Timothy R. Brick, PhD

Associate Professor of Human Development and Family Studies
The Pennsylvania State University

CONTACT INFORMATION

231 HHD Building   tbrick@psu.edu
University Park, PA 16802   https://sites.psu.edu/realtimescience
(814) 865-4868   ORCID: 0000-0002-3339-9279

FORMAL EDUCATION

PhD Psychology   August 2011
  University of Virginia, Charlottesville, VA (advisor Steven M. Boker)
  Dissertation Title: *(Re)moving Parts: Towards A System for the Separation of Affective Movements in Facial Video*

MS Computer Science and Engineering   August 2007
  University of Notre Dame, Notre Dame, IN (primary advisor Matthias Scheutz)
  Thesis Topic: TIDE: *A Timing-sensitive Incremental Discourse Engine*

BA Psychology   May 2002
  Magna Cum Laude University of Notre Dame, Notre Dame, IN

BS Computer Science and Engineering   May 2001
  Magna Cum Laude University of Notre Dame, Notre Dame, IN

CURRENT ACADEMIC POSITIONS

2021–Present: *Associate Professor* of Human Development and Family Studies, College of Health and Human Development, Penn State University.

2021–Present: *Associate Professor* of Human Development and Family Studies, College of Health and Human Development, Penn State University.

2021–Present: *Associate Professor* of Social Data Analytics, Penn State University.

2014–Present: *Faculty*, Quantitative Developmental Systems Methodology Core, Social Science Research Institute, Penn State University.

2014–Present: *Co-funded Faculty* via the Penn State Institute for Computational and Data Sciences to promote and engage researchers in interdisciplinary team science.

2024–Present: *Computational Social Sciences Liaison*, Penn State Institute for Computational and Data Sciences & Penn State Social Science Research Institute.

2014–Present: *Visiting Researcher*, Formal Methods Group, Center for Lifespan Psychology
(Summers)   & Lise Meitner Group for Environmental Neuroscience, Max Planck Institute for Human Development

PSU Affiliations

AI Hub, PSU. Affiliated Faculty.

Institute for Computational and Data Sciences, PSU. Co-funded Faculty.

Quantitative Developmental Systems Methodology Core, PSU. Faculty.

Social Science Research Institute, PSU. Affiliated Faculty.

Center for Social Data Analytics, PSU. Faculty.

Department of Human Development and Family Studies, PSU. Faculty.

College of Health and Human Development, PSU. Faculty.

Past Academic Positions

2018–2021: *Assistant Professor* of Social Data Analytics.

2014–2021: *Assistant Professor*, Department of Human Development and Family Studies.

2011-2014: *Forschungsstipendiat (Postdoctoral Research Fellow)*, Formal Methods Project, Center for Lifespan Psychology, Max Planck Institute for Human Development

2008-2010: *Fellow / Fellow Speaker* IMPRS LIFE Program; appointed *Fellow Speaker* as a representative of the Fellows to the steering committee.

Fall 2008: *Adjunct Instructor*, Department of Psychology, University of Virginia.

2007–2011: *Graduate Student*, Department of Psychology, University of Virginia.

2005–2007: *Graduate Student*, Computer Science and Psychology, University of Notre Dame.

Administrative and Service Roles

Member, Power Users Group, Institute for Computational and Data Sciences, PSU.

Faculty Representative, Chief Information Security Officer's Advisory Counsel, PSU.

Liaison for High Performance Computing, Social Science Research Institute, PSU.

Coordinator, Statistical Consulting, Clinical and Translational Science Institute. PSU.

Statistical Consultant, Quantitative Developmental Systems Methdology Core, Social Science Research Institute.

We 'R' Student Group, Faculty Advisor.

PEER REVIEWED ARTICLES AND PAPERS

Proceedings listed here are written, journal-quality papers published after full peer-review.
*indicates student or postdoctoral coauthors
**indicates supervised research staff
†indicates co-first authors

81. *Pohlmann K, *Tawil N, **Brick, T. R.**, Kühn S. (2026). Style mixing houses: The role of high- and low-level visual features in human house facade evaluation. Acta Psychol (Amst). 262:106126. doi: 10.1016/j.actpsy.2025.106126.. .

80. *Pohlmann K, *Tawil N, **Brick, T. R.**, Yaghoubi, E., Kühn S. (2025). Visualising and understanding human evaluation of house facades: GAN applied to environmental psychology. Journal of Environmental Psychology 107(102803). doi: 10.1016/j.jenvp.2025.102803..

79. Freet, C.S., Shuler, K., Kawasaki, S., Weintraub, E., Greenblatt, A., Kladney, M., Nunes, E., Foster, K. L., Kong, L., Raja-Khan, N., Cleveland, H. H., Grigson, P.S., Bunce, S.C., **Brick, T. R.**, Nyland, J.E. (2025) Efficacy of the GLP-1 receptor agonist, semaglutide, in abstinence from illicit and nonprescribed opioids in an outpatient population with OUD: A randomized, double-blind, placebo-controlled clinical trial protocol. Addict Sci Clin Pract. 2025 Oct 30;20(1):89. doi: 10.1186/s13722-025-00618-2.

78. *Bhat YR, Keller KL, **Brick, T. R.**, Pearce AL. ByteTrack: a deep learning approach for bite count and bite rate detection using meal videos in children. Front Nutr. 2025;12:1610363. doi: 10.3389/fnut.2025.1610363.. eCollection 2025.

77. Bai S, Froidevaux NM, Chen M, High AC, Ewing KE, DeFelice J, Weaver J, Ngigi KW, Riccio MR, Chiang SC, Bai L, Lunkenheimer ES, **Brick, T. R.**. Families being supportive together: A multimethod and multi-informant intensive longitudinal study of family protective mechanisms for adolescent depression. Psychol Assess. 2025 Oct;37(10):535-546. doi: 10.1037/pas0001400.

76. *Lancaster, J.H., **Brick, T. R.** & Cleveland, H.H. (2025). The effects of dynamic recovery identity on lapse risk and the role of daily recovery meetings. International Journal of Drug Policy. 2025 Nov;145:104941. doi: 10.1016/j.drugpo.2025.104941. Epub 2025 Aug 5. .

75. Skurka C, Troy CLC, Yang Y, Smith RA, Tornello S, Rosenberger JG, Brick TR, Myrick JG. "It Is in the Air": Seeking and Scanning for Information About Pre-Exposure Prophylaxis Among Young-Adult Men Who Have Sex with Men in the US. Health Commun. 2025 Jul 28;:1-12. doi: 10.1080/10410236.2025.2536314. [Epub ahead of print]

74. Freet, C. S., Shuler, K., Kawasaki, S., Weintraub, E., Greenblatt, A., Kladney, M., Nunes, E., Foster, K. L., Kong, L., Raja-Khan, N., Cleveland, H. H., Grigson, P. S., Bunce, S. C., **Brick, T. R.**, & Nyland, J. E. (2025). Efficacy of the GLP-1 receptor agonist, semaglutide, in abstinence from illicit and nonprescribed opioids in an outpatient population with treatment-refractory OUD: A randomized, double-blind, placebo-controlled clinical trial protocol. Research square, rs.3.rs-6666196. doi: 10.21203/rs.3.rs-6666196/v1.

73. *Long, J. W., Cunningham, P. M., Maksi, S.J., Keller, K.L., Cheah, C.S.L., Boot, L., Klippel, A., **Brick, T. R.**, Edwards, C. G., Kort, J., Grabusky, P., Rolls, B.J., & Masterson, T.D. (2025). Energy Density Selected in Immersive Virtual Reality Buffet Meals Is Associated with Both Energy Density Consumed and Energy Intake in Laboratory Meals. Proceedings of the 11th International Conference on Virtual Reality (ICVR 2025). :27-35. doi: 10.1109/ICVR66534.2025.11172660.

72. *Long, J. W., Cunningham, P. M., Maksi, S.J., Keller, K.L., Cheah, C.S.L., Boot, L., Klippel, A., **Brick, T. R.**, Edwards, C. G., Kort, J., Grabusky, P., Rolls, B.J., & Masterson, T.D. (2025). Variety-Seeking Behavioral Markers in an Immersive Virtual Reality Food Buffet are Associated with Greater Food and Energy Intake in Laboratory Meals. Appetite. Manuscript accepted for publication.

71. *Petrie, D. J., Knapp, K. S., Freet, C. S., Deneke, E., Stankoski, D., Brick, T. R., Cleveland, H.H., & Bunce, S. C. (2025). Contemporaneous Link Between Pain and Craving in Patients Recovering from Prescription Opioid Use Disorder During Residential Treatment. Substance Use & Misuse, 1–11. doi: 10.1080/10826084.2025.2478590.

70. *Lancaster, J.H., *Apsley, H.B., **Brick, T. R.** & Cleveland, H.H. (2025) A within-person investigation of recovery identity following substance use disorder: examining the impact of recovery-focused social contexts. Front. Public Health 13:1534432. doi: 10.3389/fpubh.2025.1534432.

69. *Drewelies, J., *Fiedler, A., **Brick, T. R.**, & Kühn, S. (2025) Investigating associations between the physical living environment and hippocampus in adulthood and older age. Environmental Research 267(120728). doi: 10.1016/j.envres.2024.120728.

68. *Knapp, K. S., *Petrie, D. J., **Brick, T. R.**, Deneke, E., Bunce, S. C., & Cleveland, H. H. (2025). Within-person affect dynamics among individuals in residential treatment for opioid use disorder: An ecological momentary assessment study. Journal of Psychopathology and Clinical Science. Advance online publication. doi: 10.1037/abn0000975.

67. *Apsley, H. B., *Lancaster, J., *Ren, W., **Brick, T. R.**, & Cleveland, H. H. (2025). Experiences at recovery community centers predict holistic recovery outcomes: a daily diary assessment of RCC helpfulness, meaningfulness, and recovery identity. Frontiers in public health, 12, 1476441. doi: 10.3389/fpubh.2024.1476441.

66. *Apsley, H. B., *Ren, W., *Lancaster, J., **Brick, T. R.**, & Cleveland, H. H. (2025). Recovery Community Center Visits and Activities: A Description Using a Daily Diary Approach. Alcoholism Treatment Quarterly, 1–10. doi: 10.1080/07347324.2024.2415595.

65. *Lancaster, J. H., *Apsley, H. B., **Brick, T. R.**, Ren, W. & Cleveland, H. H. (2024). The Day-Level Effects of Recovery Community Center Attendance on Indicators of Recovery Wellbeing and Risk. SSRN. doi: 10.2139/ssrn.4715015.

64. *Pohlmann, K., *Tawil, N., **Brick, T. R.**, & Kühn, S. (2024). When houses wear faces: Reverse correlation applied to architectural design. Journal of Environmental Psychology 98 (102401). doi: 10.1016/j.jenvp.2024.102401.

