

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

INTERACT: An Incubator to Enable Scalable Education Equity Research with Terracotta (\$499,809)
National Science Foundation (NSF), 2023-2025; Joint PIs: Ben Motz & Mary Murphy / Co-PIs:
Amanda Diekman, Emily Fyfe, Rob Goldstone, Dorainne Green

Terracotta (\$83,333+\$125,000) – Finalist and Runner-Up in the XPRIZE Digital Learning Challenge, 2022

The Canvas+Terracotta LMS-Based Experimental Education Research Platform (\$2,000,000)
Institute of Education Sciences (IES), 2021-2026; PI: Ben Motz / Co-PI: Mark McDaniel

Improving Critical Thinking with a Categorization Practice Intervention (\$5,000)
Reboot Foundation, 2020; PIs: Ben Motz and Emily Fyfe

Rapid Experimentation Educators Network (\$450,000) – Schmidt Futures, 2020
PI: Ben Motz / Co-PI: Ulrich Boser

Social Influence from Peer Assessment of College Coursework (\$20,000) – Unizin, 2020
PI: Ben Motz / Co-PIs: Matt Baldwin and Rob Goldstone

COVID-19 and Perceptions of Learning Technology (\$45,000) – Schmidt Futures, 2020

Behavioral Correlates of LMS Engagement (\$1,410) – Google Cloud Platform, 2020
Google Cloud COVID-19 research credits program

Crisis Transition to Online Learning (\$40,000) – Indiana University, 2020

Provocations: Conversations Towards a Bold University in the 21st Century (\$4,950)
Indiana University, Institute for Advanced Study, 2019

Improving Teaching Through Enhanced Analysis of Teaching Evaluations (\$5,000)
Indiana University SOTL Grant; PI: Rick Hullinger / Co-PIs: Ben Motz and John Kruschke

Improving Student Motivation and Success with Social Norm Messaging (\$11,000)
APS Fund for Teaching and Public Understanding of Psychological Science – APS, 2016
PI: Ben Motz / Co-PIs: Ed Hirt, David Landy, and Rob Goldstone

Charting Educational Outcomes Following P101 with Linear Modeling: Enabling Data-Driven
Improvement of Introductory Psychology (\$30,000) – Bay View Alliance, 2014
PI: Ben Motz / Co-PIs: David Landy and Tom Busey

CITL Writing Program Summer Writing-Teaching Grant (\$1,500) – Indiana University, 2012

SOTL Active Learning Grant (\$1,500) – Indiana University, 2009
Making Public Service Announcements as a Teaching Aid for Cognitive Psychology

Publications

Journal Articles

^ indicates student co-author; * indicates co-first authors

- Motz, B.**, Üner, Ö., Jankowski, H., Christie, M., Burgas, K., del Blanco Orobítg, D., & McDaniel, M. (2023). Terracotta: A tool for conducting experimental research on student learning. *Behavior Research Methods*. [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.^, 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.^, [42 others], & **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.ˆ, **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.*ˆ, **Motz, B.***, Heltzel, G.ˆ, & 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.ˆ, & 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)

In Progress

Motz, B., Kruschke, J. K., Hetrick, W. P., James, T., & Puce, A. (preprint). Expectations for rhythmic sounds increase bottom-up visual attention. *PsyArXiv*, [10.31234/osf.io/b2uaj](https://doi.org/10.31234/osf.io/b2uaj)

Motz, B. (preprint). Concentration toward the mode: Estimating changes in the shape of a distribution of student data. *PsyArXiv*, [10.31234/osf.io/6p9td](https://doi.org/10.31234/osf.io/6p9td)

Rust, M., & **Motz, B.** (preprint). Incorporating an LMS learning analytic into proactive advising: Validity and use in a randomized experiment. *EdArXiv*, [10.35542/osf.io/sjw2b](https://doi.org/10.35542/osf.io/sjw2b)

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. & 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)*.

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 7th 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://doi.org/10.35542/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 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 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. 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. 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. 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+Society*, Madison, Wisconsin.
- Motz, B., & Núñez, R. (2004). Implications of new baseline data in the spatial construal of time. Paper and poster presented at the annual meeting of the *Cognitive Science Society*, Chicago, Illinois.

