

**Emilio Ferrer**  
**Curriculum Vitae**

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Department of Psychology  
University of California, Davis  
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***Education***

Ph.D. Quantitative Psychology. University of Virginia, 2003.  
M.S. Social Psychology of Sports and Physical Activity. University of Oregon, 1997.  
Universidad de Alicante, Spain. Sociology, 1994.  
Licenciatura. Physical Education. Universidad Politécnica de Madrid, Spain, 1989.

**PROFESSIONAL HISTORY**

***Employment***

2008– Associate Professor Department of Psychology, University of California, Davis  
2003–2008 Assistant Professor Department of Psychology, University of California, Davis  
2002– 2003 Postdoctoral Fellow Institute for Developmental & Health Research Methodology  
University of Virginia

***Teaching – UC Davis Courses***

Applied Multivariate Analysis (Graduate)  
Applied Longitudinal Data Analysis (Graduate)  
Longitudinal Methodology in Developmental Research (Graduate)  
Statistical Analysis in Psychology (Graduate)  
Structural Equation Modeling (Graduate)  
Statistical Analysis of Psychological Data (Undergraduate)

***Teaching – Workshops***

July 2003 Instructor American Psychological Association Advanced Training Institute on  
Longitudinal Methods, University of Virginia  
  
April 2005 Instructor Applied Longitudinal Data Analysis  
Bay Area Affective Science Training Program (Stanford University, UC  
Berkeley, UC Davis, UC San Francisco)  
  
June 2005 Instructor Advanced Training Institute on Longitudinal Methods, University of  
Southern California  
  
August 2005 Instructor Workshop on Longitudinal Data Analysis, Curry School of Education,  
University of Virginia

July 2009 Instructor American Psychological Association Advanced Training Institute on Longitudinal Methods, University of Virginia

***University Service – Department of Psychology UC Davis***

2006 - 2010 Head, Quantitative Psychology Area  
 2008 - 2010 Member, Executive Committee  
 2006 - 2009 Chair, Graduate Admissions Committee  
 2007 - 2009 Member, Undergraduate Advising Committee  
 2004 - 2007 Chair, Undergraduate Curriculum Committee  
 2006 - 2008 Member, Developmental Faculty Search Committee  
 2005 - 2006 Member, Quantitative Faculty Search Committee

***Outside Service***

2007 - 2010 Member, Research Review Board, National Collegiate Athletic Association

***Honors and Awards***

2000-02 Institute on Longitudinal Methods Scholarship, The Pennsylvania State University  
 2002 The Society of Multivariate Experimental Psychology Dissertation Award  
 2005 APA Division 5 Dissertation Award, American Psychological Association  
 2005 Elected member, Society of Multivariate Experimental Psychology  
 2006 Education Abroad Program, University of California  
 Visiting Scholar - Universidad de Granada, Spain (May-June 2006)

***Professional Memberships***

American Psychological Association  
 Society of Multivariate Experimental Psychology  
 Society for Research in Child Development

***Ad hoc reviewer***

*Archives of General Psychiatry, Cognitive Therapy and Research, Developmental Psychology, Experimental Aging Research, Intelligence, Journal of Applied Developmental Psychology, Journal of Cognition and Development, Journal of Experimental Child Psychology, Journal of Sport and Exercise Psychology, Learning and Individual Differences, Multivariate Behavioral Research, Psychological Assessment, Psychological Bulletin, Psychological Methods, Psychology and Aging, Psychological Science, Psychometrika, Research on Human Development, Research Quarterly for Exercise and Sport, The Journal of Gerontology: Psychological Sciences, Oxford University Press, National Science Foundation, American Psychological Association*

**PUBLICATIONS**

***Articles and Book Chapters***

1. **Ferrer-Caja, E.,** & Weiss, M.R. (2000). Predictors of intrinsic motivation among adolescent students in physical education. *Research Quarterly for Exercise and Sport, 71,* 267-279.
2. **Ferrer-Caja, E.,** Crawford, J.R., & Bryan, J. (2002). A structural modeling examination of the executive decline hypothesis of cognitive aging through reanalysis of Crawford et al.'s (2000) data. *Aging, Neuropsychology, and Cognition, 9,* 231-249.

