Publications Emerging From Research Funded Through the National Center for Education Research

Updated October 2011

Since 2002, the Institute of Education Sciences (IES) has funded approximately 600 research grants through the National Center for Education Research. In this document, we list the publications that have resulted from these projects. Publications from IES grantees include articles intended for scientific audiences, as well as articles written for general audiences. The topics span the range from basic translational research to the evaluation of state education policies. Because the publishing process is dynamic and new articles are appearing regularly, we plan to update this list at regular intervals. Please check our website periodically for updated material.

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Cognition and Student Learning

FY 2002

Institution: Carnegie Mellon University
Principal Investigator: Robert Siegler
Project Title: Using Cognitive Analyses to Improve Children's Math and Science Learning
Grant: R305H020060

Booth, J.L., and Siegler, R.S. (2006). Developmental and Individual Differences in Pure Numerical Estimation. *Developmental Psychology, 42*(1): 189-201.

Booth, J.L., and Siegler, R.S. (2008). Numerical Magnitude Representations Influence Arithmetic Learning. *Child Development*, *79*: 1016-1031.

Laski, E.V., and Siegler, R.S. (2007). Is 27 a Big Number? Correlational and Causal Connections Among Numerical Categorization, Number Line Estimation, and Numerical Magnitude Comparison. *Child Development, 76*: 1723-1743.

Opfer, J.E., and Siegler, R.S. (2004). Revisiting Preschoolers' Living Things Concept: A Microgenetic Analysis of Conceptual Change in Basic Biology. *Cognitive Psychology, 49*(4): 301-332.

Opfer, J.E., and Siegler, R.S. (2007). Representational Change and Children's Numerical Estimation. *Cognitive Psychology, 55*: 169-195.

Ramani, G.B., and Siegler, R.S. (2008). Promoting Broad and Stable Improvements in Low-Income Children's Numerical Knowledge through Playing Number Board Games. *Child Development, 79*: 375-394.

Siegler, R. S. (2003). Relations between Short-Term and Long-Term Cognitive Development. *Psychological Science Agenda, 16*: 8-10.

Siegler, R.S. (2004). Turning Memory Development Inside Out. *Developmental Review, 24*: 469-475.

Siegler, R.S. (2004). U-Shaped Interest in U-Shaped Development – and What It Means. *Journal of Cognition and Development, 5*(1): 1-10.

Siegler, R.S. (2006). Microgenetic Analyses of Learning. In W. Damon and R.M. Lerner (Series Eds.).and D. Kuhn and R.S. Siegler (Vol. Eds.), *Handbook of Child Psychology*: *Volume 2*: *Cognition, Perception, and Language* (6th ed., pp. 464-510). Hoboken, NJ: Wiley.

Siegler, R. S. (2009). Improving the Numerical Understanding of Children from Low-Income Families. *Child Development Perspectives, 3*: 118-124.

Siegler, R.S., and Araya, R. (2005). A Computational Model of Conscious and Unconscious Strategy Discovery. In R.V. Kail (Ed.), *Advances in Child Development and Behavior* (Vol. 33, pp. 1-42). Oxford, UK: Elsevier.

Siegler, R.S., and Booth, J.L. (2004). Development of Numerical Estimation in Young Children. *Child Development 75*(2): 428-444.

Siegler, R.S., and Booth, J.L. (2005). Development of Numerical Estimation: A Review. In J.I.D. Campbell (Ed.), *Handbook of Mathematical Cognition* (pp. 197-212). Boca Raton, FL: CRC Press.

Siegler, R. S., and Mu, Y. (2008). Chinese Children Excel on Novel Mathematics Problems Even before Elementary School. *Psychological Science, 19*, 759-763.

Siegler, R. S., and Opfer, J. (2003). The Development of Numerical Estimation: Evidence for Multiple Representations of Numerical Quantity. *Psychological Science, 14*: 237-243.

Siegler, R. S., Thompson, C. A., and Opfer, J. E. (2009). The Logarithmic-to-Linear Shift: One Learning Sequence, Many Tasks, Many Time Scales. *Mind, Brain, and Education, 3*, 143-150.

Siegler, R.S., and Ramani, G.B. (2006). Early Development of Estimation Skills. *APS Observer*, *19*: 34-44.

Siegler, R.S., and Ramani, G.B. (2008). Playing Linear Numerical Board Games Promotes Low-Income Children's Numerical Development. *Developmental Science, 11*: 655-661.

Siegler, R.S., and Ramani, G.B. (2009). Playing Linear Board Games – But Not Circular Ones – Improves Low-Income Preschoolers' Numerical Understanding. *Journal of Educational Psychology, 101(3)*: 545-560.

Siegler, R. S., and Svetina, M. (2006). What Leads Children to Adopt New Strategies? A Microgenetic/Cross Sectional Study of Class Inclusion. *Child Development, 77*: 997-1015.

Institution: Columbia University
Principal Investigator: Jennifer Mangels
Project Title: The Influence of Students' Intelligence Beliefs on Attention, Information Processing, and Learning: a Neurophysiological Analysis
Grant: R305H020031

Mangels, J.A., Butterfield, B., Lamb, J., Good, C.D., and Dweck, C.S. (2006). Why Do Beliefs About Intelligence Influence Learning Success? A Social Cognitive Neuroscience Model. *Social Cognitive and Affective Neuroscience (SCAN), 1*(2): 75-86.

