

# BEN MOTZ

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## Education

- 2018 **Indiana University – Bloomington, Indiana**  
PhD in Cognitive Science  
Minor in Psychology
- 2005 **University of California San Diego – La Jolla, California**  
MS in Cognitive Science
- 2002 **Indiana University – Bloomington, Indiana**  
BS in Cognitive Science  
Concentrations in Neuroscience and Computer Science  
University & Departmental Honors

## Professional Experience

- August 2022 – *current* **Assistant Professor**, Department of Psychological and Brain Sciences  
July 2018 – July 2022 **Research Scientist**, Department of Psychological and Brain Sciences  
August 2008 – June 2018 **Senior Lecturer**, Department of Psychological and Brain Sciences  
Indiana University (Bloomington, Indiana)
- January 2006 – June 2008 **Statistical Consultant**, Analytics  
Rapp Collins Worldwide (currently RAPP; El Segundo, California)
- September 2003 – January 2006 **Graduate Associate Instructor**, Department of Cognitive Science  
University of California San Diego (La Jolla, California)
- May 2001 – August 2003 **Research Assistant**, Department of Psychological and Brain Sciences  
Indiana University (Bloomington, Indiana)

## Grants

<b>National Science Foundation (NSF)</b> , "Planning: AI-Ready: TOPSAIL: The AI-Ready Test Bed in Education" Role: PI (Co-PIs: Beth Plale, Danielle McNamara, Mary Styers). \$199,990	2025-2027
<b>Tools Competition</b> (2023-2024), Learning Sciences Research Track "Terracotta Messages" Role: PI. \$300,000	2024
<b>Institute of Education Sciences (IES)</b> , "Active Learning at Scale: Transforming Teaching and Learning via Large-Scale Learning Science and Generative AI" Role: Co-PI (PI: Danielle McNamara). \$3,750,000 total; local \$210,000	2024-2027
<b>National Science Foundation (NSF)</b> , "INTERACT: An Incubator to Enable Scalable Education Equity Research with Terracotta" Role: PI (joint with Mary Murphy; Co-PIs: Amanda Diekman, Emily Fyfe, Rob Goldstone, Dorainne Green). \$499,809	2023-2025
<b>XPRIZE</b> , Digital Learning Challenge, Finalist (\$83,333) + Runner-Up (\$125,000) prizes. "Terracotta" Role: PI.	2022
<b>Institute of Education Sciences (IES)</b> , "The Canvas+Terracotta LMS-Based Experimental Education Research Platform" Role: PI (Co-PI: Mark McDaniel). \$2,000,000	2021-2026
<b>Reboot Foundation</b> , "Improving Critical Thinking with a Categorization Practice Intervention" Role: PI (joint with Emily Fyfe). \$5,000	2020
<b>Schmidt Futures</b> , "Rapid Experimentation Educators Network" Role: PI (Co-PI: Ulrich Boser). \$450,000	2020
<b>Unizin</b> , "Social Influence from Peer Assessment of College Coursework" Role: PI (Co-PIs: Matt Baldwin, Rob Goldstone). \$20,000	2020
<b>Schmidt Futures</b> , "COVID-19 and Perceptions of Learning Technology" Role: PI. \$45,000	2020
<b>Google</b> , Google Cloud COVID-19 Research Credits Program, "Behavioral Correlates of LMS Engagement" Role: PI. \$1,410	2020
<b>Indiana University</b> , Office of Research Administration "Crisis Transition to Online Learning" Role: PI. \$40,000	2020
<b>Indiana University</b> , Institute for Advanced Study, "Provocations: Conversations Towards a Bold University in the 21st Century" Role: PI. \$4,950	2019
<b>Indiana University</b> , SoTL Grant, "Improving Teaching Through Enhanced Analysis of Teaching Evaluations" Role: Co-PI (PI: Richard Hullinger). \$5,000	2017
<b>Association for Psychological Science (APS)</b> , APS Fund for Teaching and Public Understanding of Psychological Science, "Improving Student Motivation and Success with Social Norm Messaging" Role: PI (Co-PIs: Ed Hirt, David Landy, and Rob Goldstone). \$11,000	2016
<b>Bay View Alliance</b> , "Charting Educational Outcomes Following P101 with Linear Modeling: Enabling Data-Driven Improvement of Introductory Psychology" Role: PI (Co-PIs: David Landy and Tom Busey). \$30,000	2014

<b>Indiana University</b> , CITL Summer Writing-Teaching Grant, Role: PI. \$1,500	2012
<b>Indiana University</b> , SoTL Active Learning Grant, "Making Public Service Announcements as a Teaching Aid for Cognitive Psychology" Role: PI. \$1,500	2009

## Publications

### Journal Articles

<sup>^</sup> indicates advisee co-author; \* indicates co-first authors

Attari, S.\*, **Motz, B.** \*, Mishra, A., Brautigam, G., Trapp, T., & Graham, J. (in press). Do facts matter? Consumer misperceptions about adopting electrification technologies. *Climatic Change*. [10.1007/s10584-026-04120-9](https://doi.org/10.1007/s10584-026-04120-9)

Rust, M., & **Motz, B.** (2026). Incorporating an LMS learning analytic into proactive advising: Validity and use in a randomized experiment. *Internet and Higher Education*, 68, 101057. [10.1016/j.iheduc.2025.101057](https://doi.org/10.1016/j.iheduc.2025.101057)

Narwal, A.^, Fyfe, E., & **Motz, B.** (2025). Simulation and symbolic thinking in equations representing change. *PLOS One*, 20(12), e0339004. [10.1371/journal.pone.0339004](https://doi.org/10.1371/journal.pone.0339004)