63. Freet, C.S., Evans, B., **Brick, T.R.**, Deneke, E., Wasserman, E.J., Ballard, S., Stankowski, D.M., Kong, L., Raja-Kahn, N., Nyland, J.E., Arnold, A.C., Krisnamurthy, V.B., Fernandez-Mendoza,J., Cleveland, H.H., Scioli, A.D., Molchanow, A., Messner, A.E., Ayaz, H., Grigson, P.S., & Bunce, S.C. (2024) Ecological momentary assessment and cue-elicited drug craving as primary endpoints: study protocol for a randomized, double-blind, placebo-controlled clinical trial testing the efficacy of a GLP-1 receptor agonist in opioid use disorder. Addict Sci Clin Pract 19, 56 . doi: 10.1186/s13722-024-00481-7.

62. *Beyer, M., **Brick, T. R.**, & Kühn, S. (2024). Urbanicity and psychotic experiences: Social adversities, isolation and exposure to natural environments predict psychosis. Journal of Environmental Psychology, 96 (102293). doi: 10.1016/j.jenvp.2024.102293.

61. *Long, J.W., Pritschet, S. J., Keller, K.L., Cheah, C.S.L., Boot, L., Klippel, A., **Brick, T. R.**, Edwards, C.G., Rolls, B.J., Masterson, T.D. (2023). Portion size affects food selection in an immersive virtual reality buffet and is related to measured intake in laboratory meals varying in portion size. Appetite 191 (107052). ISSN 0195-6663. doi: 10.1016/j.appet.2023.107052..

60. *Pearce, A. L., **Brick, T. R.** (2023). Validation of Computational Models to Characterize Cumulative Intake Curves from Video-Coded Meals. Frontiers in Nutrition 10:1088053. doi: 10.3389/fnut.2023.1088053.

59. Boker, S. M., von Oertzen, T., Pritikin, J. N., Hunter, M. D., **Brick, T. R.**, Brandmaier, A. M., & Neale, M. C. (2023). Products of Variables in Structural Equation Models. Structural Equation Modeling: A Multidisciplinary Journal, 30(5), 708–718. doi: 10.1080/10705511.2022.2141749.

58. Chow, S-M, Nahum-Shani, I, Baker, J. T, Spruijt-Metz, D, Allen, N. B, Auerbach, R. P., Dunton, G. F., Friedman, N. P., Intille, S., Klasnja, P., Marlin, B., Nock, M. K., Rauch, S. L., Pavel, M., Vrieze, S., Wetter, D.W., Kleiman, E.M., **Brick, T. R.**, Perry, H., Wolff-Hughes, D.L. & Intensive Longitudinal Health Behavior Network (ILHBN). (2023). The Intensive Longitudinal Health Behavior Network (ILHBN): Challenges, opportunities, and solutions from harmonizing data under heterogeneous study designs, target populations, and measurement protocols. Translational Behavioral Medicine. 13(1); 7-16. doi: 10.1093/tbm/ibac069.

57. *Wan, S., **Brick, T. R.**, Alvares-Vargas, D., & Bailey, D. H. (2023). Triangulating on Developmental Models with a Combination of Experimental and Non-Experimental Estimates. Manuscript accepted for publication by Developmental Psychology. 59(2), 216–228. doi: 10.1037/dev0001490.

56. *Ciston, A. B., Forster, C., **Brick, T. R.**, Kühn S., Verrel, J., & Filevich, E. (2022) Do I look like I'm sure?: Partial metacognitive access to the low-level aspects of one's own facial expressions. Cognition. 225; 105-155. doi: 10.1016/j.cognition.2022.105155.

55. *Petrie, D. J., *Knapp, K. S., Freet, C. S., Deneke, E., **Brick, T. R.**, Cleveland, H. H., & Bunce, S. C. (2022). Prefrontal cortical response to natural rewards and self-reported

anhedonia are associated with greater craving among recently withdrawn patients in residential treatment for opioid use disorder. Brain Research Bulletin. 190; 32-41. doi: 10.1016/j.brainresbull.2022.09.012.

54. *Husmann, K., **Brick, T. R.** & DiPerna, J. (2022). Evaluating Measurement of Longitudinal Education Data using the Measurement Model of Derivatives. Journal of School Psychology. 92; 360-375. doi: 10.1016/j.jsp.2022.04.004.

53. *Strayhorn, J. C., Collins, L. M., **Brick, T. R.**, Marchese, S. H., Pfammatter, A. F., Pellegrini, C., & Spring, B. (2022). Using factorial mediation analysis to better understand the effects of interventions. *Translational Behavioral Medicine*, 12(1), ibab137. doi: 10.1093/tbm/ibab137.

52. *Bustamante, D., Arnstadter, A. B., Pritikin, J. N., **Brick, T. R.**, & Neal, M. C. (2022) Associations between Traumatic Stress, Brain Volumes and Post-traumatic Stress Disorder Symptoms in Children: Data from the ABCD Study. *Behavior Genetics* 52(2):75-91. doi: 10.1007/s10519-021-10092-6.

51. Mascherek, A., Weber, S., Riebandt, K., Cassanello, C., Leicht, G., Brick, T., Gallinät, J. & Kühn, A. (2022). On the relation between a green and bright window view and length of hospital stay in affective disorders. European Psychiatry, 1-22. doi: 10.1192/j.eurpsy.2022.9.

50. *Schneider, J. N, Matyjek, M., Weigand, A., Dziobek, I., & **Brick, T. R.** (2022). Subjective and objective difficulty of emotional facial expression perception from dynamic stimuli. *PLoS One* 17(6):e0269156. doi: 10.1371/journal.pone.0269156.

49. *Heshmati, S., **Brick, T. R.**, Roeser, R., Oravecz, Z. (2022). Assessing psychological well-being in early adulthood: Empirical evidence for the structure of daily well-being via network analysis. *Journal of Applied Developmental Science.* doi: 10.1080/10888691.2020.1766356.

48. *Dickens, C.N., *Gray, A.L., *Heshmati, S., Oravecz, Z., & **Brick, T. R.** (2021). Daily Implications of Felt Love for Sleep Quality. The American Journal of Psychology 134(4), 463-477. doi: 10.5406/amerjpsyc.134.4.0463.

47. *Weigand, A., Trilla, I., Enk, L., O'Connell, G., Prehn, K., **Brick, T. R.**, & Dziobek, I. (2021). How Much of Me Do I See in Other Minds? Modulating Egocentricity in Emotion Judgments by tDCS. *Brain Sciences*, 11(4), 512. doi: 10.3390/brainsci11040512.

46. *Pearce, A. L., **Brick, T. R.**, Masterson, T., Adise, S., Fearnbach, S. N., Stein, W., English, L., Tanofsky-Kraff, M., & Keller, K. L. (2021). Using association rules mining to characterize loss of control eating in childhood. *Appetite*, 163, 105236. doi: 10.1016/j.appet.2021.105236.

45. *Knapp, K. S., **Brick, T. R.**, Bunce, S. C., Deneke, E., & Cleveland, H. H. (2021). Daily meaningfulness among patients with opioid use disorder: Examining the role of social experiences during residential treatment and links with post-treatment relapse. *Addictive Behaviors*, 119, 106914. doi: 10.1016/j.addbeh.2021.106914.

44. ⋆Van Doren, N., ⋆Dickens, C. N., ⋆Benson, L., **Brick, T. R.**, Gatzke-Kopp, L., & Oravecz, Z. (2021). Capturing emotion coherence in daily life: Using ambulatory physiology measures and ecological momentary assessments to examine within-person associations and individual differences. *Biological Psychology*, 162, 108074. doi: 10.1016/j.biopsycho.2021.108074.

43. Cleveland, H. H., ⋆Knapp, K. S., **Brick, T. R.**, Russell, M. A., Gajos, J. M., & Bunce, S. C. (2021). Effectiveness and Utility of Mobile Device Assessment of Subjective Craving during Residential Opioid Dependence Treatment. *Substance Use and Misuse*. doi: 10.1080/10826084.2021.1921808..

42. ⋆Tan, S. C., Gamaldo, A. A., **Brick, T. R.**, Thorpe, R. J., Allaire, J. C., & Whitfield, K. E. (2021). Effect of Selective Survival on Black Adults' Cognitive Development. *Journals of Gerontology: Series B*; gbab003. doi: 10.1093/geronb/gbab003.

41. ⋆Schneider, J., **Brick, T.R.**, & Dziobek, I. (2020). Distance to the Neutral Face Predicts Arousal Ratings of Dynamic Facial Expressions in Individuals With and Without Autism Spectrum Disorder. *Frontiers in Psychology (Emotion Science)*. doi: 10.3389/fpsyg.2020.577494.

40. ⋆Knapp, K. S., Bunce, S. C., **Brick, T. R.**, Dekene, E. & Cleveland, H. H. (2021). Daily associations among craving, affect, and social interactions in the lives of patients during residential opioid use disorder treatment. *Psychology of Addictive Behaviors*. doi: 10.1037/adb0000612. [Epub ahead of print].

39. ⋆Shewark, E. A., **Brick, T. R.**, & Buss, K. A. (2020). Capturing the temporal dynamics of fear behaviors on a second by second basis. *Infancy*. 25 (3):doi: 10.1111/infa.12328.

38. **Brick, T. R.**, ⋆⋆Mundie, J., ⋆⋆Weaver, J., Fraleigh, R., & Oravecz, Z. (2020). Wear-IT: Low-burden Mobile Monitoring and Intervention through Real-time Analysis. *Journal of Medical Internet Research (JMIR): Formative Research.* 4(6):e16072. doi: 10.2196/16072.

37. **Brick, T.R.**. & Bailey, D. H. (2020). Rock the MIC: Using the Matrix of Implied Causation to Understand Complex Causal Models. *Advances in Methods and Practices in Psychological Science.* doi: 10.1177/2515245920922775.

36. Hilpert, P., **Brick, T. R.**, Flückiger, C., Vowels, M., Ceuleman, E., Kuppens, P., & Sels, L. (2020). What Can Be Learned From Couple Research: Examining Emotional Co-Regulation Processes in Face-to-Face Interactions. *Journal of Counseling Psychology.* 67(4), 475—487. doi: 10.1037/cou0000416.

35. ⋆Osotsi, A., Oravecz, Z., Li, Q., Smyth, J., & **Brick, T. R.** (2020). Individualized modeling to distinguish between high and low arousal states using physiological data. *Journal of Healthcare Research Informatics.* doi: 10.1007/s41666-019-00064-1.

34. ⋆Jenkins, A. I. C., Fredman, S. J., Le, Y., Sun, X., **Brick, T. R.**, Skinner, O. D., & McHale, S. M. (2020). Prospective associations between depressive symptoms and marital satisfaction in Black couples. *Journal of Family Psychology*, 34, 12–23. doi: 10.1037/fam0000573.

33. Oravecz, Z., Dirsmith, J., Heshmati, S., Vandekerckhove, J. & **Brick, T. R.** (2020). Psychological Well-Being and Personality Traits are Associated with Experiencing Love in Everyday Life. *Journal of Personality and Individual Differences*, 153, 109620. doi: 10.1016/j.paid.2019.109620.