3. **Ferrer-Caja, E., & Weiss, M.R.** (2002). Cross-validation of a model of intrinsic motivation in physical education with students enrolled in elective courses. *Journal of Experimental Education, 71*, 41-65.
4. McArdle, J.J., **Ferrer-Caja, E.**, Hamagami, F., & Woodcock, R.W. (2002). Comparative longitudinal structural analyses of the growth and decline of multiple intellectual abilities over the life-span. *Developmental Psychology, 38*, 115-142.
5. Weiss, M.R., & **Ferrer-Caja, E.** (2002). Motivational orientations in sport. In T.S. Horn (Ed.), *Advances in sport psychology* (2nd ed., pp. 101-183). Champaign, IL: Human Kinetics.
6. **Ferrer, E.** & McArdle, J.J. (2003). Alternative structural models for multivariate longitudinal data analysis. *Structural Equation Modeling, 10*, 493-524.
7. **Ferrer, E.** & Nesselroade, J.R. (2003). Modeling affective processes in dyadic relations via dynamic factor analysis. *Emotion, 3*, 344-360.
8. Salthouse, T.A., & **Ferrer-Caja, E.** (2003). What needs to be explained to account for age-related effects on multiple cognitive variables? *Psychology and Aging, 18*, 91-110.
9. **Ferrer, E.**, Hamagami, F., & McArdle, J.J. (2004). Modeling latent growth curves with incomplete data using different types of structural equation modeling and multilevel software. *Structural Equation Modeling, 11*, 452-483.
10. **Ferrer, E.**, Salthouse, T.A., Stewart, W.F. & Schwartz, B.S. (2004). Modeling age and retest processes in longitudinal studies of cognitive abilities. *Psychology and Aging, 19*, 243-259.
11. Salthouse, T.A., Schroeder, D.H. & **Ferrer, E.** (2004). Estimating retest effects in longitudinal assessment of cognitive functioning in adults between 18 and 60 years of age. *Developmental Psychology, 40*, 813-822.
12. **Ferrer, E.** & McArdle, J.J. (2004). An experimental analysis of dynamic hypotheses about cognitive abilities and achievement from childhood to early adulthood. *Developmental Psychology, 40*, 935-952.
13. **Ferrer, E.**, Salthouse, T.A., McArdle, J.J., Stewart, W.F. & Schwartz, B.S. (2005). Multivariate modeling of age and practice in longitudinal studies of cognitive abilities. *Psychology and Aging, 20*, 412-422.
14. **Ferrer, E.** (2006). Application of dynamic factor analysis to affective processes in dyads. In A.D. Ong & M. van Dulmen (Eds.), *Handbook of methods in positive psychology* (pp. 41-58). Oxford University Press.
15. Sbarra, D.A., & **Ferrer, E.** (2006). The Structure and process of emotional experience following non-marital relationship dissolution: Dynamic factor analyses of love, anger, and sadness. *Emotion, 6*, 224-238.

