**Pooja Gupta Sidney**

July 2024

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**EMPLOYMENT**

Associate Professor, Department of Psychology, University of Kentucky current

Assistant Professor, Department of Psychology, University of Kentucky 2018 - 2024

Postdoctoral Research Associate, Kent State University 2016 - 2018

**EDUCATION**

PhD, Psychology, University of Wisconsin – Madison 2016

 Dissertation: *Does new learning provide new perspectives on familiar concepts?*

 *Exploring the role of analogical instruction in conceptual change in arithmetic*

Major Advisor: Dr. Martha W. Alibali

MS, Psychology, University of Wisconsin – Madison 2009

BS, Psychology, University of North Carolina – Chapel Hill 2008

**GRANTS FUNDED**

*Experiences and Beliefs of Mathematics Students*, UK College of Arts & Sciences: Advancing Transdisciplinary Research, 2023

 Role: PI

 Amount: $50,000

*Using Number Lines and Analogies to Support Integrated Rational Number Sense: A* ***D****igital* ***R****ational n****UM****ber (DRUM) Intervention,* IES Learning Acceleration Challenge: Math Prize, Phase 1 Finalist, 2023

 Role: Co-PI

 Finalist Prize: $25,000

*An Educational Intervention to Combat Whole Number Bias in Risk Perception in Ambiguous Health Context: COVID-19*, R305U200004, IES 2020-2022

 Role: Co-PI

 Amount: $200,000 total, $12,500 UK sub-award

**GRANTS SUBMITTED BY TRAINEES**

*An Emotion Regulation Skills Training for Students who Struggle with Math Anxiety*, Kaitlyn G.I. Brown, NSF GRFP, Submitted Fall 2023, under review.

*Taking a Bite of the “Feedback Sandwich”: How Order and Ratio of Negative and Positive Feedback affects College Students*, Elizabeth Shaf, UK Summer Undergraduate Research Award, Summer 2023, **funded**: $5,000.

*Representation and Greater Expectations: Understanding Math Experiences in Underrepresented Groups*, Sanjana Rahman, UK Summer Undergraduate Research Award, Summer 2023, **funded**: $5,000.

*Understanding Numbers as Measurement: An Early Childhood Education Intervention*, Amanda Kruczkowski, UK Summer Undergraduate Research Fellowship, Summer 2021, **funded**: $3,000.

*Understanding Zero and Measurement: An Early Childhood Math Intervention*, Ash Pechon, UKY Summer Undergraduate Research Fellowship, Summer 2022, **funded**: $3,000.

*Individual Differences Shape the Impact of Feedback on Students’ Performance*, Julie F. Shirah, NSF GRFP, Submitted Fall 2021, unfunded.

**AWARDS, HONORS, AND FELLOWSHIPS**

College of Arts & Sciences Outstanding Teaching Award, UK 2024

Excellent Undergraduate Research Mentor Award Nominee, UK 2022-2023

Provost Award for Outstanding Teaching Nominee, UK 2022

Wethington Award, UK 2019

Top Downloaded Article, Applied Cognitive Psychology 2017-2018
Marian Schwartz Fellowship, UW-Madison 2014

University Fellowship, UW-Madison 2008 & 2014

IES Interdisciplinary Training Program in the Education Sciences Entry Fellowship 2008 – 2013

University Housing Honored Instructor Award, UW-Madison 2012

NSF Graduate Research Fellowship Program, Honorable Mention 2009 & 2010

Dashiell-Thurstone Prize, UNC-Chapel Hill 2008

**JOURNAL ARTICLES**

1These authors contributed equally, +Graduate student authors, \*Undergraduate student authors

1. **Sidney, P.G.,** Braun, B.J., Jong, C., Hanely, D., Kim, M., Brown, K., Vega, J. +, Schmidt, J., Shirah, J. +, Wawrzyniak, C. U., & Parker, J. (in press). The College Mathematics Beliefs and Belonging Survey: Instrument Development and Validation. *International Journal of Research in Undergraduate Mathematics Education*.
2. **Sidney, P.G.** & Matthews, P.G. (2024). Fostering diversity in mathematics cognition. *Journal of Experimental Child Psychology*. DOI: 10.1016/j.jecp.2024.105955, IF = 2.6
3. Disabato, D., Foust, J. L. +, Taber, J.M., Thompson, C.A., **Sidney, P.G.,** & Coifman, K.G. (2024). What drives preventative health behaviors one year into a pandemic? A replication and extension. *Psychology & Health*. IF = 3.3
4. Yu, S. +, **Sidney, P.G.,** Kim, D., Thompson, C. A., & Opfer, J.E. (2024). From integers to fractions: The role of analogy in transfer and long-term learning. *Journal of Experimental Child Psychology*. DOI: 10.1016/j.jecp.2024.105918 IF = 2.6
5. Mitchell, B.J. +, Baugher, B., Gawlik, E., Richmond, J., **Sidney, P.G.**, Taber, J. M., Thompson, C. A., & Coifman, K. (2024). How are you feeling today? Dynamic and static indices of daily affect during a global pandemic predict psychological adjustment one year later in a multi-cohort, longitudinal investigation. *Cognitive Therapy and Research*. DOI: 10.1007/s10608-024-10484-y, IF = 2.8
6. **Sidney, P.G.** & Shirah, J. + (2023). Surface-to-structure shift in rational number categories. *Cognitive Development, 68*(1), 101386. DOI: 10.1016/j.cogdev.2023.101386 IF = 1.8.
7. Cheng, I. +, Taber, J.T., Simonovic, N. +, Coifman, K., **Sidney, P.G.,** Was, C., Thompson, C. A. (2023). The associations of cultural worldviews, political orientation, and trust with COVID-19 risk beliefs in the U.S. *Social and Personality Psychology Compass, 17*(11), e12867*.* DOI: 10.1111/spc3.12867 IF = 4.60.
8. Fitzsimmons, C.F., Woodbury, L. \*, Taber, J.T., Mielicki, M., **Sidney, P.G.**, Coifman, K.G., & Thompson, C.A. (2023). How do visual displays impact health-risk estimates? It depends on display size, shape, and prior knowledge. *Journal of Behavioral Decision Making*, *36*(5), e234. DOI: 10.1002/bdm.2341 IF = 2.51.
9. **Sidney, P.G.,** Shirah, J. +, Blake, J.\*, & Kruczkowski, A.\* (2023). Adaptive variability in children’s conceptual models of division. *Journal of Experimental Child Psychology*, *236*(1), 105743. DOI: 10.1016/j.jecp.2023.105743 IF = 2.6
10. Shirah, J. +, & **Sidney, P.G.** (2023). Computer-based feedback matters when relevant prior knowledge is not activated. *Learning & Instruction*, *87*(1), 101796. DOI: 10.1016/j.learninstruc.2023.101796. IF = 6.65
11. Fitzsimmons, C.F., **Sidney, P.G.,** Mielicki, M., Schiller, L.K., Scheibe, D. +, Taber, J.M., Matthews, P.G., Waters, E.A., Coifman, K.G., & Thompson, C.A. (2023). Worked examples and number lines improve adults’ understanding of health risks as ratios. *Journal of Applied Research in Memory and Cognition.* DOI: 10.1037/mac0000120. IF: 4.60
12. Kim, M. 1 & **Sidney, P.G.1** (2023). Do teacher instructional practices shape children’s academic self-concept and interest in mathematics and science? Evidence from TIMSS 2015. *Infant and Child Development.* DOI: 10.1002/icd.2429. IF: 1.78

