

## CONTACT INFORMATION

Department of Cognitive Sciences  
 2324 Social and Behavioral Sciences Gateway Building (SBSG)  
 University of California, Irvine  
 Irvine, CA 92697-5100  
 Phone: (949) 824-5958  
 joachim@uci.edu  
<http://www.cidlab.com/>

## EMPLOYMENT HISTORY

<i>2016 – present</i>	<b>Associate Professor</b> , Department of Cognitive Sciences University of California, Irvine
<i>2015 – present</i>	<b>Affiliated Faculty</b> , Department of Statistics University of California, Irvine
<i>2011 – present</i>	<b>Affiliated Faculty</b> , Institute for Mathematical Behavioral Sciences University of California, Irvine
<i>2011 – 2016</i>	<b>Assistant Professor</b> , Department of Cognitive Sciences University of California, Irvine
<i>2011 – present</i>	<b>Research fellow</b> , Department of Psychology and Educational Sciences University of Leuven, Belgium
<i>2010 – 2012</i>	<b>Post-doctoral fellow</b> Research Foundation—Flanders (FWO)
<i>2009 – 2010</i>	<b>Post-doctoral research associate</b> , L-BioStat University of Leuven, Belgium

## EDUCATION

<i>2005 – 2009</i>	PhD in Quantitative Psychology and Psychometrics University of Leuven, Belgium
<i>2002 – 2005</i>	Master in Psychology (Licentiate) University of Leuven, Belgium
<i>2000 – 2002</i>	Bachelor in Psychology (Candidate) University of Leuven, Belgium

## PROFESSIONAL MEMBERSHIPS

Member of the Society for Mathematical Psychology  
 Member of the Psychometric Society  
 Fellow of the Psychonomic Society  
 Member of the European Society for Cognitive Psychology  
 Member of the International Society for Research in Emotion  
 Member of the American Statistical Association  
 Member of Statisticians without Borders

# Research

## RESEARCH INTERESTS

Stochastic process models	Computational modeling of cognition
Bayesian statistics	Computational methods
Individual differences	Psychometrics
Integrative modeling	Data fusion
Reproducible science	Meta-analysis

## GRANTS OVER \$50,000

<i>April 2017</i>	National Science Foundation grant #1658303: “Estimation of unidentified cognitive models with physiological data.” 24 months. Role: <b>Principal Investigator</b> . \$337,028.00
<i>April 2016</i>	National Science Foundation: Graduate Research Fellowship Award (DGE-1321846; Awarded to advisee Alexander Etz). 36 months. Role: <b>Adviser</b> . \$132,000.00
<i>September 2015</i>	National Science Foundation grant #1534472: “Bayesian methods for meta-analysis in the presence of publication bias.” 36 months. Role: <b>Principal Investigator</b> . \$260,000.00
<i>June 2014</i>	John Templeton Foundation grant #48192: “A formal modeling framework for the dynamics of subjective well-being.” 36 months. Role: <b>Principal Investigator</b> . \$540,018.00
<i>April 2014</i>	National Science Foundation: Graduate Research Fellowship Award (DGE-1321846; Awarded to advisee Maime Guan). 36 months. Role: <b>Adviser</b> . \$121,500.00
<i>February 2014</i>	Volkswagen Foundation teaching grant: “Summer school for computational cognitive modeling”. Role: <b>Contributor</b> . (with S. Lewandowsky and K. Oberauer). \$70,000.00
<i>September 2012</i>	National Science Foundation grant #1230118: “Cognitive structural equation models.” 36 months. Role: <b>Principal Investigator</b> . \$250,000.00
<i>October 2010</i>	Research Foundation—Flanders postdoctoral research grant: “Dynamic cognitive psychometrics.” 36 months. \$200,000.00
<i>October 2009</i>	University of Leuven Research Council postdoctoral research grant: “A statistical framework for Approximate Bayesian Computation.” 12 months. \$65,000.00

