

# Pascal R. Deboeck

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## Contact Information

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**PDF Hyperlinks:** [Education](#), [Positions](#), [Publications](#), [Funding](#), [Teaching](#), [Mentoring](#),  
[Conferences](#), [Service](#), [Other](#)

## Research Interests & Expertise

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My research is focused on the development and application of statistical methods for the analysis of intensive, intraindividual time series. In particular I focus on the development and application of derivatives, differential equation modeling, and dynamical systems concepts to time series common to social, behavioral, and medical sciences.

## Education

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### **Doctor of Philosophy, Psychology, University of Notre Dame, August 2007**

Specialization: Quantitative Psychology; Thesis: Smoothing-Independent Estimation of a Linear Differential Equation Model (Advisor: Steven M. Boker)

### **Master of Arts, Psychology, University of Notre Dame, August 2005**

Specialization: Quantitative Psychology; Thesis: Using Surrogate Data Analysis to Estimate  $\tau$  for Local Linear Approximation of Damped Linear Oscillators (Advisor: Steven M. Boker)

### **Distinguished Bachelor of Arts, Psychology, University of Virginia, May 2002**

Distinguished Major Thesis: Serial versus Parallel Attentional Division in a Continuous Dual Task Situation (Advisor: Timothy Salthouse)

### **Bachelor of Arts equivalent coursework, Physics, University of Virginia, May 2002**

## Academic Positions

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University of Utah, July 2016 — present

**Associate Professor**, Developmental Program, Department of Psychology, Tenured position.  
July 2016 — present

**Consortium for Families and Health Research**, Affiliated Faculty & Statistical Consultant  
July 2016 — present

**Director, Developmental Training Program**, Department of Psychology,  
August 2019 — present

**Director, Undergraduate Certificate in Quantitative Research Analytics in the Social Sciences**,  
College of Social and Behavioral Research, July 2018 — June 2021

**University of Kansas**, August 2008 — June 2016

**Associate Professor**, Quantitative Program, Department of Psychology, Tenured position.  
August 2014 — June 2016

**Director, Quantitative Training Program**, Department of Psychology,  
May 2015 — June 2016

**Center for Research Methods and Data Analysis**, Affiliated Faculty,  
October 2009 — June 2016

**Gerontology Center**, Associated Faculty, Schiefelbusch Institute for Life Span Studies,  
October 2008 — June 2016

**Assistant Professor**, Quantitative Program, Department of Psychology,  
August 2008 — July 2014

**Post-Doctoral Research Associate**, Department of Psychology, University of Notre Dame.  
August 2007 — August 2008

**Graduate Student**, Quantitative Program, Department of Psychology, University of Notre Dame.  
August 2002 — August 2007

## Publications

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*Note: \*\* indicates authors that are current or former students.*

### Peer-Reviewed Journal Articles

Vlisides-Henry, R. D., Deboeck, P. R., Grill-Velasquez, W., Mackey, S., Ramadurai, D. K. A., Urry, J. O., Neff, D., Terrell, S., Gao, M., Thomas, L., Conradt, E., & Crowell, S. E. (in press). Behavioral and physiological stress responses: Within-person concordance during pregnancy. *Biological Psychology*.

Bulik, C. M., Butner, J. E., Tregarthen, J., Thornton, L. M., Flatt, R. E., Smith, T., Carroll, I. M., Baucom, B. R.W. & Deboeck, P. R. (2020). The Binge Eating Genetics Initiative (BEGIN): study protocol. *BMC psychiatry*, 20(1), 1-9.

Fraley, R. C., Gillath, O., & Deboeck, P. R. (2020). Do life events lead to enduring changes in adult attachment styles? A naturalistic longitudinal investigation. *Journal of Personality and Social Psychology*.

Deboeck, P. R., Cole, D. A., Preacher, K. J., Forehand, R. & Compas, B. E. (2020). Modeling Dynamic Processes with Panel Data: An Application of Continuous Time Models to Prevention Research. *International Journal of Behavioral Development*.

Deboeck, P. R. (2020). Empirical Bayes Derivative Estimates. *Multivariate Behavioral Research*, 55(3), 382-404.

Martin, D. M.\*\*, Gillath, O., Deboeck, P. R., Lang, K.\*\* & Kerr, B. (2017). Changes in Attachment Security and Mindfulness as Predictors of Changes in Depression and General Anxiety. *Journal of Social and Clinical Psychology*, 36(9), 769-797.

