessment for collaborative problem solving. To appear in U. Cress, C. Rose, A.F. Wise, & J. Oshima (Eds.) *International Handbook on Computer-Supported Collaborative Learning*. (Vol. 19, pp. 517-532). Springer, Cham. https://doi.org/10.1007/978-3-030-65291-3_28

*Perone, S. & ***Simmering, V.R.** (2017). Applications of dynamic systems theory to cognition and development: New frontiers. In J. Benson (Ed.) *Advances in Child Development and Behavior* (Vol. 52, pp. 43-80). Elsevier. <https://doi.org/10.1016/bs.acdb.2016.10.002>

Johnson, J.S. & **Simmering, V.R.** (2015). Integrating perception and working memory in a three-layer dynamic field model. In G. Schöner, J.P. Spencer, & **the DFT Research Group** (Eds.) *Dynamic Thinking: A Primer on Dynamic Field Theory* (pp. 151-168). Oxford University Press.
<https://doi.org/10.1093/acprof:oso/9780199300563.003.0006>

Simmering, V.R. & Schutte, A.R. (2015). Developmental dynamics: The spatial precision hypothesis. In G. Schöner, J.P. Spencer, & **the DFT Research Group** (Eds.) *Dynamic Thinking: A Primer on Dynamic Field Theory* (pp. 251-270). Oxford University Press.
<https://doi.org/10.1093/acprof:oso/9780199300563.003.0010>

Spencer, J.P., **Simmering, V.R.**, Schutte, A.R., & Schöner, G. (2007). What does theoretical neuroscience have to offer the study of behavioral development? Insights from Dynamic Field Theory. In J.M. Plumert & J.P. Spencer (Eds.) *The Emerging Spatial Mind* (pp. 320-361). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195189223.003.0014>

Refereed Conference Proceedings

Rosen, Y., Arieli-Attali, M., Seery, J., Ward, S., **Simmering, V.R.**, Ozersky, L., Stoeffler, K., & Webster, K. (2020). HERA: Exploring the power of adaptive scaffolding on scientific argumentation and modelling competencies in online learning systems. In Gresalfi, M. and Horn, I. S. (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020*, Volume 3 (pp. 1665-1668). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2020.1665>

- Rosen, Y., Stoeffler, K., Yudelson, M., & **Simmering, V.R.** (2020). Towards scalable gamified assessment in support of collaborative problem-solving competency development in online and blended learning. In *Proceedings of the 7th Annual Learning at Scale Conference*. <https://doi.org/10.1145/3386527.3405946>
- Ou, L., †Hofman, A., **Simmering, V.R.**, Bechger, T., Maris, G., & van der Maas, H. (2019). Modeling person-specific development of math skills in continuous time: New evidence for mutualism. In M.C. Desmarais, C. Lynch, A. Merceron, & R. Nkambou (Eds.) *Proceedings of the 12th International Conference on Educational Data Mining*. (pp. 327-377). International Educational Data Mining Society. <https://files.eric.ed.gov/fulltext/ED599207.pdf>
- Simmering, V.R.**, Ou, L., & Bolsinova, M. (2019). A cross-disciplinary look at non-cognitive assessments. In M. Wiberg, S. Culpepper, R. Janssen, J. González, & D. Molenaar. (Eds.) *Quantitative Psychology. IMPS 2018. Springer Proceedings in Mathematics & Statistics*, vol 265. (pp. 157-167). Springer. https://doi.org/10.1007/978-3-030-01310-3_15
- †Cochrane, A., Austerweil, J.L., **Simmering, V.R.**, & Green, C.S. (2018). Rapid learning in early attentional processing: Bayesian estimation of trial-by-trial updating. In C.W. Kalish, M. Rau, J. Zhu, & T.T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Cognitive Science Society.
- †Miller, H.E., ‡Weber, J.M., & **Simmering, V.R.** (2018). Differentiation by domain in young children's analogical reasoning. In C.W. Kalish, M. Rau, J. Zhu, & T.T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Cognitive Science Society. [Note: Hilary E. Miller published as Hilary E. Miller-Goldwater beginning in 2021]
- ‡Weber, J.M., †Miller, H.E., Ou, L., & **Simmering, V.R.** (2018). Children's representations of five spatial terms. In C.W. Kalish, M. Rau, J. Zhu, & T.T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Cognitive Science Society.
- Simmering, V.R.** & Perone, S. (2017). Bridging visual working memory research from infancy through adulthood with dynamic neural field modeling. In G. Gunzelmann, A. Howes, T. Tenbrink, & E.J. Davelaar (Eds.) *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (pp. 3174-3179). Cognitive Science Society.
- †Miller, H.E. & **Simmering, V.R.** (2016). General mechanisms underlying language and spatial cognitive development. In A. Papafragou, D. Grodner, D. Mirman, & J.C. Trueswell (Eds.) *Proceedings of the 38th Annual Conference of the Cognitive Science Society*, (pp. 1709-1714). Cognitive Science Society.
- †Miller, H.E. & **Simmering, V.R.** (2016). Multiple factors contributing to children's use of the intrinsic reference frame during recall. In *Spatial Cognition 2016 Conference Proceedings*.
- Simmering, V.R.**, Johnson, J.S., ‡Patterson (Wood), C.M., & Spencer, J.P. (2009). When objects disintegrate: Young children do not bind features in visual working memory. In N. Taatgen, H. van Rijn, L. Schomaker, & J. Nerbonne (Eds.) *Proceedings of the 31st Annual Conference of the Cognitive Science Society*, (pp. 106-111). Cognitive Science Society. [Note: Chelsey M. Patterson published as Chelsey M. Wood beginning in 2010]
- Simmering, V.R.** & Spencer, J.P. (2008). Developing a magic number four, plus or minus two: The Dynamic Field Theory reveals why visual working memory capacity estimates differ across tasks. In B.C. Love, K. McRae, & V.M. Sloutsky (Eds.). *Proceedings of the 30th Annual Conference of the Cognitive Science Society*, (pp. 1537-1542). Cognitive Science Society.
- Simmering, V.R.**, Spencer, J.P., & Schöner, G. (2006). From recall to discrimination: The dynamic neural field theory generalizes across tasks and development. In R. Sun & N. Miyake (Eds.) *Proceedings of the 28th Annual Conference of the Cognitive Science Society*, (pp. 792-797). Lawrence Erlbaum.