## GRANTS UNDER \$50,000

<i>January 2016</i>	William K. and Katherine W. Estes Fund (Psychonomic Society and Association for Psychological Science): “Summer school for computational cognitive modeling”. Role: Contributor (with S. Lewandowsky and K. Oberauer). \$15,000.00
<i>July 2015</i>	European Society for Cognitive Psychology: “Summer school for computational cognitive modeling”. Role: Contributor (with S. Lewandowsky and K. Oberauer). \$22,000.00
<i>July 2015</i>	National Science Foundation: “Support for the Applications of Mathematical Psychology to Industry meeting”. Role: Organizer. \$5,000.00
<i>July 2015</i>	UC Irvine School of Social Sciences Office of the Dean: “Support for the Applications of Mathematical Psychology to Industry meeting”. Role: Organizer. \$3,000.00
<i>July 2015</i>	UC Irvine School of Social Sciences Office of Graduate Affairs: “Support for the 48th Meeting of the Society for Mathematical Psychology”. Role: Principal organizer (with J. Trueblood). \$3,000.00
<i>July 2015</i>	UC Irvine Department of Cognitive Sciences: “Support for the 48th Meeting of the Society for Mathematical Psychology”. Role: Principal organizer (with J. Trueblood). \$2,500.00

July 2015	UC Irvine Department of Cognitive Sciences: “Consistency of Muscle Test Results”. Role: Adviser (with J. Wilson). \$250.00
July 2015	UC Irvine Undergraduate Research Opportunity Program (UROP): “Consistency of Muscle Test Results”. Role: Adviser (with J. Wilson). \$700.00
November 2012	UC Irvine School of Social Sciences: “Interfacing Models with Brain Signals to Investigate Cognition”. Role: Co- Principal Investigator (with R. Srinivasan, and J. Krichmar). \$4,000.00
June 2012	UC Irvine Summer Undergraduate Research Program (SURP): “Publication Bias in Three Prominent Psychological Journals”. Role: Adviser (with M. Guan). \$2,000.00
August 2010	Research Foundation—Flanders (FWO) travel grant: “Fitting a self-regulating accumulator model of human decision-making”. \$3,000.00
September 2008	Research Foundation—Flanders (FWO) travel grant: “A Bayesian treatment of the LATER model for simple response times”. \$2,500.00
November 2007	Research Foundation—Flanders (FWO) travel grant: “Hierarchical diffusion models for two-choice response times”. \$3,000.00

### PROFESSIONAL RECOGNITIONS

December 2016	I won UC Irvine’s 2016 Social Science Associate Professor Research Award
December 2016	My student Beth Baribault won the Berkeley Initiative for Transparency in the Social Sciences’ Leamer-Rosenthal Prize for Open Social Science
September 2015	I received recognition for my “excellent teaching evaluations” from the Associate Dean for Undergraduate Studies
July 2014	William K. Estes Early Career Award
September 2013	An article in <i>Emotion</i> (Pe, Vandekerckhove, & Kuppens, 2013) on which I am the corresponding author was listed as “Recommended” on “Faculty of 1000” (f1000.com)

### RECENT TALKS

- Vandekerckhove, J.** (2017, March). *Statistical power and evidence in the psychological literature*. Invited presentation at the 2017 Arthur M. Sackler Colloquium of the National Academy of Sciences. Washington, DC.
- Vandekerckhove, J.** (2017, February). *Mitigation of publication bias with behavioral process models*. Annual Interdisciplinary Conference. Breckenridge, CO.

### PUBLISHED WORK

45. Etz, A., & **Vandekerckhove, J.** (in press). Introduction to Bayesian inference for psychology. *Psychonomic Bulletin and Review*.
44. Dutilh, G., **Vandekerckhove, J.**, Ly, A., Matzke, D., Pedroni, A., Frey, R., Rieskamp, J., & Wagenmakers, E.-J. (in press). A test of the diffusion model explanation for the Worst Performance Rule using preregistration and blinding. *Attention, Perception, and Performance*.
43. Okada, K., **Vandekerckhove, J.**, & Lee, M. D. (in press). Modeling when people quit: Bayesian censored geometric models with hierarchical and latent-mixture extensions. *Behavior Research Methods*.
42. Lúcio, P. S., Salum, G. A., Rohde, L. A. P., Gadelha, A., Swardfager, W., **Vandekerckhove, J.**, Pan, P. M., Polanczyk, G., do Rosário, M. C., Jackowski, A. P., Mari, J. d. J., & and Cogo-Moreira, H. (in press). Poor stimulus discriminability as a common neuropsychological deficit between ADHD and reading ability in young children: a moderated mediation model. *Psychological Medicine*.
41. van Ravenzwaaij, D., Donkin, C., & **Vandekerckhove, J.** (in press). The EZ diffusion model provides a powerful test of simple empirical effects. *Psychonomic Bulletin and Review*.