32. *Adams, E., Marini, M. E., **Brick, T.R.**, Paul, I. M., Birch, L., & Savage, J. (2019) Ecological momentary assessment of using food to soothe during infancy in the INSIGHT trial. *International Journal of Behavioral Nutrition and Physical Activity.* 16(1):1-11. doi: 10.1186/s12966-019-0837-y.

31. *Li, Y., Ji, L., Oravecz, Z., **Brick, T. R.**, Hunter, M. D., & Chow, S.-M. (2019). dynr.mi: An R Program for Multiple Imputation in Dynamic Modeling. *International Journal of Computer, Electrical, Automation, Control and Information Engineering*, 13(5), 302–311. doi: 10.5281/zenodo.3298841.

30. Oravecz, Z., & Brick, T. R. (2018). Associations Between Slow- and Fast-Timescale Indicators of Emotional Functioning. *Social Psychological and Personality Science*, 10(7), 864–873. doi: 10.1177/1948550618797128.

29. *Snoke, J., **Brick, T. R.**, Slavković, A., & Hunter, M. D. (2018). Providing Accurate Models Across Private Partitioned Data: Secure Maximum Likelihood Estimation. *Annals of Applied Statistics* 12:2, 877–914. doi: 10.1214/18-AOAS1171.

28. †Pritikin, J., †**Brick, T.R.**, & Neale, M.C. (2018). Multivariate normal maximum likelihood with both ordinal and continuous variables, and data missing at random. *Behavior Research Methods.* 50(2):490. doi: 10.3758/s13428-017-1011-6.
   †Co-first-authors (from the author note: J.P. and T.B. contributed equally.)

27. **Brick, T.R.**, *Gray, A. L., & Staples, A. D. (2018). Recurrence quantification for the analysis of coupled processes in aging. *Journal of Gerontology B: Psychological Sciences/Social Sciences.* 73(1), 134–147. doi: 10.1093/geronb/gbx018.

26. **Brick, T.R.**, *Koffer, R., Gerstorf, D., & Ram, N. (2018). Feature selection methods for optimal design of studies for developmental inquiry. *Journal of Gerontology B: Psychological Sciences/Social Sciences.* 73(1), 113-123. doi: 10.1093/geronb/gbx008.

25. *Brinberg, M., Ram, N., Hülür, G., **Brick, T.R.**, & Gerstorf, D. (2018). Analyzing Dyadic Data Using Grid-Sequence Analysis: Interdyad Differences in Intradyad Dynamics. *The Journals of Gerontology: Series B*, 73(1), 5–18. doi: 10.1093/geronb/gbw160.

24. *Szymanski, C., Müller, V., **Brick, T. R.**, von Oertzen, T., & Lindenberger, U. (2017). Hyper-transcranial alternating current stimulation: Experimental manipulation of inter-brain synchrony. *Frontiers in Human Neuroscience*, 11, 539. doi: 10.3389/fnhum.2017.00539.

23. Perdikis, D., *Volhard, J., Müller, V., Kaulard, K., **Brick, T.R.**, Walraven, C., & Lindenberger, U. (2017). Brain synchronization during perception of facial emotional expressions with natural and unnatural dynamics. *PLoS One.* 12(7):e0181225. doi: 10.1371/journal.pone.0181225.

22. Fredman, S. J., *Le, Y., Marshall, A. D., **Brick, T. R.**, & Feinberg, M. E. (2017). A dyadic perspective on PTSD symptoms' associations with couple functioning and parenting stress in first-time parents. *Couple and Family Psychology: Research and Practice*, 6, 117-132. doi: 10.1037/cfp0000079.

21. *Pritikin, J. N., Hunter, M. D., Oertzen, von, T., **Brick, T. R.**, & Boker, S. M. (2017). Many-Level multilevel Structural Equation Modeling: An efficient evaluation strategy. *Structural Equation Modeling: a Multidisciplinary Journal*, 24(5), 684-698. doi: 10.1080/10705511.2017.1293542.

20. *Szymanski, C., Pesquita, A., Brennan, A. A., Perdikis, D., Enns, J. T., **Brick, T. R.**, Müller, V., & Lindenberger, U. (2017). Teams 'on the same wavelength' perform better: Inter-brain phase synchronization constitutes a neural substrate for social facilitation. *Neuroimage* 152: 425-436.doi: 10.1016/j.neuroimage.2017.03.013.

19. *Bezawada, S., Hu, Q., Gray, A., **Brick, T. R.**, & Tucker, C.. (2016). Automatic facial feature extraction for predicting designers' comfort with engineering equipment during prototype creation. *Journal of Mechanical Design*. doi: 10.1115/1.4035428.

18. *Hu, Q., Bezawada, S.*, Gray, A.*, **Brick, T. R.**, & Tucker, C. (2016). Exploring the link between task complexity and students' affective states during engineering laboratory activities. *Proceedings of the ASME 2016 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE 2016)*. doi: 10.1115/DETC2016-59757.

17. *Snoke, J., **Brick, T. R.**, & Slavković, A. (2016). Accurate estimation of Structural Equation Models with remote partitioned data. In Domingo-Ferrer, J., & Pejić-Bach, M. *Privacy in Statistical Databases: UNESCO Chair in Data Privacy, International Conference, PSD 2016, Dubrovnik, Croatia, September 14–16, 2016, Proceedings.* (pp. 109-209) doi: 10.1007/978-3-319-45381-1_15.

16. *Doub, A.E., Small, M. L., Levin, A., & LeVangie, K., **Brick, T. R.** (2016). Identifying users of traditional and Internet-based resources for meal ideas: An association rule learning approach. *Appetite*, 103:128–136. doi: 10.1016/j.appet.2016.04.006.

15. Ram, N., *Benson, L., **Brick, T. R.**, Conroy, D. E., & Pincus, A. L. (2016). Behavioral landscapes and earth mover's distance: A new approach for studying individual differences in density distributions. *Journal of Research in Personality*. Available online 6 June 2016. doi: 10.1016/j.jrp.2016.06.010.

14. Boker, S. M., **Brick, T. R.**, von Oertzen, T., Estabrook, R., Pritikin, J. N., Hunter, M. D., Maes, H.H., & Neale, M. C. (2015). Maintained individual data distributed likelihood estimation (MIDDLE). *Multivariate Behavioral Research*, 50(6), 706–720. doi: 10.1080/00273171.2015.1094387.

13. *Filevich, E., Dresler, M., **Brick, T.R.**, & Kühn, S. (2015). Metacognitive mechanisms underlying lucid dreaming. *Journal of Neuroscience*. 35(3), 1082–8. doi: 10.1523/JNEUROSCI.3342-14.2015.

12. Neale, M. C., Hunter, M. D., Pritikin, J., Zahery, M., **Brick, T. R.**, Kirkpatrick, R. M., Estabrook, R., Bates, T. C., Maes, H. H., & Boker, S.M. (2015). OpenMx 2.0: Extended structural equation and statistical modeling. *Psychometrika*. doi: 10.1007/s11336-014-9435-8.

11. Kühn, S., **Brick, T. R.**, Müller, B. C. N., & Gallinat, J. (2014). Is this car looking at you? How anthropomorphism predicts fusiform face area activation when seeing cars. *PLoS ONE*, 9(12): e113885. doi: 10.1371/journal.pone.0113885.

10. von Oertzen, T., & **Brick, T. R.** (2014). Efficient hessian computation using sparse matrix derivatives in RAM notation. 46(2), 385–95 *Behavior Research Methods*. doi: 10.3758/s13428-013-0384-4.

9. **Brick, T. R.**, & Boker, S. M. (2011). Correlational methods for analysis of dance movements. *Dance Research*, 29(2), 283-–304. doi: 10.3366/drs.2011.0021.

8. Boker, S., Neale M., Maes, H., Wilde, M., Spiegel, M., **Brick, T.**, Spies, J., Estabrook, R., Kenny, S., Bates, T., Mehta, P, & Fox J. (2011). OpenMx: An Open Source Extended Structural Equation Modeling Framework. *Psychometrika*. doi: 10.1007/s11336-010-9200-6.

7. Boker, S., Cohn, J., Theobald, B., Matthews, I., Mangini, M., Spies, J., Ambadar, Z. & **Brick, T.** (2011) Something in the way we move: Motion dynamics, not perceived sex, influence head movements in conversation. *Journal of Experimental Psychology: Human Perception & Performance*. 37(2), 631—640. doi: 10.1037/a0021928.

6. **Brick, T. R.**, Hunter, M. D., & Cohn, J. (2009). Get the FACS Fast: Automated FACS face analysis benefits from the addition of velocity. *Proceedings of the 2009 International Conference on Affective Computing & Intelligent Interactions (ACII 2009)*. doi: 10.1109/ACII.2009.5349600.

5. Boker, S., Cohn, J., Theobald, B., Matthews, I., **Brick, T.**, & Spies, J. (2009) Effects of damping facial expression in dyadic conversation using real–time facial expression tracking and synthesized avatars. *Philosophical Transactions of the Royal Society B*, 364(1535). doi: 10.1098/rstb.2009.0152.

4. **Brick, T. R.**, Spies, J. R., Theobald, B.-J., Matthews, I. & Boker, S. M. (2009). High-presence, low-bandwidth, apparent 3d video-conferencing with a single camera. *Proceedings of the 10th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS 2009)*. doi: 10.1109/WIAMIS.2009.5031494.

3. Theobald, B., Matthews, I., Mangini, M., Spies, J., **Brick, T.**, Cohn, J. F. & Boker, S. (2009) Mapping and manipulating facial expression. *Journal of Language and Speech*, 52(2/3), 369–386. doi: 10.1177/0023830909103181.

2. **Brick, T. R.**, Schermerhorn, P.W., & Scheutz, M. (2007). Speech and action: Integration of action and language for mobile robots. *Proceedings of the 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2007)*, 1423–1428. doi: 10.1109/IROS.2007.4399576.

1. **Brick, T.**, & Scheutz, M. (2007). Incremental natural language processing for HRI. *Proceedings of the Second ACM IEEE International Conference on Human-Robot Interaction (HRI 2007).* doi: 10.1145/1228716.1228752.

Total Peer Reviewed Publications: 81

Chapters in Books and Edited Collections

5. Hepworth, A. D., Small, M. L., **Brick, T. R.** (2025). Parents' Information Seeking and Use Regarding Infant and Toddler Nutrition Topics: A Conceptual Model and Empirical Example of Information Behavior. In: Welch, G., Harrist, A.W., Hall, H. (eds) Stress, Resilience, and Healthy Relationships with Food and Family. Emerging Issues in Family and Individual Resilience. Springer, Cham. doi: $10.1007/978\text{-}3\text{-}031\text{-}98937\text{-}7_3$. [Epub ahead of print].

4. Brick, T. R. Adaptive Design for Studies of Human Development In Douglas M. Teti, Hobart Harrington Cleveland, Kelly L Rulison (Eds.), Handbook of Research Methods in Developmental Science. (2nd) . Wiley. [In press]. ISBN/ISSN: 9781119880820.