- Nicholson, J. S., Deboeck, P. R. & Howard, W.\*\* (2017). Attrition in Developmental Psychology: A review of modern missing data reporting and practices. *International Journal of Behavioral Development*, 41, 143–153.
- Deboeck, P. R. & Boulton, A. J.\*\* (2016). Integration of Stochastic Differential Equations using Structural Equation Modeling: A Method to Facilitate Model Fitting and Pedagogy. *Structural Equation Modeling*, 23, 888–903.
- Tueller, S., Deboeck, P. R. & Van Dorn, R. (2016). Getting less of what you want: Reductions in statistical power and increased bias when categorizing medication adherence data. *Journal of Behavioral Medicine*, 39, 969–980.
- Deboeck, P. R. & Preacher, K. J. (2015). No Need to be Discrete: A Method for Continuous Time Mediation Analysis. *Structural Equation Modeling*, 23, 61–75.
- Deboeck, P. R., Nicholson, J. S., Kouros, C., Little, T. D. & Garber, J. (2015). Integrating developmental theory and methodology: Using derivatives to articulate change theories, models, and inferences. *Applied Developmental Science*, 19 (4), 217–231.
- Bergeman, C. S. & Deboeck, P. R. (2014). Trait stress resistance and dynamic stress dissipation on health and well-being: The reservoir model. *Research in Human Development*, 11(2), 108–125.
- Deboeck, P. R. & Bergeman, C. S. (2013). The Reservoir Model: A Differential Equation Model of Psychological Capacity. *Psychological Methods*, 18(2), 237–256.
- Deboeck, P. R., Atchley, P., Chan, M.\*\*, Geldhof, J.\*\*, & Fries, C.\*\* (2011). Using Momentary Derivative Estimates To Gauge Driver Performance. *Advances in Transportation Studies*, 183–192.
- Nicholson, J. S., Deboeck, P. R., Farris, J. R., Boker, S. M. & Borkowski, J. G. (2011). Maternal Depressive Symptomatology and Child Behavior: A Dynamical System with Simultaneous Bi-directional Coupling. *Developmental Psychology*, 47(5), 1312–1323.
- Russell, A., Bergeman, C. S., Deboeck, P. R., Baird, B., Montpetit, M., Ong, A. (2011). Perceived Emotion Control During Later Life: The Relationship Between Global Perceptions and Daily Experience. *Personality and Individual Differences*, 50, 1084–1088.
- Deboeck, P. R. (2010). Estimating Dynamical Systems, Derivative Estimation Hints from Sir Ronald A. Fisher. *Multivariate Behavioral Research*, 43 (4), 725–745.
- Montpetit, M. A., Bergeman, C. S., Deboeck, P. R., Tiberio, S. S. & Boker, S. M. (2010) Resilience–As–Process: Negative Affect, Stress, and Coupled Dynamical Systems. *Psychology and Aging*, 25 (3), 631–640.
- Deboeck, P. R. & Boker, S. M. (2010). Modeling Noisy Data with Differential Equations using Observed and Expected Matrices. *Psychometrika*, 75 (3), 420–437.
- Deboeck, P. R., Montpetit, M. A., Bergeman, C. S. & Boker, S. M. (2009). Describing Intraindividual Variability at Multiple Time Scales Using Derivative Estimates. *Psychological Methods*, 14 (4), 367–386.
- Deboeck, P. R., Boker, S. M. & Bergeman, C. S. (2008). Modeling Individual Damped Linear Oscillator Processes with Differential Equations: Using Surrogate Data Analysis to Estimate the Smoothing Parameter. *Multivariate Behavioral Research*, 43 (4), 497–523.
- Boker, S. M., Leibenluft, E., Deboeck, P. R., Virk, G. & Postolache, T. T. (2008). Mood Oscillations and Coupling Between Mood and Weather in Patients with Rapid Cycling Bipolar Disorder. *International Journal*

of *Child Health and Human Development*, 1 (2), 181–202. Reprinted in T. T. Postolache (Ed.) *Environment, Mood Disorders and Suicide*. Nova Science, New York. 2011.

## Chapters

Deboeck, P. R. (2020). Hands-On Experience in the Classroom — Why, How, and Outcomes. In J. L. Rodgers (Eds.) *Teaching Statistics and Quantitative Methods into the 21st Century*. Taylor & Francis.

Deboeck, P. R., Preacher, K. J. & Cole, D. A. (2018). Mediation Modeling: Differing Perspectives on Time Alter Mediation Inferences. In K. van Montfort, J. Oud & M. Voelke (Eds.) *Continuous Time Modeling in the Behavioral and Related Sciences*. Springer.

Deboeck, P. R. (2016). Dynamical Systems Approaches. In S. K. Whitbourne (Ed.) *The Encyclopedia of Adulthood and Aging, Volume 1*, pp. 384–390. John Wiley & Sons, Inc.

Deboeck, P. R. & Boker, S. M. (2015). Analysis of Dynamic Systems: The Modeling of Change and Variability. In S. J. Henly (Ed.) *Routledge International Handbook of Advanced Quantitative Methods in Nursing Research*, pp. 170–186. Abingdon, UK: Routledge/Taylor & Francis.

Little, T. D., Deboeck, P. R. & Wu, W. (2015). Longitudinal Data Analysis. In R. A. Scott and S. M. Kosslyn (Ed.) *Emerging Trends in the Social and Behavioral Sciences*. Hoboken, NJ: John Wiley and Sons.

Deboeck, P. R., Nicholson, J. S., Bergeman, C. S., & Preacher, K. J. (2013). From Modeling Long-Term Growth to Short-Term Fluctuations: Differential Equation Modeling Is the Language of Change. In Millsap, R.E., van der Ark, L.A., Bolt, D.M., & Woods, C.M. (Eds.), *New Developments in Quantitative Psychology*, pp. 427–447. New York: Springer.

Deboeck, P. R. (2013). Dynamical systems and models of continuous time. In T. D. Little (Ed.) *The Oxford Handbook of Quantitative Methods, Vol. II*, pp. 411–431. New York, NY: Oxford University Press.

Deboeck, P. R. (2011). Modeling Non-Linear Dynamics. In M. R. Mehl & T. S. Conner (Eds.) *The Handbook of Research Methods for Studying Daily Life*, pp. 440–458. New York, NY: Guilford Press.

Deboeck, P. R., Boker, S. M. (2009). Unbiased, Smoothing-Independent Estimation of Oscillators in Psychology. In S. Chow, E. Ferrer & F. Hsieh (Eds.), *Statistical Methods for Modeling Human Dynamics: An Interdisciplinary Dialogue*, pp. 179–212. New York, NY: Taylor & Francis Group.

Boker, S. M., Deboeck, P. R., Edler, C. & Keel, P. K. (2009). Generalized Local Linear Approximation of Derivatives from Time Series. In S. Chow, E. Ferrer & F. Hsieh (Eds.), *Statistical Methods for Modeling Human Dynamics: An Interdisciplinary Dialogue*, pp. 161–178. New York, NY: Taylor & Francis Group.

## Peer-Reviewed Proceedings Papers, Letters and Short Reports

Wu, Y. P.\*\*, Deboeck, P. R., Joseph, M. F., Hwang, C., Perlis, C. S., & Perlis, R. H. (2009). Does study design explain the relationship between conflict of interest and positive outcome in clinical trials in psychiatry? *Journal of Clinical Psychopharmacology*, 29 (6), 609–611.

Boker, S. M., Covey, E. S., Tiberio, S. S., & Deboeck, P. R. (2005). Synchronization in Dancing is Not Winner-Takes-All: Ambiguity Persists in Spatiotemporal Symmetry Between Dancers. *2005 Proceedings of the North American Association for Computational, Social, and Organizational Science*.

## Other Publications

Schmidt, K. M., Bowles, R. P., Kline, T. L., Deboeck, P., & McArdle, J. J. (2002, February). Jefferson Psychometric Lab Psychometric Scaling Progress Report Presented to The College Board for The Rainbow Project Data. CONFIDENTIAL DATA.