Institution: Northern Illinois University
Principal Investigator: M. Anne Britt
Project Title: Improving Students' Comprehension and Construction of Arguments
Grant: R305H020039

Britt, M.A., and Gabrys, G. (2004). Collecting Responses through Web Page Drag and Drop. *Behavior Research Methods, Instruments, and Computers, 36*(1): 52-68.

Britt, M.A., Wiemer-Hastings, P., Larson, A., and Perfetti, C.A. (2004). Automated Feedback on Source Citation in Essay Writing. *International Journal of Artificial Intelligence in Education.*

Butler, J.A. and Britt, M.A. (2011). Investigating Instruction for Improving Revision of Argumentative Essays. *Written Communication, 28*(1): 70-96.

Larson, M., Britt, M.A., and Larson, A. (2004). Disfluencies in Comprehending Argumentative Texts. *Reading Psychology, 25*: 205-224.

Wolfe, C.R., and Britt, M.A. (2008). The Locus of the Myside Bias in Written Argumentation. *Thinking and Reasoning*, *14*:1-27.

Institution: Northwestern University
Principal Investigator: David Uttal
Project Title: Learning From Symbolic Objects
Grant: R305H020088

McNeil, N., Uttal, D.H., Jarvin, L., and Sternberg, R.J. (2009). Should You Show Me the Money? Concrete Objects Both Hurt and Help Performance on Mathematics Problems. *Learning and Instruction, 19*: 171-184.

Sternberg, R. (2008). Applying Psychological Theories to Educational Practice. *American Educational Research Journal, 45*: 150–165.

Uttal, D.H., Fisher, J.A. and Taylor, H.A. (2006). Words and Maps: Developmental Changes in Mental Models of Spatial Information Acquired from Descriptions and Depictions. *Developmental Science, 9*(2): 221-235.

Uttal, D.H., Sandstrom, L.B., Newcombe, N.S. (2006). One Hidden Object, Two Spatial Codes: Young Children's Use of Relational and Vector Coding. *Journal of Cognition and Development, 7*(4), 503-525.

Institution: University of California, Los Angeles
Principal Investigators: Robert Bjork and Marcia Linn
Project Title: Introducing Desirable Difficulties for Educational Applications in Science
Grant: R305H020113

Bjork, R.A., and Bjork, E.L. (2006). Optimizing Treatment and Instruction: Implications of a New Theory of Disuse. In L.G. Nilsson and N. Ohta (Eds.), *Memory and Society*: *Psychological Perspectives* (pp. 109-133). Psychology Press: Hove and New York.

Bjork, R.A., and Linn, M.C. (2006). The Science of Learning and the Learning of Science: Introducing Desirable Difficulties. The *APS Observer, 19*(3): 29, 39.

Casperson, J.M., and Linn, M.C. (2006). Scaffolded Visualizations for Electrostatics Instruction. *American Journal of Physics, 74*(4): 316-323.

Chiu, J., and Linn, M. C. (in press). The Role of Self-Monitoring in Learning Chemistry with Dynamic Visualization. In A. Zohar and Y. J. Dori (Eds.), Metacognition and Science Education: Trends in Current Research. London, UK: Springer-Verlag.

Kornell, N., and Bjork, R.A. (2007). The Promise and Perils of Self-Regulated Study. *Psychonomic Bulletin and Review, 6*: 219-224.

Linn, M.C. (2003). WISE Research: Promoting International Collaboration. In D. Psillos, P. Kariotoglou, V. Tselfes, E. Hatzikraniotis, G. Fassoulopoulos, and M. Kallery (Eds.), *Science Education Research in the Knowledge-Based Society* (pp. 297-308). Boston, MA: Kluwer Academic Publishers.

Linn, M.C. (2005). WISE Design for Lifelong Learning: Pivotal Cases. In P. Gärdenfors and P. Johansson (Eds.), *Cognition, Education and Communication Technology.* Mahwah, NJ: Erlbaum.

Linn, M.C. (2006). WISE Teachers: Using Technology and Inquiry for Science Instruction. In E.A. Ashburn and R.E. Floden (Eds.), *Meaningful Learning Using Technology*: *What Educators Need to Know* (pp. 45-69). New York, NY: Teachers College Press.

Linn, M.C. (2006). The Knowledge Integration Perspective on Learning and Instruction. In R.K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences* (pp. 243-264). New York, NY: Cambridge University Press.

Linn, M.C., and Eylon, B.S. (2006). Science Education: Integrating Views of Learning and Instruction. In P.A. Alexander and P.H. Winne (Eds.), *Handbook of Educational Psychology* (2nd ed., pp. 511-544). Mahwah, NJ: Erlbaum.

Linn, M.C., Husic, F., Slotta, J., and Tinker, R. (2006). Technology Enhanced Learning in Science (TELS): Research Programs. *Educational Technology, 46*(3): 54-68.

Linn, M.C., Lee, H.S., Tinker, R., Husic, F., and Chiu, J.L. (2006). Teaching and Assessing Knowledge Integration in Science. *Science, 313*: 1049-1050.

Linn, M.C. (2007). Knowing When, Where, and How to Study Student Learning. In J.C. Campione, K.E. Metz, and A.S. Palincsar (Eds.), *Children's Learning in the Laboratory and in the Classroom*: *Essays in Honor of Ann Brown* (pp. 137-162). Mahwah, NJ: Erlbaum.

Linn, M.C. (2008). Teaching for Conceptual Change: Distinguish or Extinguish Ideas. In S. Vosniadou (Ed.), *Handbook of Research on Conceptual Change* (pp. 694-718). Mahwah, NJ: Erlbaum.