**Motz, B.**, Diekman, A., Goldstone, R., Green, D. J., Fyfe, E., Bernardini, S., Emerson, K., Jankowski, H., Ansari, S., Arney, M., Barbieri, C., Baumgartner, E., Beam, M., Boucher, K., Callison, M., Canning, E., Chen, X.-Y., Chow, J., Clark, T., Gensic, J., Godwin, A., Gök, S., Gunderson, E., Kung, F., Laski, E., Mak, J., Master, A., Matthews, P., Merrick, M., Narwal, A.^, Newkirk, B., Olszewski, B., Rice, A., Shelby, M., Sidney, P., Snapp-Childs, W., Stewart, M., Thompson, C., Tipton, E., Vuletic, H., White, A., Winegar, A., Yan, V., Zepeda, C., Zhang, T., & Murphy, M. C. (2025). A field-initiated vision of research infrastructure for STEM education. *International Journal of STEM Education Research*. [10.1186/s40594-025-00581-z](https://doi.org/10.1186/s40594-025-00581-z)

**Motz, B.**, Chinni, A.^, de Leeuw, J., Jankowski, H., Aggarwal, A., Amato, M., Berlin, K., Britten, K., Brown, A., Cerchiaro, M., Evans, N., Findley, A., Gorman, R., Gregg, K., Hansen, K., Hollender, H., Hullinger, R., Larkin, P., Lion, M., Long, R., Mannarino, A., Mocko, M., Moore, K.^, Packowski, J., Palmer, C., Ritchie, K., Scott, J., Stanton, M., Talcott, L., Wagner, L., Waite, M., Yeager, R., and Fyfe, E. (2025). ManyClasses 2: The effects of prequestions on media interactions and learning, *Journal of Educational Psychology*. [10.1037/edu0000978](https://doi.org/10.1037/edu0000978)

Gigerenzer, G., Allen, C., Gaillard, S., Goldstone, R., Haaf, J., Holmes, W., Kashima, Y., **Motz, B.**, Musslick, S., & Stefan, A. (2025). Alternative models of funding curiosity-driven research. *Proceedings of the National Academy of Sciences*, 122(5). [10.1073/pnas.2401237121](https://doi.org/10.1073/pnas.2401237121)

**Motz, B.** (2024). Concentration toward the mode: Estimating changes in the shape of a distribution of student data. *Journal of School Psychology*, 107, 101364. [10.1016/j.jsp.2024.101364](https://doi.org/10.1016/j.jsp.2024.101364)

**Motz, B.**, Üner, Ö, Jankowski, H., Christie, M., Burgas, K., del Blanco Orobio, D., & McDaniel, M. (2024). Terracotta: A tool for conducting experimental research on student learning. *Behavior Research Methods*, 56, 2519-2536. [10.3758/s13428-023-02164-8](https://doi.org/10.3758/s13428-023-02164-8)

Lu, X., Wang, W., **Motz, B.**, Ye, W., & Heffernan, N. (2023). Immediate text-based feedback timing on foreign language online assignments: How immediate should immediate feedback be? *Computers and Education Open*, 5(15), 100148. [10.1016/j.caeo.2023.100148](https://doi.org/10.1016/j.caeo.2023.100148)

**Motz, B.**, Bergner, Y., Brooks, C., Gladden, A.<sup>†</sup>, Gray, G., Lang, C., Li, W., Marmolejo-Ramos, F., & Quick, J. (2023). A LAK of direction: Misalignment between the goals of learning analytics and its research scholarship. *Journal of Learning Analytics*, 10(1), 1-13. [10.18608/jla.2023.7913](https://doi.org/10.18608/jla.2023.7913)

**Motz, B.**, & Morrone, A. (2023). Wild brooms and learning analytics. *Journal of Computing in Higher Education*. [10.1007/s12528-023-09353-6](https://doi.org/10.1007/s12528-023-09353-6)

**Motz, B.**, Fyfe, E., & Guba, T. (2022). Learning to call bullsh\*t via induction: Categorization training improves critical thinking performance. *Journal of Applied Research in Memory and Cognition*, <https://doi.org/10.1037/mac0000053>

de Leeuw, J.\*, **Motz, B.\***, Fyfe, E., Carvalho, P., & Goldstone, R. (2022). Generalizability, transferability, and the practice-to-practice gap. Commentary in response to T. Yarkoni, The Generalizability Crisis. *Behavioral and Brain Sciences*, 45, e11. [10.1017/S0140525X21000406](https://doi.org/10.1017/S0140525X21000406)

**Motz, B.**, Quick, J., & Morrone, A. (2022). When online courses became the student union: Utilization of learning technologies for peer interaction during COVID-19. *Technology, Mind, and Behavior*, 3(1). [10.1037/tmb0000061](https://doi.org/10.1037/tmb0000061)

**Motz, B.**, Goldstone, R., Busey, T., & Prather, R. (2021). Visual search asymmetry due to the relative magnitude represented by number symbols. *Vision*, 5(3), 42. [10.3390/vision5030042](https://doi.org/10.3390/vision5030042)

**Motz, B.**, Canning, E., Green, D., Mallon, M., & Quick, J. (2021). The influence of automated praise on behavior and performance. *Technology, Mind, and Behavior*, 2(3). [10.1037/tmb0000042](https://doi.org/10.1037/tmb0000042)