Schmidt, K. M., Bowles, R. P., Kline, T. L., Deboeck, P., & McArdle, J. J. (2001, December). Jefferson Psychometric Lab Psychometric Scaling Progress Report Presented to The College Board for The Rainbow Project Data. CONFIDENTIAL DATA.

Schmidt, K. M., Bowles, R. P., Kline, T. L., Deboeck, P. & McArdle, J. J. (2001, October). Jefferson Psychometric Lab Psychometric Scaling Progress Report Presented to The College Board for The Rainbow Project Data. CONFIDENTIAL DATA.

## Funding

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### Grant Funding

Clinical markers of neonatal opioid withdrawal syndrome: onset, severity, and longitudinal neurodevelopmental outcome (PI: Barry Lester, Elizabeth Conrardt) Role: Co-Investigator. National Institutes of Health, National Institute on Drug Abuse; April 2020 — February 2025; Total Costs: \$801,628.

Family-focused melanoma preventive intervention for children of survivors. (PI: Yelena Wu) Role: Co-Investigator. American Cancer Society; January 2020 — December 2023; Total Costs: \$789,000.

Predicting binge and purge episodes from passive and active Apple Watch data using a dynamical systems approach. (PIs: Cynthia Bulik, Jonathan Butner) Role: Co-Investigator. National Institutes of Health, National Institute on Aging; September 2019 — July 2023; Total Costs: \$2,935,155.

Collaborative Research: Separating transient and enduring forms of change in adult attachment styles. (PIs: R. Chris Fraley, Omri Gillath, Pascal R. Deboeck) National Science Foundation; September 2014 — August 2019; Total Costs: \$550,000.

Improving Childrens Well-being: Identifying Mechanisms and Timing of Family Strengthening Programs for Low-income Families through Differential Equation Modeling (PIs: Chrystyna Kouros, Pascal R. Deboeck) Department of Health and Human Services; September 2014 — February 2017; Total Costs: \$99,079.

Dynamic Multitasking Countermeasures to Improve Sustained Attention while Driving. (PI: Paul Atchley, Pascal R. Deboeck) Role: Co-Investigator. Funded by the Department of the Army; July 2012 — June 2013; Total Costs: \$50,000.

Improving the Analysis of Psychopharmacological Adherence Data (PIs: R. van Dorn, S. Tueller) Role: Statistical Consultant. National Institutes of Health; February 2015 — January 2017; Total Costs: \$82,727.

Meeting the Mental Health Needs of KDOA In-Home Medicaid Customers: Peer Support Program Statewide Implementation. (PI: Rosemary Chapin) Role: Statistical Consultant. Funded by the Kansas Department on Aging and the Kansas Health Policy Authority; August 2010 — July 2011; Total Costs: \$267,588.

Meeting the mental health needs of older adults on Medicaid: A pilot study. (PI: Rosemary Chapin) Role: Statistical Consultant. Funded by the Kansas Department on Aging and the Kansas Health Policy Authority; August 2009 — July 2010; Total Costs: \$333,018.

### Statistical Consultant, Consulting Contracts, and Other funding

SoLD Measures and Methods Across the Development Continuum (PI: Richard Lerner and Colleagues) Role: Statistical Consultant. Chan Zuckerberg Initiative DAF, an advised fund of Silicon Valley Community Foundation; February 2019 — February 2021; Total Costs: \$2,970,000.

Ambulatory Blood Pressure Monitoring and Cognitive Decline. (David K. Johnson) Role: Contracted Service, Statistical Consulting. Funded by the University of California, Davis, Alzheimers Disease Center-East Bay. May 2019 — December 2019.

Curriculum Development and Launch of the Advance Statistical Methods for Family Research Workshop Series (PI: Brain Baucom), Role: Co-I. Consortium for Families and Health Research (C-FAHR) Pilot Grant, University of Utah. Spring 2018 (\$5000).

Graphics Processing Unit (GPU) Grant Program, NVIDIA Corporation. Fall 2017 (Quadro P5000 GPU, \$648).

University of Kansas Center for Research Methods and Data Analysis Army Service Agreement (PI: Todd Little) Role: Co-Investigator. Funded by the Department of the Army; December 2012 — September 2013; Total Costs: \$315,000.

Novel Glaucoma Diagnostics for Structure and Function. (Richard Bilonick) Role: Contracted Service, Statistical Consulting. Funded by the National Institutes of Health; April 2013 — July 2013.

Attachment as Process: Modeling Attachment as a Daily Process using Differential Equation Models. (PI: Pascal R. Deboeck) Funded by the University of Kansas Center for Research. February 2011 — February 2013; Total Costs: \$8,000.

Stress, Resilience, and Working Memory in Later Life. (PIs: Anthony Ong & Alice Isen) Role: Contracted Service, Statistical Consulting. Funded by the National Institutes of Aging (R21); October 2007 — July 2010.

Teaching-Related Education and Travel (TREAT) Award, Center for Teaching Excellence at the University of Kansas. Spring 2012 (\$700).

Teaching Development Award, Department of Psychology at the University of Kansas. Spring 2012 (\$500).

Best Practices Institute, Center for Teaching Excellence at the University of Kansas. May 2009 (\$750).

Graduate Student Professional Development Award, Institute for Scholarship in the Liberal Arts at the University of Notre Dame. July, 2007 (\$1000).

## Teaching

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### Instructor (Semester Courses)

Analysis of Temporal Data

Graduate Class, University of Utah (Fall 2017, Fall 2018, Fall 2020)

Analysis of Variance

Graduate Class & Undergraduate Quantitative Minor Class

University of Kansas (Fall 2008, Spring 2009, Spring 2010, Fall 2010, Spring 2012, Spring 2013, Spring 2014)

Categorical Data Analysis (**Flipped/Reversed Class**)

Graduate Class & Undergraduate Quantitative Minor Class

University of Kansas (Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2014)

Consulting Course

Advanced Graduate Class, University of Kansas (Spring 2009, Spring 2010)

Dynamical Systems

Advanced Graduate Class, University of Kansas (Spring 2010)

Longitudinal Data Analysis

Advanced Graduate Class, University of Kansas (Spring 2015)

Modeling Intraindividual Variability (**Flipped/Reversed Class**)

Advanced Graduate Class

University of Kansas (Spring 2012, Spring 2013, Spring 2014, Spring 2015)