Invited Talks, Seminar Presentations, Posters, and Guest Lectures

- 18 Nov 2023 *Differences of Opinions: How Visualizations of Uncertainty in Ratings Data Affect Choice*. (Motz, B., Hullinger, R., Celestin, B., Butz, H., & Kruschke, J.). Presentation at Psychonomics 2023. San Francisco, CA.
- 17 Nov 2023 *Simulation and Symbolic Thinking in Equations Representing Change*. (Narwal, A., Motz, B., & Fyfe, E.). Poster at Psychonomics 2023. San Francisco, CA.
- 16 Nov 2023 *Preview of ManyClasses 2: Assessing the Effect of Pretesting on Student Learning and Behavior Across Diverse Settings and Materials*. Presentation at Biennial Meeting of the International Association of Metacognition. San Francisco, CA.
- 25 Oct 2023 *INTERACT Incubator Convening #1*. Organizer of 3-day convening of the INTERACT Incubator. Bloomington, IN.
- 21 Sep 2023 *Early Reflections on Conducting Research in Digital Learning Platforms for Equity and Effectiveness*. (Stephenson, S. P., Heffernan, N., Motz, B., Ritter, S., Mallick, D., & Davenport, J.). Invited panel at IES Innovation Day. Washington, DC.
- 26 Aug 2023 *Using Instruction to Alter Fixation Patterns in Abstract Art*. (Chinni, A. & Motz, B.). Poster at Visual Science of Art Conference (VSAC). Nicosia, Cyprus.
- 21 Jul 2023 *Replicability, Generalizability, and the ManyClasses Approach to Open Science*. Invited presentation at Program for Open Scholarship and Education (POSE). University of British Columbia. Online.
- 7 Jul 2023 *Advancing the Future of Research on Student Learning by Leveraging Standards*. Invited presentation at 2023 Learning Impact Conference, Anaheim, CA.
- 13 Apr 2023 *Embedding Experimental Research in the Learning Management System*. (Motz, B., Jankowski, H.). Poster at AERA 2023, Chicago, Illinois.
- 29 Mar 2023 *Finding Generalizable Effects in Diverse Education Settings*. Presentation at CogLunch, Cognitive Science Speaker Series. Bloomington, Indiana.

- 20 Nov 2022 *Terracotta: A Tool for Conducting Experimental Research in Classrooms on Student Learning*. (Motz, B., Jankowski, H., & McDaniel, M.). Presentation at Psychonomics 2022, Boston, Massachusetts.
- 19 Nov 2022 *An Inductive Approach to Improving Critical Thinking*. (Guba, T., Fyfe, E., & Motz, B.). Poster at Psychonomics 2022. Boston, Massachusetts.
- 4 Nov 2022 *Experimental Research on STEM Education with Terracotta*. Presentation at AAC&U Transforming STEM Higher Education Conference. Arlington, Virginia.
- 28 Apr 2022 *A (Show)Case for Research on Improving Student Success*. Invited keynote at the 2022 Unizin Summit. Online.
- 2 April 2022 *How Multiple Choice Questions can Improve Critical Thinking*. Invited speaker at *The Science of Knowledge, Learning & the Brain*. New York.
- 12 Oct 2021 *Building Terracotta: A Platform for Conducting Randomized Controlled Experiments in the LMS*. EDUCAUSE Industry and Campus Solutions webinar.
- 29 Sep 2021 *Learning Analytics and Education Research Data*. Invited presentation at PEERS Data Hub Webinar, co-sponsored by AERA and ICPSR. Online.
- 22 Sep 2021 *The Great Online Migration: Lessons Learned from Online Learning Journal Researchers*. Invited presentation at OLC Accelerate 2021 Research Summit. Online.
- 16 Jun 2021 *Learning Engineering: Advancing the Science and Practice of Education*. Invited co-discussant with Kumar Garg for plenary panel at CASE 2021. Online.
- 21 Apr 2021 *ManyClasses 1: An Unprecedented Learning Experiment – Findings, Lessons Learned, and Looking Ahead*. Presentation at the 2021 Unizin Summit. Online.
- 29 Mar 2021 *Should your (quantitative) methods change if you care about social justice?* Co-organizer of discussion panel, sponsored by the Methodology SIG of the Society for Learning Analytics. Online.
- 9 Feb 2021 *Using Data to Advance Human Learning*. Invited panelist at *Imagining Post-COVID Education with AI*, a workshop at the 35th AAAI Conference on Artificial Intelligence. Online.
- 26 Feb 2021 *Leveraging Campus Data to Improve Online Educational Outcomes*. Invited presenter to the Florida Distance Learning Research Consortium's monthly webinar series. Online.
- 3 Dec 2020 *Everyday Questions – Research for Teachers, by Teachers, Including You!* Featured session about experimental research at the annual meeting of the International Society for Technology in Education (ISTE Live). Online.
- 18 Nov 2020 *eLearning Research Symposium*. Indiana University Institute for Advanced Study Bicentennial Symposium Series. Online.

