

Ross Jacobucci
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Notre Dame, Indiana 46556
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Curriculum Vitae
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Professional History & Education

- **Assistant Professor of Psychology** 2017 - Current
University of Notre Dame Notre Dame, Indiana
- **Ph.D. Psychology** August 2017
University of Southern California (USC) Los Angeles, California
 - Area: Quantitative Methods
 - Dissertation: Evaluating the Stability of Decision Tree Algorithms.
- **M.A. Psychology** December 2015
University of Southern California (USC) Los Angeles, California
 - Area: Quantitative Methods
 - Thesis: Regularized Structural Equation Modeling.
- **M.A. Psychology** 2011-2013
University of Northern Iowa (UNI) Cedar Falls, Iowa
 - Individualized Study: Quantitative Emphasis
- **B.A. Psychology** June 2010
Luther College Decorah, Iowa
 - Thesis: The Effect of Mental Imagery on Performance in Golf.

Research Funding

• Pending

- Ross Jacobucci (PI) Under Review
IES Statistical and Research Methodology in Education: Early Career Grant
Extending Regularized Structural Equation Modeling for Big Data in Education Research
Total Direct: \$139,759
- Ross Jacobucci (Co-PI) & Brooke Ammerman (Co-PI) Under Review
NIH 1R03MH120488-01
The Implementation and Validation of Integrative Machine Learning for Predicting Suicide Outcomes
Total Direct: \$99,188

• Ongoing

- Ross Jacobucci (PI) Academic Year 2018-2019
Small Research and Creative Work grant
Institute for Scholarship in the Liberal Arts (ND)
Text Analysis for the Prediction of Suicide: A Pilot Study
\$2,475
- Ross Jacobucci (Co-PI) & Brooke Ammerman (Co-PI) 8/13/18-8/13/20
Advanced Diagnostics and Therapeutics Discovery Fund.
Using Integrative Data Mining to Improve the Prediction of Suicide: An Initial Application.
Total Direct: \$41,068

Evan Kleiman (PI)

6/26/18-12/26/19

Military Suicide Research Consortium Common Data Elements

Enhancing Identification of Suicide Risk among Military Service Members and Veterans: A Machine Learning Approach to Suicidality.

Role: Consultant

- **Completed**

T32 AG000037-38

Crimmins (PI)

01/01/15-07/31/17

Sponsored: Ruth L. Kirschstein National Research Service Award (T32).

Predoctoral trainee on the Multidisciplinary Research Training in Gerontology Grant at USC.

Role: Predoctoral Trainee

- **Not Funded**

Ross Jacobucci (PI)

NIH 1R01MH117597-01

Integrative Data Mining in the Prediction of the Pathway to Suicide.

Total Direct: \$540,750

Books

Jacobucci, R. & Grimm, K. J. (under contract). *Exploratory data mining for social and behavioral scientists*. New York, NY: Guilford.

Publications

- **Publications**

Ammerman, B.A., **Jacobucci, R.** & McCloskey, M.S. (accepted). Re-considering important outcomes of the NSSI disorder diagnostic criterion A. *Journal of Clinical Psychology*.

Jacobucci, R., Brandmaier, A., & Kievit, R. (accepted). A practical guide to variable selection in structural equation models with regularized MIMIC models. *Advances in Methods and Practices in Psychological Science*.

Burke, T.A., Ammerman, B.A., & **Jacobucci, R.** (in press). The use of machine learning in the study of suicidal and non-suicidal self-injurious thoughts and behavior: A systematic review. *Journal of Affective Disorders*.

Hong, M. R., **Jacobucci, R.** (in press). Review of Growth Modeling: Structural Equation and Multilevel Modeling Approaches (Grimm, Ram & Estabrook, 2017). *Psychometrika*.

Ammerman, B. A., Serang, S., **Jacobucci, R.**, Burke, T., A., Alloy, L. B., & McCloskey, M. S. (in press). Exploratory analysis of mediators in the relationship between childhood maltreatment and suicidal behavior. *Journal of Adolescence*.

Usami, S., **Jacobucci, R.**, & Hayes, T. (in press). The performance of latent growth curve model based structural equation model trees to uncover population heterogeneity in growth trajectories. *Computational Statistics*.

Stegmann, G., **Jacobucci, R.**, Serang, S., & Grimm, K. J. (2018). Recursive partitioning with nonlinear change trajectories. *Multivariate Behavioral Research*, 53, 559-570,.