Simmering, V.R., Spencer, J.P., & Schöner, G. (2006). The real-time and developmental dynamics of position discrimination. In *Proceedings of the 5th International Conference on Development and Learning*.

Presentations

Invited Addresses, Panels, and Colloquia

- Innovations in learning and assessment solutions for 21st-century skills. (2019, February). Keynote address in *Research in Assessment and Student Evaluation*. Global Educators Forum, Beijing, China.
- New trends in educational competencies, assessment, and college admissions. (2019, February). Panel discussion with Z. Chen and D. Nicholas, facilitated by R. Weissman. Global Educators Forum, Beijing, China.
- In-the-moment influences on visual working memory capacity and development. (2018, June). Invited session, *Making Working Memory Work*. Expanding the Field Workshop, University of East Anglia, Norwich, UK.
- Developing new ways to measure attention in young children. (2016, December). *Brown Bag Seminar*, Ripon College, Ripon, WI.
- Bridging visual working memory research from infancy through adulthood using dynamic systems models. (2016, July). In V. Camos (Chair) *Working Memory Development*. Invited symposium at the 31st International Congress of Psychology, Yokohama, Japan.
- Taking a dynamic systems perspective on cognitive development. (2016, May). *Cognition and Development Brown Bag Seminar*, University of Oregon, Eugene, OR.
- Understanding visual working memory capacity limits across tasks and development through a dynamic systems model. (2016, May). *Cognitive Neuroscience of Learning and Memory Seminar*, University of Oregon, Eugene, OR.
- Taking a dynamic systems perspective on working memory and development. (2016, March). *Institute of Child Development Brown Bag Seminar*, University of Minnesota, Minneapolis, MN.
- Investigating how and when language relates to spatial skills. (2015, October). *Development of Spatial Thinking, Cognitive Development Society Preconference*, Columbus, OH.
- Exploring the link between language and spatial skills (2015, September). *Cognitive and Behavioral Sciences Proseminar*, Illinois State University, Bloomington, IL.
- Young children's failure to use intrinsic reference frames: Problems with selection or updating? (2013, May). *Spatial Memory: Bayes and Beyond Conference*, Richmond, VA.
- Capacity in context: Dynamic processes of behavior, memory, and development. (2012, June). In J.P. Spencer (Chair) *From Complex Insights to Complex Systems: Rethinking How Development Happens*. Invited symposium at the 42nd Annual Meeting of the Jean Piaget Society, Toronto, Ontario, Canada.
- What does capacity measure? The Dynamic Field Theory explains why visual working memory capacity estimates differ across tasks and development. (2009, March). *Spence Award Colloquium*, University of Iowa, Iowa City, IA.

Conference Papers and Symposia

- Rosen, Y., Arieli-Attali, M., Seery, J., Ward, S., **Simmering, V.R.**, Ozersky, L., Stoeffler, K., & Webster, K. (2020, June). HERA: Exploring the power of adaptive scaffolding on scientific argumentation and modelling competencies in online learning systems. In *Design-Based Research and Modeling*. Paper presented at the 14th biennial International Conference on the Learning Sciences. [conference held virtually due to coronavirus pandemic]

- Ou, L., †Hofman, A., **Simmering, V.R.**, Bechger, T., Maris, G., & van der Maas, H. (2019, July). Modeling person-specific development of math skills in continuous time: New evidence for mutualism. In *Educational Systems and Psychometrics*. Paper presented at the 12th International Conference on Educational Data Mining, Montreal, Quebec, Canada.
- †Miller, H.E., Kirkorian, H., & **Simmering, V.R.** (2019, March). Using head-mounted eye-tracking to understand effects of language on children's spatial skills. In H.E. Miller (Chair) *Process-Based Approaches to Understanding Spatial Development: The Role of Attention, Language, And Gesture*. Paper presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Baltimore, MD. [Note: Hilary E. Miller presented as Hilary E. Miller-Goldwater beginning in 2021]
- Young, A.G., Ou, L., & **Simmering, V.R.** (2018, November). Young children's collaboration in an active category learning task. In B. Wyble (Chair) *Conceptual Processes*. Paper presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA.
- Rosen, Y., **Simmering, V.R.**, & Yudelson, M. (2018, October). Fostering learning solutions: Evidence centered design and scalable technologies. Paper presented at the 2018 Educational Technology & Computational Psychometrics Symposium, Iowa City, IA.
- †Cochrane, A., Austerweil, J.L., **Simmering, V.R.**, & Green, C.S. (2018, July). Rapid learning in early attentional processing: Bayesian estimation of trial-by-trial updating. In *Learning Models*. Paper presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI.
- Ou, L., Hofman, A., **Simmering, V.R.**, Maris, G., van der Maas, H. (2018, July). Continuous-time mutualism model of intelligence development. Paper presented the joint 51st Annual Meeting of the Society for Mathematical Psychology and 16th Annual Meeting of the International Conference on Cognitive Modelling, Madison, WI.
- Simmering, V.R.**, Ou, L., & Maris, G. (2018, July). A cross-disciplinary look at non-cognitive assessments. In G. Maris (Chair) *Non-cognitive Psychometric Theory and Assessment*. Paper presented at the 83rd Annual Meeting of the Psychometric Society, New York, NY.
- †Andrews, C.M., †Leuenberger, R., Kovack-Lesh, K.A., & **Simmering, V.R.** (2018, June). How does attention influence looking versus pointing? Eye-tracking in a novel touchscreen paradigm. In L. Colosimo (Chair) *Action, Perception, and Learning*. Paper presented at the 48th Annual Meeting of the Jean Piaget Society, Amsterdam, Netherlands.
- †Miller, H.E., & **Simmering, V.R.** (2018, May). Using eye-tracking to understand the complex relations between attention and language in children's spatial skill development. In L.K. Perry (Chair) *Kids in Space: The Dynamic Coupling between Space and Language Development*. Paper presented at the 48th Annual Meeting of the Jean Piaget Society, Amsterdam, Netherlands.
- †Miller, H.E., & **Simmering, V.R.** (2016, November). Examining language and gesture in spatial reasoning. In J. Sutton (Chair) *Spatial Cognition*. Paper presented at the 57th Annual Meeting of the Psychonomic Society, Boston, MA.
- †Miller, H.E. & **Simmering, V.R.** (2016, August). General mechanisms underlying language and spatial cognitive development. In *Space and Language*. Paper presented at the 38th Annual Meeting of the Cognitive Science Society, Philadelphia, PA.
- †Miller, H.E. & **Simmering, V.R.** (2016, August). Multiple factors contributing to children's use of the intrinsic reference frame during recall. In H. Tabor (Chair) *Development and Education*. Paper presented at the Spatial Cognition Conference, Philadelphia, PA.
- †Andrews, C.M. & **Simmering, V.R.** (2016, June). Testing a proposed account of visual working memory development through the effect of similarity. In D. Uttal (Chair) *Executive Function and Working Memory*. Paper presented at the 46th Annual Meeting of the Jean Piaget Society, Chicago, IL.