- 18 Sep 2020 Guest lecture to CS525/565 Topics in Computer Science and SEME565 User Modeling. Seminar organizer: Neil Heffernan, Worcester Polytechnic Institute. Worcester, Massachusetts. Online.
- May 2020 *The promises and pitfalls of conducting large-scale, multi-site experimental science in educational settings*. Symposium to be presented at the Annual Meeting of the Association for Psychological Science, Chicago, IL. (Conference canceled).
- 20 Feb 2020 *Unizin Hackathon Research Track*. Co-organized the two-day research track of the annual Unizin Hackathon. Austin, Texas.
- 23 Oct 2019 *New eLearning data, and what to do with it*. Presentation at CogLunch, Cognitive Science Speaker Series. Bloomington, Indiana.
- 15 Oct 2019 *Boost: A personal assistant for online learning*. Invited presentation at the EDUCAUSE *Under the Ed Tech Radar Pitch Competition*. Chicago, Illinois.
- 25 Sep 2019 *ManyClasses: A game-changing experiment exploring educational interventions*. Invited presentation at the inaugural University of Minnesota Learning Analytics Meet Up Series. Minneapolis, Minnesota.
- 19 Apr 2019 *Nudges as behavioral guide rails: An intervention system to proactively prevent students from missing assignments*. Presentation at the 2019 Unizin Summit. Denver, Colorado.
- 17 Apr 2019 *ManyClasses v1: A call for participation in a game-changing experiment on the psychology of learning*. Presentation at the 2019 Unizin Summit. Denver, Colorado.
- 15 Jul 2018 *ManyClasses: A model for abstracting generalizable research principles from different learning contexts*. Presentation at replicate.education: A Workshop on Large Scale Education Replication. Buffalo, New York.
- 1 Mar 2019 *This is your student's brain on Canvas*. Invited keynote presentation at the School for Public and Environmental Affairs (SPEA) Connect 2019 Teaching Workshop. Bloomington, Indiana.
- 15 Nov 2018 *Rendering retrieval practice as precious or painful*. Presentation at the Biennial Meeting of the International Association of Metacognition. New Orleans, Louisiana.
- 10 Nov 2017 *Online self-directed learning activities, and the norms that influence them*. Presentation at the 2nd annual IU Online Conference, Indianapolis, Indiana.
- 29 Sep 2017 *Motivating and teaching the psychological science*. Invited keynote presentation at Indiana Students and Teachers of Psychological Science (ISTOPS) 2017 Conference. Marian University, Indiana.
- 8 Aug 2017 *How primary sources can improve student learning*. Invited keynote presentation at the inaugural Primary Source Immersion Program, IU Libraries. Bloomington, Indiana.