Note: *Authors share equal first-authorship on this manuscript and are therefore listed in alphabetical order.*

1. Mielicki, M.K., Wilkey, E.D., Scheibe, D.A. +, Fitzsimmons, C.J. +, **Sidney, P.G.,** Bellon, E., Ribner, A. D., Soltanlou, M., Starling-Alves, I., Coolen, I., Ansari, D., & Thompson, C. A. (2023). Task features change the relation between math anxiety and number line estimation performance with rational numbers: Two large-scale online studies. *Journal of Experimental Psychology: General*. DOI: 10.1037/xge0001382 IF: 5.50
2. Mitchell, B.J. +, Taber, J.M., Thompson, C.A., **Sidney, P.G.,** Consedine, N.S., & Coifman, K.G. (2023). What activates the behavioral immune system during a global pandemic? Testing the disgust calibration hypothesis. *Evolutionary Psychological Science, 9*(3), 356–371. https://doi.org/10.1007/s40806-023-00368-x IF: 1.40
3. Taber, J.M., Updegraff, J.A., **Sidney, P. G.,** O’Brien, A.G. +, & Thompson, C.A. (2023). Experimental tests of how hypothetical monetary lottery incentives influence vaccine-hesitant U.S. adults' intentions to vaccinate. *Health Psychology*, *4*(1), 33-45. DOI: 10.1037/hea0001220 IF: 5.56
4. Thompson, C. A., Mielicki, M. K., Rivera, F., Fitzsimmons, C. J. +, Scheibe, D. A. +, **Sidney, P. G.,** ... & Waters, E. A. (2023). Leveraging math cognition to combat health innumeracy. *Perspectives on Psychological Science, 18*(1), 152-177. DOI: 10.1177/17456916221083277 IF: 8.19
5. Seah, T.H.S. +, **Sidney, P.G.,** Taber, J.M., Thompson, C.A., & Coifman, K.G. (2023). Emotional complexity and risk-related behaviors under high stress: Do protective associations persist even during a pandemic? *Emotion*, 23(3), 879-885. DOI: 10.1037/emo0001133. IF: 4.33
6. Disabato, D., Aurora, P. +, **Sidney, P**., Taber, J., Thompson, C. A., & Coifman, K. (2022). Self-care behaviors and affect during the early stages of the COVID-19 pandemic. *Health Psychology, 41*(11), 833–842. IF = 4.27
7. Mielicki, M.K., Fitzsimmons, C.J. +, Schiller, L., Scheibe, D. +, Taber, J.M., **Sidney, P.G.,** Matthews, P.G., Waters, E.A., Coifman, K., & Thompson, C.A. (2022). Number lines can be more effective at facilitating adults' performance on health-related ratio problems than risk ladders and icon arrays. *Journal of Experimental Psychology-Applied*. DOI: 10.1037/xap0000456 IF: 2.81
8. **Sidney, P.G.**, Shirah, J. +, Zahrn, L.\*, & Thompson, C.A. (2022). Diagrams support spontaneous transfer across whole number and fraction concepts. *Contemporary Educational Psychology*, *69*, 102066. DOI: 10.1016/j.cedpsych.2022.102066. IF: 6.92
9. Scheibe, D.A. +, Fitzsimmons, C.J. +, Mielicki, M.K., Taber, M.J., **Sidney, P.G.**, Coifman, K., & Thompson, C. A. (2022). Confidence in COVID problem solving: What factors predict adults’ item-level metacognitive judgments on health-related math problems before and after an educational intervention? *Metacognition and Learning*, *17*(3), 989-1023. DOI: 10.1007/s11409-022-09300-3 IF: 3.42
10. Thompson, C.A., Taber, J.M., **Sidney, P.G.** et al.(2022). Math matters during a pandemic: A novel, brief educational intervention combats whole number bias to improve health decision-making and predicts COVID-19 risk perceptions and worry across 10 days. *Journal of Experimental Psychology: Applied*, *27*(4), 632-656. DOI: 10.1037/xap0000403 IF: 2.81
11. **Sidney, P.G.,** Thompson, C.A., Fitzsimmons, C.J. +, & Taber, J.M. (2021). Children’s and adults’ math attitudes are differentiated by number type. *Journal of Experimental Education, 89,* 1-32. DOI: 10.1080/00220973.2019.1653815 IF: 2.62
12. Thompson, C.A., Taber, J.M., Fitzsimmons, C.J. +, & **Sidney, P.G.** (2021). Math predictors of numeric health and non-health decision-making problems. *Journal of Numerical Cognition, 7*(2), 221-239. DOI: 10.5964/jnc.6545 IF: 1.78
13. Coifman, K.G., Disabato, D.J., Aurora, P., Seah, T.H.S. +, Mitchel1, B. +, Simonovic, N. +, Foust, J.L. +, **Sidney, P.G.,** Thompson, C.A., & Taber, J.M. (2021). What drives preventive health behavior during a global pandemic? Emotion and worry, *Annals of Behavioral Medicine, 55*(8), 791-804*.* DOI:10.1093/abm/kaab048 IF: 4.48
14. **Sidney, P.G.** (2020).Children’s learning from implicit analogies during instruction: Evidence from fraction division. *Cognitive Development, 56*, 100956. DOI: 10.1016/j.cogdev.2020.100956 IF: 2.05
15. Fitzsimmons, C.J. +, Thompson, C.A., & **Sidney, P.G.** (2020).Confident or familiar? The role of familiarity ratings in adults' confidence judgments when estimating fraction magnitudes. *Metacognition and Learning,* *15*, 215–231. DOI: 10.1007/s11409-020-09225-9 IF: 2.75