Linn, M.C., and Eylon, B.S. (2006). Science Education: Integrating Views of Learning and Instruction. In P.A. Alexander and P.H. Winne (Eds.), *Handbook of Educational Psychology* (2nd ed., pp. 511-544). Mahwah, NJ: Erlbaum.

Linn, M. C., Chang, H.-Y., Chiu, J., Zhang, H., and McElhaney, K. (2010). Can desirable difficulties overcome deceptive clarity in scientific visualizations? In A. Benjamin (Ed.), Successful remembering and successful forgetting: a Festschrift in honor of Robert A. Bjork (pp. 239-262). New York: Routledge.

Richland, L.E., Bjork, R.A., and Finley, J.R. (in press). Desirable Difficulty in Science Acquisition: Implications for Learning and Retention. *Cognition and Instruction.*

Richland, L.E., Bjork, R.A., Finley, J.R., and Linn, M.C. (2005). Linking Cognitive Science to Education: Generation and Interleaving Effects. In B.G. Bara, L. Barsalou and M. Bucciarelli (Eds.), *Proceedings of the 27th Annual Conference of the Cognitive Science Society* (pp. 1624). Mahwah, NJ: Erlbaum.

Richland, L.E., Finley, J.R., and Bjork, R.A. (2004). Differentiating the Contextual Interference Effect from the Spacing Effect. In K. Forbus, D. Gentner, and T. Regier (Eds.), *Proceedings of the 26th Annual Conference of the Cognitive Science Society (pp*. 1624). Mahwah, NJ: Erlbaum.

Richland, L.E., Linn, M.C., and Bjork, R.A. (2007). Chapter 21: Instruction. In F. Durso, R. Nickerson, S. Dumais, S. Lewandowsky, and T. Perfect (Eds.), *Handbook of Applied Cognition* (2nd ed., pp. 555-583). West Sussex, England: John Wiley and Sons, Ltd.

Institution: University of California, Riverside
Principal Investigator: H. Lee Swanson
Project Title: Age-Related Changes in Word Problem Solving and Working Memory
Grant: R305H020055

Swanson, H.L. (2004). Working Memory and Phonological Processing as Predictors of Children's Mathematical Problem Solving at Different Ages. *Memory and Cognition, 32*: 648-666.

Swanson, H.L. (2005). Working Memory, Intelligence and Learning Disabilities. In O. Wilhelm and R.W. Engle (Eds.), *Handbook of Understanding and Measuring Intelligence* (pp.409-429). New York, NY: Sage Publications, Inc.

Swanson, H.L. (2006). Cognitive Processes that Underlie Mathematical Precociousness in Young Children. *Journal of Experimental Child Psychology, 93*(3): 239-264.

Swanson, H.L. (2006). Cross Sectional and Incremental Changes in Working Memory and Mathematical Problem Solving in Elementary School Children. *Journal of Educational Psychology, 98*(2): 265-281.

Swanson, H.L. (2006). Working Memory and Dynamic Testing of Children with Learning Disabilities. In S. Pickering (Ed.), *Working Memory and Education* (pp. 125-156). San Diego, CA: Academic Press.

Swanson, H.L., and Beebe-Frankenberger, M. (2004). The Relationship between Working Memory and Mathematical Problem Solving in Children at Risk and Not at Risk for Math Difficulties. *Journal of Educational Psychology, 96*: 471-491.

Swanson, H.L., and Jerman, O. (2006). Math Disabilities: A Preliminary Meta-Analysis of the Published Literature on Cognitive Processes. In T. Scruggs and M. Mastropieri (Eds.), *Applications of Research Methodology, Volume 1 - Advances in Learning and Behavioral Disabilities* (pp. 285-314). Bristol, UK: Elsevier Ltd.

Swanson, H.L., and Jerman, O. (2006). Math Disabilities: A Selective Meta-Analysis of the Literature. *Review of Educational Research, 76*(2): 249-274.

Swanson, H.L., Howard, C.B., and Saez, L. (2006). Do Different Components of Working Memory Underlie Different Subgroups of Reading Disabilities? *Journal of Learning Disabilities, 39*(3): 252-269.

Swanson, H.L., Jerman, O., and Zheng, X. (2008). Growth in Working Memory and Mathematical Problem Solving in Children at Risk and Not at Risk for Serious Math Difficulties. *Journal of Educational Psychology, 100*: 343-379.

Swanson, H.L., Kehler, P., and Jerman, O. (2010). Working Memory, Strategy Knowledge, and Strategy Instruction in Children with Reading Disabilities. *Journal of Learning Disabilities, 43*(1): 24-47.

Swanson, H.L., Zheng, X., and Jerman, O. (2009). Working Memory, Short-Term Memory, and Reading Disabilities: A Selective Meta-Analysis of the Literature. *Journal of Learning Disabilities, 42*(3): 260-287.

Institution: University of California, San Diego
Principal Investigator: Hal Pashler
Project Title: Optimizing Resistance to Forgetting
Grant: R305H020061

Cepeda, N., Coburn, N., Rohrer, D., Wixted, J., Mozer, M., and Pashler, H. (2009). Optimizing Distributed Practice: Theoretical Analysis and Practical Implications. *Experimental Psychology, 56(4):* 236-246.

Cepeda, N., Vul, E., Rohrer, D., Wixted, J., and Pashler, H. (2008). Spacing Effect in Learning: A Temporal Ridgeline of Optimal Retention. *Psychological Science*, *19*: 1095-1102.