40. **Vandekerckhove, J.**, & Wagenmakers, E.-J. (2016). C. S. Peirce on the Crisis of Confidence and the “No More Bets” Heuristic. *The Winnower*, 4843.
39. Oravecz, Z., Muth, C., & **Vandekerckhove, J.** (2016). Do people agree on what makes one feel loved? A cognitive psychometric approach to the consensus on felt love. *PLoS ONE*, 11, e0152803.
38. Nunez, M. D., **Vandekerckhove, J.**, & Srinivasan, R. (2017). How attention influences perceptual decision making: Single-trial EEG correlates of drift-diffusion model parameters. *Journal of Mathematical Psychology*, 76B, 117-130.
37. Etz, A., & **Vandekerckhove, J.** (2016). A Bayesian perspective on the Reproducibility Project: Psychology. *PLoS ONE*, 11, e0149794.
36. Oravecz, Z., Tuerlinckx, F., & **Vandekerckhove, J.** (2016). Bayesian data analysis with the bivariate hierarchical Ornstein-Uhlenbeck process model. *Multivariate Behavioral Research*, 51, 106-119.
35. Guan, M., & **Vandekerckhove, J.** (2016). A Bayesian approach to mitigation of publication bias. *Psychonomic Bulletin and Review*, 23, 74-86.
34. Van Elk, M., Matzke, D., Gronau, Q., Guan, M., **Vandekerckhove, J.**, & Wagenmakers, E. J. (2015). Meta-analyses are no substitute for registered replications: a skeptical perspective on religious priming. *Frontiers in Psychology*, 6.
33. Kupitz, C., Buschkuhl, M., Jaeggi, S., Jonides, J., Shah, P., & **Vandekerckhove, J.** (2015). A diffusion model account of the transfer-of-training effect. In R. Dale and C. Jennings and P. Maglio and T. Matlock and D. Noelle and A. Warlaumont and J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
32. Guan, M., Lee, M. D., & **Vandekerckhove, J.** (2015). A hierarchical cognitive threshold model of human decision making on different length optimal stopping problems. In R. Dale and C. Jennings and P. Maglio and T. Matlock and D. Noelle and A. Warlaumont and J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
31. Mistry, P. K., Trueblood, J. S., **Vandekerckhove, J.**, & Pothos, E. M. (2015). A latent-mixture quantum probability model of causal reasoning within a Bayesian inference framework. In R. Dale and C. Jennings and P. Maglio and T. Matlock and D. Noelle and A. Warlaumont and J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
30. Oravecz, Z., Huentelman, M., & **Vandekerckhove, J.** (2016). Sequential Bayesian updating for Big Data. In M. Jones (Eds.), *Big Data in Cognitive Science: From Methods to Insights* (pp. 13-33). Sussex, UK: Psychology Press (Taylor & Francis).
29. Nunez, M. D., Srinivasan, R., & **Vandekerckhove, J.** (2015). Individual differences in attention influence perceptual decision making. *Frontiers in Psychology*, 6, 18.
28. Zhang, S., Lee, M. D., **Vandekerckhove, J.**, Maris, G., & Wagenmakers, E.-J. (2014). Time-varying boundaries for diffusion models of decision making and response time. *Frontiers in Psychology*, 5, 1364.
27. Lee, M. D., Newell, B., & **Vandekerckhove, J.** (2014). Modeling the adaptation of search termination in human decision making. *Decision*, 1, 223-251.
26. Murphy, P. R., **Vandekerckhove, J.**, & Nieuwenhuis, S. (2014). Pupil-linked arousal determines variability in perceptual decision making. *PLOS Computational Biology*, 10, e1003854.
25. **Vandekerckhove, J.** (2014). A cognitive latent variable model for the simultaneous analysis of behavioral and personality data. *Journal of Mathematical Psychology*, 60, 58-71.
24. Wiech, K., **Vandekerckhove, J.**, Zaman, J., Tuerlinckx, F., Vlaeyen, J. W. S., & Tracey, I. (2014). Influence of prior information on pain involves biased perceptual decision-making. *Current Biology*, 24, R679-R681.
23. Wabersich, D., & **Vandekerckhove, J.** (2014). The RWiener package: an R package providing distribution functions for the Wiener diffusion model. *The R Journal*, 6, 49-56.