16. Fitzsimmons, C.J. +, Thompson, C.A., & **Sidney, P.G.** (2020).Do adults treat equivalent fractions equally? Adults’ strategies and errors during fraction reasoning. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 46*(11), 2049-2074. DOI: 10.1037/xlm0000839 IF: 2.32
17. Choi, S.S.\*, Taber, J.M., Thompson, C.A., & **Sidney, P.G.** (2020). Math anxiety, but not induced stress, is associated with objective numeracy. *Journal of Experimental Psychology: Applied*, *26*(4), 604-619. DOI: 10.1037/xap0000268 IF: 2.81
18. **Sidney, P.G. &** Thompson, C.A. (2019). Implicit analogies in learning: Supporting transfer by “warming up”. *Current Directions in Psychological Sciences, 28*(6) 619-625*.* DOI: 10.1177/0963721419870801 IF: 4.67
19. **Sidney, P.G.,** Thompson, C.A., & Rivera, F.D. (2019). Number lines, but not area models, support children’s accuracy and conceptual models of fraction division. *Contemporary Educational Psychology*, *58*, 288-298. DOI: 10.1016/j.cedpsych.2019.03.011 IF: 6.92
20. **Sidney, P.G.,** Thalluri, R.\*, Buerke, M.\*, & Thompson, C.A. (2019). Who uses more strategies? Linking mathematics anxiety to adults’ strategy variability and performance on fraction magnitude tasks. *Thinking and Reasoning*, *25*(1), 94-131. DOI: 10.1080/13546783.2018.1475303 IF: 3.54
21. Cooper, J.L., **Sidney, P.G.**, & Alibali, M.W. (2018). Who benefits from diagrams and illustrations in math problems? Ability and attitudes matter. *Applied Cognitive Psychology, 32*(1), 24-38. DOI: 10.1002/acp.3371 IF: 2.00
22. Thompson, C.A., Morris, B., & **Sidney, P.G.** (2017). Are books like number lines? Children spontaneously encode spatial-numeric relationships in a novel spatial estimation task. *Frontiers in Psychology*, 8. DOI: 10.3389/fpsyg.2017.02242 IF: 2.99
23. **Sidney, P.G.,** & Alibali, M.W. (2017). Creating a context for learning: Activating children’s whole number knowledge prepares them to understand fraction division. *Journal of Numerical Cognition, 3*(1), 31-57. DOI: 10.5964/jnc.v3i1.71 IF: 1.78
24. Grammer, J.K., Coffman, J.L.**, Sidney, P.G.**, & Ornstein, P.A. (2016). Linking teacher instruction and student achievement in mathematics: The role of teacher language. *Journal of Cognition and Development*, *17*(3), 468-485. DOI: 10.1080/15248372.2015.1068777 IF: 2.58
25. Hattikudur, S., **Sidney, P.G.**, & Alibali, M.W. (2016). Does comparing informal and formal procedures promote mathematics learning? The benefits of bridging depend on attitudes towards mathematics. *Journal of Problem Solving, 9*(1), Article 2. DOI: 10.7771/1932-6246.1180
26. **Sidney, P.G.**, Hattikudur, S., & Alibali, M.W. (2015). How do contrasting cases and self-explanation promote learning? Evidence from fraction division*. Learning and Instruction, 40,* 29-38. DOI: [10.1016/j.learninstruc.2015.07.006](http://dx.doi.org/10.1016/j.learninstruc.2015.07.006) IF: 6.63
27. **Sidney, P.G.**, & Alibali, M.W. (2015). Making connections in math: Activating a prior knowledge analogue matters for learning. *Journal of Cognition and Development, 16*(1) 160-185. DOI:10.1080/15248372.2013.792091 IF: 2.58

**INVITED COMMENTARY**

1These authors contributed equally, +Graduate student authors, \*Undergraduate student authors

1. Braun, B.J. & **Sidney, P.G.** (2022) Collaborating across disciplines. *Notices of the American Mathematical Society*, 69(10), 1741-1744.
2. Thompson, C.A., **Sidney, P.G.**, Fitzsimmons, C.J. +, Mielicki, M., Schiller, L., Scheibe, D., Opfer, J. E., & Siegler, R. S. (2022).Comments regarding *numerical estimation strategies are correlated with math ability in school-age children*. *Cognitive Development*, *62*. DOI: j.cogdev.2022.101188 IF: 1.89
3. **Sidney, P.G.**1, Thompson, C.A.1, Matthews, P.G.1, & Hubbard, E.M.1 (2017). From continuous magnitudes to symbolic numbers: The centrality of ratio. *Behavioral and Brain Sciences, 40*. DOI: 10.1017/S0140525X16002284 IF: 17.19

Note: *Authors share equal first-authorship on this manuscript.*

1. Alibali, M.W., & **Sidney, P.G.** (2015). Variability in the natural number bias: Who, when, how, and why?. *Learning and Instruction*, *37*, 56-61. DOI: 10.1016/j.learninstruc.2015.01.003 IF: 6.63

**BOOK CHAPTERS**

**Sidney, P.G.,** Thompson, C.A., & Opfer, J.E. (2019). Development of fraction understanding. Dunlosky, J. & Rawson, K. (Eds.) *Cambridge Handbook of Cognition and Education*. (pp. 148–182). Cambridge University Press.