16. Bales, K. L., Plotsky, P. M., Young, L. J, Lim, M. M., Grotte, N., **Ferrer, E.**, & Carter, C. S. (2007). Neonatal oxytocin manipulations have long-lasting, sexually dimorphic effects on vasopressin receptors. *Neuroscience*, *144*, 38-45.
17. Chow, S –M., **Ferrer, E.**, & Nesselroade, J.R. (2007). An unscented Kalman filter approach to the estimation of nonlinear dynamical systems models. *Multivariate Behavioral Research*, *42*, 283-321.
18. **Ferrer, E.**, McArdle, J.J., Shaywitz, B.A., Holahan, J.N., Marchione, K., & Shaywitz, S.E. (2007). Longitudinal models of developmental dynamics between reading and cognition from childhood to adolescence. *Developmental Psychology*, *43*, 1460-1473.
19. Kail, R.V., & **Ferrer, E.** (2007). Processing speed in childhood and adolescence: Longitudinal models for examining developmental change. *Child Development*, *78*, 1760-1770.
20. Shaywitz, B.A., **Ferrer, E.**, & Shaywitz, S.E. (2007). A case of less than meets the eye. *Annals of Neurology*, *10.1002*, 21156.
21. Corbett, B., Shickman, K., & **Ferrer, E.** (2008). The effects of Tomatis sound therapy on language in children with autism. *Journal of Autism and Developmental Disorders*, *38*, 562-566.
22. **Ferrer, E.**, & Widaman, K. F. (2008). Dynamic factor analysis of dyadic affective processes with inter-group differences. In N.A. Card, J.P. Selig., & T.D. Little (Eds.), *Modeling dyadic and interdependent data in the developmental and behavioral sciences* (pp. 107-137). Hillsdale, NJ: Psychology Press.
23. **Ferrer, E.**, Balluerka, N., & Widaman, K.F. (2008). Factorial Invariance and the specification of second-order latent growth models. *Methodology*, *4*, 22-36.
24. Wright, S.B., Matlen, B.J., Baym, C.L., **Ferrer, E.**, & Bunge, S.A. (2008). Neural correlates of fluid reasoning in children and adults. *Frontiers in Neuroscience*, *1*, 1-8.
25. **Ferrer, E.**, O'Hare, E., & Bunge, S.A. (2009). Fluid reasoning and the developing brain. *Frontiers in Neuroscience*, *3*(1), 46-51.
26. **Ferrer, E.**, & Zhang, G. (2009). Time series models for examining psychological processes: Applications and new developments. In R. E. Millsap, & A. Maydeu-Olivares (Eds.), *Handbook of quantitative methods in psychology* (637-657). London: Sage Publications.
27. Song, H., & **Ferrer, E.** (2009). State-space modeling of dynamic psychological processes via the Kalman smoother algorithm: Rationale, finite sample properties, and applications. *Structural Equation Modeling*, *16*, 338-363.
28. Song, H., Thompson, R.A., & **Ferrer, E.** (2009). Attachment and self-evaluation in Chinese adolescents: Developmental and gender differences. *Journal of Adolescence*, *32*, 1267-1286.

29. **Ferrer, E.**, Shaywitz, B.A., Holahan, J.N., Marchione, K., & Shaywitz, S.E. (in press). Uncoupling of reading and IQ over time: Empirical evidence for a definition of dyslexia. *Psychological Science*.
30. **Ferrer, E.**, Chen, S., Chow, S.M., & Hsieh, F. (in press). Exploring intra-individual, inter-individual and inter-variable dynamics in dyadic interactions. In S.M. Chow, E. Ferrer, & F. Hsieh (Eds.), *Statistical methods for modeling human dynamics: An interdisciplinary dialogue*. Notre Dame Series on Quantitative Methodology (Vol. 4). New York, NY: Taylor and Francis.
31. Gaffney, T., Cudeck, R., **Ferrer, E.**, & Widaman, K.F. (in press). On the factor structure of standardized educational achievement tests. *Advances in Rasch Modeling II*.
32. Hsieh, F., **Ferrer, E.**, Chen, S., & Chow, S.-M. (in press). Exploring nonstationary dynamics in dyadic interactions via hierarchical segmentation. *Psychometrika*.
33. Larzalere, R. E., **Ferrer, E.**, & Khun, B.R. (in press). Validity of causal inferences from passive longitudinal analyses of correction interventions: Accounting for selection and regression artifacts. *International Journal of Behavioral Development*.
34. Widaman, K.F., & **Ferrer, E.**, & Conger, R.D. (in press). Factorial invariance within longitudinal structural equation models: Measuring the same construct across time. *Child Development Perspectives*.

### **Books**

Chow, S.M., **Ferrer, E.**, & Hsieh, F. (Eds.), *Statistical methods for modeling human dynamics: An interdisciplinary dialogue*. Notre Dame Series on Quantitative Methodology (Vol. 4). New York, NY: Taylor and Francis.

### **Submitted and Under Review**

**Ferrer, E.**, Steele, J., & Hsieh, F. (2008). Analyzing dynamics of affective dyadic interactions using patterns of intra- and inter-individual variability.