22. Oravecz, Z., **Vandekerckhove, J.**, & Batchelder, W. H. (2014). Bayesian Cultural Consensus Theory. *Field Methods*, *26*, 207-222.
21. Salum, G. A., Sergeant, J., Sonuga-Barke, E., **Vandekerckhove, J.**, Gadelha, A., Pan, P. M., Moriyama, T. S., Graeff-Martins, A. S., Gomes de Alvarenga, P., do Rosário, M. C., Manfro, G. G., Polanczyk, G., & Rohde, L. A. P. (2014). Mechanisms underpinning inattention and hyperactivity: neurocognitive support for ADHD dimensionality. *Psychological Medicine*, *44*, 3189-3201.
20. **Vandekerckhove, J.**, Matzke, D., & Wagenmakers, E.-J. (2015). Model comparison and the principle of parsimony. In J. R. Busemeyer, J. T. Townsend, Z. J. Wang, and A. Eidels (Eds.), *Oxford Handbook of Computational and Mathematical Psychology* (pp. 300-317). Oxford, UK: Oxford University Press.
19. Wabersich, D., & **Vandekerckhove, J.** (2014). Extending JAGS: A tutorial on adding custom distributions to JAGS (with a diffusion model example). *Behavior Research Methods*, *46*, 15-28.
18. Salum, G. A., Sergeant, J., Sonuga-Barke, E., **Vandekerckhove, J.**, Gadelha, A., Pan, P. M., Moriyama, T. S., Graeff-Martins, A. S., Gomes de Alvarenga, P., do Rosário, M. C., Manfro, G. G., Polanczyk, G., & Rohde, L. A. P. (2014). Specificity of basic information processing and inhibitory control in attention deficit/hyperactivity disorder. *Psychological Medicine*, *44*, 617-631.
17. **Vandekerckhove, J.**, Guan, M., & Styrcula, S. (2013). The consistency test may be too weak to be useful: Its systematic application would not improve effect size estimation in meta-analyses. *Journal of Mathematical Psychology*, *57*, 170-173.
16. Pe, M., **Vandekerckhove, J.**, & Kuppens, P. (2013). A diffusion model account of the relationship between the emotional flanker task and depression and rumination. *Emotion*, *13*, 739-747.
15. Dutilh, G., Forstmann, B. U., **Vandekerckhove, J.**, & Wagenmakers, E.-J. (2013). A Diffusion Model Account of Age Differences in Posterror Slowing. *Psychology and Aging*, *28*, 64-76.
14. Dutilh, G., **Vandekerckhove, J.**, Forstmann, B. U., Keuleers, E., Brysbaert, M., & Wagenmakers, E.-J. (2012). Testing theories of post-error slowing. *Attention, Perception, and Psychophysics*, *7*, 454-465.
13. Oravecz, Z., Tuerlinckx, F., & **Vandekerckhove, J.** (2011). A hierarchical latent stochastic differential equation model for affective dynamics. *Psychological Methods*, *16*, 468-490.
12. **Vandekerckhove, J.**, Tuerlinckx, F., & Lee, M. D. (2011). Hierarchical diffusion models for two-choice response times. *Psychological Methods*, *16*, 44-62.
11. **Vandekerckhove, J.**, Verheyen, S., & Tuerlinckx, F. (2010). A crossed random effects diffusion model for speeded semantic categorization data. *Acta Psychologica*, *133*, 269-282.
10. Wetzels, R., **Vandekerckhove, J.**, Tuerlinckx, F., & Wagenmakers, E.-J. (2010). Bayesian parameter estimation in the Expectancy Valence model of the Iowa gambling task. *Journal of Mathematical Psychology*, *54*, 14-27.
9. Dutilh, G., **Vandekerckhove, J.**, Tuerlinckx, F., & Wagenmakers, E.-J. (2009). A diffusion model decomposition of the practice effect. *Psychonomic Bulletin and Review*, *16*, 1026-1036.
8. Oravecz, Z., Tuerlinckx, F., & **Vandekerckhove, J.** (2009). A hierarchical Ornstein-Uhlenbeck model for continuous repeated measurement data. *Psychometrika*, *74*, 395-418.
7. **Vandekerckhove, J.** (2009). *Extensions and applications of the diffusion model for two-choice response times*.
6. Panis, S., De Winter, J., **Vandekerckhove, J.**, & Wagemans, J. (2008). Identification of everyday objects on the basis of fragmented versions of outlines. *Perception*, *37*, 271-289.
5. **Vandekerckhove, J.**, & Tuerlinckx, F. (2008). Diffusion Model Analysis with MATLAB: A DMAT Primer. *Behavior Research Methods*, *40*, 61-72.
4. **Vandekerckhove, J.**, Tuerlinckx, F., & Lee, M. D. (2008). A Bayesian approach to diffusion process models of decision-making. In V. M. Sloutsky, B. C. Love, & K. McRae (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (pp. 1429-1434). Austin, TX: Cognitive Science Society.