Nonparametric Data Analysis

Advanced Graduate Class, University of Kansas (Fall 2014)

Simulation Studies with R

Advanced Graduate Class, University of Kansas (Fall 2009)

Structural Equation Modeling

Graduate Class, University of Utah (Fall 2019)

Quantitative Methods I

Graduate Class, University of Notre Dame (Fall 2007)

Quantitative Methods II

Graduate Class, University of Utah (Spring 2017, Spring 2018, Spring 2019, Spring 2020)

Experimental Psychology I

Undergraduate Class, University of Notre Dame (Spring 2008)

**Semester Courses where Significant Support was Provided:**

Consortium for Families and Health Research Fellows course

Graduate Class, University of Utah (Spring 2018)

**EARA-SRA Senior Scholar, Quantitative Methods:** One week summer school that is hosted by the European Society for Research on Adolescence (EARA) and the Society for Research on Adolescence (SRA). This summer school provides an opportunity for 24 doctoral students to learn from 8 senior researchers. Atlanta, GA; May 2015.

**Workshops:**

**Week-long**

— Level, Change, and Acceleration: Modeling Correlated Change in Longitudinal Data and Intensive Repeated Measures Design (ICPSR, Utah; 2019, 2020)

— Modeling Intraindividual Observations (KU Summer Institute; 2013)

— Categorical Data Analysis; Co-taught with Dr. Carol Woods (KU Summer Institute; 2010, 2011, 2012)

— Introduction to R; Co-taught with Dr. Paul Johnson (KU Summer Institute; 2010, 2011, 2012, 2013)

### 1-3 Day

— Introduction to R; (Texas Christian University; 2016)

— Matrix Algebra; (KU Summer Institute; Summer 2014)

— Intensive Longitudinal Data Analysis; (Indiana University — Purdue University Indianapolis; Summer 2018)

### <1 Day

— C-FAHR: Introduction to Mixed Models in R (February, 2020)

— Using  $\text{\LaTeX}$  for Theses and Dissertations (September 2006)

— Introduction to R (May, 2006)

— Introduction to Mx (February, 2006)

— Introduction to  $\text{\LaTeX}$ (October, 2005)

**iPsychD: Intraindividual Psychological Dynamics:** Workgroup is aimed at studying the modeling of intraindividual processes and producing new research. 2010–2016.

**SYNC: Systems and Coffee:** Workgroup is aimed at studying dynamical systems. 2016–present.

### Teaching Development Activities & Attended Programs:

**Project-Based Introductory Statistics Curriculum**, Wesleyan University, CT. Workshop developed with support from the National Science Foundation. Attended Summer 2012.

**Best Practices Institute**, Center for Teaching Excellence, University of Kansas, KS. Institute where one focuses on modification of a specific course so as to improve student progress towards the goals of the course. Attended May 2009.

**Workshops** from Center for Teaching Excellence at the University of Kansas. Typically 1 to 2 workshops per year. August 2008 — June 2016.

**Striving for Excellence in Teaching Certificate**, Kaneb Center, University of Notre Dame, IN. Certificate given to individuals meeting goals that demonstrate efforts to improve teaching quality. Awarded May 2005.

## Students and Mentoring

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### Graduate Students

Dillon Ely (Fall 2019 — Summer 2020)

Leslie Shaw, Ph.D. (Spring 2013 — Summer 2017)

Mauricio Garnier-Villarreal, Ph.D. (Fall 2013 — Summer 2016)

Luke McCune, M.A. (Fall 2013 — Summer 2014)



Steve Short, Ph.D. (Fall 2013 — Spring 2014)  
Aaron Boulton, Ph.D. (Fall 2012 — Spring 2014)  
Sunthud Pornprasertmanit, Ph.D. (Fall 2010 — Spring 2014)  
Scott Drotar, M.A. (Fall 2009 — Spring 2013)

## Post-Doctoral

Lyndsey Miller. Intra-Individual Dynamics of Stress and Health Among Informal Dementia Caregivers, National Institutes of Aging, K01. Role: Consultant

## Dissertation and Masters Committees (program, proposal date and/or defense date)

*Note: REMS: Research, Evaluation, Measure and Statistics*

Nila Shakiba (Developmental Dissertation, TBD)  
Yeseul Nam (Cognitive Dissertation, TBD)  
Ty McKinney (Cognitive Dissertation, Proposed June, 2020)  
Ibrahim Aljulaymi (Rehabilitation Science Dissertation, Proposed April, 2020)  
Kevin Greenberg (Educational Psychology Dissertation, Proposed January, 2020)  
Ascher Munion (Cognitive Dissertation, Defended May 2020)  
Erika Roberge (Clinical Dissertation, Defended May, 2019)  
Priya Ramanujam (Clinical Dissertation, Defended May, 2019)  
Brendan Ostlund (Developmental Dissertation, Defended April 2019)  
Lucybel Mendez (Clinical Master's, December 2018)  
Leslie Shaw (Quantitative Dissertation, Defended June, 2017)  
Mauricio Garnier-Villarreal (Quantitative Dissertation, Defended July, 2016)  
Mian Wang (Quantitative Dissertation, Defended May, 2016)  
Fan Jia (Quantitative Dissertation, Defended May, 2016)  
Matt Sherwood (School of Business Dissertation, Proposed, July 2015)  
Richard Kinai (Quantitative Master's, Defended June 2015)  
Leslie Shaw (Quantitative Master's, Defended June, 2015)  
Mark Geiger (School of Business Dissertation, Proposed June, 2015)  
Kyle Lang (Quantitative Dissertation, Defended May 2015)  
Terrence Jorgensen, Jr. (Quantitative Dissertation, Defended May, 2015)  
Jared Harpole (Quantitative Dissertation, Defended, October 2015)  
Luke McCune (Quantitative Master's, Defended June, 2014)  
Aaron Boulton (Quantitative Dissertation, Defended May, 2014)  
Sunthud Pornprasertmanit (Quantitative Dissertation, Defended May, 2014)  
Stephen Short (Quantitative Dissertation, Defended April, 2014)  
Cullen Merritt (School of Public Affairs and Administration Dissertation, Defended April, 2014)  
Mike Ellis (School of Business Dissertation, Defended March, 2014)  
Ken Dalton (School of Business Dissertation, Defended, December 2014)  
Mauricio Garnier-Villarreal (Quantitative Master's, Defended November, 2013)  
Mindy Pressman (Clinical Master's, Defended August, 2013)  
Scott Drotar (Quantitative Master's, Defended April, 2013)  
Jared Harpole (Quantitative Master's, Defended February, 2013)  
Fei Gu (REMS Dissertation, School of Education, Defended January 2013)  
Mike Struempf (Political Science Dissertation, Defended July 2012)  
Waylon Howard (Quantitative Dissertation, Proposal March 2012)  
David Martin (Counseling Dissertation, School of Education, Defended January 2012)  
Pui Chi Chiu (REMS Dissertation, School of Education, Defended June 2012)  
Emily Fall (Quantitative Dissertation, Defended July 2011)  
Ihno Lee (Quantitative Dissertation, Defended June 2011)