Burke, T. A., **Jacobucci, R.**, Ammerman, B. A., Piccirillo, M., McCloskey M., & Alloy, L. B. (2018). Identifying the relative importance of non-suicidal self-injury features in predicting suicidal ideation and behavior using exploratory data mining. *Psychiatry Research*, 262, 175-183.

Ammerman, B. A., **Jacobucci, R.**, & McCloskey, M. S. (2018). Using exploratory data mining to identify important predictors of non-suicidal self-injury frequency. *Psychology of Violence*, 8, 515-525.

- Ammerman, B. A., **Jacobucci, R.**, Kleiman, E. M., Uyeji, L., & McCloskey, M. S. (2018). The relationship between nonsuicidal self-injury age of onset and severity of self-harm. *Suicide and Life Threatening Behavior*, 48, 31-37.
- Jacobucci, R.**, Grimm, K. J. (2018). Comparison of frequentist and Bayesian regularization in structural equation modeling. *Structural Equation Modeling*, 25, 639-649.
- Stegmann, G., **Jacobucci, R.**, Harring, J., & Grimm, K. J. (2018). Nonlinear mixed-effects modeling programs in R. *Structural Equation Modeling*, 25, 160-165.
- Serang, S., **Jacobucci, R.**, Brimhall, K. C., & Grimm, K. J. (2017). Exploratory mediation analysis via regularization. *Structural Equation Modeling*, 24, 733-744.
- Jacobucci, R.**, Grimm, K. J., & McArdle, J. J. (2017). A comparison of methods for uncovering sample heterogeneity: Structural equation model trees and finite mixture models. *Structural Equation Modeling*, 24, 270-282.
- Grimm, K. J., **Jacobucci, R.**, McArdle, J. J. (January, 2017). Big data methods and psychological science. *Psychological Science Agenda*.
- Ammerman, B. A., **Jacobucci, R.**, Kleiman, E. M., Muehlenkamp, J. J., & McCloskey, M. S. (2017). Development and validation of empirically derived frequency criteria for NSSI disorder using exploratory data mining. *Psychological Assessment*, 29, 221-231.
- Jacobucci, R.**, Grimm, K. J., & McArdle, J. J. (2016). Regularized structural equation modeling. *Structural Equation Modeling*, 23, 555-566. doi:10.1080/10705511.2016.1154793. PMCID: 4937830
- Jacobucci, R.**, & McArdle, J. J. (2015). Abstract: Regularized structural equation modeling. *Multivariate Behavioral Research* 50, 736-736. doi:10.1080/00273171.2015.1121125.
- Hayes, T., Usami, S., **Jacobucci, R.**, & McArdle, J. J. (2015). Using classification and regression trees (CART) and random forests to analyze attrition in longitudinal data: Results from two simulation studies. *Psychology and Aging*, 30, 911-929. doi:10.1037/pag0000046. PMCID: 4743660
- Skaar, N. R., Christ, T. J., & **Jacobucci, R.** (2014). Measuring adolescent prosocial and health risk behavior in schools: Initial development of a screening measure. *School Mental Health*, 6, 137-149. doi:10.1007/s12310-014-9123-y

• Chapters

- Grimm, K. J., Stegmann, G., **Jacobucci, R.**, & Serang, S. (in press). Big data in developmental psychology. In S. E. Woo, L. Tay, & R. W. Proctor (Eds.), *Big data methods for psychological research: New horizons and challenges*. Washington, DC: American Psychological Association.
- Jacobucci, R.** & Grimm, K. J. (2018). Regularized estimation of multivariate latent change score models. *Advances in Longitudinal Models for Multivariate Psychology: A Festschrift for Jack McArdle*. Routledge, London.
- Grimm, K. J. & **Jacobucci, R.** (2018). Individually varying time metrics in latent change score models. *Advances in Longitudinal Models for Multivariate Psychology: A Festschrift for Jack McArdle*. Routledge, London.

• Technical Reports

- Jacobucci, R.** (2017). regsem: Regularized Structural Equation Modeling. *arXiv preprint arXiv:1703.08489*.

• Manuscripts Under Review

- Serang, S. & **Jacobucci, R.** (under review). Exploratory mediation analysis of dichotomous outcomes via regularization.
- Jacobucci, R.** (under review). Are decision trees reliable enough for psychological research?

Ammerman, B.A., **Jacobucci, R.**, Turner, B. J., Dixon-Gordon, K., & McCloskey, M.S. (under review). Quantifying the importance of lifetime frequency versus number of methods used in the consideration of NSSI severity.

