

# Timothy Raymond Brick, PhD

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## PERSONAL INFORMATION

**Office:**

Human Development and Family Studies  
Pennsylvania State University  
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University Park, PA 16802

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**Web:**

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**Citizenship:**

USA

## 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

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## PROFESSIONAL ACADEMIC POSITIONS

**2014-Present:** *Assistant Professor*, Department of Human Development and Family Studies,  
Pennsylvania State University

**Summer 2014:** *Visiting Researcher*, Center for Lifespan Psychology, Max Planck Institute for  
Human Development

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

**Fall 2008:** *Adjunct Professor*, Department of Psychology, University of Virginia.  
Co-instructor for Introductory Graduate Statistics

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

**2005–2007:** *Graduate Student*, Joint PhD Program in Computer Science and Psychology,  
University of Notre Dame

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## HONORS AND AWARDS

**Predoctoral Fellow** (2009-2010) National Institute on Aging Training Grant–Quantitative Modeling in Aging Research. Grant Number: T32 AG20500-08 PI: John R. Nesselroade, University of Virginia.

**LIFE Program Fellow** (2008-2010) selected for membership in the international LIFE program on lifespan development.

**LIFE Program Fellow/Fellow Speaker** (2008-2010) appointed to represent the Virginia fellows as a member of the steering committee.

**Presidential Fellow** (2007-2011) from the University of Virginia.

**Eli J. Lily Presidential Fellow** (2005-2007) from the University of Notre Dame.

**John D. Reilly Scholar** (2002) for excellence in interdisciplinary undergraduate studies.

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## PEER REVIEWED ARTICLES, PAPERS, AND ABSTRACTS

\*indicates student authors

**Brick, T.R.**, Koffer, R.\*, Gerstorf, D., & Ram, N. (accepted). Feature Selection Methods for Optimal Design of Studies for Developmental Inquiry. Manuscript accepted for publication.

Brinberg, M.\*, Ram, N., Hülür, G., **Brick, T.**, & Gerstorf, D. (in press). Analyzing Dyadic Data using Grid-Sequence Analysis: Inter- Dyad Differences in Intra-Dyad Dynamics. *Journal of Gerontology*.

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..

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.

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.

- 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.
- 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. PMID: 26717128
- Filevich, E., Dresler, M., **Brick, T.R.**, and Kühn, S. (2015). Metacognitive mechanisms underlying lucid dreaming. *Journal of Neuroscience*. 35(3), 1082–8. doi: 10.1523/JNEUROSCI.3342-14.2015. PMID: 25609624
- 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. (2015). OpenMx 2.0: Extended Structural Equation and Statistical Modeling. *Psychometrika*.doi: 10.1007/s11336-014-9435-8. PMID: 25622929
- Kühn, S., **Brick, T. R.**, Müller, B. C. N., and Gallinat, J. (2014). Is this car looking at you? How anthropomorphism predicts fusiform face area activation when seeing cars. *PLOS ONE*. doi: 10.1371/journal.pone.0113885. PMID: 25517511
- 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. PMID: 24197708
- 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.
- 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. PMID: 23258944
- 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. PMID: 21463081
- 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. PMID: 21311738
- 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. PMID: 19884143

- 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.
- Theobald, B., Matthews, I., Mangini, M., Spies, J., **Brick, T.**, Cohn, J. F. & Boker, S. (2009) Mapping and Manipulating Visual Prosody. *Journal of Language and Speech*, 52(2/3), 369–386. doi: 10.1177/0023830909103181. PMID: 19624037
- 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.
- 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.

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## MANUSCRIPTS IN PROCESS

\*indicates graduate students

Manuscripts available upon request

- Boker, S. M., Staples, A. D., & **Brick, T. R.** (2016). Measuring the Semantic Structure of Attributed Affect from Thin Slices of Natural Conversation. Manuscript submitted for publication.
- Szymanski, C.\*, Pesquita, A., Brennan, A. A., Perdakis, D., Enns, J. T., **Brick, T. R.**, Müller, V., and Lindenberger, U. (2016). Teams on the same wavelength perform better: Inter-brain phase synchronization constitutes a neural substrate for social facilitation. Manuscript under revision for resubmission.
- Fredman, S. J., Le, Y.\*, Marshall, A. D., **Brick, T. R.**, & Feinberg, M. E. (2016). A Dyadic Analysis of PTSD Symptoms Associations with Couple Functioning and Parenting Stress during the Transition to Parenthood. Manuscript under revision for resubmission.
- Brick, T.R.**, Gray, A. L.\*, & Staples, A. D. (2016). Recurrence Quantification for the Analysis of Coupled Processes in Aging. Manuscript under revision for resubmission.
- Bezawada, S. R.\*, Sowmyasri, M.\*, Hegde, D. J.\*, Tucker, C. and **Brick, T. R.** (2016). Machine Learning Classification of Interest as an Affective State during Workforce Training. Manuscript under revision for resubmission.
- Szymanski, C.\*, **Brick, T. R.**, Müller, V., von Oertzen, T., & Lindenberger, U. (2016). tACS Times Two: Introducing ‘hyper-tACS’ for experimental manipulation of interbrain synchrony. Manuscript in preparation for submission.