3. Spruyt, A., Hermans, D., De Houwer, J., **Vandekerckhove, J.**, & Eelen, P. (2007). On the predictive validity of indirect attitude measures: Prediction of consumer choice behavior on the basis of affective priming in the picture-picture naming task. *Journal of Experimental Social Psychology*, *43*, 599-610.
2. **Vandekerckhove, J.**, Panis, S., & Wagemans, J. (2007). The concavity effect is a compound of local and global effects. *Perception and Psychophysics*, *69*, 1253-1260.
1. **Vandekerckhove, J.**, & Tuerlinckx, F. (2007). Fitting the Ratcliff diffusion model to experimental data. *Psychonomic Bulletin and Review*, *14*, 1011-1026.

## SOFTWARE

- Vandekerckhove, J.** (2015). Trinity [Software and manual]. Available via <http://works.cidlab.com/>
- Wabersich, D., Lee, M. D., & **Vandekerckhove, J.** (2013). jags-alcove [Software and manual]. Available via <http://works.cidlab.com/>
- Wabersich, D., & **Vandekerckhove, J.** (2013). jags-wiener [Software and manual]. Available via <http://works.cidlab.com/>
- Wabersich, D., Lee, M. D., & **Vandekerckhove, J.** (2013). RAlcove [Software and manual]. Available via <http://works.cidlab.com/>
- Wabersich, D., Lee, M. D., & **Vandekerckhove, J.** (2013). RWiener [Software and manual]. Available via <http://works.cidlab.com/>
- Oravecz, Z., Tuerlinckx, F., & **Vandekerckhove, J.** (2012). BHOUM: Bayesian Hierarchical Ornstein-Uhlenbeck Modeling [Software and manual]. Available via <http://bayesian.zitaoravecz.net/>
- Oravecz, Z., **Vandekerckhove, J.**, & Batchelder, W. H. (2012). Bayesian Cultural Consensus Toolbox [Software and manual]. Available via <http://bayesian.zitaoravecz.net/>
- Vandekerckhove, J.**, & Tuerlinckx, F. (2009). wiener.odc and wienereta.odc [Software and manual]. Available via <http://works.cidlab.com/>
- Vandekerckhove, J.**, & Tuerlinckx, F. (2007). The Diffusion Model Analysis Toolbox [Software and manual]. Available from <http://works.cidlab.com/>
- Vandekerckhove, J.** (2006). General simulated annealing algorithm. Available via <http://works.cidlab.com/>

## DISSERTATION

- Vandekerckhove, J.** (2009). Extensions and applications of the diffusion model for two-choice response times. Unpublished doctoral dissertation.