Fyfe, E., de Leeuw, J. R., Carvalho, P. F., Goldstone, R., Sherman, J.<sup>†</sup>, Admiraal, D., Alford, L. K., Bonner, A., Brassil, C. F., Brooks, C. A., Carbonetto, T., Chang, S. H., Cruz, L., Czimoniewicz-Klippel, M., Daniel, F., Driessen, M., Habashy, N., Hanson-Bradley, C. L., Hirt, E. R., Carbonell, V. H., Jackson, D. K., Jones, S., Keagy, J. L., Keith, B., Malmquist, S. J., McQuarrie, B., Metzger, K. J., Min, M. K., Patil, S., Patrick, R. S., Pelaprat, E., Petunich-Rutherford, M., Porter, M., Prescott, K., Reck, C., Renner, T., Robbins, E., Smith, A. R., Stuczynski, P., Thompson, J., Tsotakos, N., Turk, J. K., Unruh, K., Webb, J. D., Whitehead, S. N., Wisniewski, E. C., Zhang, K. A., & **Motz, B.** (2021). ManyClasses 1: Assessing the generalizable effect of immediate versus delayed feedback across many college classes. *Advances in Methods and Practices in Psychological Science*, 4(3), 1-24. [10.1177/25152459211027575](https://doi.org/10.1177/25152459211027575)

**Motz, B.**, Mallon, M., & Quick, J. (2021). Automated educative nudges to reduce missed assignments in college. *IEEE Transactions on Learning Technologies*, 14(2), 189-200. [10.1109/TLT.2021.3064613](https://doi.org/10.1109/TLT.2021.3064613)

**Motz, B.**, Quick, J., Wernert, J., & Miles, T. (2021). A pandemic of busywork: Increased online coursework following the transition to remote instruction is associated with reduced academic achievement. *Online Learning*, 25(1), 70-85. [10.24059/olj.v25i1.2475](https://doi.org/10.24059/olj.v25i1.2475)

Andrews, C.<sup>^</sup>, **Motz, B.**, Israel, J., & Leary, H. (2020). Characteristics of students who opted in to use the Boost mobile app as an educational support service. *Journal of Teaching and Learning with Technology*, 9(1), 158-170. [10.14434/jotlt.v9i1.29376](https://doi.org/10.14434/jotlt.v9i1.29376)

Eyink, J.\*<sup>^</sup>, **Motz, B.**\* , Heltzel, G.<sup>^</sup>, & Liddell, T. (2020). Self-regulated studying behavior, and the social norms that influence it. *Journal of Applied Social Psychology*, 50(1), 10-21. [10.1111/jasp.12637](https://doi.org/10.1111/jasp.12637)

**Motz, B.**, Carvalho, P., de Leeuw, J., & Goldstone, R. (2018). Embedding experiments: Staking causal inference in authentic educational contexts. *Journal of Learning Analytics*, 5(2), 47-59. [10.18608/jla.2018.52.4](https://doi.org/10.18608/jla.2018.52.4)

**Motz, B.**, de Leeuw, J., Carvalho, P., Liang, K.<sup>^</sup>, & Goldstone, R. (2017). A dissociation between engagement and learning: Enthusiastic instructions fail to reliably improve performance on a memory task. *PLoS ONE*, 12(7): e0181775. [10.1371/journal.pone.0181775](https://doi.org/10.1371/journal.pone.0181775)  
(Winner of the Center for Open Science Preregistration Challenge Award)

de Leeuw, J. & **Motz, B.** (2016). Psychophysics in a Web browser? Comparing response times collected with JavaScript and Psychophysics Toolbox in a visual search task. *Behavior Research Methods*, 48(1), 1-12. [10.3758/s13428-015-0567-2](https://doi.org/10.3758/s13428-015-0567-2)

Carvalho, P., Braithwaite, D., de Leeuw, J., **Motz, B.**, & Goldstone, R. (2016). An in-vivo study of self-regulated study sequencing in Introductory Psychology courses. *PLoS ONE* 11(3): e0152115. [10.1371/journal.pone.0152115](https://doi.org/10.1371/journal.pone.0152115)

Day, S., **Motz, B.**, Goldstone, R. (2015). The cognitive costs of context: The effects of concreteness and immersiveness in instructional examples. *Frontiers in Psychology*, 6(1876). [10.3389/fpsyg.2015.01876](https://doi.org/10.3389/fpsyg.2015.01876)

**Motz, B.**, Teague, J., & Shepard, L. (2015). Know thy students: An institutional report that provides aggregate student data to instructors. *EDUCAUSE Review Online (Peer Reviewed Category)*. <http://www.educause.edu/ero/article/know-thy-students-providing-aggregate-student-data-instructors>

**Motz, B.** (2013). Cognitive science in popular film: The Cognitive Science Movie Index. *Trends in Cognitive Sciences*, 17(10), 483-485. [10.1016/j.tics.2013.08.002](https://doi.org/10.1016/j.tics.2013.08.002)

**Motz, B.**, Erickson, M. & Hetrick, W. (2013). To the beat of your own drum: Cortical regularization of non-integer ratio rhythms toward metrical patterns. *Brain and Cognition*, 81(3), 329-336. [10.1016/j.bandc.2013.01.005](https://doi.org/10.1016/j.bandc.2013.01.005)

**Motz, B.**, James, K. & Busey, T. (2012). The Lateralizer: A tool for students to explore the divided brain. *Advances in Physiology Education*, 36(3), 220-225. [10.1152/advan.00060.2012](https://doi.org/10.1152/advan.00060.2012)

**Motz, B.**, Goldstein, M. & Smith, L. (2012). Understanding behavior from the ground up: Constructing robots to reveal simple mechanisms underlying complex behavior. *Psychology Learning and Teaching*, 11(1), 77-86. [10.2304/plat.2012.11.1.77](https://doi.org/10.2304/plat.2012.11.1.77)