Hsieh, F., **Ferrer, E.**, Chen, S., Mauss, I.B., & Gross, J.L. (2007). A small-world network approach for evaluating coherence in multivariate systems: An application to psychophysiological emotion data.

Hsieh, F., McAssey, M., & **Ferrer, E.** (2009). Optimal and robust design for efficient system-wide synchronization in networks of randomly-wired neuron-nodes.

MacLean, K.A., **Ferrer, E.**, Aichele, S.R., Bridwell, D.A., Zanesco, A.P., Jacobs, T.L., King, B.G., Rosenberg, E.L., Sahdra, B.K., Shaver, P.R., Wallace, B.A., Mangun, G.R., & Saron, C.D. Intensive meditation training leads to improvements in perceptual discrimination and sustained attention. *Psychological Science*. (Submitted 04/28/09).

Stuhlman, M.W., **Ferrer, F.**, Downer, J.T., Hamre, B.K., Mashburn, A.J., & Pianta, R.C. (2008). Modeling the developmental dynamics between academic achievement and social behaviors across the elementary years. *Developmental Psychology* (08/04/08).

### **Technical Reports**

**Ferrer, E.** & McArdle, J.J. (2002). *An effectiveness study of summer bridge programs*. Technical Report. University of Virginia. Charlottesville, VA.

**Ferrer, E.** (2006). *Empire state screening tool for learning disabilities: A report review*. Technical report submitted to the California Department of Social Services. University of California, Davis, CA.

Hamagami, F., McArdle, J. J., Nesselroade, J.R., **Ferrer, E.**, & Boker, S. (2003). *Modeling acceleration of dynamic systems with interindividual variation using structured difference equation methodology*. Technical Report. University of Virginia. Charlottesville, VA.

### GRANTS

#### **Ongoing Research Support**

Emilio Ferrer (PI) 01/01/06 – 06/30/10  
National Science Foundation – BCS 0527766 \$722,300  
Modeling Dynamics of Dyadic Interactions  
Role: Principal Investigator

Silvia Bunge & Emilio Ferrer (Multiple PIs) 07/01/07 – 06/30/12  
NIH-NINDS – 1R01NS057146-01 \$1,866,754  
Neural Changes Underlying the Development of Fluid Reasoning  
Role: Principal Investigator

Sy-Miin Chow (PI) 09/25/08 – 08/31/2011  
National Science Foundation – BCS 0827021 \$750,000 (\$139,800)  
DHB Collaborative Research: Developing Non-Stationary and Network-based Methods for Modeling the Perception and Physiology of Emotion  
Role: PI (Sub-contract with UNC-Chapel Hill)

Clifford Saron (PI) 07/01/07 – 06/30/2010  
The Fetzer Institute \$800,000  
Longitudinal Study of the Cognitive, Emotional, and Neural Effects of Sustained, Intensive Meditation Training  
Role: Co-PI

Susan Rivera (PI)  
NIH – 1R01 HD056031-01  
Visual Processing and Later Cognitive Effects in Infants with Fragile X Syndrome  
Role: Co-Investigator

***Submitted/Pending Research Grants***

Rand D. Conger (PI) 07/01/10– 06/30/2015  
 NIH-NIDA \$7,799.238  
 Mexican Family Culture & Substance Use Risk & Resilience  
 Role: Co-PI

***Completed***

Emilio Ferrer (PI) 01/07/04 – 30/09/05  
 University of California, Davis (Office of Academic Senate) \$33,000  
 Modeling Dynamics of Dyadic Interactions  
 Role: Principal Investigator

Emilio Ferrer (PI) 01/10/05 – 30/06/06  
 UC Davis: Center on Quantitative Social Science Research  
 Seminar & Workshop: Dynamical Factor Analysis  
 Seminar and workshop to present practical techniques for the analysis of data using dynamic factor analysis. Invited presenter: Dr. Michael Browne (Ohio State University).  
 Role: Seminar Organizer

R03 HD44679-01A1 Robert E. Larzelere (PI) 03/10/2004 - 02/28/2006  
 NIH - NICHD \$73,500  
 Antisocial Growth and Parenting: Bidirectional Linkages  
 Role: Consultant