## ARTICLES UNDER REVIEW OR IN PREPARATION

- Baribault, B., Donkin, C., Little, D. R., Trueblood, J., van Ravenzwaaij, D., White, C. N., Oravecz, Z., De Boeck, P., & **Vandekerckhove, J.** (in preparation) Robust tests of theory through coanalysis of randomly sampled experiments.
- Baribault, B., & **Vandekerckhove, J.** (in preparation). A tutorial on cognitive latent variable modeling.
- Dutilh, G., Annis, J., Brown, S. D., Cassey, P., Evans, N. J., Grasman R. P. P. P., Hawkins, G. E., Heathcote, A., Holmes, W. R., Kryptos, A.-M., Kupitz, C. N., Leite, F. P., Lerche, V., Lin, Y.-S., Logan, G. D., Palmeri, T. J., Starns, J. J., Trueblood, J. S., van Maanen, L., van Ravenzwaaij, D., **Vandekerckhove, J.**, Visser, I., Voss, A., White, C. N., Wiecki, T. V., Rieskamp, J. & Donkin, C. (under review). The quality of response time data inference: A blinded, collaborative approach to the validity of cognitive models.
- Hesmati, S., **Vandekerckhove, J.**, Batchelder, W., Pressman, S., & Oravecz, Z. (under review). What does it mean to feel loved: Cultural consensus and individual differences.

- Kupitz, C., & **Vandekerckhove, J.** (in preparation). A cognitive latent variable approach to the transfer-of-training effect.
- Matzke, D., Boehm, U., & **Vandekerckhove, J.** (under review). Bayesian Inference in Psychology, Part III: Bayesian parameter estimation in nonstandard models.
- Mistry, P. K., Trueblood, J. S., **Vandekerckhove, J.**, & Pothos, E. M. (under review). A quantum probability account of individual differences in causal reasoning.
- Rouder, J., Haaf, J., & **Vandekerckhove, J.** (under review). Bayesian Inference in Psychology, Part IV: Parameter Estimation and Bayes factors.
- Wilson, J., Baribault, B., & **Vandekerckhove, J.** (in preparation). Chance level performance in expert diagnoses with applied kinesiology.

## MEDIA ATTENTION

- A press release about my work on the dynamics of subjective well-being was posted on the UCI News service and picked up by several online aggregators.
- I was interviewed by various media outlets (*Science News*, *Nature News*, *WIRED Magazine*) in relation to my work on the Reproducibility Project: Psychology.
- My work on model complexity was featured on the Psychonomic Society’s blog (<http://www.psychonomic.org/news/news.asp?id=316843>).
- My advocacy for more robust science was mentioned by President Marcia McNutt of the National Academy of Sciences in a letter to the editor of the *Chronicle of Higher Education* (<http://www.chronicle.com/blogs/letters/scientists-dont-view-reproducibility-as-risky-business/>).

## WEBSITES MAINTAINED

<b>cidlab.com</b>	To distribute research results and publications
<b>beingwellproject.com</b>	Public outreach regarding positive-psychology research

Various other websites to announce events and workshops.

# Service

## GRADUATE ADVISING

<i>2016 – present</i>	Alexander Etz
<i>2014 – present</i>	Colin Kupitz (with S. Jaeggi)
<i>2014 – present</i>	Beth Baribault
<i>2013 – present</i>	Irina Danileiko (with M. D. Lee)
<i>2013 – present</i>	Maime Guan (with M. D. Lee)
<i>2012 – present</i>	Michael D. Nunez (with R. Srinivasan)

## DEPARTMENTAL SERVICE

<i>2017 – present</i>	Graduate Director of Cognitive Sciences
<i>2013 – 2017</i>	Undergraduate Director of B.S. Cognitive Sciences
<i>2012 – present</i>	Academic personnel committee member (3) and chair (2)
<i>2012 – present</i>	Search committee member (4) and chair (2)
<i>2011 – present</i>	Doctoral committees (3), advancement committees (9), concentration exams (7)