Cepeda, N.J., Pashler, H., Vul, E., Wixted, J.T., and Rohrer, D. (2006). Distributed Practice in Verbal Recall Tasks: A Review and Quantitative Synthesis. *Psychological Bulletin*, 132(3): 354-380.

Pashler, H., Cepeda, N.J., Wixted, J.T., and Rohrer, D. (2005). When Does Feedback Facilitate Learning of Words? *Journal of Experimental Psychology*: *Learning, Memory, and Cognition,* 31(1): 3-8.

Pashler, H., Zarow, G., and Triplett, B. (2003). Is Temporal Spacing of Tests Helpful Even When It Inflates Error Rates? *Journal of Experimental Psychology*: *Learning, Memory, and Cognition,* 29(6): 1051-1057

Rohrer, D. (2009). The Effects of Spacing and Mixing Practice Problems. *Journal for Research in Mathematics Education*, 40: 4-17.

Rohrer, D., and Taylor, K. (2006). The Effects of Overlearning and Distributed Practice on the Retention of Mathematics Knowledge. *Applied Cognitive Psychology*, 20(9): 1209-1224.

Rohrer, D., Taylor, K., Pashler, H., Wixted, J.T., and Cepeda, N.J. (2005). The Effect of Overlearning on Long-Term Retention. *Applied Cognitive Psychology, 19*(3): 361-374.

FY 2003

Institution: Carnegie Mellon University
Principal Investigator: David Klahr
Project Title: From Cognitive Models of Reasoning to Lesson Plans for Inquiry
Grant: R305H030229

Klahr, D., and Li, J. (2005). Cognitive Research and Elementary Science Instruction: From the Laboratory, to the Classroom, and Back. *Journal of Science Education and Technology*, *14*(2): 217-238.

Li, J., and Klahr, D. (2006). The Psychology of Scientific Thinking: Implications for Science Teaching and Learning. In J. Rhoton and P. Shane (Eds.), *Teaching Science in the 21st Century*. (pp 3017-328). Arlington, VA: National Science Teachers Association Press.

Li, J., Klahr, D., and Siler, S. (2006). What Lies Beneath the Science Achievement Gap? The Challenges of Aligning Science Education with Standards and Tests. *Science Educator, 15*: 1-12.

Institution: Carnegie Mellon University
Principal Investigator: John Anderson
Project Title: The Neural Markers of Effective Learning
Grant: R305H030016

Anderson, J.R. (2007). *How Can the Human Mind Occur in the Physical Universe?* New York, NY: Oxford University Press.

Anderson, J.R., Anderson, J.F., Ferris, J.L., Fincham, J.M., and Jung, K.J. (2009). Lateral Inferior Prefrontal Cortex and Interior Cingulate Cortex are Engaged at Different Stages in the Solution of Insight Problems. *PNAS Proceedings of the National Academy of Sciences of the United States of America, 106*(26): 10799-10804.

Institution: Columbia University
Principal Investigator: Janet Metcalfe
Project Title: Study Enhancement Based on Principles of Cognitive Science
Grant: R305H030175

Metcalfe, J. (2006). Principles of Cognitive Science in Education. *APS Observer, 19*: 27.

Metcalfe, J., and Kornell, N. (2007). Principles of Cognitive Science in Education: The Effects of Generation, Errors and Feedback. *Psychonomic Bulletin and Review, 14*(2): 225-229.

Metcalfe, J., Kornell, N., and Son, L.K. (2007). A Cognitive-Science Based Program to Enhance Study Efficacy in a High and Low-Risk Setting. *European Journal of Cognitive Psychology, 19*(4): 743-768.

Institution: George Mason University
Principal Investigator: Robert Pasnak
Project Title: Increasing Learning by Promoting Early Abstract Thought
Grant: R305H030031

Greene, M. R., Pasnak, R., and Romero, S. (2009). A Time Lag Analysis of Temporal Relations between Motivation, Academic Achievement, and Two Cognitive Abilities. *Early Education and Development, 20:* 799-825

Hendricks, C., Trueblood, L., and Pasnak, R. (2006). Effects of Teaching Patterning to 1st-Graders. *Journal of Research in Childhood Education, 21*(1): 79-89.

Kidd, J.K. Pasnak, R., Gadzichowski, M., Ferral-Like, M., and Gallington, D. (2008). Enhancing Kindergartners' Mathematics Achievement by Promoting Early Abstract Thought. *Journal of Advanced Academic*s, *19*: 164-200.

Pasnak, R., Cooke, W.D., and Hendricks, C. (2006). Enhancing Academic Performance by Strengthening Class-Inclusion Reasoning. *Journal of Psychology*: *Interdisciplinary and Applied*,*140*: 603-613.

Pasnak, R., Kidd, J., Gadzichowski, M., Ferral-Like, M., Gallington, D., and Saracina, R. (2007). Nurturing Developmental Processes. *Journal of Developmental Processes, 2*: 90-115.

Pasnak, R., Kidd, J., Gadzichowski, M., Gallington, D. Saracina, R., and Addison, K. (2007). Teaching Kindergarteners Abstractions. *International Journal of Learning, 13*(11): 1-6.

Pasnak, R., Kidd, J., Gadzichowski, M., Gallington, D., Saracina, R., and Addison, K. (2009). Promoting Early Abstraction to Promote Early Literacy and Numeracy. *Journal of Applied Developmental Psychology, 30(3)*: 239-249.
Pasnak, R., Kidd, J.K., Gadzichowski, M.K., Gallington, D.A., and Saracina, R.P. (2008). Can Emphasizing Cognitive Development Improve Academic Achievement? *Education Research*, *50*: 261-276.