3. Cleveland, H. H., **Brick, T. R.**, Knapp, K. S., & Croff, J. M. (2021). Recovery and Recovery Capital: Aligning Measurement with Theory and Practice. In Croff, J. M. & Beaman, J. (Eds). *Family Resilience and Recovery from Opioids and Other Addictions.*(pp.). Springer Nature Switzerland. ISBN 978-3-030-56957-0. ISBN 978-3-030-56958-7 (eBook). doi: 10.1007/978-3-030-56958-7.

2. **Brick, T. R.**, Prindle, J. J. (2017). Time-series Analysis. In Hopkins, B., Geangu, E., & Linkenauger, S. (Eds.) *The Cambridge Encyclopedia of Child Development, Second Edition.* New York, NY: Cambridge University Press. doi: 10.1017/9781316216491.

1. Mårtensson, J., Eriksson, J., **Brick, T.**, Bodammer, N., Lindgren, M., Johansson, M., Nyberg, L., & Lövdén, M. (2014). Proficiency and brain structure during intense language learning. In Horne, M., Lindgren, M., Nilsson, M., Roll, M., Shtyrov, Y., Ståhlberg, F., & Topgaard, D., (Eds.) *Microstructures of Learning: Novel methods and approaches for assessing structural and functional changes underlying knowledge acquisition in the brain.* (pp 17-20). Frontiers Media SA. ISBN 978-2-88919-480-3.

Total Chapters In Books And Edited Collections: 5

Software Publications

8. **Mundie, J., **Weaver, J., Oravecz, Z., & **Brick, T.R.** (2019). *Wear-IT* smartphone app. Low-burden active and passive data collection application for context-sensitive, individually-tailored, responsive analysis, assessment, and intervention in real time. Demo available. Role: Project lead, primary author, supervised of staff developers.

7. **Brick, T. R.**, & Jacobucci, R. (2019). mxregsem. Software for regularization for eXtended SEM, e.g. multigroup and timeseries models and missingness. Available at `https://github.com/trbrick/mxregsem`. Role: Primary author and developer.

6. **Brick, T. R.** & Bailey, D. H. (2019). MICr: Matrices of Implied Causation (MICs) for Structural Equation Models. Available at `https://github.com/trbrick/MICr`. Role: Primary author and developer.

5. *Husmann, K., & **Brick, T. R.** (2019). mxmmod: Measurement Model of Derivatives in OpenMx. Available at `https://github.com/khusmann/mxmmod`. Role: Co-author and co-designer, supervised student programmer.

4. *Schneider, J. & **Brick, T. R.**. (2018). plsR: An R package for PLS analysis. Available at CRAN or `https://github.com/jschn/plsr`. Role: Designer, supervised student programmer, co-author.

3. Neale, M. C., Hunter, M. D., Pritikin, J., Zahery, M., **Brick, T. R.**, Kirkpatrick, R. M., Estabrook, R., Bates, T. C., Maes, H. H., and Boker, S. M. (2014). *OpenMx: Extended Structural Equation Modeling Framework (Latest Version 2.0)*. Available at `http://openmx.ssri.psu.edu/`. Role: Primary developer, computational kernel.

2. **Brick, T. R.**, Braun, J.*, Harrill, C., & Yu, M. (2013) "Face Modeling GUI, Version 0.2β." Software for facial expression analysis and stimulus synthesis. Additional contributor J.R. Spies. Available upon request. Role: Primary developer, supervised of student co-developers.

1. **Brick, T. R.** (2007) "TIDE: Timing-sensitive Incremental Discourse Engine." A module for incremental discourse understanding and generation for the DIARC Robotic Architecture. Paper available from `http://timbrick.net/papers/Brick-2007-IROS.pdf`. Role: Primary author and developer.

Total Software Publications: 8

PATENTS

3. US Provisional Patent Application. Witmer, K.M., **Brick, T. R.**. (2025) Idiolectic Models for Diagnostics: A Novel Approach to Understanding Semantic Relationships in Clinical Populations.

2. US Patent Application Ser. No. 17/608,066. [**Brick, T.R.**, Mundie, J., & Oravecz, Z. (2022). Automatic Delivery of Personalized Messages.]

1. Boker, S. M., **Brick, T. R.**, & Spies, J. R. (2015). "System and method for low bandwidth image transmission." *U.S. Patent No. 9030486 B2.* Washington, DC: USPTO.

Total Patents And Provisional Patents: 3

MEDIA MENTIONS

10. Khullar, D. (2025). Can Ozempic Cure Addiction?
    `https://www.newyorker.com/magazine/2026/02/16/can-ozempic-cure-addiction`. The
    New Yorker.

9. Verry, J. F. (2023). Penn State research team receives NIH grant to study HIV treatment
   messaging. `https://www.psu.edu/news/bellisario-college-communications/story/`
   `penn-state-research-team-receives-nih-grant-study-hiv/`. Penn State official news
   release.

8. Swayne, M. (2021, October 27). Researchers use mobile tech, forge partnerships to study
   home literacy efforts. `https://www.icds.psu.edu/`
   `researchers-use-mobile-tech-forge-partnerships-to-study-home-literacy-efforts/`.
   Penn State official news release. Also picked up by Phys.org and others.

7. Dolan, Eric. (2020, June 19). New study highlights important links between depressive
   symptoms, Black identity and marital satisfaction in African-American couples. Psypost.org.
   `https://www.psypost.org/2020/06/new-study-highlights-important-links`. Popular
   science news website discussing the results of the article *Prospective associations between
   depressive symptoms and marital satisfaction in Black couples*, published in Journal of
   Family Psychology.

6. Swayne, M. (2019, November 25). *All the feels: Feeling loved in everyday life linked with
   improved well-being.* Penn State News.
   `https://news.psu.edu/story/599763/2019/11/25/research/`
   `all-feels-feeling-loved-everyday-life-linked-improved-well-being`. Penn State
   official news release regarding our article *Associations Between Slow- and Fast-Timescale
   Indicators of Emotional Functioning.* Also picked up by Science Daily and others.

5. Baker, N. (2019, November 26). Science Says Experiencing Love in Everyday Life Improves
   Your Mental Well-Being. `https://www.marthastewart.com`MarthaStewart.com. `https:`
   `//www.marthastewart.com/2224466/everyday-love-improves-mental-well-being`.
   Martha Stewart dot com's take on the article *Associations Between Slow- and
   Fast-Timescale Indicators of Emotional Functioning.*

4. Harney, S. (2018, March 1). Penn State researchers developing startup to help those
   recovering from addiction. Daily Collegian. Retrieved from
   `https://www.collegian.psu.edu/news/campus/`
   `penn-state-researchers-developing-startup-to-help-those-recovering-from-addiction/`
   `article_206eba1e-1cdd-11e8-8701-6b9828f62878.html`.

3. Wertz, P. K. (2015, September 16). NSF grant allows researchers to explore use of co-robots
   in teaching. Penn State News. `http://news.psu.edu/story/370235/2015/09/16/`
   `research/nsf-grant-allows-researchers-explore-use-co-robots-teaching`. Penn
   State News posting of a research grant on co-robotics, associated with several papers.

2. Jacobs, K. (2015, June 08). New system allows researchers to conduct studies while
   participants keep privacy. Penn State News.

`http://news.psu.edu/story/359800/2015/06/08/research/`
`new-system-allows-researchers-conduct-studies-while-participants`. Penn State News reporting of early work on the MIDDLE project. Also picked up by phys.org and others.

1. NBC29 News [Television program and video file](2010). Local newscast reporting on the Avatar Project. `http://www.nbc29.com/global/Category.asp?C=175568&clipId=` `4563545&topVideoCatNo=82958&autoStart=true`; retrieved February 22, 2010.

Total Popular Media Mentions: 10

External Funding

16. **Comparing Child Eating Patterns in Controlled and Home Environments**. PI: Pearce. Fudned by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD; 1 R03 HD115728). 09/11/2025-08/31/2027. Award Amount: $157,300. Role: Co-I. This project uses smartphone-based photo and videorecording tools along with analytical AI tools to examine how characteristics of home eating environment influence *meal microstructure*–characteristics like bite rate and changes in rate of cumulative intake–and other obesogenic factors. My role is in charge of data collection technology and machine-learning in analysis.

15. **UG3/UH3:Use of a GLP-1 Agonist to Treat Opioid Use Disorder in Rats and Man**. PIs: Grigson, Brick, Bunce, Nyland. Funded by the National Institute on Drug Abuse (NIDA; 1 UH3 DA050325). 06/01/2025 to 05/31/2028. Award Amount: $12,469,800. The major goals of this project are to evaluate a GLP-1 agonist for craving in patients undergoing medically assisted recovery from Opioid Use Disorder, and to examine the associated mechanisms of craving, sleep, hunger, and stress in real time in residential and outpatient treatment. Role: Co-I in charge of ambulatory data collection and modeling of sleep, craving, stress and reactivity in both residential and outpatient settings.

14. **Investigation of Digital Media Use, Anxiety, and Biobehavioral Emotion Regulation in Adolescents.** PI: Myruski. Funded by the National Institute of Mental Health (NIMH;1R01MH) Role: Co-I, Study Design and Data Analysis. Using smartphones and ecological momentary assessment to examine the effects of use time of various digital media (e.g. social media) on emotional characteristics like anxiety and biobehavioral regulation.

13. **Enhancing Engagement with Online Health Messaging about Oral and Injectable PrEP Among Young-Adult MSM** (1R21MH133487). PI: Skurka. Role: Co-I, design and quantitative analysis. Funded by the National Institute of Mental Health. 07/2023-06/2025. Award amount: $442,749. This project examines the way that men who have sex with me engage with online information about Preventative Emergency Prophylaxis for HIV prevention, including new forms like injectable PrEP. My role is as data analyst integrating data from eye-tracking, web behavior modeling, and self-report data.

12. **Family supportive communication and depression during early to middle adolescence: a technology-enhanced naturalistic observational study** PI: Brick. Funded by the National Institute of Mental Health (1 R21 MH125046-01A1). 04/2022-03/2025. Award Amount: $418,344. This project uses mobile sensing and real-time adaptivity to examine supportive communication between parents and adolescents, with a focus on clinical depression. Role: Co-I and designer/ of the innovative mobile prompting system, which delivers smartphone surveys after parent-child interactions and cues videorecording during in-car conversation opportunities.

11. **Piloting the use of daily diary surveys to evaluate how recovery community centers support members' recovery wellbeing**. PI: Cleveland. Sub-grant from NIDA grant (R24DA051988; PI Kelly). Sub-grant Award Amount: $30,000. 01/2022-04/2023. This project uses smartphone-prompted surveys to examine the influences on recovery for participants involved in a recovery community center (RCC). RCCs are an alternative pathway to inpatient treatment ("rehab") centers. Role: Co-I in charge of technology and data collection.