- †Cochrane, A.K., Green, C.S., & **Simmering, V.R.** (2016, June). Mapping the links between working memory and fluid reasoning in school-aged children. In D. Uttal (Chair) *Executive Function and Working Memory*. Paper presented at the 46th Annual Meeting of the Jean Piaget Society, Chicago, IL.
- †Jensen, C.A., **Simmering, V.R.**, & Rogers, T.T. (2016, June). The touch of knowledge: A developmental exploration of the impact of conceptual knowledge on visual recognition in a touchscreen change-detection paradigm. In *Conceptual Development*. Paper presented at the 46th Annual Meeting of the Jean Piaget Society, Chicago, IL.
- †Miller, H.E. & **Simmering, V.R.** (2016, June). Processes involved in the development of the intrinsic reference frame. In H.E. Miller (Chair) *Understanding Mechanisms Supporting Spatial Cognition Early in Development*. Paper presented at the 46th Annual Meeting of the Jean Piaget Society, Chicago, IL.
- Simmering, V.R.** & Perone, S. (2016, June). Connecting the dots: Developmental continuity in working memory processes from infancy through later childhood. In **V.R. Simmering** (Chair) *New Insights from Systems Approaches to Cognition and Development*. Paper presented at the 46th Annual Meeting of the Jean Piaget Society, Chicago, IL.
- †Miller, H.E., Vlach, H.A., & **Simmering, V.R.** (2015, November). The role of selection in the relation between language and spatial cognition. In V. Camos (Chair) *Working Memory III*. Paper presented at the 56th Annual Meeting of the Psychonomic Society, Chicago, IL.
- †Jensen, C., **Simmering, V.R.**, & Rogers, T.T. (2015, June). From general to specific: A developmental exploration of the influence of conceptual knowledge on visual recognition. In U. Müller (Chair) *Cognitive Development II*. Paper presented at the 45th Annual Meeting of the Jean Piaget Society, Toronto, Ontario, Canada.
- Simmering, V.R.** (2015, June). Feature binding in visual working memory is impaired during early childhood and can be improved through adding spatial structure. In E. Amsel (Chair) *Cognitive Development I*. Paper presented at the 45th Annual Meeting of the Jean Piaget Society, Toronto, Ontario, Canada.
- Simmering, V.R.** (2015, June). Re-conceptualizing working memory development as increasing dynamic stability: A dynamic systems model. In **V.R. Simmering** (Chair) *Bringing Together Research using Different Approaches and Age Groups to Understand the Development of Visuospatial Working Memory*. Paper presented at the 45th Annual Meeting of the Jean Piaget Society, Toronto, Ontario, Canada.
- †Miller, H.E., **Simmering, V.R.**, & Vlach, H.A. (2015, March). Evaluating relations between spatial language and spatial skills across tasks. In *Spatial Reasoning in Early and Middle Childhood*. Paper presented at the 71st Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- †Miller, H.E., Vlach, H.A., & **Simmering, V.R.** (2015, March). Quality of children's spatial language use predicts spatial skills. In H.E. Miller (Chair) *Understanding the Development of Spatial Language Use and Spatial Skills*. Paper presented at the 71st Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- Simmering, V.R.** (2015, March). Effects of task context can shed light onto cognitive self-organization: Taking a dynamic view of visual memory development. In S. Perone (Chair) *Thinking beyond the Lab: Understanding Cognition across Contexts can Advance the Application of Developmental Research*. Paper presented at the 71st Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- †Miller, H.E., Vlach, H.A., & **Simmering, V.R.** (2014, May). The role of selection and flexibility in language use in developing spatial skills. In H.E. Miller (Chair) *Putting the Pieces Together: The Role*

of Spatial Language in Spatial Cognition. Paper presented at the 44th Annual Meeting of the Jean Piaget Society, San Francisco, CA.