Pasnak, R., Maccubbin, E., and Ferral-Like, M. (2007). Using Developmental Principles to Assist At-Risk Preschoolers in Developing Numeracy and Phonemic Awareness. *Perceptual and Motor Skills, 105*:163-176.

Romero, S., Perez, K., Pasnak, R, and Lehman, E. (2009). Selection of Friends in Ethnically Diverse Preschools. *NHSA Dialog: A Research-To-Practice Journal, 12(4)*: 293-306.

Institution: University of California, Los Angeles
Principal Investigator: Keith Holyoak
Project Title: a Multidisciplinary Study of Analogical Transfer in Children's Mathematical Learning
Grant: R305H030141

Morrison, R.G., Doumas, L.A.A., and Richland, L.E. (2006). The Development of Analogical Reasoning in Children: a Computational Account. In R. Sun and N. Miyake (Eds.), *Proceedings of the 28th Annual Conference of the Cognitive Science Society*. Mahwah, NJ: Erlbaum.

Richland, L.E., Bjork, R.A., and Linn, M.C. (2007). Instruction. In F. Durso, R. Nickerson, S. Dumais, S. Lewandowsky and T. Perfect (Eds.), *Handbook of Applied Cognition*, (2nd ed., pp. 555-583). Hoboken, NJ: Wiley and Sons, Ltd.

Richland, L.E., Holyoak, K.J., and Stigler, J.W. (2004). Analogy Generation in Eighth Grade Mathematics Classrooms. *Cognition and Instruction, 22*: 37-60.

Richland, L.E., Morrison, R.G., and Holyoak, K.J. (2004). Working Memory and Inhibition as Constraints on Children's Development of Analogical Reasoning. In K. Forbus, D. Gentner, and T. Regier (Eds.), *Proceedings of the 26th Annual Conference of the Cognitive Science Society* (pp. 1149-1154). Mahwah, NJ: Erlbaum.

Richland, L.E., Morrison, R.G., and Holyoak, K.J. (2006). Children's Development of Analogical Reasoning: Insights from Scene Analogy Problems. *Journal of Experimental Child Psychology, 94*: 249-271.

Richland, L.E., Zur, O., and Holyoak, K.J. (2005). Cross-Cultural Differences in Use of Comparisons: Imagery and Visual Cues. In B.G. Bara, L. Barsalou, M. Bucciarelli (Eds.), *Proceedings of the 27th Annual Conference of the Cognitive Science Society* (pp. 1149-1154). Mahwah, NJ: Erlbaum.

Richland, L.E., Zur, O., and Holyoak, K.J. (2007). Cognitive Supports for Analogy in the Mathematics Classroom. *Science, 316*: 1128-1129.

Institution: University of Illinois at Chicago
Principal Investigators: Jennifer Wiley and Keith Thiede
Project Title: Improving Monitoring Accuracy Improves Learning from Text
Grant: R305H030170

Dunlosky, J., and Thiede, K.W. (2004). Causes and Constraints of the Shift-To-Easier-Materials Effect in the Control of Study. *Memory and Cognition, 32*: 779-788.

Dunlosky, J., Hertzog, C., Kennedy, M., and Thiede, K. (2005). The Self-Monitoring Approach for Effective Learning. *Cognitive Technology, 10*: 4-11.

Griffin, T.D., Wiley, J., and Thiede, K.W. (2008). Individual Differences, Rereading, and Self-Explanation: Concurrent Processing and Cue Validity as Constraints on Metacomprehension Accuracy. *Memory and Cognition*, *36*: 93-103.

Jee, B., Wiley, J., and Griffin, T.D. (2006). Expertise and the Illusion of Comprehension. In R. Sun and N. Miyake (Eds.), *Proceedings of the 28th Annual Conference of the Cognitive Science Society*. Mahwah, NJ: Erlbaum.

Thiede, K.W., Dunlosky, J., Griffin, T.D., and Wiley, J. (2005). Understanding the Delayed Keyword Effect on Metacomprehension Accuracy. *Journal of Experimental Psychology*: *Learning, Memory and Cognition, 31*: 1267-1280.

Thiede, K.W., Griffin, T.D., Wiley, J., and Anderson, M. (2010). Poor Metacomprehension Accuracy as a Result of Inappropriate Cue Use. *Discourse Processes, 47(4)*: 331-362.

Thiede, K.W., Griffin, T.D., Wiley, J., and Redford. (2009). Metacognitive Monitoring During and After Reading. In D.J. Hacker, J. Dunlosky, and A.C. Graesser (Eds.), *Handbook of Metacognition in Education.* Routledge.

Trabasso, T., and Wiley, J. (2005). What Happens at Reunions? Exploring Causal Connections and Their Role in Reunion Effects. *Discourse Processes, 39*: 129-164.

Wiley, J., Griffin, T.D., and Thiede, K.W. (2005). Putting the Comprehension in Metacomprehension. *Journal of General Psychology, 132*: 408-428.

Institution: University of Maryland
Principal Investigator: Thomas Wallsten (Original PI: Thomas Nelson)
Project Title: Computer-Assisted Instruction for Learning and Long-Term Retention Based on Recent Cognitive and Metacognitive Findings
Grant: R305H030283

Jang, Y., and Nelson, T.O. (2005). How Many Dimensions Underlie Judgments of Learning and Recall? Evidence from State-Trace Methodology. *Journal of Experimental Psychology*: *General*, *134*: 308-326.