## UCI TEACHING

<i>Undergraduate</i>	Advanced experimental methods in psychology, lecture Advanced experimental methods in psychology, lab Honors advanced experimental methods in psychology, lecture Honors advanced experimental methods in psychology, lab Individual study
<i>Graduate</i>	Software development Bayesian inference Algorithmic statistics Dissertation study

## EXTERNAL TEACHING

<i>September 2016</i>	<b>Invited lecturer</b> , Workshop at University of Toronto, “A practical course in Bayesian graphical modeling” (with M. D. Lee)
<i>2010 – 2016</i>	<b>Lecturer and co-organizer</b> , biennial Computational Cognitive Modeling summer school
<i>March 2015</i>	<b>Invited lecturer</b> , seminar for Interdisciplinary Data Sciences Consortium, University of South Florida, Tampa, “Cognitive psychometrics and cognitive latent variable models”
<i>July 2015</i>	<b>Invited lecturer</b> , Workshop at University of Zurich, “Cognitive psychometrics and cognitive latent variable modeling”
<i>December 2010</i>	<b>Invited lecturer</b> , University of Zurich doctoral program, “A practical course in Bayesian graphical modeling” (with M. D. Lee)
<i>September 2010</i>	<b>Invited lecturer</b> , University of Zurich doctoral program, “Programming models in MATLAB”
<i>2006 – 2011</i>	<b>Teaching assistant</b> (2006 – 2008, 2010 – 2011), substitute local coordinator (2007), and co-lecturer (2008) “Socrates-Erasmus Intensive Program on Mathematical and Computational Models in the Psychological Sciences”
<i>2005 – 2008</i>	<b>Teaching assistant</b> and tutor for various undergraduate courses on statistics. Co-lecturer for undergraduate courses on mathematical modeling

## EDITORIAL AND AD-HOC REVIEWER SERVICE

2017 – present	<b>Editorial board member</b> , <i>Advances in Methods and Practices in Psychological Science</i>
2017	<b>Guest lead editor</b> , <i>Psychonomic Bulletin &amp; Review</i> , Special issue on statistical recommendations (with J. N. Rouder and J. Kruschke)
2016 – present	<b>Panel member</b> , National Science Foundation, Advisory Panel for the Methodology, Measurement, and Statistics (MMS) Program
2016 – present	<b>Consulting editor</b> , <i>Behavior Research Methods</i>
2016 – present	<b>Tutorial editor</b> , <i>Journal of Mathematical Psychology</i>
2014 – 2016	<b>Consulting editor</b> , <i>Journal of Mathematical Psychology</i>

**Ad hoc reviewer** for *Acta Psychologica*, *the Annual Meeting of the Society for Cognitive Science (conference)*, *Behavior Research Methods*, *Clinical Epidemiology*, *Cognition*, *Cognitive Psychology*, *Cognitive Science*, *Decision*, *Experimental Psychology*, *Interuniversity Graduate School of Psychometrics and Sociometrics*, *iPerception*, *Journal of Cognitive Neuroscience*, *Journal of Mathematical Psychology*, *Memory & Cognition*, *Methodology*, *the National Science Foundation*, *PLOS ONE*, *Psychological Science*, *Psychological Methods*, *Psychological Research*, *Psychological Review*, *Psychometrika*, *Psychonomic Bulletin & Review*, *Quarterly Journal of Experimental Psychology*, and others.