Núñez, R., **Motz, B.**, & Teuscher, U. (2006). Time after time: The psychological reality of the Ego- and Time-Reference-Point distinction in metaphorical construals of time. *Metaphor and Symbol*, 21(3), 133-146. [10.1207/s15327868ms2103\\_1](https://doi.org/10.1207/s15327868ms2103_1)

**Motz, B.**, & Alberts, J. (2005). The validity and utility of geotaxis in infant rats. *Neurotoxicology and Teratology*, 27, 529-533 and reply 543-544. [10.1016/j.ntt.2005.06.005](https://doi.org/10.1016/j.ntt.2005.06.005)

Alberts, J., **Motz, B.**, & Schank, J. (2004). Positive geotaxis in infant rats: A natural behavior and a historical correction. *Journal of Comparative Psychology*, 118(2), 123-132. [10.1037/0735-7036.118.2.123](https://doi.org/10.1037/0735-7036.118.2.123)

#### Under Review

**Motz, B.**\*, Hullinger, R.\* , Celestin, B., Butz, H.^, & Kruschke, J. (under review). Differences of opinions: How visualizations of uncertainty in ratings data affect choice.

**Motz, B.**, Chinni, A.^, Barriball, A.^, & McNamara, D. (under review). Some assembly required: Self-testing alone is not an effective way to build broader understanding.

[https://doi.org/10.31234/osf.io/73mbh\\_v1](https://doi.org/10.31234/osf.io/73mbh_v1)

#### Other

Jaggars, S. **Motz, B.**, Rivera, M., Heckler, A., Quick, J., Hance, E., Karwisch, C. (2021). Digital divides at the University: Lessons learned from the COVID-19 Emergency Transition. Aaron Horn, Ed., *Midwest Higher Education Compact (MHEC)*. Minneapolis, MN.

**Motz, B.** (August 23, 2019). Principles for the responsible design of automated student support. *EDUCAUSE Review, Transforming Higher Ed Blog*.  
<https://er.educause.edu/blogs/2019/8/principles-for-the-responsible-design-of-automated-student-support>

Kiang, M., & **Motz, B.** (2005). Letter from the editors: Intersection Point. *Cognitive Science Online*, 3(2), i-ii. [paper pdf](#)

## Refereed Conference Papers

Motz, B., Chinni, A., Barriball, A., & McNamara, D. (2025). Some assembly required: Learning facts in isolation limits inferences. In *Proceedings of the 47th Annual Conference of the Cognitive Science Society*, 47. <https://escholarship.org/uc/item/3m55z785>

Narwal, A., Goldstone, R., Fyfe, E., & Motz, B. (2025). Second hand effects: Exploring spatial influences on temporal judgments in clocks. In *Proceedings of the 47th Annual Conference of the Cognitive Science Society*, 47. <https://escholarship.org/uc/item/9p61c193>

Gatto, O., Yong, C., Sirajuddin, A., & Motz, B. (2025). When rules don't cut it: The relative frequency of inductive and deductive language during real-world surgical training. In *Proceedings of the 47th Annual Conference of the Cognitive Science Society*, 47.

<https://escholarship.org/uc/item/3gc1f7fm>

Fan, J., Zheng, K., Motz, B., Doroudi, S., Son, J., & Thille, C. (2025). Minds at school: Advancing cognitive science by measuring and modeling human learning in situ. In *Proceedings of the 47th Annual Conference of the Cognitive Science Society*.

Motz, B., Jankowski, H., Lopatin, J., Tseng, W., & Tate, T. (2024). Using a platform to run an experiment outside the platform. In *Fifth Annual Workshop on A/B Testing and Platform-Enabled Learning Research*, companion proceedings of the 11th ACM Conference on Learning @ Scale.

Ritter, S., Fancsali, S., & Murphy, A., Heffernan, N., Motz, B., Mallick, D.B., Roschelle, J., McNamara, D., & Williams, J.J. (2024). Fifth Annual Workshop on A/B Testing and Platform-Enabled Learning Research. In *Proceedings of the 11th ACM Conference on Learning @ Scale*.  
[10.1145/3657604.3664642](https://doi.org/10.1145/3657604.3664642)

Motz, B. & Jankowski, H. (2023). Embedding experimental research in the learning management system. Division D – Measurement and Research Methodology. *2023 Conference of the American Educational Research Association (AERA)*.

Ritter, S., Heffernan, N., Williams, J.J., Lomas, D., Bicknell, K., Roschelle, J., Motz, B., McNamara, D., Baraniuk, R., Basu Mallick, D. and Kizilcec, R. (2023). Fourth Annual Workshop on A/B Testing and Platform-Enabled Learning Research. In *Proceedings of the 10th ACM Conference on Learning@Scale*. [10.1145/3573051.3593397](https://doi.org/10.1145/3573051.3593397)

Quick, J., Motz, B., & Morrone, A. (2023). Lost in translation: Determining the generalizability of temporal models across course contexts. In *Proceedings of the 13th International Conference on Learning Analytics & Knowledge (LAK23)*. [10.1145/3576050.3576092](https://doi.org/10.1145/3576050.3576092)

Ritter, S., Heffernan, N., Williams, J. J., Bicknell, K., Lomas, D., Roschelle, J., Motz, B., McNamara, D., Baraniuk, R., Mallick, D., Kizilcec, R., & Baker, R. (2022). Third Annual Workshop on A/B Testing and Platform-Enabled Learning Research. In *Proceedings of the 8th ACM Conference on Learning @ Scale*. [10.1145/3491140.3528288](https://doi.org/10.1145/3491140.3528288)