Nelson, T.O., Narens, L., and Dunlosky, J. (2004). A Revised Methodology for Research on Metamemory: Pre-Judgment Recall and Monitoring (PRAM). *Psychological Methods, 9* (1): 53-69.

Richards, R.M., and Nelson, T.O. (2004). Effect of the Difficulty of Prior Items on the Magnitude of Judgments of Learning for Subsequent Items. *American Journal of Psychology, 117*(1): 81-91.

Scheck, P., and Nelson, T.O. (2005). Lack of Pervasiveness of the Underconfidence-With-Practice Effect: Boundary Conditions and an Explanation via Anchoring. *Journal of Experimental Psychology: General, 134*(1): 124-128.

Scheck, P., Meeter, M., and Nelson, T.O. (2004). Anchoring Effects in the Absolute Accuracy of Immediate Versus Delayed Judgments of Learning. *Journal of Memory and Language, 51*: 71-79.

Van Overschelde, J.P., and Nelson, T.O. (2006). Delayed Judgments of Learning Cause Both a Decrease in Absolute Accuracy (Calibration) and an Increase in Relative Accuracy (Resolution). *Memory and Cognition*, *34*: 1527-1538.

Institution: Carnegie Mellon University
Principal Investigators: Erik Reichle and Jonathan Schooler
Project Title: Lapses in Meta-Cognition during Reading: Understanding Comprehension Failure
Grant: R305H030235

Pollatsek, A., Reichle, E.D., and Rayner, K. (2006). Serial Processing Is Consistent with the Time Course of Linguistic Information Extraction From Consecutive Words during Eye Fixations in Reading: A Response to Inhoff, Eiter, and Radach (2005). *Journal of Experimental Psychology*: *Human Perception and Performance, 32*: 1485-1489.

Pollatsek, A., Reichle, E.D., and Rayner, K. (2006). Tests of the E-Z Reader Model: Exploring the Interface Between Cognition and Eye-Movement Control. *Cognitive Psychology, 52*: 1-56.

Reichle, E.D., Pollatsek, A., and Rayner, K. (2007). Modeling the Effects of Lexical Ambiguity on Eye Movements during Reading. In R.P.G. Van Gompel, M.F. Fischer, W.S. Murray, and R.L. Hill (Eds.), *Eye Movements*: *A Window on Mind and Brain* (pp. 271-292). Oxford, UK: Elsevier.

Schooler, J.W., Reichle, E.D., and Halpern, D.V. (2004). Zoning Out while Reading: Evidence for Dissociations between Experience and Metaconsciousness. In D.T. Levin (Ed.), *Thinking and Seeing: Visual Metacognition in Adults and Children* (pp. 203-226). Cambridge, MA: MIT Press.

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Principal Investigator: Arthur Glenberg
Project Title: Training Indexing to Enhance Meaning Extraction in Young Readers
Grant: R305H030266

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Principal Investigator: Henry L. Roediger, III
Project Title: Test-Enhanced Learning
Grant: R305H030339

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Principal Investigator: Robert Sternberg
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Grant: R305H030282

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Principal Investigator: Michael Russell
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Principal Investigators: Carol M. Connor and Fred Morrison
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Principal Investigator: Hal Pashler
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Grant: R305H040108

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Principal Investigator: Brian Bottge
Project Title: Advancing the Math Skills of Low-Achieving Adolescents in Technology-Rich Learning Environments
Grant: R305H040032

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Principal Investigator: David Rabiner
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Grant: R305H050036

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Principal Investigator: Robert Siegler
Project Title: Improving Children's Pure Numerical Estimation
Grant: R305H050035

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Principal Investigator: Jon Star
Project Title: Using Contrasting Examples to Support Procedural Flexibility and Conceptual Understanding in Mathematics
Grant: R305H050179

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Principal Investigator: Robert Goldstone
Project Title: Grounded and Transferable Knowledge of Complex Systems Using Computer Simulations
Grant: R305H050116

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Principal Investigator: David Uttal
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Principal Investigator: Barry Gholson
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Principal Investigator: Janet Metcalfe
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Principal Investigator: Philip Kellman
Project Title: Integrating Conceptual Foundations in Mathematics through the Application of Principles of Perceptual Learning
Grant: R305H060070

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Institution: University of Kentucky
Principal Investigator: Elizabeth Lorch
Project Title: Teaching the Logic of the Scientific Method in the Fourth Grade
Grant: R305H060150

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Principal Investigator: Stephen Hooper
Project Title: Attention, Memory, and Executive Functions in Written Language Expression in Elementary School Children
Grant: R305H060042

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Institution: University of Washington
Principal Investigator: Deborah McCutchen
Project Title: Making Meaning: Morphological Processing and Its Contribution to Adolescent and Pre-Adolescent Literacy
Grant: R305H060073

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Institution: University of Wisconsin, Madison
Principal Investigator: Martha Alibali
Project Title: Does Visual Scaffolding Facilitate Students' Mathematics Learning? Evidence from Early Algebra
Grant: R305H060097

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Institution: Vanderbilt University
Principal Investigator: Gautam Biswas
Project Title: A Learning by Teaching Approach to Help Students Develop Self-Regulatory Skills in Middle School Science Classrooms
Grant: R305H060089

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Principal Investigator: Henry Roediger, III
Project Title: Test-Enhanced Learning in the Classroom
Grant: R305H060080

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Principal Investigator: Keith Thiede
Project Title: Improving Metacomprehension and Self-Regulated Learning from Scientific Texts
Grant: R305B070460