- Simmering, V.R.** (2013, October). (Chair) *Development of Visual Attention: Implications across Contexts and Populations*. Symposium presented at the 8th Biennial Meeting of the Cognitive Development Society, Memphis, TN.
- Simmering, V.R.** & Perone, S. (2011, March). (Chairs) *New Insights from Dynamic Systems Approaches to Development*. Symposium presented at the 69th Biennial Meeting of the Society for Research in Child Development, Montreal, Quebec, Canada.
- Simmering, V.R.**, Johnson, J.S., ‡Patterson, C.M., & Spencer, J.P. (2009, July). When objects disintegrate: Young children do not bind features in visual working memory. In L. Gresham (Chair) *Development and Representation*. Paper presented at the 31st Annual Meeting of the Cognitive Science Society, Amsterdam, Netherlands.
- Simmering, V.R.** (2009, April). Computational modeling as a tool for understanding development. In **V.R. Simmering** (Chair) *Modern Approaches to the Development of Visuo-Spatial Cognition*. Paper presented at the 68th Biennial Meeting of the Society for Research in Child Development, Denver, CO.
- Spencer, J.P., **Simmering, V.R.**, & Johnson, J.S. (2008, November). What does capacity measure? Insights from a dynamic field theory of visual working memory. In J.P. Spencer (Chair) *Visual Working Memory*. Paper presented at the 49th Annual Meeting of the Psychonomic Society, Chicago, IL.
- Spencer, J.P., Troob, W.W., & **Simmering, V.R.** (2008, August). The Dynamic Field Theory versus the Category Adjustment Model: A critical test. Paper presented at the 30th Annual Meeting of the Cognitive Science Society, Washington, DC.
- Simmering, V.R.**, Spencer, J.P., & Dineva, E. (2007, October). A theoretical framework for modeling the development of cognition and action. In **V.R. Simmering** & J.P. Spencer (Chairs), *To Model or Not To Model – Is That A Central Question?* Paper presented at the 5th Biennial Meeting of the Cognitive Development Society, Santa Fe, NM.
- Spencer, J.P., **Simmering, V.R.**, Perone, S. & Johnson, J.S. (2007, March). Using dynamic field theory to understand the integration of where and what over development. In J.P. Spencer & L.M. Oakes (Chairs), *What AND Where: The Co-Development of Dorsal and Ventral Stream Processes*. Paper presented at the 67th Biennial Meeting of the Society for Research in Child Development, Boston, MA.
- Simmering, V.R.**, Spencer, J.P., & Schutte, A.R. (2006, November). Generalizing the dynamic field theory of spatial working memory across real and developmental time scales. Paper presented at the 2nd Computational Cognitive Neuroscience Conference, Houston, TX.
- Spencer, J.P., Johnson, J.S., **Simmering, V.R.**, & Schöner, G. (2006, November). Be flexible but keep it real: The dynamic field theory offers behavioral flexibility with task-specific prediction. In J.P. Spencer (Chair) *Spatial Cognition*. Paper presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX.
- Simmering, V.R.**, Spencer, J.P., & Schöner, G. (2006, July). From recall to discrimination: The Dynamic Neural Field Theory generalizes across tasks and development. In S. Lane (Chair) *Memory*. Paper presented at the 28th Annual Meeting of the Cognitive Science Society, Vancouver, British Columbia, Canada.
- Simmering, V.R.**, Spencer, J.P., & Schöner, G. (2006, May). The real-time and developmental dynamics of position discrimination. Paper presented at the 5th meeting of the International Conference on Development and Learning, Bloomington, IN.

- Spencer, J.P. & **Simmering, V.R.** (2005, April). Balancing a general process approach with the context-specific nature of cognition. In J.P. Spencer (Chair), *The Dynamic Field Theory: A General Process Approach to Cognitive Development*. Paper presented at the 66th Biennial Meeting of the Society for Research in Child Development, Atlanta, GA.
- Spencer, J.P. & **Simmering, V.R.** (2004, November). Carving up space at imaginary joints: Can people mentally impose spatial category boundaries? In L. Carlson (Chair), *Spatial Cognition*. Paper presented at the 45th Annual Meeting of the Psychonomic Society, Minneapolis, MN.
- Spencer, J.P. & **Simmering, V.R.** (2002, November). Grounding working memory in the world: A dynamic field model of position discrimination and spatial memory biases. In M. Masson (Chair), *Spatial Cognition*. Paper presented at the 43rd Annual Meeting of the Psychonomic Society, Kansas City, MO.

Conference Posters

- Rosen, Y., Stoeffler, K., Yudelson, M., & **Simmering, V.R.** (2020, August). *Towards scalable gamified assessment in support of collaborative problem-solving competency development in online and blended learning*. Work-in-progress poster presented at the 7th Annual Learning at Scale Conference. [conference rescheduled and convened virtually due to coronavirus pandemic; posters converted to 3-minute video presentations]
- †Andrews, C.M., ‡Leuenberger, R.E., †Eschman, B., †Reynolds, E.E., Ross-Sheehy, S.R., **Simmering, V.R.**, & Kovack-Lesh, K.A. (2019, October). *Attention in action: Comparing the influence of attentional cues on behaviors across looking and touchscreen paradigms*. Poster presented at the 11th Biennial Meeting of the Cognitive Development Society, Louisville, KY.
- †Jensen, C.A., Rogers, T.T., & Simmering, V.R. (2019, October). *Children make category generalizations based on object shape but not object color in visual recognition tasks*. Poster presented at the 11th Biennial Meeting of the Cognitive Development Society, Louisville, KY.
- †Menendez, D., Ou, L., Yudelson, M., & **Simmering, V.R.** (2019, October). *Inter-relatedness of pre-algebraic knowledge among middle school children*. Poster presented at the 11th Biennial Meeting of the Cognitive Development Society, Louisville, KY, and the 2019 Educational Technology & Computational Psychometrics Symposium, Iowa City, IA.
- †Andrews, C.M., ‡Leuenberger, R., Kovack-Lesh, K.A., & **Simmering, V.R.** (2019, March). *Attention across action systems: Bridging the gap in attention measurement techniques across development*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Baltimore, MD.
- ‡Leuenberger, R., †Andrews, C.M., **Simmering, V.R.**, & Kovack-Lesh, K.A. (2019, March). *Bridging the gap in attentional task design and developing age-appropriate measurements: A cross-task examination*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Baltimore, MD.
- †Miller, H.E. & Simmering, V.R. (2019, March). *Adult-provided versus children's spontaneous use of spatial words on spatial performance*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Baltimore, MD. [Note: Hilary E. Miller presented as Hilary E. Miller-Goldwater beginning in 2021]
- Ou, L., †Hofman, A., **Simmering, V.R.**, Arieli-Attali, M., Maris, G., van der Maas, H., von Davier, A.A. (2018, October) *Learning as a complex system: A dynamic modeling approach*. Poster presented at CresstCon 2018, Los Angeles, CA.
- Arieli-Attali, M., Ou, L., & **Simmering, V.R.** (2018, July). *Predicting choices of item difficulty in self-adapted testing using hidden Markov models*. Poster presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI.