Motz, B., Brooks, C., Quick, J., Bergner, Y., Gray, G., Lang, C., Li, W., Marmolejo-Ramos, F. (2022). A baseline measure of open research practices in learning analytics. In *Building Open Science and Scholarship in SoLAR*, a workshop associated with the 12th Learning Analytics and Knowledge Conference. [10.35542/osf.io/325d7](https://doi.org/10.35542/osf.io/325d7)

Motz, B., Carvalho, P., & Fyfe, E. (2020). A preliminary taxonomy of A/B: Education experiments with different inferences and scopes. In *Educational A/B Testing at Scale*, a workshop associated with the 7<sup>th</sup> ACM Conference on Learning @ Scale.

- Quick, J., Motz, B., Israel, J., & Kaetzel, J. (2020). What college students say, and what they do: Aligning self-regulated learning theory with behavioral logs. In *Proceedings of the 10th International Conference on Learning Analytics & Knowledge (LAK20)*. [10.1145/3375462.3375516](https://doi.org/10.1145/3375462.3375516)
- Fyfe, E. R., de Leeuw, J. R., Carvalho, P. F., Goldstone, R. L., Sherman, J., & Motz, B. A. (2020, April). Large-scale collaborative science: The ManyClasses approach to experimental educational research. In S. J. Peters (chair), Actions for increasing the credibility of educational research. Symposium accepted at the *American Education Research Association (AERA)*, San Francisco, CA. (Conference canceled). [10.35542/osf.io/tv7rn](https://osf.io/tv7rn)
- Motz, B., Quick, J., Schroeder, N., Zook, J., & Gunkel, M. (2019). The validity and utility of activity logs as a measure of student engagement. In *Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK19)*. [10.1145/3303772.3303789](https://doi.org/10.1145/3303772.3303789)
- Motz, B. & Carvalho, P. (2019). Not whether, but where: Scaling-up how we think about effects and relationships in natural educational contexts. In *Companion Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK19)*. [10.13140/RG.2.2.30825.34407](https://doi.org/10.13140/RG.2.2.30825.34407)
- Motz, B., Busey, T., Rickert, M., Landy, D. (2018). Finding topics in enrollment data. In *Proceedings of the 11th International Conference on Educational Data Mining*. Buffalo, New York.  
<https://eric.ed.gov/?id=ED593218>
- Carvalho, P., Gao, M., Motz, B., & Koedinger, K. (2018). Analyzing the relative learning benefits of completing required activities and optional readings in online courses. In *Proceedings of the 11th International Conference on Educational Data Mining*. Buffalo, New York.  
<https://eric.ed.gov/?id=ED593230>
- de Leeuw, J., Motz, B., Eastwood, J., Maltese, A., Goldstone, R., & Danish, J. (2015). Needle in the neural haystack: EEG signatures of concept learning while viewing naturalistic educational materials. Paper presented at the 2015 annual meeting of the *American Educational Research Association*, Chicago, Illinois.
- Carvalho, P.F., Braithwaite, D. W., de Leeuw, J. R., Motz, B. A., & Goldstone, R.L. (2014). Effectiveness of Learner-Regulated Study Sequence: An in-vivo study in Introductory Psychology courses. In *Proceedings of the 37th Annual Conference of the Cognitive Science Society*.
- Motz, B. (2013). Fantasy football: A touchdown for undergraduate statistics education. Paper and presentation at the annual meeting of *Games+Learning+Sociality*, Madison, Wisconsin.
- Motz, B., & Núñez, R. (2004). Implications of new baseline data in the spatial construal of time. In *Proceedings of the 26th Annual Conference of the Cognitive Science Society*.

## **Invited Talks, Seminar Presentations, Posters, and Guest Lectures**

- 17 Dec 2025 SREE Methods Webinar: *From Clicks to Causal Claims: Methodological Innovations in Digital Learning Platform Research*. Invited Presentation. (Roschelle, J., Botelho, A., Motz, B.)
- 23 Nov 2025 Psychonomics 2025. Denver, CO. Presentation: *Teaching Students to Spot Misinformation: Does Learning-by-Doing Beat Learning-by-Knowing?* (Motz, B. & Gregg, K.).
- 21 Nov 2025 Psychonomics 2025. Denver, CO. Poster: *Examining Self-regulated Learning of Natural Science Categories through Adaptive Learning Systems* (Hu, M., Nosofsky, R., Motz, B.).
- 21 Nov 2025 Psychonomics 2025. Denver, CO. Symposium presentation: *Boundaries, Generalizability, and Translating Science to Educational Practice*.
- 11 Oct 2025 SREE 2025. Chicago, IL. Moderated discussion: *Classroom-Embedded Experiments at Scale: New Methods and Ethical Considerations for Digital Learning Platforms* (Roschelle, J., Wei, X., Closser, A., Basu Mallick, D., Motz, B., & Ritter, S.).
- 28 Jul 2025 Nightingale Labs 2025 Workshop, Stanford University. Palo Alto, CA. Invited Presentation.
- 17 Jun 2025 Program for Open Scholarship and Education (POSE). University of British Columbia. Invited Online Presentation.
- 03 Jun 2025 1EdTech Learning Impact Conference 2025. Indianapolis, IN. Panel: *Bringing Learner Data into the Research Lab*. (Motz, B., Basu Mallick, D., Cleary, A., & Hecht, C.)
- 14 May 2025 IU Learning Analytics Faculty Fellows (LAFF) Program. Indianapolis, IN. Keynote for Inaugural Kick-Off Meeting.
- 22 Jan 2025 Cognitive and MCP Colloquium, Department of Psychological Sciences, Purdue University, West Lafayette, IN. Invited Presentation.
- 2 Dec 2024 Innovation Insights Speaker Series, Center for Academic Innovation, University of Michigan. Invited Online Presentation.
- 15 Oct 2024 XPRIZE Alumni Trailblazers webinar series, XPRIZE.org. Invited Online Presentation.
- 21 Feb 2024 LERN Speaker Series, Learning Engineering Institute, Arizona State University. Tempe, AZ. Invited Presentation.
- 14 Feb 2024 University of Southern Indiana's 8<sup>th</sup> annual Celebration of Teaching and Learning Symposium. Evansville, IN. Keynote Presentation.
- 13 Feb 2024 SoTL Workshop, Indiana University Center for Innovative Teaching and Learning. Bloomington, IN.
- 18 Nov 2023 Psychonomics 2023. San Francisco, CA. Presentation: *Differences of Opinions: How Visualizations of Uncertainty in Ratings Data Affect Choice*. (Motz, B., Hullinger, R., Celestin, B., Butz, H., & Kruschke, J.).