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Institution: Boulder Technologies
Principal Investigator: Wayne Ward
Project Title: Improving Science Learning through Tutorial Dialogs
Grant: R305B070434

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Institution: Carnegie Mellon University
Principal Investigator: Philip Pavlik
Project Title: Bridging the Bridge to Algebra: Measuring and Optimizing the Influence of Prerequisite Skills on a Pre-Algebra Curriculum
Grant: R305B070487

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Institution: Carnegie Mellon University
Principal Investigator: David Mostow
Project Title: Explicit Comprehension Instruction in an Automated Reading Tutor that Listens
Grant: R305B070458

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Institution: University of Oregon
Principal Investigator: Helen Neville
Project Title: Training Attention in Preschool: Effects on Neurocognitive Functions and School Performance
Grant: R305B070018

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Institution: George Mason University
Principal Investigator: Robert Pasnak
Project Title: An Economical Improvement in Literacy and Numeracy
Grant: R305B070542

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Institution: Northern Illinois University
Principal Investigator: Keith Millis
Project Title: Acquiring Research Investigative and Evaluative Skills (ARIES) for Scientific Inquiry
Grant: R305B070349

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Institution: Ohio State University
Principal Investigator: Vladimir Sloutsky
Project Title: The Role of External Representations in Learning and Transfer of Mathematical Knowledge
Grant: R305B070407

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Principal Investigator: Harold E. Pashler
Project Title: Harnessing Retrieval Practice to Enhance Learning in Diverse Domains
Grant: R305B070537

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Principal Investigator: Brian Ross
Project Title: Conceptual Analysis and Student Learning in Physics
Grant: R305B070407

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Institution: University of Notre Dame
Principal Investigator: Nicole McNeil
Project Title: Arithmetic Practice that Promotes Conceptual Understanding and Computational Fluency
Grant: R305B070297

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Institution: Carnegie Mellon University
Principal Investigator: Robert Siegler
Project Title: Improving Children's Numerical Understanding
Grant: R305H080013

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Institution: Kent State University
Principal Investigator: Katherine Rawson
Title: Developing the Retrieval-Monitoring-Feedback (RMF) Method for Improving the Durability and Efficiency of Student Learning
Grant: R305A080316

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Institution: Northwestern University
Principal Investigator: Lance Rips
Project Title: The Organization of Mathematical Knowledge
Grant: R305A080341

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Institution: University of Illinois, Urbana Champaign
Principal Investigator: Richard Anderson
Project Title: Mindful Instruction of Nonmainstream Children
Grant: R305A080347

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Institution: University of Massachusetts, Amherst
Principal Investigator: Beverly Woolf
Title: Teaching Every Student: Using Intelligent Tutoring and Universal Design to Customize the Mathematics Curriculum
Grant: R305A080664

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Institution: University of Texas Health Science Center at Houston
Principal Investigator: Jason Anthony
Title: Efficacy of Earobics Step I in English Language Learners and Low SES Minority Children
Grant: R305A080196

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Institution: Vanderbilt
Principal Investigator: Laura Novick
Title: A Cognitive Approach to Implementing Tree Thinking in High School and College Biology Curricula
Grant: R305A080621

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2011

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Principal Investigator: Fara Rohani
Title: An Alternative Statewide Assessment Strategy that Uses Test Results to Support Learning and Includes Measures of Problem Solving
Grant: R305A110121

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Early Learning Programs and Policies

FY2008

Institution: Florida State University
Principal Investigators: Cynthia Puranik and Christopher Lonigan
Project Title: Test of Emergent Writing Skills
Grant: R305A080488

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Institution: Ohio State University
Principal Investigator: Laura Justice
Project Title: Efficacy of *Read It Again!* in Rural Preschool Settings
Grant: R305A080459

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Education Leadership

FY 2004

Institution: MDRC
Principal Investigator: Janet Quint
Project Title: Learning From Efforts to Strengthen Educational Leadership in Urban School Districts
Grant: R305E040100

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Institution: University of Pennsylvania
Principal Investigator: Jonathan Supovitz
Project Title: Assessing the Impact of Principals' Professional Development: An Evaluation of the National Institute for School Leadership
Grant: R305E040085

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FY 2005

Institution: University of Wisconsin, Madison
Principal Investigator: Anthony Milanowski
Project Title: Study of Innovative School Leadership Performance Evaluation Systems
Grant: R305E050135

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FY 2008

Institution: University of Pennsylvania
Principal Investigator: Porter Andrew
Project Title: The Development and Validation of the Vanderbilt Assessment of Leadership in Education
Grant: R305A080370

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FY 2009

Institution: Syracuse University
Principal Investigator: Benjamin Dotger
Project Title: School Leader Communication Model
Grant: R305A090421

Dotger, B. (in press). The School Leader Communication Model: An Emerging Method for Bridging School Leader Preparation and Practice. *Journal of School Leadership*.

FY 2010

Institution: Stanford University
Principal Investigator: Sussana Loeb
Project Title: Assessing School Leaders' Development of Management Skills and Leadership: A Longitudinal Mixed-Methods Study
Grant: R305A100286

Grissom, J. and Loeb, S. (2011). Triangulating Principal Effectiveness: How Perspectives of Parents, Teachers, and Assistant Principals Identify the Central Importance of Managerial Skills. *American Education Research Journal,* 48 (5): *1091-1123.*

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Education Policy, Finance, and Systems

FY 2004

Institution: Empirical Education
Principal Investigator: Denis Newman
Project Title: Low Cost Experiments to Support Local School District Decisions
Grant: R305E040031

R305E040096

Institution: New York University
Principal Investigator: Leanna Stiefel
Project Title: How Should We Organize Primary Schooling? Grade Span, School Size, and Student Academic Achievement
Grant: R305E040096

Rubenstein, R., Schwartz, A.E., Stiefel, L., and Zabel, J. (2009). Spending, Size, and Grade Span in K-8 Schools, *Education Finance and Policy,* 4(1): 60-88.