Alibali, M.W., & **Sidney, P.G.** (2015). The role of intraindividual variability in learning in childhood and adolescence. In M. Diehl, K. Hooker, & M. Sliwinski (Eds.) *Handbook of intraindividual variability across the lifespan* (pp. 84-102). New York, NY: Taylor and Francis.

**PUBLIC-FACING MEDIA**

Thompson, C.A., Taber, J., Coifman, K., & **Sidney, P.G.** (2020, April 8). *Math misconceptions may lead people to underestimate the true threat of COVID-19*. The Conversation.

<https://theconversation.com/math-misconceptions-may-lead-people-to-underestimate-the-true-threat-of-covid-19-134520>

**Sidney, P. G.** (2024). *Children’s learning from implicit analogies during instruction: Evidence from fraction division.* Faculti Media Library.

**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**

1These authors contributed equally, +Graduate student authors, \*Undergraduate student authors

Parrent, P.\*, Jong, C., **Sidney, P. G.,** &Braun, B.J. (October, 2023). Factors that influence college students’ mathematics identity and beliefs about the nature of mathematics. *Proceedings of the 45th annual meeting North American Chapter of the International Group for the Psychology of Mathematics Education*. Reno, NV: University of Nevada, Reno.

Shirah, J. F. +, & **Sidney, P. G.** (July, 2022). Role of prior knowledge in feedback timing [Abstract]. *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. Toronto, CA: Cognitive Science Society.

Fitzsimmons, C. +, Thompson, C. A., **& Sidney, P. G.** (2019). Confident or familiar? The role of familiarity and fraction estimation precision on metacognition *Proceedings of the 41th annual meeting North American Chapter of the International Group for the Psychology of Mathematics Education*. St. Louis, MO: University of Missouri at Columbia.

Chan, Y.-C. +, **Sidney, P. G.,** & Alibali, M. W. (2019). Corresponding color coding facilitates learning of area measurement. *Proceedings of the 41th annual meeting North American Chapter of the International Group for the Psychology of Mathematics Education*. St. Louis, MO: University of Missouri at Columbia.

**Sidney, P. G.,** Thompson, C. A., & Rivera, F. D. (2018). Using visual models in fraction division: Number lines support children’s accuracy and conceptual understanding. *Proceedings of the 40th annual meeting North American Chapter of the International Group for the Psychology of Mathematics Education*. Greenville, SC: University of South Carolina & Clemson University.

**Sidney, P. G.**, & Alibali, M. W. (2013). Children's and adults' models of whole number division: Consistency or variability?.In M. V. Martinez, & A. C. Superfine (Eds.) *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Chicago, IL: University of Illinois at Chicago.

**Sidney, P. G.**, & Alibali, M. W. (2012). Supporting conceptual representations of fraction division by activating prior knowledge domains.In L.R. Van Zoest, J.-J. Lo, & J. L. Kratky (Eds.) *Proceedings of the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (1012). Kalamazoo, MI: Western Michigan University.

Hattikudur, S., **Sidney, P. G.**, & Alibali, M. W. (2010, August). Unique and additive effects of self-explaining and contrasting cases on learning fraction division [Abstract]. *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (p584). Portland, OR: Cognitive Science Society.

**SUBMITTED MANUSCRIPTS**

Scheibe, D.A. +, Was, C.A., **Sidney, P. G.,** & Thompson, C.A. (accepted pending minor revisions). How does math anxiety affect math performance? An experimental two-study investigation into the mechanism of math anxiety interventions. *Journal of Experimental Psychology: General.*

Fitzsimmons, C.J. +, Was, C., **Sidney, P.G.,** Taber, J., & Thompson, C.A. (revision under review). A confirmatory factor analysis of the math attitudes questionnaire in U.S. adults: Number-specific attitudes matter.

Disabato, D., Aurora, P., **Sidney, P.G**., Taber, J. M., Thompson, C.A., & Coifman, K.G. (revision under review). Taking care with self-care during COVID-19: Affect-behavior associations during early stages of the pandemic.

Owusua, T.\*, Fitzsimmons, C.J., Miller-Cotto, D., Coifman, K., Taber, J. M., **Sidney, P.G.,** & Thompson, C. A. (in revision). Identities at the Intersection of Gender and Race/Ethnicity: Interrelations with Math Anxiety, Math Attitudes, and Math Performance.

**Sidney, P.G.**, Scheibe, D.A. +, Zahrn, L. +, Brown, K.G.I.+, & Thompson, C.A., (invited submission under review).Developing effective interventions for math anxiety. *Current Directions in Psychological Science*.

Osana, H. P., **Sidney, P. G.,** MacCaul, R. +, & Barilaro, M.+(invited submission under review). Instructional models and perceptual similarity in partitive and quotative division contexts. *Canadian Journal of Experimental Psychology.*

Jong, C., **Sidney, P. G.**, Braun, B.J., Wawrzyniak, C., Brown, M. +, Brown, K.G.I.+, Rogers, R. J. +,Parrent, P.\*, Parker, J.M., & Hanely, D.W. (submission under review). Affect and achievement: Salient K-12 mathematics experiences among undergraduate students in precalculus and calculus.