10. **Mechanisms of Adherence to Light Intensity Physical Activity to Prevent Alzheimer's Disease and Related Dementias** PI: Hakun. Funded by National Institute on Aging (1 R61 AG078084-01). 09/2022-08/2023. Award Amount: $363,448. This project examines participants' use of step-tracking tools as a means of understanding adherence to physical activity interventions in older adults. Role: Co-I advising data collection and wearable technology tools.

9. **UG3:Use of a GLP-1 Agonist to Treat Opioid Use Disorder in Rats and Man**. PIs: Grigson, Brick, Bunce, Nyland. Funded by the National Institute on Drug Abuse (NIDA; 1 UG3 DA050325-01). 06/01/2019 to 05/31/2024. Award Amount: $5,513,509. The major goals of this project are to evaluate a GLP-1 agonist for craving in patients undergoing medically assisted recovery from Opioid Use Disorder, and to examine the associated mechanisms of craving, sleep, hunger, and stress in real time in residential and outpatient treatment. Role: Co-I in charge of ambulatory data collection and modeling of sleep, craving, stress and reactivity in both residential and outpatient settings.

8. **Polysomnography Assessment During GLP-1R Agonist Treatment of Opioid Use Disorder**) PI: Krishnamurthy. Funded by the National Institute for Drug Abuse. Supplemental study to add sleep studies to 1 UG3 DA050325-01.

7. **R01: The Fragile Families Sleep Sub-Study: Longitudinal behavioral, sociodemographic and contextual predictors of young adult sleep health and well being**. PI: Hale. Funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (2R01HD073352 - 06A1). 7/1/2019-6/30/2024. Award Amount: $1,700,335. The major goals of this project are: To test whether sleep health trajectories are associated with disparities in physical health, social-emotional health, and socioeconomic wellbeing. Role: Co-I in charge of EMA/wearable data collection and analysis; Grant Co-author.

6. **R01: Investigating Sleep and Circadian-Dependent Mechanisms Contributing to Response to Buprenorphine MAT in the Human Laboratory and Natural Environment with Dual Orexin Antagonist Suvorexant**, PI: Krishnamurthy. Funded by the National Institute on Drug Abuse (NIDA). 09/01/2016 to 08/31/2019. Award Amount: $2,622,439. Role: Invited after project start to take charge of data collection and modeling of sleep, stress, and recovery.

5. **IGE: Individualized Pathways and Resources to Adaptive Control Theory-Inspired Scientific Education (iPRACTISE)**, PI: Chow. Funded by the National Science Foundation (DGE-1806874); September 1, 2018–August 31, 2021. PI: Sy-Miin Chow. Award Amount:$490,804. Role: Co-I, Grant Co-author.

4. **The Center for Innovation in Intensive Longitudinal Studies (CIILS)**. Funded by the National Institute on Alcohol Abuse and Alcoholism (1 U24 AA027684-01). September 20, 2018–August 31, 2022. PI: Sy-Miin Chow. Award Amount: $1,835,411. Role: Co-I in charge of data harmonization, Grant Co-author.

3. **STINT: Brain change and knowledge acquisistion during 2015-2018 university studies of math or language**, Funded by the Swedish Foundation for International Cooperation in Research and Higher Education (STINT); 2015-2018. PI: Johan Mårtensson. Award Amount: $35,000. Role: Co-I, Grant Co-author.

2. **NSF NRI: Observation, Inference and Intervention: An Adaptive Co-robot System that Provides Individually Customized Performance Feedback Based on Students' Affective States** PI: Conrad Tucker. Co-PI: Timothy R. Brick. Funded by the National Science Foundation National Robotics Institute (NRI-1527148); September 1, 2015–August 31, 2018. Award Amount: $342,574.00. Role: Co-PI, Grant Co-author.

1. **BMBF: Vom Emotionsmodell zum adaptiven Lernen: Emotionssensitive Systeme zum Training sozialer Kognition (EMOTISK) [From emotional modeling to adaptive learning: An Emotion-sensitive System for Training Social Cognition (EMOTISK)]**. Funded by the German Ministry for Education and Research (BMBF); April 1, 2015–March 31, 2018. PI: Isabel Dziobek. Award Amount: $1,280,720. Role: Co-I, Grant Co-author.

Total External Funding Sources: 16

Editorial Responsibilities

Associate Editor Quantitative Methods for the Behavioral Sciences (QCMB). 2019-present.

Editorial Board Journal of Gerontology: Psychological Sciences. 2019-present.

Editorial Board Multivariate Behavioral Research. 2020-present.

Review Editor Frontiers in Quantitative Psychology and Measurement. 2017-present.

Grant Reviewer - Federal NSF Graduate Research Fellowship Program;

Grant Reviewer - Outside University NIH Clinical and Translational Science Institute (University of Buffalo); Research Council KU Leuven; Research Foundation - Flanders

Ad Hoc Reviewer Psychological Methods, Behavior Research Methods, Perception, Current Psychology, Experimental Gerontology, Journal of Gerontology: Psychological Sciences, Journal of Child and Family Studies, Journal of the Royal Society-Interface, Frontiers in Psychology, Journal of Applied Developmental Science, Frontiers in Neuroscience, Journal of Consulting and Clinical Psychology, Aging Neuropsychology and Cognition, Dance Research Electronic, IEEE Transactions on Affective Computing, European Journal of Personality, Topics in Cognitive Science (TopiCS), Applied Perception in Graphics and Visualization (APGV), International Conference on Affective Computing & Intelligent Interactions (ACII), International Conference on Intelligent Robots and Systems (IROS), International Conference on Robotics and Automation (ICRA) International Symposium on Robot and Human Interactive Communication (ROMAN), Human Technology Journal, Symmetry. Student Session for the Annual Meeting of the Society for Multivariate Experimental Psychology (SMEP).

INTERNATIONAL AND DOMESTIC INVITED TALKS AND PANEL DISCUSSIONS

15. **Brick, T. R.** (2025). "Multilevel Statistical Inference from Machine Learning Tools using Surrogate Data Analysis". Part of the Invited Symposium on Machine Learning Approaches for Modeling Intensive Longitudinal Data. Presented at the 2025 Annual Convention of the Association for Psychological Science (APS 2025). Washington, D.C., USA; May 24, 2025.

14. **Brick, T. R.** (2025). "Adaptive Design for Observational and Experimental Studies: An Overview". Delivered as part of the Biostatistics, Epidemiology, and Research Design series. National audience. University Park, PA, USA.

13. **Brick, T. R.** (2024). "Deep Data: Emerging Approaches using Deep Learning for Data Transformation". Delivered to the Lifespan Development center at the Max Planck Institute for Human Development. Berlin, Berlin, Germany.

12. **Brick, T. R.**(2020). SoDA 502: Social Data Analytics Seminar, "Feeling, Fast and Slow and in my own way." Local invited guest lecture.

11. **Brick, T. R.** (2019). Net Effect: How does thinking in networks change the way we understand and measure emotion? Or: Towards a Network Model of Emotion and Regulation. Presented to the University of Southern California's Quantitative Methods series. Los Angeles, CA; March 25, 2019.

10. **Brick, T. R.** (2018). Finding What Matters: Sequence Learning and Feature Selection for Real-time Science. Presented to the Psychologisch Instituut, KU Leuven. Leuven, Belgium; Sept. 20, 2018.

9. **Brick, T. R.** (2018) "Data Mining and Precision in Theory (Or: Rethinking Confirmatory Analysis)". Presented talk as part of the Advanced Methods at Purdue (AMAP 2018) interdisciplinary scientific planning group. West Lafayette, IN, USA; October 29, 2018.

8. **Brick, T. R.** (2017). Towards Science in Real Time: Machine Learning and Image Processing for Behavioral Science. Presented to the Lund University Department of Psychology, Cognitive Psychology Group. Lund, Sweden; May 12, 2017.

7. **Brick, T. R.** (2017). Faces and Factors: Computer vision and Data reduction in the Behavioral Science. Presented to the Humanities Laboratory at the Centre for Languages and Literature, Lund University. Lund, Sweden; May 16, 2017.

6. **Brick, T. R.** (2016). Dynamical Systems Theory. Presented to the LIFE Academy Methods Series. Berlin, Germany; December 15, 2016.

5. **Brick, T. R.** (2016). Towards continual prediction: Personalized selection of features in longitudinal and timeseries data. Presented to the conference COGITO: Ten Years Later. Berlin, Germany; October 5–7, 2016.

4. **Brick, T. R.** (2016). Driving the dynamics: Simulations to assist real time modeling. Presented to the Dynamical Systems Modeling Expert Meeting. Aberdeen, Scotland, UK; August 08–09, 2016.

3. **Brick, T. R.** (2015) Dynamical Systems and Emotional Interaction. Presented at the 2015 meeting of the Animal Behavior Society. Anchorage, AK, USA; June 13, 2015.

2. **Brick, T. R.** (2012) In Your Face: What Face-tracking and Avatars Can Do For Psychology. Presented at the *Affective Neuroscience and Psychology of Emotion*; Berlin, Germany; May 5, 2013.

1. **Brick, T. R.** (2013) Face Reading and Interactive Responses. Presented to the Frauenhofer Institute; Berlin, Germany; August 20, 2013.

Total Invited Talks: 15

WORKSHOPS

Brick, T. R. (2024). "An Introduction to Text Mining for Scientific Inquiry," Biostatistics, Epidemiology and Research Design, CTSI, University Park, PA; May 7, 2024. Invited. National. Role: Sole Faculty.

Brick, T. R., & Boker, S. (UVa). (2024). "Regularization and Feature Selection," Part of the OpenMx International Master Class, VCU, Richmond, VA, USA; November 16, 2024. Invited.

Brick, T. R., & Neale, M. (VCU). (2024). "Mixtures and Regime Shifts," Part of the OpenMx International Master Class, VCU, Richmond, VA, USA; November 15, 2024. Invited.

Kirkpatrick, R. (VCU), & **Brick, T. R.** (2024). "Philosophy of OpenMx," Part of the OpenMx International Master Class, VCU, Richmond, VA, US; November 14, 2024. Invited.

"Rethinking Time and Variability. Or: What's wrong with all the models we've talked about". Part of the 2017 Advanced Genetic Epidemiology Statistical Workshop. Richmond, VA, USA; October 23-27, 2017. Role: Faculty.

"Data Heterogeneity and a few ways to look for it (including latent class analysis and SEM Trees" and "Optimization: A Primer". Part of the 2015 Advanced Genetic Epidemiology Statistical Workshop. Richmond, VA, USA; October 26-30, 2015. Role: Faculty.

"Time and Variability: An Introduction to Intraindividual Variability and Dynamical Systems Analysis." Part of the "It's About Time" workshop at the 2015 meeting of the Animal Behavior Society. Anchorage, AK, USA; June 10, 2015. Role: Faculty.

Workshop: "Introduction to Structural Equation Modeling". Max Planck Institute for Human Development, Berlin. April 26, 2013. Role: Faculty, organizer.