- 17 Nov 2023 Psychonomics 2023. San Francisco, CA. Poster: *Simulation and Symbolic Thinking in Equations Representing Change* (Narwal, A., Motz, B., & Fyfe, E.).
- 16 Nov 2023 International Association of Metacognition. San Francisco, CA. Presentation: *Preview of ManyClasses 2: Assessing the Effect of Pretesting on Student Learning and Behavior Across Diverse Settings and Materials.*
- 25 Oct 2023 *INTERACT Incubator*. Organizer of 3-day convening of the INTERACT Incubator. Bloomington, IN.
- 21 Sep 2023 IES Innovation Day. Washington, DC. Invited Panel (Stephenson, S. P., Heffernan, N., Motz, B., Ritter, S., Mallick, D., & Davenport, J.).
- 26 Aug 2023 Visual Science of Art Conference (VSAC). Nicosia, Cyprus. Poster: *Using Instruction to Alter Fixation Patterns in Abstract Art.* (Chinni, A. & Motz, B.).
- 21 Jul 2023 Program for Open Scholarship and Education (POSE). University of British Columbia. Invited Online Presentation.
- 7 Jul 2023 Learning Impact Conference 2023, Anaheim, CA. Invited Presentation.
- 13 Apr 2023 AERA 2023, Chicago, Illinois. Poster: *Embedding Experimental Research in the Learning Management System.* (Motz, B., Jankowski, H.).
- 20 Nov 2022 Psychonomics 2022, Boston, MA. Presentation: *Terracotta: A Tool for Conducting Experimental Research in Classrooms on Student Learning.* (Motz, B., Jankowski, H., & McDaniel, M.).
- 19 Nov 2022 Psychonomics 2022. Boston, MA. Poster: *An Inductive Approach to Improving Critical Thinking.* (Guba, T., Fyfe, E., & Motz, B.).
- 4 Nov 2022 AAC&U Transforming STEM Higher Education Conference. Arlington, Virginia. Presentation: *Experimental Research on STEM Education with Terracotta.*
- 28 Apr 2022 Unizin Summit. Online Keynote Presentation.
- 2 April 2022 Learning & the Brain, *The Science of Knowledge*, New York, NY. Invited speaker.
- 12 Oct 2021 EDUCAUSE Industry and Campus Solutions Webinar.
- 29 Sep 2021 PEERS Data Hub Webinar, co-sponsored by AERA and ICPSR. Invited Online Presentation.
- 22 Sep 2021 OLC Accelerate 2021 Research Summit. Invited Online Presentation.
- 16 Jun 2021 CASE 2021. Online. Invited plenary co-discussant with Kumar Garg.
- 21 Apr 2021 2021 Unizin Summit. Online. Presentation: *ManyClasses 1: An Unprecedented Learning Experiment – Findings, Lessons Learned, and Looking Ahead.*
- 29 Mar 2021 Methodology SIG of the Society for Learning Analytics. Co-organizer of online discussion panel, *Should your (quantitative) methods change if you care about social justice?*
- 9 Feb 2021 AAAI Conference on Artificial Intelligence. Online. Invited panelist at workshop, *Imagining Post-COVID Education with AI.*
- 26 Feb 2021 Florida Distance Learning Research Consortium's monthly webinar series. Invited Online Presentation.