**INVITED PRESENTATIONS**

*Analogical Transfer in Mathematics Learning* February 2023

Readings in Educational Science Seminar, University of Alabama

*Making Math More Intuitive* January 2023

Psychology Department, Elon University

*Learning by Analogy in Mathematics* November 2022

Analogical Minds Seminar, International Virtual Meeting

*Diversifying Mathematics Cognition* May 2022

KSU NUMBERs Workshop, Kent State University

*Learning by Analogy in Mathematics* March 2022

Developmental Science Colloquium Series, University of Maryland

*When Math Cognition Influences COVID-19 Reasoning* February 2022

The Social and the Science: Psychosocial & Biomedical Research on COVID-19,

University of Kentucky

*Tools for Math Instruction: Research-based Strategies to Help Students* August 2021

Tutor Training at “The Study”, University of Kentucky

*Analogies in Math: Helping Students Use What They Know* April 2019

Mathematics Teaching and Learning Seminar, University of Kentucky

*Mathematics Learning in Middle Childhood* October 2018

Invited Lecture in PSY 223, University of Kentucky

*Prior Knowledge and New Learning: Connecting Whole Numbers and Fractions* February 2016

Interdisciplinary Training Program in Education Sciences Seminar,

University of Wisconsin –Madison

*Prior Knowledge and New Learning: Connecting Whole Numbers and Fractions* January 2016

Department of Psychological Sciences, Kent State University

*Prior Knowledge and New Learning: Connecting Whole Numbers and Fractions* January 2016

Psychology Department, Carnegie Mellon University

*Making Connections in Math by Activating Prior Knowledge* March 2012

Interdisciplinary Training Program in Education Sciences Seminar,

University of Wisconsin –Madison

**CONFERENCE PRESENTATIONS**

1These authors contributed equally, +Graduate student authors, \*Undergraduate student authors

Kim, M., Fields, C. +, Fitisone, K. +, Matusz, D. +, McAweeney, K. +, **Sidney, P. G.**,& Tanaka, K. + (2024, June). *Demystifying the undergraduate psychology experience: Supporting the career transition for psychology majors.* Unconference session accepted at the 2024 Annual Meeting of the Society for the Improvement of Psychological Science. Nairobi, Kenya.

Brown, K.G.I. +, **Sidney, P.G.**, Fitzsimmons, C.J., Taber, J.T., Coifman, K., & Thompson, C.A. (2024, June). *Sources of variability in parents’ support for mathematics learning at home.* Paper to be presented at the annual meeting of the Mathematics Cognition and Learning Society. Washington, DC.

Brown, K.G.I. +, & **Sidney, P.G.** (2024, April). *Mathematics sense of belonging and attitudes among gender-diverse college students.* Poster to be presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.

Shaf, E.\*, & **Sidney, P.G.** (2024, April). *“Feedback Sandwich”: Combining Constructive and Positive Feedback for College Students.* Poster to be presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.

Rahman, S.\*, & **Sidney, P.G.** (2024, April). *Asian (American) Students’ Experiences with the “Model Minority Myth” in Math.* Poster to be presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.

Vyas, B.\*, & **Sidney, P.G.** (2024, April). *Perceptions of health risks of nicotine usage in adolescents*. Poster to be presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.

**Sidney, P.G.** & Zahrn, L. \* (2024, March). *Type of analogy during instruction moderates relationships between sixth-grade students’ inhibitory control and mathematics learning*. Poster to be presented at the biennial meeting of the Cognitive Development Society, Pasadena, CA.

Fitzsimmons, C. J., Scheibe, D., Rodrigues, J., Opfer, J. E., **Sidney, P. G.,** Thompson, C. A. (2024, March). *Aligning proportionally equivalent whole number and fraction magnitudes on number lines improved estimation accuracy for 3rd through 5th graders with or at risk for math learning difficulties.* Poster to be presented at the biennial meeting of the Cognitive Development Society, Pasadena, CA.

Shirah, J. +, & **Sidney, P.G.** (2023, April). *The effect of need for cognition on feedback timing*. Poster presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.

Brown, K.G.I.+, **Sidney, P.G.,** Fitzsimmons, C.J., Adjei, B.\*, Taber, J.M., Coifman, K., & Thompson, C.A. (2023, April). *Parents’ support for children’s mathematics learning during the COVID-19 pandemic.* Poster presented at the annual meeting of the Midwestern Psychological Association. Chicago, IL.

Kruczkowski, A.\*, & **Sidney, P. G.** (2023, March). Y*oung children’s opportunities to learn about measurement.* Poster presented at the biennial meeting of the Society for Research in Child Development. Salt Lake City, UT.

Shirah, J. +, & **Sidney, P. G.** (2023, March). *The effect of need for cognition on feedback timing*. Paper presented at the annual meeting of the Southern Society for Psychology and Philosophy. Louisville, KY

Osana, H. P., MacCaul, R. +, & **Sidney, P. G.** (2022, July). *Sharing cupcakes on a number line: Instructional models and their perceptual similarity to partitioned objects.* Poster presented at the annual meeting of the International Mind, Brain, and Education Society. Montreal, Canada.

**Sidney, P. G.,** & Shirah, J. + (2022, April). *Surface-to-structure shifts in rational number categories*. Poster presented at the biennial meeting of the Cognitive Development Society. Madison, WI.

Shirah, J. +, Blake, J.\*, Kruczkowski, A.\*, & **Sidney, P. G.** (2022, April). *Context-dependent variability in children’s conceptual models of division*. Poster presented at the biennial meeting of the Cognitive Development Society. Madison, WI.

Shirah, J**.** +& **Sidney, P. G.,** &. (2022, March). *The role of prior knowledge in computer-generated feedback*. Poster presented at the annual meeting of the Kentucky Psychological Association. Louisville, KY.