Workshop: "Structural Equation Modeling". Freie Universität, Berlin. March 14–15, 2013. Role: Faculty, co-organizer.

Workshop: "2nd Annual INAPIC Fall Workshop: Longitudinal Methods to Analyze Brain-Behavior Relationships". Zurich, Switzerland; August 2012. Role: Faculty.

Workshop: "1st Annual INAPIC Fall Workshop: New methods for conceptualizing, analyzing, and visualizing dyadic data within and across persons". International Normal Aging and Plasticity Imaging Center (INAPIC). Zurich, Switzerland; August 2011. Role: Faculty.

2010 International Workshop on Statistical Genetics and Methodology of Twin and Family Studies. Boulder, CO; March 2010. Role: Faculty.

"Introduction to LATEX". Seminar on LATEX typesetting system. Charlottesville, VA. 2007 and 2008. Role: Instructor and Organizer.

CONFERENCE TALKS, POSTERS, DEMOS, AND PUBLISHED ABSTRACTS

Underline indicates presenter/copresenter other than first author.
⋆indicates graduate students.

63. Paul, P.⋆, **Brick, T. R.**, & Brandmaier, A. M. (2025). Analyzing Robustness of Boruta Feature Selection in a Univariate Framework [POSTER]. Poster presented at the 2025 Annual Convention of the Association for Psychological Science (APS 2025). Washington, D.C., USA; May 25, 2025.

62. Paul, P.⋆, **Brick, T. R.**, & Brandmaier, A. M. (2025). Analyzing Effectiveness of SEM-Boruta in Ambulatory Assessment. Presented at the 2025 Annual meeting of the Society for Ambulatory Assessment. Lueven, Belgium. May 26, 2025.

61. Paul, P.⋆, **Brick, T. R.**, & Brandmaier, A. M. (2025). Unpacking Heterogeneity in a Multivariate and Longitudinal Framework: Structural Equation Models with Boruta Feature Selection. Presented at the 2025 Annual Convention of the Association for Psychological Science (APS 2025). Washington, D.C., USA; May 22, 2025.

60. Kile, E. O.⋆, **Brick, T. R.** (2025). Improving Ambulatory Assessment: Data Quality, Participant Perspectives, and Innovative Tool. Presented at the 2025 Annual meeting of the Society for Ambulatory Assessment. Lueven, Belgium. May 28, 2025.

59. **Brick, T. R.** (organizer and chair), ⋆Paul, P., Hunter, M., Park, J., & Fisher, Z. (2024). "Symposium: Heterogeneity in repeated measures data". Chaired symposium at the International Meeting of the Psychometric Society. Prague, Czech Republic; July 16, 2024.

58. ⋆van Doren, N., ⋆Dickens., C. N., Benson, L., **Brick, T. R.**, & Kopp, L. (expected Mar. 2022). The Adaptive Value of Emotion Coherence: Examining Individual Differences and Risks for Psychopathology. Presented to the Society for Affective Science. Virutal; March 20-April 2, 2022.

57. **Brick, T. R.** (2021). Burden and Bias in Adaptive Sampling: Simulating Some Strategies. Presented at the Symposium on Psychological Measurement in Experience Sampling Methods at the 2021 Meeting of the Society for Ambulatory Assessment. Zürich, Switzerland; June 20, 2021.

56. Shewark, E. A., **Brick, T. R.**, & Buss, K.A.,(2021). The continuous dimensions of fear reactivity and regulation. In Shewark, E.A. (chair): Using intensive longitudinal approaches to understand child development. Annual meeting of the Society for Research in Child Development (SRCD), Virtual (due to COVID-19 pandemic).

55. ⋆Knapp, K. S., Cleveland, H., **Brick, T. R.**, & Bunce, S. C. (2019). [ABSTRACT] Exploring daily processes of addiction: Associations between social experiences and craving among opioid addicts in treatment. *Annals of Behavioral Medicine.* (53), (pp. S398–S398).

54. **Brick, T. R.** (2019). Sequence Mining for Complex Pattern Finding. Part of Symposium: Interest Group Session—Measurement, Statistics, and Research Design: Analysis of Developmental and Complex Systems: Understanding the Dynamics of Aging. Presented at the *2019 meeting of the Gerontological Society of America (GSA 2019).* Austin, TX; November 13-17, 2019

53. **Brick, T. R.** (2019). Lowering burden in ecological momentary assessment: Measurement approaches and real-time methods. Presented at the *6th Biennial Conference of the Society for Ambulatory Assessment (SAA 2019).* Syracuse, NY; June 19-22, 2019.

52. ⋆Knapp, Kyler, Cleveland, H. H., **Brick, T. R.**, & Bunce, S. C. (2019). Having purpose during recovery: Are daily fluctuations in affect and social experiences associated with

eudaimonic wellbeing during opioid treatment?. Presented at the *6th Biennial Conference of the Society for Ambulatory Assessment (SAA 2019)*. Syracuse, NY; June 19-22, 2019.

51. *Hepworth, A. D., **Brick, T. R.**, Small, M. (2019). [ABSTRACT] Exploring Parents' Satisfaction with Infant and Toddler Feeding Information: A Repeated-Measures Analysis of Information Need and Acquisition Characteristics (P17-006-19). *Current Developments in Nutrition.* 3(Supplement_1), nzz038.P17-006-19. Paper presented at the *American Society for Nutrition (ASN1029)*. Baltimore, MD; June 8-11, 2019. doi: 10.1093/cdn/nzz038.P17-006-19.

50. *Hepworth, A. D., Small, M. L., **Brick, T. R.** (2019). Classifying parents' behavioral application of information about infant and toddler feeding using decision tree modeling. Poster presented at the *2019 Biennial meeting of the Society for Research in Child Development (SRCD 2019)*, Baltimore, MD; March 21–23, 2019.

49. *Shewark, E., **Brick, T. R.**, Buss, K. (2019). Capturing Temporal Dynamics of Fear Behaviors on a Second by Second Basis. Presented at the *2019 Biennial meeting of the Society for Research in Child Development (SRCD 2019)*, Baltimore, MD; March 21–23, 2019.

48. Enk, L., O'Connel, G., Prehn, K., Domke, J., **Brick, T. R**, Dziobek, I., Wiegand, A. (2018). How much of me do I see in you: Neural correlates of self-other distinction in the affective domain. Poster presented at the *11th Scientific Meeting for Autism Spectrum Conditions.* Frankfurt am Main, Germany; March 15–16, 2018.

47. Filevich, E., **Brick, T. R.**, Kühn, S., & Verrel, J. (2017). Metacognition of movement: the case of facial expressions. Presented to the *Association for the Scientific Study of Consciousness (ASSC21)*, Beijing, China.

46. *Hepworth, A. D., Small, M. L., **Brick, T. R.** (2017). A new conceptual model of information seeking and use can inform obesity prevention and treatment. Poster presented at the annual meeting of the Obesity Society: Obesity Week 2017, Washington, DC; November, 2017.

45. **Brick, T. R.** (2017). Selection of measurement types and times for real-time dynamical modeling. Presented at the Dynamical Systems Experts Meeting as part of the *5th Biennial Conference of the Society for Ambulatory Assessment (SAA 2017)*. Belval, Luxembourg; June 15–17, 2017.

44. **Brick, T. R.** (2017). Data mining approaches for the dynamics of well-being. Presented at the Workshop on Models and Methods to Study Psychological Well-Being as part of the *29th Annual Convention of the Association for Psychological Science (APS 2017)*. Boston, MA, USA; May 25–28, 2017.

43. *Shewark, E., **Brick, T. R.**, Buss, K. (2017). Capturing Temporal Dynamics of Fear Behaviors on a Second by Second Basis. Presented to the *2017 Biennial meeting of the Society for Research in Child Development (SRCD 2017)*. Austin, TX, USA; April 6–8, 2017.

42. **Brick, T. R.**, & Tucker, C. (2016) Real Time Observation, Inference and Intervention of Co-robot Systems: Towards Individually Customized Performance Feedback Based on Students' Affective States. Presented to the *National Robotics Initiative Principal Investigators meeting (NRI-PI 2016)*. Washington, DC, USA; November 29–30, 2016. Included talk and robotics demonstration.

41. **Brick, T.R.**, Koffer, R.⋆, Gray, A.⋆, Gerstorf, D. & Ram, N. (2016). Finding the Right Variables, Study Design, and Theory Using Feature Selection Methods. Presented to the *Meeting of the Gerontological Society of America (GSA 2016)*. New Orleans, LA, US; November 17–20, 2016.

40. ⋆Brinberg, M., **Brick, T.R.**, Hülür, G., Gerstorf, D. & Ram, N. (2016). Dyadic Analysis Using Grid Sequence Methods: Inter-Dyad Differences in Intra-Dyad Dynamics. Presented to the *Meeting of the Gerontological Society of America (GSA 2016)*. New Orleans, LA, US; November 17–20, 2016. C

39. **Brick, T. R.** (2016). Dynamic adaptation and re-adaptation: Modeling minute-to-minute changes in rapport. Presented to the *28th Annual Convention of the Association for Psychological Science (APS 2016)*. Chicago, IL, US; May 26–29, 2016.

38. **Brick, T. R.** (2016). Event-contingent Assessment and Model-based Missingness. Presented to the *28th Annual Convention of the Association for Psychological Science (APS 2016)*. Chicago, IL, US; May 26–29, 2016.

37. ⋆Hepworth, A. D., Small, M. L., Birch, L. L., **Brick, T. R.** (2016). #HealthyKids on Instagram: Posts reflect interest in food, family, and personal experience, not children's weight status. Poster presented at the *annual meeting of the Obesity Society: Obesity Week 2016*, New Orleans, LA; October 21–November 4, 2016.

36. ⋆Hepworth, A., Small, M., Birch, L., & **Brick, T. R.** (2016). Portrayals of infant feeding practices on social media: Baby-led weaning on Instagram. Presented to the *Society for Research in Child Development's Special Topics Meeting on Technology and Media in Children's Development*. Irvine, CA, US; October 27–30, 2016.

35. Fredman, S. J., ⋆Le, Y., Marshall, A. D., **Brick, T. R.**, & Feinberg, M. E. (2016). A dyadic perspective on the associations among PTSD symptoms, perceived couple functioning, and parenting stress. In S. J. Fredman (Chair), Partnering and parenting in the presence of PTSD. Symposium conducted at the 50th annual convention of the *Association for Behavioral and Cognitive Therapies*. New York, NY, US; October 27–30, 2016.

34. ⋆Snoke, J., **Brick, T. R.**, & Slavković, A. (2016). Accurate Estimation of Structural Equation Models with Remote Partitioned Data. Presented to *Privacy in Statistical Databases: UNESCO Chair in Data Privacy, International Conference, (PSD 2016)*. Dubrovnik, Croatia, September 14–16, 2016.