- 26 Jul 2017 *Embedding assessments in online content using Quick Check*. Invited workshop presentation and accompanying webinar at Indiana University's Center for Innovative Teaching and Learning. Bloomington, Indiana.
- 9 Jul 2017 *Big data: An exploratory study of in-vivo online courses*. (Yu, J., Motz, B., & Landy, D.). Poster presented at Beyond the Lab: Using Big Data to Discover Principles of Cognition, Leading Edge Workshop of the Psychonomic Society, Madison, Wisconsin.
- 25 Feb 2017 *Evidence-Based Teaching*. Invited presentation at the Annual Meeting of the Council of Graduate Departments of Psychology (COGDOP). Greenville, South Carolina.
- 25 May 2016 *Educational outcomes following enrollment in Introductory Psychology*. (Motz, B., & Rickert, M.). Poster presented at the Society for the Teaching of Psychology Teaching Institute at the 23rd Annual Conference of the Association for Psychological Science, Chicago, Illinois.
- 1 Apr 2016 *Teaching Hackathon*. Master of ceremonies and co-organizer for inaugural hackathon at Indiana University's Center for Innovative Teaching and Learning Celebration of Teaching 2016. Bloomington, Indiana.
- 12 Feb 2016 *The Future of Teaching*. Invited panelist at Preparing Future Faculty Conference. Bloomington, Indiana.
- 4 Feb 2016 *Positioning Psychology Among Indiana's High School Sciences*. Presentation at Hoosier Association for Science Teachers, Inc. (HASTI). Indianapolis, Indiana.
- 21 Oct 2015 *Ubiquitous lightweight assessment in an online course*. Presentation at Indiana University's Statewide IT 2015 Conference. Bloomington, Indiana.
- 27 Feb 2015 *Psychology Perspective on MCAT 2015*. Seminar presentation for advisees of Indiana University's Health Professions and Prelaw Center (HPPLC). Bloomington, Indiana.
- 8 Oct 2014 *Know thy students: An institutional report on aggregate student data*. Presentation at Indiana University's Statewide IT 2014 Conference. Bloomington, Indiana.
- 6 Feb 2014 *The Psychological Science: Mind, Brain, & Behavior*. Presentation at Hoosier Association for Science Teachers, Inc. (HASTI). Indianapolis, Indiana.
- 11 Oct 2013 *Psychology in the Real World*. Invited moderator for plenary discussion panel at the 125th anniversary celebration of the Department of Psychological and Brain Sciences. Bloomington, Indiana.
- 26 Aug 2013 *Ethics and scientific integrity*. Invited panelist at Cognitive Neuroscience Seminar. Bloomington, Indiana.
- 8 Feb 2013 *Lecture as laboratory: Applying scientific inquiry to teaching practices*. Invited plenary at the University of Louisville Delphi Celebration of Teaching & Learning. Louisville, Kentucky.

- 7 Feb 2013 *Let's talk about study guides*. Moderated discussion at the Department of Psychological and Brain Sciences Pedagogy Seminar. Bloomington, Indiana.
- 12 Mar 2012 *To the beat of your own drum: Cortical regularization of non-integer ratio rhythms toward metrical patterns*. Presentation at CogLunch, Cognitive Science Speaker Series. Bloomington, Indiana.
- 15 Apr 2011 *Morality, empathy, and attribution of responsibility*. Invited presentation to Moral Psychology Reading Group. Bloomington, Indiana.
- 5 Apr 2011 *Student-generated public service announcements: A case study of the need for careful assessment of learning outcomes*. Poster presented at the "Spotlight on Innovation" poster session for Indiana University's Center for Innovative Teaching and Learning, Bloomington, Indiana.
- 25 Oct 2010 *Psychology at business*. Invited lecture to PSY P452 Psychology in the Business Environment. Bloomington, Indiana.
- 21 Oct 2010 *Rhythm of perception and attention: An OEP study of temporal attention*. (Erickson, M., Motz, B., & Hetrick, W.). Poster presented at the annual meeting of the Society for Psychophysiological Research, Portland, Oregon.
- 21 Nov 2008 *Grounding abstract concepts*. Invited presentation to the Percepts and Concepts Laboratory. Bloomington, Indiana.
- 14 Nov 2007 *Bootstrapping to evaluate differences in proportions*. Technical report and presentation to the Rapp Collins Analytics Department. El Segundo, California.
- 27 Mar 2007 *Structural equation modeling using PROC CALIS*. Technical report and presentation to the Rapp Collins Analytics Department. El Segundo, California.
- 15 Jun 2005 *Effects of tempo on rhythmic expectations*. (Motz, B., Urbach, T., & Kutas, M.). Poster and presentation at the biennial workshops of the Society for Music Perception and Cognition, San Diego, California.
- 2001 *Positive evidence of geotaxis in 10-day-old rats*. (Motz, B., & Alberts, J.) Poster presented at the annual meeting of the International Society for Developmental Psychobiology, San Diego, California.