• Manuscripts in Preparation

Ammerman, B. A., Hong, M., Sorgi, K. M., **Jacobucci, R.**, & McCloskey, M. S. (in preparation). The most dangerous method: An examination of non-suicidal self-injury methods.

Grimm, K. J., & **Jacobucci, R.** (in preparation). Reliable trees: Reliability informed recursive partitioning for psychological data.

Presentations

• Oral Presentations

Jacobucci, R., Hong, M., Brandmaier, A., Ammerman, B., & McCloskey, M. (2018, October). *Assessing Continuous Versus Categorical Diagnosis Using Latent Variable Modeling*. Invited talk given at the Arizona State Quantitative Psychology brown bag.

Jacobucci, R., Hong, M., Brandmaier, A., Ammerman, B., & McCloskey, M. (2018, October). *Assessing Continuous Versus Categorical Diagnosis Using Latent Variable Modeling*. Invited talk given at the Quantitative Develop Systems Methodology Core at Penn State University.

Jacobucci, R., Hong, M., Brandmaier, A., Ammerman, B., & McCloskey, M. (2018, September). *Assessing Continuous Versus Categorical Diagnosis Using Latent Variable Modeling*. Talk given at the Quantitative Studies Group at the University of Notre Dame.

Stegmann, G., **Jacobucci, R.**, Serang, S., & Grimm, K. J. (2018, July). *Identifying divergent nonlinear growth trajectories using recursive partitioning*. International Meeting of Psychometric Society. New York, NY.

Jacobucci, R. (2018, July). *Flexible specification of large structural equation models with regularization*. Invited talk given at the Max Planck Institute for Human Development in Berlin, Germany.

Grimm, K. J., Stegmann, G., **Jacobucci, R.**, & Serang, S. (2018, March). Machine learning approaches to understanding differences in longitudinal change trajectories. Keynote address at the 6th Annual Meeting of the Texas Universities' Educational Statistics and Psychometrics Alliance.

Jacobucci, R. (2017, November). *Exploratory data mining for a single outcome in clinical research*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.

Ammerman, B. A., **Jacobucci, R.**, Turner, B. J., Serang, S., & McCloskey, M. S. (2017, November). *Quantifying the importance of lifetime frequency versus number of methods used in the consideration of NSSI severity*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.

Jacobucci, R., Serang, S., & Ammerman, B.A. (2017, November). *Multivariate approaches to exploratory data mining with the application of exploratory mediation for self-injury*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.

Burke, T. A., **Jacobucci, R.**, Ammerman, B.A., Hamilton, J. L., & Alloy, L. B. (2017, June). *Using exploratory data mining to compare importance of risk factors in predicting recent versus former history of non-suicidal self-injury*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.

Kleiman, E.M., **Jacobucci, R.**, Ammerman, B.A., Turner, B.J., Beale, E.E., Fedeor, S., Huffman, J.C., & Nock, M. K. (2017, June). *What affect states are most strongly associated with suicidal ideation? A real-time monitoring, exploratory data mining study*. Paper presented at the 51st Annual Convention for the Association for Behavioral and Cognitive Therapies, San Diego, California.

- Zelinski, E. M., **Jacobucci, R.** (2017, July). *Heterogeneity in cognitive change trajectories of older adults observed from structural equation model trees*. Alzheimers Association International Conference in London, UK
- Burke, T. A., **Jacobucci, R.**, Ammerman, B. A., Piccirillo, M., McCloskey M., & Alloy, L. B. (2017, April). *Identifying the relative importance of non-suicidal self-injury features in predicting suicidal ideation and behavior using exploratory data mining*. Paper presented at the 50th Annual Conference of American Association of Suicidology in Pheonix, Arizona.
- Jacobucci, R.**, Zelinski, E. M. (2016, November). *The bi-directional relationship between health and cognition in older age*. Paper presented at the Gerontological Society of America Annual Meeting, New Orleans, Louisiana.
- Peters, K., **Jacobucci, R.**, Prescott, C., Walters, E., McArdle, J. J. (2016, November). *Computerized adaptive testing of cognitive abilities in the Project Talent Aging Study*. Paper presented at the Gerontological Society of America Annual Meeting, New Orleans, Louisiana.
- Jacobucci, R.**, Grimm, K. J. (2016, October). *Psuedo-continuous testing of the latent difference score model*. Paper invited for presentation at the conference to honor the work of Jack McArdle, Richmond, Virginia.
- Grimm, K. J., **Jacobucci, R.** (2016, October). *Individually-varying time metrics in latent change score models*. Paper invited for presentation at the conference to honor the work of Jack McArdle, Richmond, Virginia.
- Jacobucci, R.**, Grimm, K. J., McArdle, J. J. (2016, July). *Comparison of frequentist and Bayesian regularization in structural equation modeling*. Paper presented at the International Meeting for the Psychometric Society, Asheville, North Carolina.
- Ammerman, B. A., **Jacobucci, R.**, Kleiman, E. M., Muehlenkamp, J., J. & McCloskey, M. S. (2015, November). *The exploration and validation of an empirically derived frequency criteria for NSSI Disorder*. Paper presented at the 49th Annual Convention for the Association for Behavioral and Cognitive Therapies, Chicago, Illinois
- Jacobucci, R.**, Prindle, J. J., McArdle, J. J. (2015, September). *An Application of Exploratory Data Mining in Project TALENT*. Paper presented at the International Meeting for Intelligence Research Annual Conference, Albuquerque, New Mexico.