- †Jensen, C.A., Rogers, T.T., & **Simmering, V.R.** (2018, July). *Children regularize object shape but not object color in visual recognition tasks*. Poster presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI.
- ‡Leuenberger, R.E., †Andrews, C.M., Kovack-Lesh, K.A., & **Simmering, V.R.** (2018, July). *Comparing flanker effects in direction and color over development*. Poster presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI.
- †Miller, H.E., ‡Weber, J.M., & **Simmering, V.R.** (2018, July). *Differentiation by domain in young children's analogical reasoning*. Poster presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI.
- ‡Weber, J.M., †Miller, H.E., Ou, L., & **Simmering, V.R.** (2018, July). *Children's representations of five spatial terms*. Poster presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI.
- Arieli-Attali, M., Ou, L., & **Simmering, V.R.** (2018, June). *Modelling the dynamics of choice in self-adapted testing under learning versus performance goals*. Poster presented at the Expanding the Field Workshop, University of East Anglia, Norwich, UK.
- Simmering, V.R.**, †Cochrane, A.K., & Green, C.S. (2017, November). *Identifying targets for cognitive training to improve fluid reasoning in children and young adults*. Poster presented at the 2017 Educational Technology & Computational Psychometrics Symposium, Iowa City, IA.
- †Miller, H.E., †Andrews, C.M., & **Simmering, V.R.** (2017, October). *How language and gesture use during spatial tasks provide novel insights into spatial processing*. Poster presented at the 10th Biennial Meeting of the Cognitive Development Society, Portland, OR.
- †Miller, H.E., †Jensen, C., Austerweil, J. & **Simmering, V.R.** (2017, October). *Investigating flexibility in young children's spatial recall strategies through probabilistic modeling*. Poster presented at the 10th Biennial Meeting of the Cognitive Development Society, Portland, OR.
- †Andrews, C.M., ‡Coates, E., Kovack-Lesh, K.A., & **Simmering, V.R.** (2017, July). *Predicting preschool-aged children's behavior regulation from attention tasks in the lab*. Poster presented at the 39th Annual Meeting of the Cognitive Science Society, London, UK.
- Simmering, V.R.** & Perone, S. (2017, July) *Bridging visual working memory research from infancy through adulthood with dynamic neural field modeling*. Poster presented at the 39th Annual Meeting of the Cognitive Science Society, London, UK.
- †Andrews, C.M., ‡Coates, E., Kovack-Lesh, K.A., & **Simmering, V.R.** (2017, April). *Comparing multiple measures of attention in preschool-aged children*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Austin, TX. [Note: Chelsea M. Andrews presented as Chelsea M. Grahn before 2016]
- †Cochrane, A.K., Green, C.S., & **Simmering, V.R.** (2017, April). *Attentional capacity and selection: Comparing middle childhood to adulthood*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Austin, TX.
- †Cochrane, A.K., Green, C.S., & **Simmering, V.R.** (2017, April). *Visual cognitive sub-processes predicting reasoning in middle childhood and adulthood*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Austin, TX.
- †Jensen, C., **Simmering, V.R.**, & Rogers, T.T. (2017, April). *A developmental exploration of the role of knowledge and perception on visual object recognition*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Austin, TX.
- †Miller, H.E., & **Simmering, V.R.** (2017, April). *During the spatial task: Children's quality of language use predicts spatial performance*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Austin, TX.

- †Miller, H.E., & **Simmering, V.R.** (2017, April). *Individual differences in 4-year-olds' attention to relevant cues across language, memory, and spatial tasks*. Poster presented at the 72nd Biennial Meeting of the Society for Research in Child Development, Austin, TX.
- †Jensen, C., **Simmering, V.R.**, & Rogers, T.T. (2016, August). *A computational consideration of object recognition across development*. Poster presented at the 15th Neural Computation and Psychology Workshop, Philadelphia, PA.
- †Jensen, C., **Simmering, V.R.**, & Rogers, T.T. (2016, August). *Modeling the influence of knowledge on recognition: Connecting visual recognition behavior across development to PDP computational models of semantic knowledge*. Poster presented at the 38th Annual Meeting of the Cognitive Science Society, Philadelphia, PA.
- †Cochrane, A.K., Green, C.S., & **Simmering, V.R.** (2015, October). *Developmental contributions of attention and working memory to higher cognition*. Poster presented at the 9th Biennial Meeting of the Cognitive Development Society, Columbus, OH.
- †Jensen, C., **Simmering, V.R.**, & Rogers, T.T. (2015, October). *Is a hump-less camel real? The role of knowledge in visual recognition*. Poster presented at the 9th Biennial Meeting of the Cognitive Development Society, Columbus, OH.
- †Miller, H.E., Vlach, H.A., & **Simmering, V.R.** (2015, October). *Relation between language and spatial cognition: Uncovering mechanisms*. Poster presented at the 9th Biennial Meeting of the Cognitive Development Society, Columbus, OH.
- ‡Grahn (Andrews), C.M., ‡Cooper, T.L., †Miller, H.E., & **Simmering, V.R.** (2015, March). *Developmental changes in the effects of similarity on visual working memory*. Poster presented at the 71st Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA. [Note: Chelsea M. Grahn presented as Chelsea M. Andrews beginning in 2016]
- †Jensen, C., †Miller, H.E., & **Simmering, V.R.** (2015, March). *Developmental changes in how children weight spatial information*. Poster presented at the 71st Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- †Miller, H.E., Vlach, H.A., & **Simmering, V.R.** (2014, July). *Language use and spatial development*. Poster presented at the 36th Annual Conference of the Cognitive Science Society, Quebec City, Quebec, Canada.
- †Miller, H.E., & **Simmering, V.R.** (2013, October). *Language facilitates 4-year-olds' use of intrinsic reference frame during recall*. Poster presented at the 8th Biennial Meeting of the Cognitive Development Society, Memphis, TN.
- Simmering, V.R.** (2013, April). *Do children represent integrated objects in visual working memory?* Poster presented at the 70th Biennial Meeting of the Society for Research in Child Development, Seattle, WA.
- Simmering, V.R.** (2013, April). *Precision of visual working memory predicts capacity development*. Poster presented at the 70th Biennial Meeting of the Society for Research in Child Development, Seattle, WA.
- ‡Miller, H.E., **Simmering, V.R.**, & °Patterson, R. (2012, November). *The role of spatial language in reference frame selection over development*. Poster presented at the 53rd Annual Meeting of the Psychonomic Society, Minneapolis, MN.
- Simmering, V.R.**, ‡Miller, H.E., & °Patterson, R. (2011, April). *The role of landmarks in children's use of local spatial reference frames*. Poster presented at the 69th Biennial Meeting of the Society for Research in Child Development, Montreal, Quebec, Canada.