- 3 Dec 2020 International Society for Technology in Education (ISTE Live). Featured Online Presentation.
- 18 Nov 2020 Indiana University Institute for Advanced Study Bicentennial Symposium Series. Organizer: *eLearning Research Symposium*.
- 18 Sep 2020 Worcester Polytechnic Institute. Worcester, MA. Guest Online Lecture to CS525/565 Topics in Computer Science and SEME565 User Modeling. Seminar organizer: Neil Heffernan.
- May 2020 Annual Meeting of the Association for Psychological Science, Chicago, IL. Symposium (Conference canceled).
- 20 Feb 2020 Unizin Hackathon, Research Track. Austin, Texas. Co-organizer.
- 15 Oct 2019 EDUCAUSE *Under the Ed Tech Radar Pitch Competition*. Chicago, Illinois. Invited Presentation.
- 25 Sep 2019 University of Minnesota, Learning Analytics Meet Up Series. Online Presentation at Inaugural Symposium.
- 19 Apr 2019 Unizin Summit. Denver, CO. Presentation: *Nudges as behavioral guide rails: An intervention system to proactively prevent students from missing assignments*.
- 17 Apr 2019 Unizin Summit. Denver, CO. Presentation: *ManyClasses v1: A call for participation in a game-changing experiment on the psychology of learning*. (Motz, B. & Fyfe, E.)
- 15 Jul 2018 replicate.education: A Workshop on Large Scale Education Replication. Buffalo, NY. Presentation: *ManyClasses: A model for abstracting generalizable research principles from different learning contexts*.
- 1 Mar 2019 School for Public and Environmental Affairs (SPEA) Connect 2019 Teaching Workshop. Bloomington, Indiana. Invited Keynote Presentation.
- 15 Nov 2018 International Association of Metacognition. New Orleans, LA. Presentation: *Rendering retrieval practice as precious or painful*.
- 10 Nov 2017 IU Online Conference. Indianapolis, IN. Presentation: *Online self-directed learning activities, and the norms that influence them*.
- 29 Sep 2017 Indiana Students and Teachers of Psychological Science (ISTOPS) 2017 Conference. Marian University, Indiana. Invited Keynote Presentation.
- 8 Aug 2017 Primary Source Immersion Program, IU Libraries. Bloomington, Indiana. Invited Keynote Presentation.
- 26 Jul 2017 Indiana University's Center for Innovative Teaching and Learning. Bloomington, Indiana. Invited workshop presentation and accompanying webinar.
- 9 Jul 2017 Beyond the Lab: Using Big Data to Discover Principles of Cognition, Leading Edge Workshop of the Psychonomic Society, Madison, WI. Poster: *Big data: An exploratory study of in-vivo online courses*. (Yu, J., Motz, B., & Landy, D.).
- 25 Feb 2017 Annual Meeting of the Council of Graduate Departments of Psychology (COGDOP). Greenville, SC. Invited Presentation.

- 25 May 2016 Society for the Teaching of Psychology Teaching Institute at the 23<sup>rd</sup> Annual Conference of the Association for Psychological Science, Chicago, IL.  
Poster: *Educational outcomes following enrollment in Introductory Psychology.* (Motz, B., & Rickert, M.).
- 1 Apr 2016 Indiana University, Center for Innovative Teaching and Learning Celebration of Teaching 2016. Bloomington, IN. Master of ceremonies and co-organizer for inaugural teaching hackathon.
- 12 Feb 2016 Preparing Future Faculty Conference. Bloomington, Indiana. Invited Panelist.
- 4 Feb 2016 Hoosier Association for Science Teachers, Inc. (HASTI). Indianapolis, IN.  
Presentation: *Positioning Psychology Among Indiana's High School Sciences.*
- 21 Oct 2015 Indiana University's Statewide IT 2015 Conference. Bloomington, IN.  
Presentation: *Ubiquitous lightweight assessment in an online course.*
- 27 Feb 2015 Indiana University's Health Professions and Prelaw Center (HPPLC). Bloomington, IN. Seminar presentation.
- 8 Oct 2014 Indiana University's Statewide IT 2014 Conference. Bloomington, IN.  
Presentation: *Know thy students: An institutional report on aggregate student data.*
- 6 Feb 2014 Hoosier Association for Science Teachers, Inc. (HASTI). Indianapolis, IN.  
Presentation: *The Psychological Science: Mind, Brain, & Behavior.*
- 11 Oct 2013 125<sup>th</sup> anniversary celebration of the Department of Psychological and Brain Sciences. Bloomington, IN. Invited moderator for plenary discussion panel: *Psychology in the Real World.*
- 8 Feb 2013 University of Louisville Delphi Celebration of Teaching & Learning. Louisville, Kentucky. Invited Plenary Presentation.
- 5 Apr 2011 Indiana University Center for Innovative Teaching and Learning, Spotlight on Innovation, Bloomington, IN. Poster: *Student-generated public service announcements: A case study of the need for careful assessment of learning outcomes.*
- 21 Oct 2010 Society for Psychophysiological Research, Portland, OR. Poster: *Rhythm of perception and attention: An OEP study of temporal attention.* (Erickson, M., Motz, B., & Hetrick, W.).
- 15 Jun 2005 Society for Music Perception and Cognition, San Diego, CA. Presentation: *Effects of tempo on rhythmic expectations.* (Motz, B., Urbach, T., & Kutas, M.).
- 2001 International Society for Developmental Psychobiology, San Diego, CA. Poster: *Positive evidence of geotaxis in 10-day-old rats.* (Motz, B., & Alberts, J.)

## **Appointments**

Associate Director – 2022 - *current*

Director – 2019 - 2022

eLearning Research and Practice Lab, Pervasive Technology Institute

Faculty Fellow for Academic Analytics, eDS, University Information Technology Services – 2018 - 2020

Director of Undergraduate Instruction and Online Development – 2015-2018

Director of Pedagogy – 2012-2014

IU Department of Psychological and Brain Sciences

## **Service**

Spokesperson, Cognitive Area, IU Department of Psychological and Brain Sciences – 2023-*current*

Appointee, Graduate Program Committee, Graduate Admissions Committee, Space Committee

Guest-Editor, Contemporary Educational Psychology – 2026

Emerging Shared Research Infrastructure in Educational Psychology

Associate Editor, Journal of Applied Research in Memory and Cognition – 2026 - *current*

Organizing Committee, Methodology in Learning Analytics SIG, SoLAR – 2020-2024

Lead Partner, Charting the Future, Indiana University, University Academic Affairs – 2021-2023

Invited Member, IUB2030 Strategic Planning Working Group, Indiana University Bloomington – 2022