33. ⋆Gray, A., **Brick, T. R.**, & Boker, S.M. (2016). Multiple Information Pathways in the Expression of Conversational Affect. Presented to the *28th Annual Convention of the Association for Psychological Science (APS 2016)*. Chicago, IL, US; May 26–29, 2016.

32. *Koffer, R., Ram, N., **Brick, T. R.**, Almeida, D., & Tucker, C. S. (2015). [Abstract]. Machine learning and gerontology: Boosted regression trees predict age differences in stressor experience. *Gerontologist*, 55(Issue Suppl_2):461–462. doi: 10.1093/geront/gnv195.10.. Poster presented as Machine Learning and Developmental Science: Using Boosted Regression Trees to Predict Interpersonal Stressor Occasions to the*68th Annual Scientific Meeting of the Gerontological Society of America (GSA 2015)*. Baltimore, MD, USA; November 18-22, 2015.

31. Doub, A.*, Small, M., Levin, A., LeVangie, K., & **Brick, T. R.** (2015) Examining traditional and Internet-based resources for home cooking information: An association rule learning approach. Poster presented to *Obesity Week 2015*. Los Angeles, CA, USA; November 2-6, 2015.

30. Tucker, C., **Brick, T. R.**, *Dering, M., *Gray, A., *Bezawada, S., *Kohler, A., *Mohammed, A., *Shartle, O., & *Viola, T. (2015) Real Time Observation, Inference and Intervention of Co-robot Systems: Towards Individually Customized Performance Feedback Based on Students' Affective States. Poster presented at the *NSF National Robotics Initiative Principal Investigators meeting (NRI-PI 2015)*. Washington, DC, USA; November 5–6, 2015

29. **Brick, T. R.** (2015) Row Fit Derivative Clustering for Heterogeneity Analysis. Presented at *Modern Modeling Methods (M³) 2015*; Storrs, CT, USA; May 20, 2015.

28. **Brick, T. R.** (2014) Avatars and live videoconference manipulation. Presented at the *1st Annual Workshop on Computationally Intensive Modeling (CompTIES 2014)*; Tuscon, AZ, USA; Nov. 7, 2014.

27. **Brick, T. R.**, Brandmaier, A. M., & Prindle, John J. (2014) Row Derivatives and Theory Guided Exploration. Presented at the *26th Annual Convention for the Association for Psychological Science (APS 2014)*; San Francisco, CA, USA; May 25, 2014.

26. **Brick, T. R.**, von Oertzen, T. & Brandmaier, A. M. (2014) Integrating other ideas: PPML and Ωnyx. Presented at the *26th Annual Convention for the Association for Psychological Science (APS 2014)*; San Francisco, CA, USA; May 22, 2014. Part of the pre-conference OpenMx/SEM workshop.

25. Estabrook, R., & **Brick, T. R.** (2014) MxThreshold: Improving OpenMx Pathic Specification. Presented at the *26th Annual Convention for the Association for Psychological Science (APS 2014)*; San Francisco, CA, USA; May 22, 2014. Part of the pre-conference OpenMx/SEM workshop.

24. **Brick, T. R.**, Brandmaier, A. M., & Prindle, John J. (2014) Row Derivatives and Theory Guided Exploration. Poster presented at the *26th Annual Convention for the Association for Psychological Science (APS 2014)*; San Francisco, CA, USA; May 25, 2014.

23. **Brick, T. R.** (2013) Multilevel SEM: Towards a Common Specification. Presented at the *25th Annual Convention for the Association for Psychological Science (APS 2013)*; Washington, DC, USA; May 24, 2013.

22. **Brick, T. R.** & Brandmaier, A. M. (2012) Modeling Facial Expression Mirroring in Conversation. Presented at the *17th Herbstakademie: The Implications of Embodiment–Enactive, Clinical, Social*; Heidelberg, Germany; October 2, 2012.

21. **Brick, T. R.** (2012) Facing the Odds: Bayesian Modeling of Facial Expression Data. Presented to the *MPS/UCL Symposium on Computational Psychiatry and Aging*; Ringberg, Germany; September 21, 2012.

20. **Brick, T. R.** (2012) Dyadic Longitudinal Models (and a bit about Ergodicity). Presented at the *2nd Annual INAPIC Fall Workshop: Longitudinal Methods to Analyze Brain-Behavior Relationships*; Zurich, Switzerland; September 15, 2012.

19. **Brick, T. R.** (2011) Time-Frequency Transformation for the Separation of Speech and Affect in Facial Movements. Presented at *New England Sequencing and Timing*; Amherst, MA; March 5, 2011.

18. **Brick, T. R.**, & Boker, S. M. (2010) Introduction to Dynamical Systems Analysis. *Advanced Genetic Epidemiology and Statistical Molecular Genetics Workshop*; Richmond, Virginia; October 20, 2010.

17. Boker, S., Neale, M., Maes, H., Mehta, P., Wilde, M., **Brick, T.**, Spies, J., Spiegel, M. Estabrook, R., Hunter, M., Kenny, S., Fox, J., & Bates, T. (2009) OpenMx: An Open Source and Extensible SEM Framework. *Annual Meeting of the Society of Multivariate Experimental Psychology*; Salishan, Oregon; October 10, 2009.

16. Boker, S., Neale, M., Maes, H., Wilde, M., Spiegel, M., **Brick, T.**, Spies, J., Estabrook, R., Kenny, S., Bates, T., Mehta, P., & Fox, J. (2009) OpenMx: Multipurpose Software for Statistical Modeling. *Facilitating Interdisciplinary Research: Methodological and Technological Innovation in the Behavioral and Social Sciences Meeting*; Bethesda, Maryland; October 8, 2009.

15. **Brick, T. R.**, Hunter, M. D., & Cohn, J. (2009) Get the FACS Fast: Automated FACS face analysis benefits from the addition of velocity. Presented to the *2009 International Conference on Affective Computing & Intelligent Interactions (ACII 2009).*; Amsterdam, Netherlands.

14. **Brick, T. R.**, Spies, J. R., Theobald, B.-J., Matthews, I. & Boker, S. M. (2009) High-Presence, Low-Bandwidth, Apparent 3D Video-conferencing With A Single Camera. Presented to the *9th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS 2009)*; London, England; May 6–8, 2009.

13. **Brick, T. R.**, & Boker, S. M. (2009) Synchronization with Ambiguous Auditory Rhythms During Unstructured Dance. Presented to the *New England Sequencing and Timing 2009*; New Haven, Connecticut; March 7, 2009.

12. **Brick, T. R.**, Hunter, M. D., & Cohn, J. (2009). Towards Automatic Coding of Facial Expression [Abstract]. *Multivariate Behavioral Research.* doi: 10.1080/00273170903467356.. Presented at the *Annual Meeting of the Society of Multivariate Experimental Psychology*; Salishan, Oregon; October 9, 2009.

11. Boker, S. M., **Brick, T. R.**, Monpetite, M. A. & Bergeman, C. S. (2008) Modeling Individual Changes due to Resiliency using Differential Equations. *Individual Pathways of Change*; The Pennsylvania State University; September 11, 2008.

10. Boker, S. M., **Brick, T. R.** & Spies, J. R. (2008) Coordination of Facial Expressions and Head Movement in Dyadic Conversation. *New England Sequencing and Timing*; New Haven, Connecticut; March 8, 2008.

9. Matthews, I., Boker, S. M., Theobald, B.–J., Cohn, J. F., Mangini, M., Spies, J. R., **Brick, T. R.**, & Abadar, Z. (2007) Facial Expression and Motion in Dyadic Conversation. *Meeting of Minds: The Thinking Head Thinking Systems Project*; Parramatta, Australia; November 23, 2007.

8. **Brick, T. R.**, Boker, S. M., Waddell, J. R., & Covey, E.S. Effects of Ambiguous Rhythmic Stimuli on Unconstrained Dance. *2007 Auditory Perception, Action and Cognition Meeting*, Long Beach, California; November 16–18 2007.

7. **Brick, T. R.**, Schermerhorn, P. W., & Scheutz, M. Speech and Action: Integration of Action and Language for Mobile Robots. *2007 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '07)*, San Diego, California; October 28 – November 2, 2007.

6. Boker, S. M., Cohn, J. F., Lucey, S., Theobald, B.–J., Matthews, I., Abadar, Z., Mangini, M., Spies, J. R., & **Brick, T. R.** (2007) Measuring and Manipulating Coordination Dynamics during Conversation. *Annual Meeting of the Society of Multivariate Experimental Psychology*; Chapel Hill, NC; October 18, 2007.

5. Boker, S. M., Cohn, J. F., Lucey, S., Theobald, B.–J., Matthews, I., Abadar, Z., Mangini, M., Spies, J. R., & **Brick, T. R.** (2007) Manipulation of Appearance and Dynamics during Dyadic Interaction. Invited talk presented to the *National Science Foundation Human and Social Dynamics Program Annual PIs Meeting*; Arlington, Virginia; October 2, 2007.

4. **Brick, T.** & Scheutz, M. (2007) Incremental Natural Language Processing for HRI. Poster presented at the *Second ACM IEEE International Conference on Human-Robot Interaction*, Boston, Massachusetts; March 2007.

3. Boker, S. M., Cohn, J., Matthews, I., Ashenfelter, K., Spies, J., **Brick, T.**, Deboeck, P., Covey, E. & Tiberio, S. (2006) Coordinated Motion and Facial Expression in Dyadic Conversation. Poster presented to the *2006 NSF–HSD P.I. meeting*; Washington, DC; September 14–15, 2006.

2. Schermerhorn, P., Kramer, J., **Brick, T.**, Anderson, D., Dingler, A., & Scheutz, M. (2006) DIARC: A Testbed for Natural Human-Robot Interaction. In *Proceedings of the 2006 AAAI Mobile Robot Workshop*, Boston, Massachusetts, July 2006.

1. **Brick, T. R.**, Boker, S. M., & Waddell, J. L. (2006) Joint Location and Angle Extraction for Pose Estimation from Underconstrained Motion Capture Data. Presented at the *Annual Conference of the North American Association for Computational, Social, and Organizational Science*, Notre Dame, Indiana; June 22–23, 2006.

SELECTED INTERNAL FUNDING

Seed Funding: Distributed Privacy Approaches. Funded by the Institute for Computational and Data Sciences; July 2020-June 2021. PI: Timothy R. Brick. Award Amount: $30,000. Role: PI.

The Dynamics of Social Identity in Addiction Recovery: Developing and Piloting a Mobile App to Assess the Daily Role of Social networks in the Recovery of Substance-Dependent Individuals. Funded by Penn State Global Programs and Monash University. August 2019–August 2020. PI: Timothy R. Brick. Award Amount: $17,625. Role: PI.

Facilitated Support: Wear-IT. Funded by the Social Science Research Institute; July 2015–Present. PI: Timothy R. Brick. Award Amount: $59,461 Role: PI.

Parent Regulation in Stressful Moments (PRISM). Funded by the Social Science Research Institute; August, 2018–July 2019. PI: Erika Lunkenheimer. Award Amount: $5,000. Role: Co-I.