Mielicki, M. K., Fitzsimmons, C. J. +, Schiller, L. K., Scheibe, D. +, Taber, J. M., **Sidney, P. G.,** Matthews, P. G., Coifman, K. G., Waters, E. A., & Thompson, C. A. (2022, April). *The picture of health: Visuals and health-related math problem solving.* Paper to be presented at the 94th Annual Meeting of the Midwestern Psychological Association, Chicago, IL.

Thompson, C.A., et al. (2021, March). *Math Misconceptions Abound When Adults Reason about COVID-19 Health Statistics.* Paper presented at the Association for Psychological Science Virtual Convention. Virtual meeting.

**Sidney, P. G.,** Blake, J.\*, Shirah, J. +, & Kruczkowski, A.\* (2021, March). *Context-dependent variability in children’s conceptual models of division*. Poster presented at the biennial meeting of the Society for Research in Child Development. Virtual meeting.

**Sidney, P. G.,** & Thompson, C. A. (2020, December). *Leveraging students' prior knowledge during learning.* Invited Science of Learning symposium at the annual meeting of the Southern Society of Philosophy and Psychology. Virtual meeting.

Chan, J. Y. C., **Sidney, P. G**., & Alibali, M. W. (2020, June). *Color-coding facilitates learning of area measurement.* In J. Y. C. Chan (Chair), Connecting ideas in mathematical learning. Symposium accepted at the 2020 Mathematical Cognition and Learning Society Conference. Dublin, Ireland.  (*Conference cancelled due to COVID-19*)

Eismann, G. E.\*, **Sidney, P. G.**, Vega, J. +, & Braun, B.(2020, April).*Preservice teachers’ conceptual understanding of fraction division compared to other undergraduates: Are the differences due to attitudes?*. Poster accepted for presentation at the annual meeting of the Midwestern Psychological Association, Chicago, IL. (*Conference cancelled due to COVID-19*)

Blake, J.\*, & **Sidney, P. G.** (2020, April).*Exploring context-dependent variability in children’s understanding of whole number division and zero.*Poster to be presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL. (*Conference cancelled due to COVID-19*)

Zahrn, L.\*, & **Sidney, P. G.** (2020, April). *Intervening in the Negative Effects of Math Anxiety in Undergraduate Students.* Poster accepted for presentation at the annual meeting of the Midwestern Psychological Association, Chicago, IL. (*Conference cancelled due to COVID-19*)

Thompson, C. A., Taber, J., Fitzsimmons, C. +, & **Sidney, P. G.** (2020, April).*Strategy Reports Are Associated with Health Decision-Making Accuracy*. Paper accepted for presentation at the annual meeting of the Midwestern Psychological Association, Chicago, IL. (*Conference cancelled due to COVID-19*)

**Sidney, P. G.**, Thompson, C. A., Fitzsimmons, C., & Taber, J. M. (2019, October). *Children’s and adults’ math attitudes are differentiated by number type.* Poster presented at the biennial meeting of the Cognitive Development Society, Louisville, KY.

Fitzsimmons, C. +, Rivers, M., **Sidney, P. G.,** Dunlosky, J., & Thompson, C. A. (2019, October).*What cues do children use when judging their confidence in fraction estimation performance? Confidence judgments relate more strongly to familiarity than performance.* Poster presented at the biennial meeting of the Cognitive Development Society, Louisville, KY.

**Sidney, P. G.,** Thompson, C. A., & Rivera, F. D. (2019, March). *Number lines, but not area diagrams, support children’s fraction division problem solving.* Paper presented at the annual meeting of Society for Research in Child Development, Baltimore, MD.

Choi, S. S.\*, Taber, J. M., Thompson, C. A., & **Sidney, P. G.** (2019, March*). Experimentally-induced incidental stress does not influence objective or subjective numeracy.* Poster presented at the annual meeting of Society of Behavioral Medicine, Washington, DC.

Opfer, J. E., Kim, D. +, **Sidney, P. G.,** Fitzsimmons, C. F. +, & Thompson, C. A. (2018, July). *Taking Whorf to school: Does language reform improve student learning*? Poster presented at the annual meeting of the Cognitive Science Society, Madison, WI.

Opfer, J. E., **Sidney, P. G.,** Yu, S. +, & Thompson, C. A. (2018, May). *Cognitive support for learning fractions by analogy.* Paper presented at the annual Association for Psychological Science convention, San Francisco, CA.

Opfer, J. E., **Sidney, P. G.,** Yu, S. +, & Thompson, C. A. (2017, October). *Effects of cognitive supports for learning fractional magnitudes by analogy.* Poster presented at the biennial meeting of the Cognitive Development Society, Portland, OR.

Thalluri, R.\*, Buerke, M.\*, **Sidney, P. G.,** &Thompson, C. A.(2017, April). *The role of mathematics anxiety in students’ fraction magnitude comparison.* Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

**Sidney, P. G.,** & Alibali, M. W. (2017, April). *Learning about fraction division via implicit and explicit analogies to whole numbers.* Poster presented at the biennial meeting of the Society for Research in Child Development, Austin, TX.

**Sidney, P. G.**, & Alibali, M. W. (2015, October). *Conceptual change in children’s number categories: The integration of fraction and whole number knowledge*. Poster presented at the biennial meeting of the Cognitive Development Society in Columbus, OH.

**Sidney, P. G.,** & Alibali, M. W. (2015, April). *Creating contexts for fraction learning by activating relevant prior knowledge.* Paper presented at the annual meeting of the American Educational Research Association in Chicago, IL.

**Sidney, P. G.** & Alibali, M. W. (2015, March). *Measuring conceptual change in mathematics: Could learning about fractions provoke changes in arithmetic categories?.* Poster presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, PA.

**Sidney, P. G.**, Brown, S. A., Crooks, N. M., & Alibali, M.W. (2013, October). *Beyond instruction: Sources of conceptual knowledge and new strategies in mathematics*. Poster presented at the biennial meeting of the Cognitive Development Society in Memphis, TN.