## EVENTS ORGANIZED

May 2017	<b>Organizer</b> (with Z. Oravecz), “Models and Methods of Well-Being,” Boston, MA
November 2016	<b>Organizer</b> (with A. Criss and E.-J. Wagenmakers), “Computational Approaches to Cognition,” Boston, MA
May 2016	<b>Organizer</b> , “Cognitive Psychometrics in Action.” Speakers: Joachim Vandekerckhove, Klaus Oberauer, Edgar Erdfelder, Dora Matzke. Chicago, IL
November 2015	<b>Organizer</b> (with A. Criss and E.-J. Wagenmakers), “Mathematical Psychology at Psychonomics,” Chicago, IL
July 2015	<b>Organizer</b> , “Applications of Mathematical Psychology to Industry meeting,” Newport Beach, CA
July 2015	<b>Organizer</b> (with J. Trueblood), “48th Annual Meeting of the Society for Mathematical Psychology,” Newport Beach, CA
July 2015	<b>Organizer</b> , “Teaching Bayesian statistics with JASP,” Newport Beach, CA
November 2014	<b>Organizer</b> , “Using BayesFactor for practical Bayesian analysis.” Speakers: Richard Morey and Joachim Vandekerckhove. Irvine, CA
March 2014	<b>Organizer</b> , “Workshop on Recent Advances in Bayesian Inference.” Speakers: John Kruschke, Jeffrey Rouder, Mario Perrugia, Hal Stern, Wesley Johnson. Irvine, CA
November 2013	<b>Organizer</b> (with J. Krichmar and R. Srinivasan), “Workshop on Interfacing Models with Brain Signals to Investigate Cognition.” Speakers: Will Alexander, Nathaniel Daw, Mimi Liljeholm, David Noelle, Thomas Palmeri, Roger Ratcliff, John Serences, Brandon Turner. Irvine, CA
August 2010	<b>Organizer</b> , “Practical Applications of Models for Response Time.” Speakers: Joachim Vandekerckhove, Roger Ratcliff, Amy Criss, Fabio Idrobo, Gilles Dutilh, Tiffany Ho, Corey White. Portland, OR

## OTHER SERVICE TO THE FIELD

2014	<b>Developer</b> , “Minimal frustration” automated scheduler for the 47th Annual Meeting of the Society for Mathematical Psychology.
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## Research statement

My main research interest is the development and adaptation of mathematical models of behavior and cognition as methods for data analysis. The principal goal of this line of work is to turn quantitative models into research tools with practical use.

This ultimate objective is typically operationalized through two concrete paths. The first path involves the construction of new models that address specific data analysis issues found in the literature. Two examples of such issues are efficient population-level analysis and nonindependence. Population-level analysis is made more efficient by implementing interindividual differences as statistical random effects, which serves the dual purpose of aligning the modeling practice with the reality of randomly sampled participants, as well as allowing the modeler to describe the distribution of parameters across participants and make probabilistic statements about intergroup differences. Nonindependence is a possibly more pervasive issue in which multiple measurements share a common cause. Examples range from subsequent reaction time measurements to long streams of electroencephalographic data. One strategy to treat this issue is to explicitly model a joint underlying cause – which might be an adapting cognitive strategy in the case of sequential reaction times, or distributed neural activation in the case of EEG data.

The immediate goal of this line is to design models whose parameters tell us, as exactly and directly as possible, what we want to know – while at the same time avoiding model misspecification. This path often includes collaboration with substantive researchers.

The second path focuses on model implementation: the development of statistical and computational methods for fitting and evaluating models. For much of this work, the major challenge is to develop algorithms, software, and statistics – that is, the challenge is technical. For me, however, the most interesting part has always been the path from the set of assumptions that one, as a researcher, is willing to make about a psychological process and the (sometimes very) different set of assumptions that make up a formal model that can be applied in practice. It has been a guiding principle in my methodological work to make that road as short and unwinding as possible by increasing the flexibility of existing models and statistical frameworks. In the foreseeable future, my research program will continue to include work in the same directions of model building and model implementation.

In addition to this, I have taken up a separate research line in which I apply the techniques of behavioral modeling and modern statistics to the issue of publication bias and statistical forensics (i.e., methods to evaluate the quality of published analyses). This line of work is an interesting special case of my regular modeling work in which the subjects are researchers and publishers, and the behavioral processes are those that lead to scientific publications. In this line, the application of Bayesian statistics is particularly apposite since it often involves small amounts of data but significant prior information. The practical goal of this line of work is to use behavioral models and modern statistics in order to improve on meta-analysis by mitigating the damaging effects of such processes as publication bias and various questionable, but common, research practices.

The application of established psychometric, statistical, and computational methods in experimental contexts is the foundation of the road I expect my research career to follow. Combining these different disciplines remains a major untapped resource that has a large potential impact on data analysis practices in the field.