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## CHAPTERS, BOOKS, AND EDITED COLLECTIONS

**Brick, T. R.**, Prindle, J. J. (in press). Time-series Analysis. In Hopkins, B., Geangu, E., and Linkenauger, S. (Eds.) *The Cambridge Encyclopedia of Child Development, Second Edition*. New York, NY: Cambridge University Press.

Mårtensson, J., Eriksson, J., **Brick, T.**, Bodammer, N., Lindgren, M., Johansson, M., Nyberg, L., and Lövdén, M. (2014). Proficiency and brain structure during intense language learning. In Horne, M., Lindgren, M., Nilsson, M., Roll, M., Shtyrov, Y., Ståhlberg, F., and 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.

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## SOFTWARE PUBLICATIONS

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)*, <http://openmx.psyc.virginia.edu/>. Role: Primary developer, computational kernel.

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## PATENTS

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: U.S. Patent and Trademark Office.

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## EXTERNAL FUNDING

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

**STINT: Brain change and knowledge acquisition 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.

**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.

**BMBF: Vom Emotionsmodell zum adaptiven Lernen: Emotionsensitive 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: \$1,280,720.00. Role: Co-I, Grant Co-author.

**Beaumont Foundation of America Educational Institution Pilot Grant** Funded by Beaumont Foundation of America. August 2003–May 2004; Grant in kind: \$45,000 Equipment Total Costs. Role: Grant Co-author; Grant Administrator.

**Teca Oyate Waonspekiya Americorps National Service Grant** Funded by Corporation for National Public Service. December 2003–November 2006; \$633,000 Total Costs. Role: Grant Co-author; Interim Administrator.

**Wakanyeja kin Wokiye Owicakiyapi 21st Century Learning Center** Funded by South Dakota Department of Education and Cultural Affairs; January 2004–December 2009; \$600,000 Total Costs. Role: Grant Author.

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## INTERNAL FUNDING SOURCES

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

**SSRI:** Match funding for programmer support. Funded by the PSU Social Science Research Institute; April 1, 2015–March 31, 2017 PIs: Timothy R. Brick, & Zita Oravec. Total Award Amount: \$116,121.80. Role: PI

**Pre-Doctoral Fellowship (20092010)** National Institute on Aging Grant Title: Training in Quantitative Modeling in Aging Research  
Grant Number: T32 AG20500-08 PI: John R. Nesselroade, PhD, University of Virginia

**Presidential Fellowship** for promising doctoral students. Awarded by the University of Virginia.

**Eli J. Lily Presidential Fellowship** for promising doctoral students. Awarded by the University of Virginia.



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## OTHER SELECTED SOFTWARE PROJECTS

\*indicates graduate students, \*\*indicates undergraduates

**Brick, T. R.**, Jednoralski, D.\* , Nehls, R.\*\* , and Verrel, J. (2012) “Vestibular Augmentation System, Version 0.1.” Hardware and software system for augmentation of vestibular stabilization in older adults.

**Brick, T. R.**, Braun, J.\* , Harrill, C., & Yu, M. (2013) “Face Modeling GUI, Version 0.2 $\beta$ .” Software for facial expression analysis and stimulus synthesis. Includes Open-Sourced code from the DeMoLib by Saragih and Goecke, and from a framework by J.R. Spies.

**Brick, T. R.** (2007) “TIDE: Timing-sensitive Incremental Discourse Engine.” A module for incremental discourse understanding and generation for the DIARC Robotic Architecture.

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## INTERNATIONAL AND DOMESTIC INVITED TALKS

In all cases, first author is presenting author. Underline indicates additional presenters.

\*indicates graduate students

**Brick, T. R.** (2016). Dynamical Systems Theory. Presented to the LIFE Academy for

**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.

**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.

**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.

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

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

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## WORKSHOP TEACHING EXPERIENCE

**Faculty** 2015 Advanced Genetic Epidemiology Statistical Workshop. Richmond, VA, USA; October 26-30, 2015.

**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.

**Instructor** “Introduction to Structural Equation Modeling”. Workshop at the Max Planck Institute for Human Development, Berlin. April 26, 2013.

**Instructor** “Structural Equation Modeling”. Workshop at the Freie Universität, Berlin. March 14–15, 2013.

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

**Faculty** Workshop: “New methods for conceptualizing, analyzing, and visualizing dyadic data within and across persons”. Zurich, Switzerland; August 2011.