- Simmering, V.R.** & Patterson, R. (2011, March). *A neural field model of visual working memory development: Insights into capacity limitations*. Poster presented at the 69th Biennial Meeting of the Society for Research in Child Development, Montreal, Quebec, Canada.
- Spencer, J.P., **Simmering, V.R.**, & Johnson, J.S. (2009, May). *What is capacity? Grounding cognitive concepts in neural dynamics with a dynamic neural field model of visual working memory*. Poster presented at the 9th Annual Meeting of the Vision Sciences Society, Naples, FL.
- ‡Patterson, C.M., **Simmering, V.R.** & Spencer, J.P. (2009, April). *Feature binding in visual working memory is a developmental achievement*. Poster presented at the 68th Biennial Meeting of the Society for Research in Child Development, Denver, CO.
- Simmering, V.R.** & Spencer, J.P. (2009, April). *Development of visual working memory capacity: Bridging the theoretical and empirical gaps between infancy and five years*. Poster presented at the 68th Biennial Meeting of the Society for Research in Child Development, Denver, CO.
- Simmering, V.R.** & Spencer, J.P. (2008, August). *Developing a magic number, plus or minus two: The Dynamic Field Theory reveals why visual working memory capacity estimates differ across tasks*. Poster presented at the 30th Annual Meeting of the Cognitive Science Society, Washington, DC.
- Spencer, J.P., **Simmering, V.R.**, Perone, S. & Ross-Sheehy, S. (2008, March). *The development of visual working memory: Bridging the theoretical and empirical gap between infancy and five years*. Poster presented at the 16th International Conference on Infant Studies, Vancouver, British Columbia, Canada.
- Simmering, V.R.**, Spencer, J.P., & Schöner, G. (2007, August). *From egocentric to object-centered reference frames: Grounding visuospatial cognition in the world*. Poster presented at the 29th Annual Meeting of the Cognitive Science Society, Nashville, TN.
- ‡Vorderstrasse, V.M., **Simmering, V.R.**, & Spencer, J.P. (2007, March). *A-not-B-type biases generalize to non-spatial features*. Poster presented at the 67th Biennial Meeting of the Society for Research in Child Development, Boston, MA.
- Simmering, V.R.** & Spencer, J.P. (2005, October). *Spatial recall biases predict position discrimination performance across development*. Poster presented at the 4th Biennial Meeting of the Cognitive Development Society, San Diego, CA.
- Simmering, V.R.** & Spencer, J.P. (2005, June). *Generalizing a dynamic field model of spatial working memory to account for position discrimination near axes of symmetry*. Poster presented at the International Conference on Connectionist and Dynamic Systems Approaches to Development: On the Cusp of a New Grand Theory or Still Too Distributed? Iowa City, IA.
- Simmering, V.R.**, Spencer, J.P., & Schutte, A.R. (2005, April). *Generalizing the dynamic field theory across spatial working memory tasks*. Poster presented at the 66th Biennial Conference of the Society for Research in Child Development, Atlanta, GA.
- Troob, W.W., **Simmering, V.R.**, & Spencer, J.P. (2004, August). *Cross-category effects in spatial working memory*. Poster presented at the 26th Annual Meeting of the Cognitive Science Society, Chicago, IL.
- Simmering, V.R.** & Spencer, J.P. (2004, August). *Now you see it, now you don't: Can people mentally impose spatial category boundaries?* Poster presented at the 26th Annual Meeting of the Cognitive Science Society, Chicago, IL.
- Peterson, C., Darling, W., **Simmering, V.R.**, & Spencer, J.P. (2003, November). *Frames of reference in visual and proprioceptive spatial memory*. Poster presented at the 33rd Annual Meeting of the Society for Neuroscience, New Orleans, LA.
- Troob, W.W., **Simmering, V.R.**, Johnson, J.S., & Spencer, J.P. (2003, November). *Cross-category effects in spatial working memory: Memory for items in unselected spatial categories influences adjacent categories*

over delay. Poster presented at the 33rd Annual Meeting of the Society for Neuroscience, New Orleans, LA.

Simmering, V.R., Spencer, J.P., & Taborga, P.A. (2003, November). *Now you see it, now you don't: Can people mentally impose spatial category boundaries?* Poster presented at the 44th Annual Meeting of the Psychonomic Society, Vancouver, British Columbia, Canada.

Simmering, V.R., Schutte, A.R., & Spencer, J.P. (2003, October). *Flexibility in spatial categorization near a developmental transition*. Poster presented at the 3rd Biennial Meeting of the Cognitive Development Society, Park City, UT.

Schutte, A.R., Spencer, J.P., & **Simmering, V.R.** (2001, October). *Look...don't touch: 2-year-olds make A-not-B-type errors in a looking version of the sandbox task*. Poster presented at the 2nd Biennial Meeting of the Cognitive Development Society, Virginia Beach, VA.

Simmering, V.R., Marchant, Z.L., & Spencer, J.P. (2001, April). *Tests of a dynamic field theory of spatial memory: Spatial separation and choice density affect the similarity of recognition and recall responses*. Poster presented at the 64th Biennial Meeting of the Society for Research in Child Development, Minneapolis, MN.