• Poster Presentations

- Jacobucci, R.**, & Zelinski, E. M. (2017, July). *Exploratory Search for Heterogeneity in Change Across Old Age Using Structural Equation Model Trees*. Poster presented at the International Association of Gerontology and Geriatrics, San Francisco, California.
- Khoddam, R., Cho, J., Jacobucci, R., Prescott, C. A., & Leventhal, A. M. (2017, March). *Bivariate Latent Difference Score Modeling to Examine the Relationship between Conduct Problems and Cigarette Smoking among Adolescents*. Poster presented at the Society for Research on Nicotine and Tobacco annual meeting, Florence, Italy.
- Ammerman, B. A., **Jacobucci, R.**, & McCloskey, M. S. (2016, June). *The Prediction of Non-Suicidal Self-Injury Frequency Using Random Forests*. Poster presented at the 11th Annual Meeting of the International Society for the Study of Self-Injury, Eau Claire, Wisconsin.
- Jacobucci, R.**, Hayes, T., Zelinski, E. M. (2015, November). *Evaluating Methods for Generalizing from a Convenience Sample*. Poster presented at the 68th Annual Scientific Meeting of the Gerontological Society of America, Orlando, Florida.
- Zelinski, E., **Jacobucci, R.**, Kennison, R., & Zak, D. (2014, November). *Can a convenience sample produce generalizable results?* Poster session presented at the Gerontological Society of America Annual Scientific Meeting, Washington, DC.
- Jacobucci, R.**, Williams, J. E., & Thiruselvam, I. (2013, January). *A confirmatory factor analysis of the short form for the IPIP-NEO five-factor model personality scale*. Poster session presented at the Society for Personality and Social Psychology, New Orleans, Louisiana.

Jacobucci, R., Brownfield, C., & Williams, J. E. (2012, December). *Intelligence as a factor in criminal offender risk assessment*. Poster session presented at the International Society for Intelligence Research, San Antonio, Texas.

Jacobucci, R., Williams, J. E., & Thiruselvam, I. (2012, March). *Convergent validity of two short form measures of the five factor model of personality*. Poster session presented at the Iowa Psychological Association Spring Conference, Ames, Iowa.

Software

Jacobucci, R. (2017). regsem: Performs Regularization on Structural Equation Models (version 0.8.1) [Software]. Available from <https://cran.r-project.org/web/packages/index.html>

Jacobucci, R., Stewart, S., Abdoell, M., Serang, S., & Stegmann, G. (2017). longRPart2: Recursive Partitioning of Longitudinal Data (version 0.0.1) [Software]. Available from <https://cran.r-project.org/web/packages/longRPart2/index.html>

Jacobucci, R. (2017). dtree: Decision Trees (version 0.2.3) [Software]. Available from <https://cran.r-project.org/web/packages/dtree/index.html>

Jacobucci, R. (2016). autosem: Performs Specification Search in Structural Equation Models (version 0.1.0) [Software]. Available from <https://cran.r-project.org/web/packages/autoSEM/index.html>

Awards/Honors

2016 USC Psychology Department Travel Grant Award

Travel award to present at the 2016 Psychometric Society Meeting.

Amount: \$500

2015 SMEP Conference Travel Award

Travel award to present at the 13th Annual Society of Multivariate Experimental Psychology Graduate Student Conference.

Amount: \$1500

2015 ISIR Conference Travel Award

Travel award to present at the annual meeting of the International Society for Intelligence Research.

Amount: \$1500

2014 SMEP Workshop Travel Award

Travel award to attend the 2014 APA Advanced Training Institutes on Structural Equation Modeling in Longitudinal Research and Exploratory Data Mining in Behavioral Research.