Invited Member, Research Committee, Unizin Consortium – 2019-2021

Academic Editor, PLoS ONE – 2018-2022

Undergraduate Curriculum Committee, IU Department of Psychological and Brain Sciences – 2009-2021

Chair, Ad Hoc Assessment Committee – 2013-2014

Curator, Designer, and Developer, Cognitive Science Movie Index – 2010-2018

Invited Member, Educational Policies Committee, IU Bloomington Faculty Council – 2014-2016

Active Learning Online Faculty Learning Community, IU CITL – 2015-2016

Invited Member, Indiana University Faculty Leadership Institute, IU FACET – 2014-2016

Elected Member, Student Academic Appointee Board of Review, IU Bloomington Faculty Council – 2014-5

Consultant and On-Camera Interviewee, NFL Network – 2011-2014

Organizer, Pedagogy Seminar, IU Department of Psychological and Brain Sciences – 2011-2014

Preparing Future Professors Faculty Learning Community, IU CITL – 2010-2014

Invited Member, Undergraduate Strategic Planning Committee, Indiana University Bloomington – 2013

Branding and Website Committee, IU Department of Psychological and Brain Sciences – 2009-2013

Principal designer and developer of departmental website (2011 redesign)

Co-Editor – UCSD Cognitive Science Online, 2004-2005

Advisory Boards: IES R305N240063 (PI: Akira Miyake), NSF-DUE 2417328 (PI: Jennifer Knight), NSF-DRL 1713567 (PI: Judith Fan)

Reviewer for: *Advances in Methods and Practices in Psychological Science; Behavioral Sciences; Biological Psychology; British Journal of Educational Psychology; British Journal of Educational Technology; Cognition and Instruction; Educational Psychology Review; Human Brain Mapping; IEEE Transactions on Neural Systems and Engineering; Journal of Applied Research on Memory and Cognition; Journal of Educational Psychology; Journal of Quantitative Analysis in Sports; Journal of Teaching and Learning; Learning and Instruction; NeuroImage; Oxford University Press; Perspectives on Psychological Science; PLoS ONE; Psychonomic Bulletin & Review; Technology, Mind, and Behavior*

## Courses Taught

Cognitive Psychology (IU) – 2009-current

Upper-level survey of mental functions, theories, and experiments in cognitive psychology

Laboratory in Human Learning and Cognition – 2023-current

Senior capstone course exploring experimental research on human learning and memory

Human Memory – 2022-current

Upper-level overview of cognitive theories of human memory and associated processes

Introductory Data Analysis for Psychological and Brain Sciences – 2020-current

Elementary data analysis methods including manipulating, summarizing, and visualizing data

[Online] Introductory Psychology 1 (IU) – 2015-2020

Research methods, neuroscience, perception, learning, and cognitive psychology

Introduction to Psychological and Brain Sciences (IU) – 2009-2015

Brain anatomy, perception, development, cognitive psychology, and social psychology

Prediction, Probability, and Pigskin (IU) – 2012-2014

Freshman-level introduction to analytical techniques thru the lens of fantasy football

Methods in Experimental Psychology (IU) – 2009-2014

Experimental methods, research design, and scientific writing

Teaching of Psychology (IU) – 2012-2014

Graduate survey of pedagogical practices, emphasis on training lab instructors

General Psychology Honors (IU) – 2008-2012

Survey of introductory psychology material, including weekly advanced labs and demonstrations

Neuroanatomy and Physiology (UCSD, with Jaime Pineda) – 2005

Brain anatomy, cortical function, and neural information processing

Learning and Memory (UCSD, with Seana Coulson) – 2005  
Experimental foundations of psychological theories of learning and memory

Introduction to Cognitive Science (UCSD, with Jochen Triesch) – 2004  
Freshman course to provide interdisciplinary overview of Cognitive Sciences

Java Programming for Cognitive Modeling (UCSD, with John Batali) – 2004  
Introduction to Java programming and its applications in the modeling of cognitive processes

Design and Analysis of Experiments (UCSD, with John Batali) – 2004  
Mathematical introduction to probability, test design, and inferential statistics

Mathematical Foundations of Cognitive Science & Informatics (IU, with Ruth Eberle) – 2001-2002  
Introduction to mathematical and logical tools for building models in the information sciences

## Society Memberships

Fellow, Psychonomic Society – 2018-current  
Member, Society for Applied Research in Memory and Cognition (SARMAC) – 2022-current  
Member, Cognitive Science Society – 2024-current  
Member, Association for Psychological Science (APS) – 2024-current

## Honors and Awards

Finalist & Runner Up – XPRIZE Digital Learning Challenge, 2023  
Trustee Teaching Award – Indiana University, 2012, 2014, 2016, 2023  
Tools Competition Mid-Range Prize – Futures Forum on Learning, 2021  
Platinum Award (highest award), IMS Global Learning Impact Awards – IMS Global, 2019  
President's Award for Excellence in Teaching and Learning Technology – Indiana University, 2015  
Faculty Appreciation Award – IU Women's Basketball Program, 2009, 2014  
Outstanding Teaching Award, Cognitive Science – Indiana University, 2013  
Student Choice Award Nomination – Indiana University, 2009, 2010, 2011, 2012  
Rising Star Award (annual office award) – Rapp Collins Los Angeles, 2008  
Superior Teaching Award, Cognitive Science – UCSD, 2004, 2005, 2006  
Outstanding Contribution Award, Cognitive Science – Indiana University, 2002  
NIH Travel Award – National Institute of Health, 2001  
Senior Leaders Award – Indiana University, 2001