Appointments

Associate Director, eLearning Research and Practice Lab, Pervasive Technology Institute – 2022 - current

Director, eLearning Research and Practice Lab, Pervasive Technology Institute – 2019 - 2022

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

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

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

Reviewer for: *Biological Psychology*; *British Journal of Educational Technology*, *Cognition and Instruction*; *Educational Psychology Review*; *Human Brain Mapping*; *IEEE Transactions on Neural Systems and Engineering*; *Journal of Quantitative Analysis in Sports*; *Journal of Educational Psychology*; *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*; *Institute of Education Sciences*; *National Science Foundation*

Courses Taught

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

Cognitive Psychology (IU) – *2009-2014*
Upper-level survey of mental functions, theories, and experiments in cognitive 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*
Society for Learning Analytics Research (SoLAR) – *2018-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

Media Appearances & Features

EdPost, [There's No Excuse for Not Teaching Critical Thinking](#) (27 Sep 2021)

Fox59 Morning News, [Teaching critical thinking skills in the nation's schools](#) (13 Sep 2021)

EdSurge, [Improving Critical Thinking May Take Practice](#) (8 Sep 2021)

Campus Technology Insider Podcast, [The Science of Studying Student Learning at Scale](#) (26 Jul 2021)

Chronicle of Higher Education Teaching Newsletter, [Before Rushing to Give Your Students Feedback, Read This](#) (01 Jul 2021)

Google Cloud Education Blog, [Campuses Use Data Analytics and Virtual Agents for Student Success](#) (16 Jun 2020)

Inside Higher Ed, [What Do We Know About This Spring's Remote Learning?](#) (10 Jun 2020)

The Learning Curve, [The New Ed Research Tool, "ManyClasses"](#) (12 Nov 2019)

Fox Sports 1 & NFL Network, *NFL Films*, *NFL Films Presents, Pursuing your Passion*- Featured segment on C105 (10 Oct 2014), *NFL Top Ten*, *Top 10 Fantasy Seasons* (04 Sep 2014)

Inside IUB, [Video Feature: IU undergrads design palm sweat sensors to test results of psychological experiments](#) (31 Jan 2014)

NFL Network, *NFL 2020*, [Player Health and Safety](#) (Episode 7; 04 Dec 2013), [The Fan Experience](#) (Episode 6; 20 Nov 2013), [Analytics & Officiating](#) (Episode 4; 24 Oct 2013), [The Game](#) (Episode 3; 10 Oct 2013)

Inside IUB, [Featured Spotlight: Ben Motz](#) (24 Oct 2013)

NBC News, LiveScience.com, [Top Brain Science Movies Revealed](#) (01 Oct 2013)

BrainBlogger.com, [Swing jazz and neural oscillations](#) (19 Aug 2013)

NFL Network, *Path to the Draft*, [Body clock](#) (17 Apr 2012)

WTHR, *Eyewitness News*, [IU prof uses stats to predict NFL performance](#) (15 Feb 2012)

NPR, *Morning Edition*, [Is home-field advantage the real deal?](#) (11 Jan 2012)

Herald Times, *Teaching through football* (16 Jan 2012)

NFL Network, *Football Freakonomics*, [Does firing your head coach fix anything?](#) (Episode 9; 28 Dec 2011), [Home field advantage](#) (Episode 7; 14 Dec 2011), [How much do injuries hurt?](#) (Episode 6; 07 Dec 2011), [Is the NFL a QB-driven league?](#) (Episode 5; 30 Nov 2011)

Indiana University Teaching & Learning Faculty Showcase, [Sharing Knowledge](#) (Spring 2010)

WIUX, *News Hour*, [Understanding Abstract Concepts: A WIUX Interview with Ben Motz](#) (24 Feb 2010)

The Guardian, [How Time Flies](#) (23 Feb 2005)