Campus Talks (while at University of Wisconsin - Madison, excluding Psychology Department)

Shared processes underlying spatial skills and language development. (2016, December). *Waisman Center Early Childhood seminar series*.

Re-conceptualizing visuospatial memory development as an increase in dynamic stability. (2015, February). *UW Chaos and Complex Systems seminar series*.

How young children remember what they saw where. (2014, January). *McPherson Eye Research Institute seminar series*.

Computational modeling of cognition and development. (2013, April). *Honors Student Organization's "Wednesdays at Washburn" faculty lecture series*.

Linking brain development to behavioral change using computational models of cognition. (2013, February). *Waisman Center Early Childhood seminar series*.

Using neural models to understand developmental improvements in working memory capacity. (2012, November). *Frontiers in Education: Education and Neuroscience Initiative*.

Cognition in the context of perception and action. (2010, December). *McPherson Eye Research Institute seminar series*.

Dynamic Field Theory: Application to the development of visual working memory capacity. (2009, February). *Human, Animal, and Machine Learning: Experiment and Theory*.

Professional Organization Memberships and Affiliations

Cognitive Development Society

Cognitive Science Society

Delta Center (Affiliate)

International Society of the Learning Sciences

McPherson Eye Research Institute

Psychonomic Society (Fellow)

Society for Research in Child Development

Spatial Intelligence and Learning Center (Spatial Network Member)

Vision Sciences Society

TEACHING

Professional Development and Specialized Instruction

Peer-Reviewed Professional Development Sessions and Pre-Conference Tutorials or Workshops

- Career Paths beyond the Tenure Track for Cognitive and Developmental Scientists.* Half-day workshop presented at the 12th Biennial Meeting of the Cognitive Development Society (2022, April); co-organizer and -leader with Carissa Shafto. Madison, WI.
- Career Paths beyond the Tenure Track for Cognitive Scientists.* Half-day workshop presented at the 43rd Annual Meeting of the Cognitive Science Society (2021, July); co-organizer and -leader with Carissa Shafto. Virtual [live presentation and Q&A via videoconference].
- Alternate Career Paths for Developmentalists.* Professional development session presented at the 73rd Biennial Meeting of the Society for Research in Child Development (2021, April); co-organizer and -leader with Carissa Shafto. Virtual [pre-recorded video presentation with live Q&A via videoconference].
- Beyond the Ivory Tower: Non-Academic Career Paths for Cognitive and Developmental Scientists.* Half-day workshop presented at the 11th Biennial Meeting of the Cognitive Development Society (2019, October); co-organizer and -leader with Carissa Shafto. Louisville, KY.
- Beyond the Ivory Tower: Non-Academic Career Paths for Cognitive Scientists.* Half-day workshop presented at the 41st Annual Meeting of the Cognitive Science Society (2019, July); co-organizer and -leader with Carissa Shafto. Montreal, Quebec.
- Dynamic Field Theory: Conceptual Foundations and Applications in the Cognitive and Developmental Sciences.* Full day hands-on tutorials at the 39th Annual Meetings of the Cognitive Science Society (2017, July); co-instructor with John P. Spencer and Sebastian Schneegans. London, UK.
- Dynamic Field Theory: Conceptual Foundations and Applications in the Cognitive and Developmental Sciences.* Full day hands-on tutorials at the 31st Annual Meetings of the Cognitive Science Society (2009, July); co-instructor with Gregor Schöner and Christian Faubel. Amsterdam, Netherlands.

Invited Campus Professional Development Panels, Seminars, and Workshops

- Nonacademic Career Paths. (2023, March). *Prevention Science Colloquium Series*. Washington State University, Pullman, WA. [seminar via videoconference]
- Career Paths Off the Tenure Track. (2023, February-March). *Psychology Department Colloquium Series*. University of Texas – El Paso, El Paso, TX. [two-session seminar via videoconference]
- Exploration beyond Faculty Positions; How to Prepare for Different Career Paths. (2022, September-October). *Cognitive and Neurobiological Approaches to Plasticity Center Brown Bag Series*. Kansas State University, Manhattan, KS. [two-session seminar via videoconference]
- Non-Academic Career Paths (2021, March). *Carolina Consortium on Human Development Professional Development Series*, University of North Carolina at Chapel Hill, Chapel Hill, NC. [seminar via videoconference, co-lead by Carissa Shafto]
- Career Paths Off the Tenure Track. (2020, October). *Department of Psychology and Human Development Seminar Series on the Cognitive Science of Learning and Development*, Vanderbilt University, Nashville, TN. [seminar via videoconference]
- The Versatile PhD: Exploring Non-Academic Career Options for School of Human Ecology PhD Student. (2020, April). *OneSoHE Advanced Professional Development Seminar Series*. University of Wisconsin – Madison, Madison, WI. [panel discussion via videoconference, with Kara Freihofer and Lauren Usher, facilitated by Lauren Feiner]

- Applying Academic Skills in Non-Academic Careers. (2020, March). *Psychology Department Seminar Series*. North Dakota State University, Fargo, ND. [seminar via videoconference; co-presenter Carissa Shafto could not participate due to coronavirus pandemic]
- Non-Academic Job Discussion (2020, March). *Psychology Brown Bag Series*. St. Louis University, St. Louis, MO. [panel discussion via videoconference, with Casey Turner, facilitated by Tony Buchanan]
- Applying Academic Skills in Non-Faculty Careers. (2019, November). *Office of Postdoctoral Studies Career Exploration Series*. University of Wisconsin – Madison, Madison, WI. [workshop, with contributions from Aimee Arnoldussen and Idella Yambin]
- Career Paths Beyond Academia. (2019, November). *Communication Sciences and Disorders Professional Development Series*. University of Wisconsin – Madison, Madison, WI. [seminar]
- Non-Academic Career Paths with Psychology Degrees. (2019, September). *Psychology Brown Bag Series*. University of Tennessee – Knoxville, Knoxville, TN. [seminar via videoconference]
- Navigating Non-Academic Career Paths with a PhD. (2019, September). *Learning, Understanding, Cognition, Intelligence, Data Science (LUCID) Training Grant Seminar Series*. University of Wisconsin – Madison, Madison, WI. [seminar]
- Non-Academic Job Discussion. (2019, April). *Psychology Brown Bag Series*. Carnegie Mellon University, Pittsburgh, PA. [panel discussion via videoconference, with David Landy, facilitated by Juwon Lee]