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

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## CONFERENCE / WORKSHOP TALKS, POSTERS, and ABSTRACTS

Underline indicates presenters.

\*indicates graduate students

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 Obesity Week 2016. New Orleans, LA, US; October 21–November 4, 2016.

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.

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.

**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.

**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.

- 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.
- Koffer, R.\*, Ram, N., **Brick, T. R.**, Almeida, D., & Tucker, C. (2015) Machine Learning and Developmental Science: Using Boosted Regression Trees to Predict Interpersonal Stressor Occasions. Poster presented to the 68th Annual Scientific Meeting of the Gerontological Society of America (GSA 2015). Baltimore, MD, USA; November 18-22, 2015.
- 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.
- 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. Washington, DC, USA; November 5–6, 2015
- 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. Presented to the NSF National Robotics Initiative Principal Investigators meeting. Washington, DC, USA; November 5–6, 2015
- Brick, T. R.** (2015) Row Fit Derivative Clustering for Heterogeneity Analysis. Presented at Modern Modeling Methods (M<sup>3</sup>) 2015; Storrs, CT, USA; May 20, 2015.
- 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.
- 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.
- Brick, T. R.**, von Oertzen, T. & Brandmaier, A. M. (2014) Integrating other ideas: PPML and  $\Omega$ nyx. 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Brick, T. R.**, Hunter, M. D., & Cohn, J. (2009) Towards Automatic Recognition of Facial Affect. *Annual Meeting of the Society of Multivariate Experimental Psychology*; Salishan, Oregon; October 9, 2009.
- 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.
- 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.
- 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.

- 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.
- Brick, T. R.**, Hunter, M. D., & Cohn, J. (2009). Towards Automatic Coding of Facial Expression [Abstract]. *Multivariate Behavioral Research*. doi: 10.1080/00273170903467356.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.

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## GRADUATE AND UNDERGRADUATE TEACHING EXPERIENCE

**Faculty Instructor** Methods of Research in Human Development (HD FS 516). Penn State University, Fall 2015, Fall 2016.

**Faculty Instructor** Applied Statistics Laboratory (HD FS 518). Penn State University, Fall 2015, Fall 2016.

**Faculty Instructor** Health, Technology, and Personal Data Collection (HD FS 497D). Penn State University, Spring 2016.

**Faculty Instructor** Mining the Internet with Python (HD FS 597B). Penn State University, Spring 2016.

**Faculty Instructor** Data Mining for Human Development (HD FS 597E). Penn State University, Spring 2015.

**Adjunct Faculty Instructor** Quantitative Methods I (PSY 771) with co-instructor Ryne Estabrook. University of Virginia. Fall 2008. Co-instructor with another graduate student. Charlottesville, VA; May 2010.

**Teaching Assistant** Psycholinguistics (PSY 428) under Dr. Kathleen Eberhard. University of Notre Dame. Fall 2002.

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## OTHER TEACHING EXPERIENCE

**Lecturer** “Dynamical Systems Theory.” Given to the LIFE program on lifespan developmental psychology. Berlin, Germany, 2016.

**Guest Lecturer** “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 Lecturer** “Reading the Face: Avatars and Behavioral Interactions.” Given to Social Data Analytics Seminar (SoDA 502) for Dr. Burt Monroe. 2014.

**Guest Lecturer** “Avatars, Embodiment, and Artificial Intelligence”. Given to Artificial Intelligence (CS 416) for Dr. Worthy Martin. 2008, 2009, and 2011.

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

**Teaching Assistant** Structural Equation Modeling in OpenMx.

**Instructor** “Introduction to L<sup>A</sup>T<sub>E</sub>X”. Single-session seminar on L<sup>A</sup>T<sub>E</sub>X typesetting system. 2007 and 2008.

**High School Teacher** Red Cloud Indian School. Fall 2002 – Spring 2005.

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## PROFESSIONAL, LOCAL, AND DEPARTMENTAL SERVICE

**Member** Steering Committee for the PSU Institute for CyberSciences. PSU data governance board. Program, Planning, & Development Committee (PPD&E). 2016-

**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.

**Reviewer** Psychological Methods, Perception, Experimental Gerontology, Journal of Gerontology, Journal of the Royal Society-Interface, Frontiers in Quantitative Psychology, Journal of Consulting and Clinical Psychology, Dance Research Electronic, Applied Perception in Graphics and Visualization (APGV), International Conference on Affective Computing & Intelligent Interactions (ACII), International Conference on Intelligent Robots and Systems (IROS), International Symposium on Robot and Human Interactive Communication (ROMAN).

**Reviewer (conference abstracts)** Student Session for the Annual Meeting of the Society for Multivariate Experimental Psychology (SMEP).

**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 L<sup>A</sup>T<sub>E</sub>X typesetting system.

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## 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, Psychometric Society.