Mike Clark (Quantitative Dissertation, Defended June 2010)  
James Selig (Quantitative Dissertation, Defended June 2009)  
Vince Staggs (Quantitative Dissertation, Defended April 2009)

Afsheen Gul, External Dissertation Evaluation for the University of the Punjab, Lahore-Pakistan (2012)

## **Conferences, Colloquia, Symposia, and Posters**

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*Note: \*\* indicates authors that are current or former students.*

### **Invited Talks (selected subset)**

Deboeck, P. R. (2017, December). Continuous and Discrete Time: How Differing Perspectives on Modeling Time Affect Developmental Inferences. Invited presentation for the Society for the Study of Human Development, SSHD Professional Development Webinar.

Deboeck, P. R. (2017, May). Generating Hands-On Experience in the Classroom: A Reverse Classroom Retrospective. Invited presentation for Teaching Statistics and Quantitative Methods into the 21st Century, APA Division 5 mid-year conference. Sponsored by APA Division 5, the Society for Multivariate Experimental Psychology, and Vanderbilt University; Nashville, TN.

Deboeck, P. R. (2015, May). No Need to be Discrete. Invited Senior Scholar at the EARA-SRA Summer School; Atlanta, GA.

Deboeck, P. R. (2015, May). The Challenges of (Longitudinal) Data Analysis. Invited Senior Scholar at the EARA-SRA Summer School; Atlanta, GA.

Deboeck, P. R. (2014, September). Characterizing Intraindividual Variability using Continuous Time Models: Moving Beyond Correlation and Towards Meaningful Parameters. Invited presentation at the Society for Research in Child Development Developmental Methodology Conference; San Diego, CA.

Deboeck, P. R. (2014, February). One Person's Error is Another's Treasure: Using Derivatives to Describe Intraindividual Variability. Invited Presentation at the University of North Carolina, Center for Developmental Science; Chapel Hill, NC.

Deboeck, P. R. (July, 2012). From Modeling Long-Term Growth to Short-Term Fluctuations: Differential Equations are the Language of Change. Invited State-of-the-Art Presentation, International Meeting of the Psychometric Society; Lincoln, Nebraska.

Deboeck, P. R. & Preacher, K. J. (October, 2011). No Need to be Discrete: A Method for Continuous Time Mediation Analysis. Invited Presentation at the University of Notre Dame, Quantitative Studies Group; Notre Dame, IN.

Deboeck, P. R. (2010, May). Dynamical Systems: Thinking about ways to model nonlinear change. Association for Psychological Science Annual Convention, Invited Symposium: Dynamical Systems: Thinking About Ways to Model Nonlinear Change (Organizer: P. R. Deboeck); Boston, Massachusetts.

### **Presentations**

Deboeck, P. R. (2020, October). Estimating Derivatives using Time-Delay Embedding. Invited presentation for the University of Virginia's Design and Data Analysis (DADA) lecture series.

Deboeck, P. R. (2020, September). No Need to be Discrete: A Comparison of Continuous and Discrete Time Perspectives. Invited presentation for Arizona State University's Quantitative Brown Bag Speaker Se-

ries.

Miller, L. M., Deboeck, P. R., Beattie, Z., Mattek, N., Sharma, N., Wild, K., Kaye, J. A., & Dodge, H. H. (2019, October). Modeling of behavioral interdependencies discoverable in continuous home-based digital activity data. Alzheimer's Disease Centers, Pre-conference workshop; St. Louis, MO.

Chandler, K., Hodge, C., Deboeck, P., Melton, K., and McElvaine, K. (2019, October). The Costs and Benefits of Ecological Momentary Assessments (EMA) of Studying Within-Person & Within-Family Variability. Society for the Study of Human Development; Portland, OR.

Deboeck, P. R. (2018, September). More Efficient Estimation of Derivatives for Visualizing Dynamical Systems. Presentation at the Developmental Methods Conference; Whitefish, MT.

Deboeck, P. R. (2018, September). Continuous and Discrete Time: Different Inferences from the same Multi-Wave Data. Presentation at the Developmental Methods Conference; Whitefish, MT.

Deboeck, P. R., Fraley, R. & Shaw, L.\*\* (2017, August). Visualizing Dynamic Data with More Efficient Derivative Estimation. Symposium presentation at the American Psychological Association. Symposium: Methodological Advances for Modeling and Characterizing Repeated Intraindividual Observations (APA CE Session; Organizer: Pascal R. Deboeck); Washington, D.C.

Deboeck, P. R., Fraley, R. & Gillath, O. (2017, August). Modeling of Repeated Observations, Separated by Random Intervals, Using Continuous Time Models. Poster presented at the American Psychological Association; Washington, D.C.

Garnier-Villarreal, M.\*\*, Deboeck, P. R., Johnson, D., Watts A. (2017, May). Intra and Interindividual Variation Modeling: Bayesian Mixed-Effects Nonstationary Latent Differential Equation Model

Deboeck, P. R. & Boulton, A. J.\*\* (2017, May). Using Derivatives to Articulate Theories and Models of Change. Presentation at Vanderbilt University, Quantitative Methods Colloquium Series; Nashville, TN.

Deboeck, P. R. (2016, May). Using Derivatives to Articulate Theories of Change. Presentation at the University of Missouri, Quantitative Psychology Colloquium Series; Columbia, MO.

Deboeck, P. R. (2016, February). Using Derivatives to Articulate Change Theories, Models, and Inferences. Presentation at the Pennsylvania State University, Quantitative Development Brownbag; State College, PA.