Robert Kail (PI) 01/09/04 – 31/08/05  
 NIH-NICHD  
 Nature and Impact of Development in Processing Speed  
 Role: Consultant

Alex Mason (PI) 01/09/05 – 31/03/07  
 NIH-NIDA  
 Role of Psychopathology in Adolescent Problem Drug Use  
 Role: Consultant

***Other***

Philip Cowan (PI)  
 NIH-NIA  
 Dynamic Adaptation to Aging in Multiple Contexts  
 Role: Co-PI and Core Co-Leader

**CONFERENCE ORGANIZATIONS**

Organizer (with Silvia Bunge). Annual Psychology Department Conference (May, 2004).  
 Department of Psychology, University of California, Davis, CA.

Organizer (with Nekane Balluerka). Videoconference on Research Designs and Data Analysis for Modeling Change in Longitudinal Studies. (February 2007). Methodology for the Social and Health Sciences Annual Meeting. Barcelona, Spain.

## **ADVISING**

### *Graduate Students*

2004 – 2009 Hairong Song, Doctoral student (Assistant Professor, University of Oklahoma)  
 2007 – present Joel Steele , Doctoral student  
 2008 – present Laura Castro-Schilo, Doctoral student  
 2008 – present Stephen Aichele, Doctoral student  
 2008 – present Jonathan Helm, Doctoral student

### *Undergraduate Students*

2005 – 2006 Brittany Gentile, Honors Thesis. Highest Honors.  
 2006 – 2007 Bryan Matlen, Honors Thesis. Highest Honors.

### *Visiting Scholars*

May-June 05 Isabel Cuadrado Guirado, Visiting scholar, Universidad Nacional de Educación a Distancia, Madrid, Spain.

April-May 06 Nekane Balluerka, Visiting scholar, Universidad del Pais Vasco, San Sebastian, Spain.

Aug-Dec. 07 Ana María López, Visiting scholar, Universidad de Sevilla, Sevilla, Spain.

Aug-Nov 08 Fernando Molero, Visiting scholar, Universidad Nacional de Educación a Distancia, Madrid, Spain.

### ***Research Lab Students and Alumni***

Elizabeth Abinante, Nahal Agahi, Sarah Andrews, Christie Barnett, Suk Brar, Philip Cello, Christina Crosetti, Michelle DeLong\*, Roman Deveras, Lizbeth Duran\*, Neil Eligado, Erica González\*, Jessica Gould, Annie Hayes, Cindy Hing, Mary Ho, Poplar Haines, Jonathan Helm\*, Cindy Hing, Yvonne Jefferson, Lauren Jenkins, Charlene Lal, Ignacia López, Jennifer Macway, Kimberly Malinowski, Bryan Matlen\*, Dale Mendoza, Nicole Nelson, Anh Nguyen, Teresa Nguyen, Katherine O'Leary, Jenna Ornbaun, Sofia Reamer, Alexandra Schade, Alicia Semiatin, Jason Sharp, Catherine Shih, Ashika Singh\*, Catherine Tran, Monique Truchetta, Arlene Visitacion, Lydia Werner\*, Alaina White, Heather Wilson, Lindsey Yarbrough, Theresa Yim, Angie Yu

\* *Currently Attending Graduate School*

## **PROFESSIONAL DEVELOPMENT**

### ***Workshops and Seminars Attended***

2000 Institute on Longitudinal Methods, The Pennsylvania State University: Multilevel and Growth Curve Modeling  
 2001 Institute on Longitudinal Methods, The Pennsylvania State University: Longitudinal Modeling with Mplus

- 2002 Institute on Longitudinal Methods, The Pennsylvania State University: Missing Data in Longitudinal Research
- 2003 Notre Dame Series on Quantitative Methodology, Notre Dame University: Data Analytic Techniques for Dynamical Systems
- 2004 Factor Analysis at 100, University of North Carolina, Chapel Hill
- 2004 5<sup>th</sup> International Conference on Independent Component Analysis, Granada, Spain.

Updated August 2009