Discovery To Innovation: Wear-IT Together: An integrative framework for physiological and social data collection. Funded by the Penn State Research Foundation and the College of Health and Human Development; August 15, 2016–August 14, 2017. PI: Timothy R. Brick. Co-PI: Zita Oravecz. Award Amount: $54,000. Role: PI.

GRADUATE AND UNDERGRADUATE TEACHING EXPERIENCE

Courses Taught and Developed at Penn State

Generative AI for Human Development (HDFS 597-003). Penn State University. Discussion of applications of generative and analytic AI tools (e.g. Large Language Models, Convolutional Neural Networks, etc.) to scientific processes and studies, as well as practical experience in applying those tools. 2026.

Practical Deep Learning for Human Development (HDFS 597-001). Penn State University. Discussion and practice of the development, training, fine-tuning, and applications of modern deep learning tools, including autoencoders, convolutional networks, prediction and classification models, and large language models, to scientific questions in human development. 2025.

Health, Technology, and Personal Data Collection (HD FS 497D). Penn State University. Discussion of current trends in modern health-data collection and management tools (e.g. electronic health records, wearables, etc), and discussion of issues of privacy, law, ethics, and logistics associated with their adoption, 2016 & 2017.

Mining the Internet with Python (HD FS 597-001). Original design for an introduction to computational thinking and Python programming using the example of Internet data collection, processing, and analysis. 2016, 2018.

Data Mining for Human Development (HD FS 597-004). Penn State University. Biennial; Developer and Classroom Head. Original design for a broad introduction to modern data mining techniques and exploratory visualizations, and their application in the behavioral sciences with an emphasis on longitudinal and timeseries data analysis., 2015, 2017, & 2020.

Methods of Research in Human Development (HD FS 516). Redesigned course using R, RStudio and literate computing approaches, 2015 & 2016.

Applied Statistics Laboratory (HD FS 518). Redesigned course using R, RStudio and literate computing approaches. Introductory applications of statistics and literate computing in R/RStudio, 2015 & 2016.

Course Designed and Taught as Adjunct Instructor at University of Virginia

Quantitative Methods I and Laboratory (PSY 771/772). University of Virginia. Co-designer, co-instructed. Introductory statistical methods and lab, 2008. Charlottesville, VA; May 2010.

OTHER TEACHING EXPERIENCE

5. "Vector Spaces, Principal Components, and Factor Analysis." and "Face Mining, and a bit about emotion." Given to Data Mining Driven Design (EDSGN/IE/CSE 561) for Dr. Conrad Tucker, 2015. Guest lecture.

4. "Reading the Face: Avatars and Behavioral Interactions." Given to Social Data Analytics Seminar (SoDA 502) for Dr. Burt Monroe. 2014. Guest lecture.

3. "Avatars, Embodiment, and Artificial Intelligence". Given to Artificial Intelligence (CS 416) for Dr. Worthy Martin. 2008, 2009, and 2011. Guest lecture.

2. APA Advanced Training Institute: Structural Equation Modeling in Longitudinal Research, Charlottesville, VA; May 2010. Role: Teaching Assistant.

1. Structural Equation Modeling in OpenMx. Workshop given to the LIFE academy, 2009. Role: Teaching Assistant.

SELECTED LOCAL SEMINAR PRESENTATIONS AND POSTERS

First author is presenting author

29. **Brick, T. R.**(2021). Towards a 5 (or so)-step Process for Discrete Sequence Analysis. Presented to the weekly meeting of the Quantitative Developmental Systems Group. University Park, PA; February 17, 2021.

28. **Brick, T. R.** (2019). Regularization approaches for feature selection and burden limitation. Presented to the weekly meeting of the Quantitative Developmental Systems Group. University Park, PA; October 2, 2019.

27. **Brick, T. R.**. (2018). The Data Imperative: How is your health data protected and used? Presented at Science on Tap. Penn State Science Policy Society & CTSI. State College, PA. Oct.16, 2018.

26. Heidle**, C. I., Small, M. L., **Brick, T. R.**, & Hepworth*, A. D. (2017). Can an existing theory be adapted to better predict parents' infant feeding information seeking behaviors? Poster presented at the Pennsylvania State University Undergraduate Research Exhibition, University Park, PA. Awarded 1st place in the University Libraries Information Literacy Award competition.

25. **Brick, T. R.** (2017) END CONFIRMATORY ANALYSIS!!!! (Or: In defense of data-driven approaches). Presented to the weekly meeting of the Quantitative Developmental Systems Group. State College, PA; Feb. 20, 2017.

24. **Brick, T. R.** (2016) In-the-moment Monitoring and Manipulation: Real Science in Real-time. Presented to the weekly meeting of the Quantitative Developmental Systems Group. State College, PA; Sept. 16, 2016.

23. **Brick, T. R.** (2016) Why it helps to make things up: Using simulation approaches to understand real-time process models. Presented to the weekly meeting of the Quantitative Developmental Systems Group. State College, PA; Sept. 21, 2016.

22. **Brick, T. R.** (2016) Likelihood Wells: How you see fit(s). Presented to the weekly meeting of the Quantitative Developmental Systems Group. State College, PA; Feb. 03, 2016.

21. **Brick, T. R.** (2015) STOP COLLECTING DATA!!!!! Presented to the weekly meeting of the Quantitative Developmental Systems Group. State College, PA; Feb. 25, 2015.

20. **Brick, T. R.** (2014) Fit Derivatives (and a little about SEM Trees). Presented to the weekly meeting of the Quantitative Developmental Systems Group. State College, PA; Nov. 12, 2014.

19. **Brick, T. R.** (2013) Computerized Interpretation and Generation of Emotional Expression. Presented at the *MPI-B Research Colloquium*; Berlin, Germany; May 5, 2013.

18. **Brick, T. R.** (2013) Science, Knowledge, Information, and Conversation: A Quick Survey of Knowledge Discovery and Sharing. Presented to the Berlin International School. Berlin, Germany; May 2, 2013.

17. **Brick, T. R.** (2013) Computerized Interpretation and Generation of Emotional Expression. Presented at the *MPI-B Research Colloquium*; Berlin, Germany; May 5, 2013.

16. **Brick, T.R.** (2012) Emotions, Avatars, and Synchronization. Presented to the Math Competition Group from the Berlin International School. Berlin, Germany; March 22, 2013.

15. **Brick, T.R.** (2012) Formal Methods in Lifespan Psychology (Part II). Presented to the *Lifespan Psychology Project Retreat*. Chorin, Germany; August 30, 2012.

14. **Brick, T.R.** (2012) Sensory Augmentation and Substitution. Presented to the *Computer Science Research Circle* of the Max Planck Institute. Berlin, Germany; April 19, 2012.

13. **Brick, T.R.** (2012) Why Numbers? Why and How Scientists Use Math. Presented to the Math Competition Group from the Berlin International School. Berlin, Germany; March 22, 2012.

12. **Brick, T.R.** (2011) In Your Face: What Computer-generated Avatars Can Do for Psychology. Presented to the *Adaptive Behavior and Cognition* Group at the Max Planck Institute. Berlin, Germany; Nov. 4, 2011.

11. **Brick, T.R.** (2010) Avatars and the Analysis of Affect. Presented at *Design and Data Analysis*, University of Virginia Department of Psychology; Charlottesville, Virginia; Nov. 4, 2010.

10. **Brick, T.R.** (2010) The Statistician's Tour of the OpenMx Back-end. Presented at *Design and Data Analysis*, University of Virginia Department of Psychology; Charlottesville, Virginia; Feb. 11, 2010.

9. **Brick, T.R.** (2009) (Re)moving Parts: A Proposed Method For Separating Different Types of Movement In Facial Expression Data. Presented at *Design and Data Analysis*; Charlottesville, Virginia; October 29, 2009.

8. **Brick, T.R.** (2009) Towards Separation of Distinct Non-stationary Signals in a Time-series. Presented to the Fall Research Academy of the LIFE Program; Ann Arbor, MI; October 16–20, 2009.

7. **Brick, T.R.** (2009) Avatars in Conversation (and People in Conversation with Them). Presented to the Lifespan Development Group at the Max Plank Institute for Human Development; Berlin, Germany; August 4, 2009.

6. **Brick, T.R.** (2009) Conversational Avatar Programming. Presented to the Human Perception, Cognition, and Action Group Meeting at the Max Planck Institute for Biological Cybernetics; Tübingen, Germany; July 7, 2009.

5. **Brick, T.R.** (2009) Multiple Timescales in Conversation. Poster at the Spring Research Academy of the LIFE Program; Zurich, Switzerland; May 25–29, 2009.

4. **Brick, T.R.** (2009) Ambiguous Rhythms and Unconstrained Dance. Presented at Cognitive Area Lunch, University of Virginia Department of Psychology; Charlottesville, Virginia; February 11, 2009.

3. **Brick, T.R.** (2009) Phase to Phase: An Introduction to Phase Analysis. Presented at *Design and Data Analysis*; Charlottesville, Virginia; January 29, 2009.

2. **Brick, T.R.** (2008) Mechanics and Applications of Active Appearance Teleconferencing. Presented at *Design and Data Analysis*; Charlottesville, Virginia; February 28, 2008.

1. **Brick, T.R.** (2007) Segmentation of Swing: An Exploration of Synchronization and Ambiguity in Rhythm and Dance. Presented to the Quantitative Seminar Group, University of Notre Dame, Notre Dame, IN; March 20, 2007.

SELECTED PROFESSIONAL SERVICE ASSIGNMENTS

Liaison between the Social Science Research Institute and Institute for Computational and Data Sciences, focused on development of a High-Performance Computing platform.

Representative Chief Information Security Officer Advisory Board. Faculty Representative. 2021-Present.

Representative Social Data Analytics Graduate Program Committee. Representative for HDFS. 2020-Present.

Strategic Planning Committee Human Development and Family Studies. Methods section. 2020-2021.

Panel Review Co-chair Intensive Data Collection Methods Panel, Developmental Methodology conference, 2016.

Consultant LIP Retreat 2015. Responsible for evaluating and reviewing the LIP research agenda for the Max Planck Society. Berlin, Germany. 6/23–6/26, 2015.

Coordinator MPI School Workshop for local high school students (2012–2014)

Supervisor High School student praktikum at the Max Planck Institute (three students, 2012-2013)

Designer / Creator Introduction, Welcome, and Demonstration Video for a retreat between the University of Virginia Office of the Vice President of Research and potential corporate partners.

Co-Chair, Professional Issues Committee Fall 2008–Spring 2009 Department of Psychology, University of Virginia.

Professional Seminar Instructor Fall 2007, Fall 2008 & Fall 2010. Single-session seminar on LaTeX typesetting system.

Past and Current Professional Memberships

American Psychological Association (APA), Association for Psychological Science (APS), Association for Computing Machinery (ACM), Institute of Electrical and Electronic Engineers (IEEE), Society for Mathematical Psychology, Society for Ambulatory Assessment, Gerontological Society of America, Psychometric Society.