Deboeck, P. R. (2016, February). Trash to Treasure: Modeling "Error". Presentation at the Pennsylvania State University, Center for Healthy Aging Special Interest Group; State College, PA.

Deboeck, P. R. (2016, January). The Challenge of Articulating How, When, and Why People Change. Presentation at the University of Michigan, Department of Psychology; Ann Arbor, MI.

Deboeck, P. R. (2015, December). The Challenge of Articulating How, When, and Why People Change. Presentation at Indiana University, School of Education; Bloomington, IN.

Deboeck, P. R. (2015, November). The Challenge of Articulating How, When, and Why People Change. Presentation at the University of Utah, Consortium for Families and Health Research; Salt Lake City, UT.

Deboeck, P. R. (2014, December). Addressing Intraindividual Variability Questions with Derivatives. Presentation at the Pennsylvania State University, Department of Biobehavioral Health; State College, PA.

Deboeck, P. R. (2014, December). Addressing Intraindividual Variability Questions with Derivatives. Presentation at the University of California, Davis, Department of Psychology; Davis, CA.

Deboeck, P. R. (2014, November). Introducing Differential Equations to Social Scientists. Presentation at Computationally Intensive Modeling of Social Interaction Conference; Biosphere II, AZ.

Deboeck, P. R. & Boulton, A. J.\*\* (2014, September). Exploring Underlying Processes in Panel Data using Continuous Time Models. Symposium presentation at the Society for Research in Child Development Developmental Methodology Conference. Symposium: Advanced Modeling of Nonlinear Developmental Trajectories (Organizers: Kevin Grimm, Pascal R. Deboeck); San Diego, CA.

Kouros, C., Deboeck, P. R., Nicholson, J., Garber, J., Little T. (2014, September). Integrating Developmental Theory and Methodology: Using Derivatives to Articulate Change Theories, Models, and Inferences. Poster at the Society for Research in Child Development Developmental Methodology Conference; San Diego, CA.

Deboeck, P. R. (2014, September). Recent developments in modeling intensive longitudinal data: Idiographic and group approaches. Symposium discussant at the Society for Research in Child Development Developmental Methodology Conference. Symposium: Recent developments in modeling intensive longitudinal data: Idiographic and group approaches (Organizer: Kathleen Gates); San Diego, CA.

Deboeck, P. R. & Boulton, A. J.\*\* (2014, May). Discrete and Continuous Time Models from the Perspective of Structural Equation Modeling. Presentation at the Modern Modeling Methods Conference; Storrs, CT.

Leslie S.\*\* & Deboeck, P. R. (2014, May). Impact of Measurement Error in Continuous Time. Poster presented at the Modern Modeling Methods Conference; Storrs, CT.

Bergeman, C. S. & Deboeck, P. R. (2013, November). The ability to dissipate daily stress on health outcomes in later life. Presented at the Annual Convention of the Gerontological Society of America; New Orleans, Louisiana.

Bisconti, T., Hall, R., Deboeck, P. R., Montpetit, M., Powers, S., & Bergeman, C. S. (2013, November). Short Term Fluctuation in Depressed Mood as a Predictor of Long-term Depression in a Sample of Recent Widows. Poster presented at the Annual Convention of the Gerontological Society of America; New Orleans, Louisiana.

Martin, D.\*\*, Gillath, O., Lang, K.\*\*, Deboeck, P. R. & Kerr, B. (2013, August). Mindfulness and Attachment Security as Predictors of Success in Therapy. Poster presented at the American Psychological Association; Honolulu, Hawaii.

Boulton, A. J.\*\* & Deboeck, P. R. (2013, May). Continuous Time Analysis of Panel Data: An Illustration of the Exact Discrete Model. Presented at the Modern Modeling Methods; Storrs–Mansfield, Connecticut.

Deboeck, P. R., Montpetit, M. A., & Bergeman, C. S. (2012, November). Modern Methods for Modeling of Intraindividual Data: Extracting More Information from the Same Data. Poster presented at the Annual Convention of the Gerontological Society of America; San Diego, California.

Deboeck, P. R. & Preacher, K. J. (July, 2012). No Need to be Discrete: A Method for Continuous Time Mediation Analysis. International Meeting of the Psychometric Society; Lincoln, Nebraska.

Bergeman, C. S., Deboeck, P. R. & Pitzer, L. (2011, November). Stress Exposure and Stress Recovery: The Reservoir Model of Psychological Capacity. Annual Convention of the Gerontological Society of America, Symposium presentation: Highlighting Stress and Resilience with Burst Data: The Notre Dame Study of Health and Well Being (Organizer: L. Pitzer); Boston, Massachusetts.

Montpetit, M. A., Bergeman, C. S., Bank, K. H., & Deboeck, P. R. (2011, November). Racial identification, discrimination, and stress–recovery: A Dynamical Systems Approach. Annual Convention of the Gerontolog-

ical Society of America, Symposium presentation: Highlighting Stress and Resilience with Burst Data: The Notre Dame Study of Health and Well Being (Organizer: L. Pitzer); Boston, Massachusetts.

Deboeck, P. R., Atchley, P., Chan, M.\*\*, Geldhof, J.\*\*, & Fries, C.\*\* (2011, September). Using Momentary Derivative Estimates To Gauge Driver Performance. 3rd International Conference on Road Safety and Simulation; Indianapolis, IN.

Deboeck, P. R. (2011, June). Modeling of Intraindividual Social Science Time Series: Applying a Differential Equation Model to Examine Self-Regulation with Short, Noisy Time Series. Society for Ambulatory Assessment; Ann Arbor, MI.

Deboeck, P. R. & Nicholson, J. S. (2011, May). Using Derivatives to Nuance Discussion of Coupled Constructs. Poster presented at the Association for Psychological Science; Washington, District of Columbia.

Deboeck, P. R. & Nicholson, J. S. (2011, April). Using Derivatives to Become More Nuanced in Discussing 'Related' Variables. Society for Research in Child Development, Symposium: Panel Data Analysis: Innovative Approaches to Gain More Information from Our Studies (Organizer: P. R. Deboeck); Montreal, Canada.

Nicholson, J. S., Farris, J. R. & Deboeck, P. R. (2011, April). The Current State of Attrition Reporting in Developmental Literature: Is Standardization Needed? Society for Research in Child Development; Montreal, Canada.