Alibali, M. W. & **Sidney, P. G.** (2013, August). Paths of continuity and change in mathematics learning: Evidence from perceptual and analogical learning. In T. Nunes & S. Vosniadou (Chairs), *Continuity and change in the growth of children’s mathematical understanding*. Invited symposium conducted at the 15th Biennial EARLI Conference for Research on Learning and Instruction, Munich, Germany.

**Sidney, P. G.** & Alibali, M. W. (2013, July). *Conceptual change in mathematics: Learning about fractions may provoke changes in children’s prior whole number knowledge.* Poster presented at the Midwestern Meeting for Mathematical Thinking, Minneapolis, MN.

**Sidney, P. G.**, Chan, Y.-C.\*, & Alibali, M. W. (2013, April). *Developing operation sense: Children’s and adults’ arithmetic with countable and uncountable amounts.* Poster presented at the biennial meeting of the Society for Research in Child Development, Seattle, WA.

Cooper, J. L., Nathan, M. J., Clinton, V., **Sidney, P. G**., & Alibali, M. W. (2012, April).  Design principles for the integration of visual and verbal information in a math curriculum. In M.J. Nathan (Chair), *Bridging research and practice: From cognitive principles to design principles of curriculum, instruction, and assessment*.  Symposium conducted at the meeting of the American Educational Research Association, Vancouver, Canada.

Cooper, J., Clinton, V., **Sidney, P.**, Alibali, M., Nathan, M. (2011, October). *Visuals in mathematics problem solving: When are the benefits?* Poster presented at the 7th biennial meeting of the Cognitive Development Society in Philadelphia, PA.

Crooks, N. M., **Sidney, P. G.**, Hattikudur, S., Alibali, M. W. (2011, October) *Sources of conceptual knowledge in the development of mathematical reasoning.* Poster presented at the 7th biennial meeting of the Cognitive Development Society in Philadelphia, PA.

**Sidney, P. G.** & Alibali, M. W. (2011, April). *Making connections in math: Effects of analogue choice, linking, and prior knowledge on learning.* Poster presented at the meeting of the Society for Research in Child Development, Montreal, CA.

**Sidney, P. G.**, Hattikudur, S., & Alibali, M. W. (2011, April). *Unique and additive effects of self-explaining and contrasting cases on learning fraction division.* Poster presented at the meeting of the Society for Research in Child Development, Montreal, CA.

Hattikudur, S., **Sidney, P. G.**, & Alibali, M. W. (2010, August). *Unique and additive effects of self-explaining and contrasting cases on learning fraction division.* Poster presented at the 32nd Annual Conference of the Cognitive Science Society in Portland, OR.

**Sidney, P. G.** & Alibali, M. W. (2010, June) *Building mathematical understanding through analogical transfer.* Poster presented at the 5th Annual IES Research Conference in Washington, DC.

Hattikudur, S., **Sidney, P. G.**, & Alibali, M. W. (2009, October) *Making connections: Activating students’ prior knowledge during a new lesson.* Poster presented at the 6th biennial meeting of the Cognitive Development Society in San Antonio, TX.

Nathan, M. J., Church, R. B. **Sidney, P. G.**, Wolfgram, M., Johnson, C. V., Bieda, K., Hostetter, A.B., Jacobs, S., Knuth, E., & Alibali, M. (2009, June). *How teachers link mathematical ideas during instructional communication*. Poster presented at the 5th Annual IES Research Conference in Washington, DC.

Grammer, J. K., **Sidney, P. G.**, Mugno, A. P., Lee, S., Langley, H. A., Coffman, J. L., & Ornstein, P. A. (2009, April). *A longitudinal exploration of children’s multiple strategy use in the context of the elementary school classroom*. Poster presented at the meeting of the Society for Research in Child Development, Denver, CO.

Coffman, J. L., **Gupta, P.**, Grammer, J. K., & Ornstein, P. A. (2008, March). *Classroom contexts and children's cognitive growth: A longitudinal picture of memory strategies and academic achievement.* Poster presented at the meeting of the American Educational Research Association, New York, NY.

**SERVICE**

Field

Editorial Board Member, *JEP: Learning, Memory, Cognition* 2024-2026

INTERACT Incubator Member*,* Indiana University Bloomington 2023-2025

Mathematics Cognition Reading Group Organizer 2023-2024

Editorial Board Member, *Cognitive Development* 2022-2024

NSF Panel Reviewer 2022-2024

Conference Abstract Reviewer, *Cognitive Development Society* Spring 2022

Presided Meeting Sessions, Psychology of Mathematics Education – Fall 2012

 North American Chapter

University

Working Group on *Ethics, Equity, Inclusion, and Justice in the Mathematical* 2021-current

 *Sciences*, Co-Organizer, University of Kentucky

Responsible Conduct of Research, In-Person Training Facilitator 2023-current

Acting Chair Advisory Appointment Committee, College of Arts & Sciences, UK Spring 2023

Chair Advisory Appointment Committee, College of Arts & Sciences, UK Spring 2022

Departmental

Developmental, Social, Health Area Coordinator, Psychology, UK 2023-current

Pre-tenure faculty representative to DOE/FMER revisions, Psychology, UK 2023

Mentoring Plan Committee, Psychology, UK 2021-2023

Developmental, Social, Health Brown Bag Coordinator, Psychology, UK 2019-2023

Developmental, Social, Health Area Co-Coordinator, Psychology, UK Spring 2022

Graduate Statistics Committee, Psychology, UK 2020-2021

Developmental Psychology Search Committee, Psychology, UK Fall 2019

Graduate student representative to the Climate and Diversity Committee, 2011-2014

 Psychology, UW-Madison

Community Outreach

Unstoppable Women, Girl Scouts of Kentucky’s Wilderness Road Summer 2022

K5 Teacher Professional Development, Ashland Elementary Spring 2022

**MEDIA MENTIONS**

Melito, T. (2023, July 12). *UK professor explains how to prevent student summer learning loss*. Fox 56 News: Lexington. <https://fox56news.com/news/local/uk-professor-explains-how-to-prevent-student-summer-learning-loss/>