University of Wisconsin – Madison

Undergraduate Courses

- Cognitive Development (senior capstone seminar: Spring 2011; lecture with discussion sections: Fall 2011, Fall 2012, Fall 2015)
- Development of Perception, Action, and Cognition (senior capstone seminar: Spring 2009, Fall 2009, Fall 2010, Spring 2014, Fall 2016)
- Topics in Psychology for Honors Students (co-taught sophomore seminar: Fall 2008, Spring 2010, Fall 2011)

Graduate Courses

- Basics of Human Memory (Spring 2012, Spring 2014)
- Development of Perception, Action, and Cognition (Spring 2009)
- Dynamic Systems Approaches to Cognition and Development (Spring 2015)

University of Iowa

- Introduction to Child Development (as Graduate Teaching Assistant, leading four sections: Fall 2001, Spring 2002; as Graduate Instructor of evening section: Fall 2005)
- Introduction to Clinical Psychology (as Undergraduate Teaching Assistant: Spring 2001)
- Laboratory in Psychology (as Graduate Teaching Assistant: Spring 2003)

SERVICE

Professional Field Service

Review Service: Grants

- College of Reviewers (2014-2016), *National Science Foundation*, Developmental and Learning Sciences
- Ad hoc reviewer
- Society for Research in Child Development Small Grants* (2019)

Swiss National Science Foundation (2014, 2019)
University of Lethbridge, Insight Development Grants (2015)

Review Service: Journals

Editorial board

Developmental Psychology (2013-2015)
Frontiers in Psychology: Developmental Psychology (2010-)
Journal of Cognition & Development (2017-2020)
Journal of Experimental Child Psychology (2013-2017)

Ad hoc reviewer

<i>Attention, Perception, & Psychophysics</i>	<i>Frontiers in Psychology:</i>
<i>British Journal of Developmental Psychology</i>	<i>Cognition</i>
<i>Child Development</i>	<i>Educational Psychology</i>
<i>Child Development Research</i>	<i>Psychology of Aging</i>
<i>Child Neuropsychology</i>	<i>Quantitative Psychology and Measurement</i>
<i>Cognition</i>	<i>Infancy</i>
<i>Cognitive Development</i>	<i>Journal of Experimental Psychology:</i>
<i>Cognitive Processes</i>	<i>Human Perception & Performance</i>
<i>Cognitive Psychology</i>	<i>Learning, Memory, & Cognition</i>
<i>Cognitive Science</i>	<i>Memory & Cognition</i>
<i>Cognitive Systems Research</i>	<i>Psychological Bulletin</i>
<i>Developmental Psychobiology</i>	<i>Psychology & Neuroscience</i>
<i>Developmental Psychology</i>	<i>Psychology of Sport & Exercise</i>
<i>Educational Psychology</i>	<i>Psychometrika</i>
<i>Frontiers in Human Neuroscience:</i>	<i>Quarterly Journal of Experimental Psychology</i>
<i>Motor Neuroscience</i>	<i>Spatial Cognition & Computation</i>

Review Service: Conference Submissions

Annual Meeting of the Cognitive Science Society (2008, 2010, 2017, 2018, 2022)
Biennial Meeting of the Society for Research in Child Development (2010, 2012, 2016)
International Conference on Educational Data Mining (2020)
Joint International Conference on Development and Learning and Epigenetic Robotics (2015, 2019)

Institutional Service

Center Service (ATLAS, University of Kansas), 2021-

ATLAS Internal Language Ad Hoc Committee member (2022-23)
Alternate Assessment Portfolio Steering Team member (2021-)
Grants Portfolio Steering Team member (2021-)

ACT, Inc., 2017-2020

Intellectual Property Committee member (2018-2020)
Learning Solutions Interest Group co-founder and chair (2018-2020)

Departmental Service (Psychology Department, University of Wisconsin - Madison), 2008-2017

Area Chair, Cognitive and Cognitive Neuroscience (2009-2011, 2015-2017)
Area Chair, Developmental (2009-2010, 2012-2013, 2016-2017)
Graduate Committee member (2009-2010, 2011-2012, 2013-2014, 2015-2017)

Undergraduate Committee member (2010-2011, 2012-2013, 2014-2015)

University Service (University of Wisconsin - Madison), 2008-2017

McPherson Eye Research Institute Education Subcommittee chair (2013-2016) and member (2011-2013, 2016-2017)

McPherson Eye Research Institute Leadership Committee member (2010-16)

OUTREACH AND PUBLIC ENGAGEMENT

Presentations and Publications

- 2020 What is learning? [podcast] Episode 9 of *ACTNext Navigator Podcast*, hosted and produced by Adam Burke, with contributions from Saad Khan, Gunter Maris, Kristin Stoeffler, and Michael Yudelson. Retrieved 3/6/2020 from <https://www.youtube.com/watch?v=xwghMv8OWGU>
- 2019 Lessons from learning to walk. [blog post] Retrieved 6/21/2019 from <https://medium.com/actnext-navigator/lessons-from-learning-to-walk-actnext-c480a421930e>
- 2014 Visual memory from birth to five years. [oral presentation] *Madison Central Lion's Club*, Madison, WI.

Interactive Events

- 2016 "Serious Fun" Exploration Station (topic: basic research on visuospatial cognitive development). *University of Wisconsin - Madison Science Expeditions*. Madison, WI.
- 2013 "Can You Believe Your Eyes?" Exploration Station (topic: visual perception and dysfunction). *University of Wisconsin - Madison Science Expeditions*. Madison, WI.
- 2013 Vision at the Zoo (topic: comparative vision research). *Henry Vilas Zoo*. Madison, WI.