Deboeck, P. R. & Bergeman, C. S. (2010, November). Are Intraindividual Differences in the Dynamics of Negative Affect and Stress Consistent? Annual Convention of the Gerontological Society of America; New Orleans, Louisiana.

Montpetit, M. A., Bergeman, C. S., Deboeck, P. R. & Boker, S. M. (2010, May). Stress-Resistance and Stress-Recovery: A "Dynamic" Conception of Resilience-as-Process. Association for Psychological Science Annual Convention, Invited Symposium: Dynamical Systems: Thinking About Ways to Model Nonlinear Change (Organizer: P. R. Deboeck); Boston, Massachusetts.

Nicholson, J. S., Deboeck, P. R., Farris, J. R. & Boker, S. M. (2010, May). Maternal Depressive Symptomatology and Child Behavior: Transactional Relationship with Simultaneous Bidirectional Coupling. Association for Psychological Science Annual Convention, Invited Symposium: Dynamical Systems: Thinking About Ways to Model Nonlinear Change (Organizer: P. R. Deboeck); Boston, Massachusetts.

Nicholson, J. S., Farris, J. R., Deboeck, P. R. & Howard, K. M. (2010, March). Smoke and Mirrors, or Full Disclosure? The State of Attrition Reporting in Developmental Literature. Gatlinburg Conference on Research & Theory in Intellectual & Developmental Disabilities; Annapolis, Maryland.

Nicholson, J. S., Farris, J. R., Deboeck, P. R. & Howard, K. M. (2010, March). Smoke and Mirrors, or Full Disclosure? The State of Attrition Reporting in Developmental Literature. Society for Research in Human Development; San Antonio, Texas.

Deboeck, P. R. (2009, November). Modeling Intraindividual Variability: A Comparison of Discrete Time and Continuous Time Methods. Poster presented at the Annual Convention of the Gerontological Society of America; Atlanta, Georgia.

Deboeck, P. R. & Bergeman, C. S. (2009, November). Relating Intraindividual Change and Variability: Predicting 3-year Changes from Daily Variability in Older Adults. Annual Convention of the Gerontological Society of America, Symposium presentation: The Dynamic Nature of Stress and Well-being: Short-term Variability from a Lifespan Perspective (Organizers: A. Brose & C. Wrzus); Atlanta, Georgia.

Montpetit, M. A., Deboeck, P. R. & Bergeman, C. S. (2009, November). Overlapping Sources of Variability

in Negative Affect: Relationships with Coping and Physical Health. Annual Convention of the Gerontological Society of America, Symposium presentation: Differential Change in Health in Later Life (Organizer: I. Schöllgen); Atlanta, Georgia.

Deboeck, P. R. (2009, July). Autoregressive Models: A Comparison of Discrete and Continuous Time Methods. European Survey Research Association, Symposium presentation: Comparing and Evaluating Autoregressive, Latent Trajectory, Autoregressive Latent Trajectory and Continuous Time Autoregressive Latent Trajectory Models (Organizer: J. Oud); Warsaw, Poland.

Nicholson, J. S., Farris, J. R., Deboeck, P. R., Boker, S. M. & Borkowski, J. G. (2009, April). Maternal Depressive Symptomatology and Child Behavior: Transactional Relationship with Simultaneous Bidirectional Coupling. Poster presented at the Society for Research in Child Development Biannual Meeting; Denver, Colorado.

Deboeck, P. R. (2008, November). Using Derivatives to Relate Resiliency to Daily Intraindividual Variability. Annual Convention of the Gerontological Society of America, Symposium presentation: Risk, Resilience and Recovery: The Notre Dame Study of Health and Well-being (Organizer: C. S. Bergeman); National Harbor, Maryland.

Deboeck, P. R., Nicholson, J. S., Farris, J. R., Boker, S. M. & Borkowski, J. G. (2008, September). Simultaneous bi-directional coupling between maternal depressive symptomatology and child behavior. Invited symposium presentation at the 4th Congress of the European Society on Family Relations; Jyväskylä, Finland.

Deboeck, P. R. (2007, December). Intraindividual Change & Variability. Invited presentation at the University of Cincinnati Children's Hospital Medical Center, Division of Behavioral Medicine & Clinical Psychology; Cincinnati, Ohio.

Deboeck, P. R. (2007, December). Using Derivatives to Describe Intraindividual Variability. Invited presentation at Ball State University; Muncie, Indiana.

Deboeck, P. R., Montpetit, M. A., & Bergeman, C. S. (2007, November). Estimation of Interindividual Differences in Intraindividual Variability at Multiple Time Scales. Paper presented at the Annual Convention of the Gerontological Society of America; San Francisco, California.

Montpetit, M. A., Deboeck, P. R., & Bergeman, C. S. (2007, November). Negative and Positive Affect: Derivative Variability Analysis. Paper presented at the Annual Convention of the Gerontological Society of America; San Francisco, California.

Deboeck, P. R. (2007, November). Using Derivatives to Describe Intraindividual Variability. Invited presentation at the University of Kansas; Lawrence, Kansas.

Deboeck, P. R. (2007, May). Differential Equation Modeling of Intraindividual Variability. Invited colloquia presented at the Notre Dame Series on Quantitative Methodologies; Notre Dame, Indiana.

Deboeck, P. R. (2007, February). Dynamical Systems Modeling of Intraindividual Variability. Invited presentation at McGill University; Montreal, Canada.

Deboeck, P. R. (2007, January). Dynamical Systems Modeling of Intraindividual Variability. Invited presentation at the University of North Carolina; Chapel Hill, North Carolina.

Deboeck, P. R. (2007, January). Dynamical Systems Modeling of Intraindividual Variability. Invited presentation at the University of Missouri; Columbia, Missouri.

Boker, S. M. & Deboeck, P. R. (2006, November). Age-Related Latent Symmetry Dynamics in Head Move-

ments and Facial Expressions during Dyadic Conversation. Symposium talk presented to the Annual Convention of the Gerontological Society of America.

Montpetit, M. A., Bergeman, C. S. & Deboeck, P. R. (2006, November). Negative Affect and Stress: A Dynamical Systems Analysis. Poster presented at the Annual Convention of the Gerontological Society of America.