Weir, K. (2023, August 15). How to help kids manage math anxiety. APA Monitor. <https://www.apa.org/topics/anxiety/helping-kids-manage-math-anxiety>

**AD HOC JOURNAL REVIEWS**

*Child Development, Developmental Psychology, Developmental Science*, *Learning and Individual Differences, Learning and Instruction, Journal of Experimental Psychology: Applied, Journal of Experimental Psychology: Human Perception and Performance, Journal of Numerical Cognition, Contemporary Educational Psychology, Cognition and Instruction, Journal for Research in Mathematics Education, Journal of Educational Psychology*

**TEACHING EXPERIENCE**

Senior Thesis Research (University of Kentucky) since 2023

Graduate Course: Children’s Cognitive Development (University of Kentucky) 2023

Capstone Course: How Children Learn (University of Kentucky) since 2022

Developmental Psychology (University of Kentucky) since 2019

Processes of Psychological Development (University of Kentucky) since 2018

Psychological Foundations of Education, Online Course (Kent State University) 2017

Graduate Course in General Linear Modeling I, II (Lab Instructor, UW-Madison) 2013, 2014

Experimental Psychology (Teaching Assistant, UW-Madison) 2012

Cognitive Development Depth Course (Teaching Assistant, UW-Madison) 2011, 2012

**MENTORSHIP**

Graduate Committees

Kaitlyn G. I. Brown, University of Kentucky, Masters Committee: Chair, 2022-present

Julie F. Shirah, University of Kentucky, Masters Committee: Chair, 2020-2022

Alvaro Cornejo, University of Kentucky, Doctoral Advisory Committee, Member, 2024

Alexis Bird, University of Kentucky, Dissertation Committee: External Member, 2024

Kristen Buford, Masters Committee, Member, 2022-present

Ryan J. Rogers, University of Kentucky, Doctoral Advisory Committee, Member, 2022-2024

Zakary Clements, University of Kentucky, Dissertation Committee: External Member, 2023

Calah Ford, University of Kentucky, Dissertation Committee: External Member, 2021

Rebecca MacCaul, Concordia University, Masters Committee: Member, 2020-2021

Undergraduate Senior Theses in Psychology

Sanjana Rahman, *More Than a Monolith: Asian/Asian American Students’ Experiences with the “Model Minority” Myth in Math*, 2023-2024

Elizabeth Shaft, *Taking a Bite of the “Feedback Sandwich”: How Order and Ratio of Constructive and Positive Feedback affects College Students*, 2023-2024

Sheridan Oldham, *The Effects of Single Parent Households on Learning and Educational Quality in Childhood*, 2023

Julia Lyle, *A Review of Socio-Emotional Learning Programs*, 2023

Ashlyn Pechon, *Understanding Zero and Measurement: An Early Childhood Math Intervention*, 2022-2023

Hollie Clifton, *Perceptions of Health Risks of Nicotine Usage in Adolescents: A Research Proposal*, 2022

Amanda Kruczkowski, *Understanding Numbers as Measurement: An Early Childhood Education Intervention*, 2021-2022

Lauren Zahrn, *Using Expressive Writing and Cognitive Reframing to Reduce Undergraduates’ Mathematics Anxiety,* 2019-2020

Jessica Blake, *Task Context Effects on Children’s Understanding of Whole Number Division,* 2019-2020

Gabrielle Eismann, *Preservice Teachers’ Conceptual Understanding of Fraction Division Compared to Other Undergraduates,* 2019-2020

Undergraduate Research Assistants, UK Cognition and Development Lab

Joined in 2024: *Julianna Hakel, Jessalin Archer, Lucas Teodorescu*

Joined in 2023: *Bhavya Vyas, Sara Corman, Sarah Templeman, Kelsi Pennington, Victoria Helton, Ryley McGuckin, Paige Bussolati, Kristen Bailey*

Joined in 2022: *Jocelyn Martin, Lindsay Roesel, Rae Cascio, Sanjana Rahman, Alana Lancaster, Mya Welch*

Joined in 2021: *Hollie Clifton, Ash Pechon, Jana Shelley, Elizabeth Shaf*

Joined in 2020: *Grace Guidi*

Joined in 2019: *Deanna Chesser, Lauren Zahrn, Andrea MacDonald, Gabrielle Eismann, Jessica Blake, Lexee McDonald, Nitya Kumar, Allison Silvestrini, Hannah Tyger, Caelin McManis, Amanda Kruczkowski, Molli Wilkins*

Undergraduate Psychology Internship Supervision

2024: *Jordan Arocha*

2023: *Rosie Davila*

2022: *Rosie Davila, Julia Lyle, Sara Corman, Sofia Palummo*

2020: *Mary Woodall, Molli Wilkins*

UW Pre-College Enrichment Opportunity Program for Learning Excellence, UW-Madison

5 students in 2009-2010

**PROFESSIONAL DEVELOPMENT**

Faculty Success Program, National Center for Faculty Development & Diversity Summer 2023

Responsible Conduct of Research Training, University of Kentucky (UK) Spring 2023

Inclusive Teaching with Universal Design for Learning, UK CELT Spring 2023

**N**umerical **U**nderstanding **M**entored **B**y **E**xpert **R**esearcher**s** Workshop, KSU Spring 2022

Mathematics Cognition Reading Group member 2021-2023

Summit on Women Faculty, Kent State University (KSU) Spring 2018

Writing Club Workshop by Prof. John Dunlosky, KSU Summer 2017

Roundtable: Flipping the Classroom: Benefits and Challenges, UW-Madison Fall 2012

Symposium on Grading: From Philosophy to Practice, UW-Madison Fall 2012

Doing Bayesian Data Analysis by Prof John K. Kruschke, UW-Madison Summer 2012

Graduate Assistants' Equity Workshops for Teaching Assistants, UW-Madison Spring 2012