Amount: \$1000

2014 APA Science Directorate Travel Award

Travel award to attend the 2014 APA Advanced Training Institutes on Structural Equation Modeling in Longitudinal Research and Exploratory Data Mining in Behavioral Research.

Amount: \$500

Intercollegiate Academics Fund Travel Award, UNI, Fall 2012

Award allocated to promote and support the presentation of research at an academic conference.

Amount: \$650

Graduate Student Opportunity Fund For Travel, UNI, Fall 2012

Award to support travel for graduate students presenting at an academic conference.

Amount: \$250

College of Social and Behavioral Sciences Graduate Research Award, UNI, Fall 2012

Award allocated for the purchase of expenses related to thesis research.

Amount: \$500

Graduate College Tuition Scholarship, UNI, Fall 2012

Scholarship based on academic performance.

Academic All-American, Golf, 2009, 2010

An award given out by the Golf Coaches Association of America based on academic and athletic performance.

Teaching Experience

- **Classes**

Undergraduate Psych Statistics

PSY30100 - 03: Experimental Psychology I - Statistics

Fall 2017 & 2018, University of Notre Dame

Graduate Regression

PSY60101 - 01: Quantitative Methods in Psychology II

Spring 2018, University of Notre Dame

- **Workshops**

Exploratory Data Mining via SEARCH Strategies

8/15/2016-8/19/2016 & 8/14/2017-8/18/2017

University of Michigan, Ann Arbor, MI.

Role: Lecturer and lab instructor.

Lecture Topic: Structural Equation Model Trees

Lab Topics: R, Regression, Clustering, Factor Analysis, Decision Trees & Extensions, SEM Trees.

Big Data: Exploratory Data Mining in Behavioral Research

APA Advanced Training Institutes. 6/6/2016-6/10/2016 & 6/5/2017-6/9/2017

Arizona State University, Tempe, AZ

Role: Lecturer and lab instructor.

Lecture Topic: Structural Equation Model Trees

Lab Topics: Decision Trees, Random Forests, Boosting, & SEM Trees.

Structural Equation Modeling in Longitudinal Research

APA Advanced Training Institutes. 6/6/2016-6/10/2016 & 5/30/2017-6/3/2017

Arizona State University, Tempe, AZ

Role: Lab instructor.

Lab Topics: Longitudinal Factor Analysis & Alternate Change Score Models.

Exploratory Data Mining via SEARCH Strategies

6/8/2015-6/12/2015, University of Michigan, Ann Arbor, MI

Role: Lab instructor.

Lab Topics: R, Regression, Clustering, Factor Analysis, Decision Trees & Extensions, SEM Trees.

Big Data: Exploratory Data Mining in Behavioral Research

APA Advanced Training Institutes. 6/1/2015-6/5/2015, Arizona State University, Tempe, AZ

Role: Lab instructor.

Lab Topics: Decision Trees & Extensions, SEM Trees, Heuristic Search Algorithms.

- **Lecturing**

Exploratory Factor Analysis, Multivariate Analysis of Behavioral Data, Fall 2016, USC

The application of SEM Trees in Project TALENT, Big Data: Exploratory Data Mining in Behavioral Research Workshop, Summer 2014, USC.

Graphing in R, Graduate Consultation and Computer Center Lecture Series, Spring 2014, USC.

Item Factor Analysis, Graduate Consultation and Computer Center Lecture Series, Spring 2014, USC.

Factor Indeterminacy, Workshop in Quantitative Methods – Mathematical Psychology, Spring 2014, USC

Estimation in Factor Analysis, Workshop in Quantitative Methods – Mathematical Psychology, Spring 2014, USC

Statistical Learning-Part 3: Advanced Algorithms, Graduate Consultation and Computer Center Lecture Series, Fall 2014, USC.

Statistical Learning-Part 1: Preprocessing, Graduate Consultation and Computer Center Lecture Series, Fall 2014, USC.

Exploratory Factor Analysis, Introduction to Psych Statistics, Spring 2012, UNI

Professional Activities

- **Consulting**

Team member of environmental-brain aging psychometrics working group for the Environmental Determinants of Cognitive Aging R01, Summer 2013 - Spring 2014, USC.

- **Reviewing**

Journal of Consulting and Clinical Psychology

Structural Equation Modeling

Advances in Methods and Practices in Psychological Science

Multivariate Behavioral Research

Journal of Mathematical Psychology

Psychological Methods

Behavior Research Methods

Psychometrika

BMJ Open