Deboeck, P. R., Montpetit, M. A. & Bergeman, C. S. (2006, October). Derivative Variability Analysis: Examination of Intraindividual Variability at Multiple Time Scales. Presented at the Society of Multivariate Experimental Psychology Graduate Student Preconference; Lawrence, Kansas.

Boker, S. M. & Deboeck, P. R. (2006, March). Models of intersegmental coordination and control in a moving room. Presented to the New England Sequencing and Timing Meeting; New Haven, Connecticut.

Boker, S. M. & Deboeck, P. R. (2005, November). Age-Related Differences in Postural Control: Multisegmental Dynamics in a Moving Room. Symposium talk presented to the Annual Convention of the Gerontological Society of America.

Boker, S. M., Deboeck, P. R. & Tiberio, S. (2004, March). Latent Differential Equations Models of Interpersonal Coordination in Dance. New England Sequencing and Timing Meeting; New Haven, Connecticut.

Boker, S. M. & Deboeck, P. R. (2003, October). Latent Differential Equations Models of Interpersonal Coordination During Dyadic Dance. 11th Herbstakademie: Dynamical Systems in Cognitive Science; Ascona, Switzerland.

Boker, S. M. & Deboeck, P. R. (2003, September). Dynamical Systems Models of Rapid Cycling Bipolar Disorder. Society of Multivariate Experimental Psychology Annual Meeting; Keystone, Colorado.

Deboeck, P., Schmidt, K., Bowles, R. & Kline, T. (2002, June). Effects of Group Membership Analysis on Indicators of Cognitive Engagement. Psychometric Society, Symposium: Understanding cognitive processes by modeling sources of variation in item difficulty (Organizer: K. M. Schmidt, University of Virginia); Chapel Hill, North Carolina.

#### **Local Brownbags, Colloquiums, and Series:**

**University of Utah Consortium for Families and Health Research:** Data & Design Discussion – What should I do with my data? (Fritz, J. & Deboeck, P. R.; October, 2016)

**University of Utah Developmental/CCF Brownbag:** Work–Life Balance (Conradt, E., Raby, L. & Deboeck, P. R. ; October, 2017); Replication (Deboeck, P. R. & Raby, L.; October, 2017); Using Derivatives To Articulate Change Theories, Models, And Inferences (November, 2016)

**University of Kansas Quantitative Proseminar Series:** Introduction to xxM: n-level Structural Equation Modeling (October, 2014); Continuous Time Modeling via Structural Equation Modeling (November, 2013); From Modeling Long–Term Growth to Short–term Fluctuations: Differential Equations are the Language of Change (September, 2012); No Need to be Discrete: A Method for Continuous Time Mediation Analysis (September, 2011); Two Researchers and the Autoregressive Conundrum (October, 2009); The Hunt for Intrinsic Properties [Based on the Cattell Paper of Steven M. Boker](October, 2008)

**University of Kansas Developmental Proseminar Series:** From Pendulums to People: Using a Simple Dynamical System to Explore Psychological Constructs (January, 2010)

**University of Kansas Gerontology Faculty Colloquium:** Modeling Emotional Change in Older Adults: A Dynamical Systems Approach (April, 2009)

**Notre Dame Quantitative Studies Group:** Oscillatory Models of Rapid Cycling Bipolar Disorder, A Reanalysis (March 2006); Local Linear Approximation, Made Easy? (October 2005); Estimation of  $\tau$  Using Surrogate Data Analysis (February 2005); Topics on Local Linear Approximation of Damped Linear Oscillators (September 2004); Estimation of Changing Parameters for a Coupled Damped Oscillator Model (April 2004); Nonverbal Communication and Dancing: Modeling Intermittently Stationary Data (November 2003); Dynamic Systems Model: Problems incurred due to non-random missing data (April 2003)

## Professional Service

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### Journal Related Service

**Consulting Editor:** Psychological Methods (2013–present)

**Guest Article Editor/Special Action Editor:** SAGE Open Manuscript, International Journal of Behavioural Development (2015); American Psychological Association, Psychological Methods (2017–2019)

**Ad-Hoc Reviewer:** American Psychologist, British Journal of Mathematical and Statistical Psychology, Education and Psychological Measurement, Educational Assessment, Emotion, European Journal of Personality, Frontiers in Quantitative Psychology and Measurement, International Journal of Behavioral Development, International Journal of Psychophysiology, Journal of Abnormal Psychology, Journal of Articles in Support of the Null Hypothesis, Journal of Consulting and Clinical Psychology, Journal of Educational and Behavioral Statistics, Journal of Educational Psychology, Journal of Personality, Journal of Personality and Social Psychology, Multivariate Behavioral Research, Preventative Medicine, Psychological Assessment, Psychological Methods, Psychometrika, Scientific Studies of Reading, Translational Behavioral Medicine: Practice, Policy and Research

### Grant/Funding Related Service

**Institute of Education Sciences:** Scientific Review Panel Member (2015–2019)

**Ad Hoc Reviewer:** K.U. Leuven, National Science Foundation

### Conference Related Service

**American Psychological Association:** Division 5 (Quantitative and Qualitative Methods) Program Chair, (2016–2017)

**Gerontological Society of America:** BSS Program Committee (2009–2010)

**Society of Multivariate Experimental Psychology:** Graduate Student Conference Organizer (2004)

**Ad Hoc Reviewer:** Gerontological Society of America Annual Conference (2009–2011); Road Safety and Simulation (2011); Society of Multivariate Experimental Psychology Graduate Student Preconference (2003, 2007)

**Northern Indiana Regional Science Fair Judge, 2004–2006**

**University of Utah Science & Engineering Fair, 2018, 2020**

## Other Professional Activities

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**Professional Memberships:** American Psychological Association (APA), American Statistical Association (ASA), Institute of Mathematical Statistics (IMS)



**Consultant, University of Notre Dame Graduate School:** Consultant to the Assistant Dean for Recruitment and Retention on the Spring, 2007 survey of Notre Dame graduate students. Summer, 2007.

**Notre Dame Series on Quantitative Methodology:** Editorial Assistant, *Quantitative Methods in Aging Research* (2006) and *Data Analytic Techniques for Dynamical Systems in the Social and Behavioral Sciences* (2007). Mahwah, NJ: Lawrence Erlbaum Associates