Schwartz, A.E., Stiefel, L., Rubenstein, R. and Zabel, J. (2011). The Path Not Taken: How Does School Organization Affect 8th Grade Achievement? *Educational Evaluation and Policy Analysis,* 33 (3): 293-317.

Institution: Vanderbilt University
Principal Investigator: Ellen Goldring
Project Title: Public School Choice: Magnet Schools, Peer Effects, and Student Achievement
Grant: R305E040056

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FY 2005

Institution: National Bureau of Economic Research
Principal Investigator: Patrick Bayer
Project Title: The Unintended Consequences of a Major Education Policy Reform: California's Class Size Reduction, Student Achievement, and the 'Social Multiplier'
Grant: R305E050137

Bayer, P., Fernando, F., and Mcmillan, R. (2007). A Unified Framework for Measuring Preferences for Schools and Neighborhoods, *Journal of Political Economy*, *115*(4):2001-2052.

Institution: National Bureau of Economic Research
Principal Investigator: Thomas Kane
Project Title: Implementing Public School Choice in Charlotte, NC: Impacts on Student Outcomes, Competitiveness and Racial Segregation
Grant: R305E050052

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Institution: Pennsylvania State University
Principal Investigator: William Hartman
Project Title: Cost Accounting for Student-Level Resources
Grant: R305E050089

Denison, D., Hartman, W., Stiefel, L., and Moser Degan, M. A Model for School-Level Resource Reporting: Benefits and Challenges. *Public Performance and Management Review, 35*(1): 29-53.

FY 2007

Institution: Carnegie Mellon University
Principal Investigator: Dennis Epple
Project Title: Determinants of Student Outcomes in an Urban School District: Educational Interventions and Family Choices
Grant: R305A07117

Billie, D. , Engberg , J., Epple, D., Sieg, H., and Zimmer, R. Evaluating the Gifted Program of an Urban School District using a Modified Regression Discontinuity Design NBER Working Paper 16414. National Bureau of Economic Research.

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Institution: Western Michigan University
Principal Investigator: Gary Miron
Project Title: Evaluation of the Kalamazoo Promise
Grant: R305A07381

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Miron, G., and Evergreen, S. (2008). *The Kalamazoo Promise as a Catalyst for Change in an Urban School District*: *a Theoretical Framework for the Evaluation of the Kalamazoo Promise*. Working Paper #1.

Miron, G., Jones, J.N, and Kelaher-Young, A.J. (2010-2011) Kalamazoo Promise: Can a Universal College Scholarship Reform Urban Education? *Phi Delta Kappan,* 92(4): 50-56v.

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Institution: Stanford University
Principal Investigator: Sean Reardon
Project Title: The Effects of Racial School Segregation on the Black-White Achievement Gap
Grant: R305A070377

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FY 2008

Institution: National Bureau of Economic Research
Principal Investigator: Susan Dynarski
Project Title: Catholic School Prices, Private School Attendance, and Student Outcomes
Grant: R305A080202

Dynarski, S. , Gruber, J., and Li, D. (2009). Cheaper By the Dozen: Using Sibling Discounts at Catholic Schools to Estimate the Price Elasticity of Private School Attendance. NBER Working Paper No. 15461 National Bureau for Economic Research.

Institution: University of Pennsylvania
Principal Investigator: John Fantuzzo
Project Title: Kids Integrated Data System (KIDS): An Evidence-Based System for Enhancing Educational Proficiency and Social Adjustment
Grant: R305A080309

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Education Technology

FY 2008

Institution: Carnegie Mellon University
Principal Investigator: David (Jack) Mostow
Project Title: Accelerating fluency development in an automated reading tutor
Grant: R305A080628

Duong, M., and Mostow, J. (2009). Detecting Prosody Improvement in Oral Rereading. Second ISCA Workshop on Speech and Language Technology in Education (SLaTE), Wroxall Abbey Estate, Warwickshire, England.

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Institution: Harvard University
Principal Investigator: Christopher Dede
Project Title: Virtual Performance Assessments for Measuring Student Achievement in Science
Grant: R305A080141

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Institution: University of Massachusetts, Amherst
Principal Investigator: Beverly Woolf
Project Title: Teaching Every Student: Using Intelligent Tutoring And Universal Design to Customize the Mathematics Curriculum
Grant: R305A080664

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Woolf, B. P., Burleson, W., Arroyo, I., Dragon, T., and Picard, R. (2009). Affect-Aware Tutors: Recognizing and Responding to Student Affect Emotional Intelligence for Computer Tutors, *Special Issue on Modeling and Scaffolding Affective Experiences to Impact Learning, International Journal of Learning Technology,* 4(3-4): 129 – 164.

Institution: The University of Memphis
Principal Investigator: Danielle McNamara
Project Title: The Writing Pal: An Intelligent Tutoring System that Provides Interactive Writing Strategy Training
Grant: R305A080589

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Crossley, S.A., and McNamara, D.S. (in press). Predicting Second Language Writing Proficiency: The Role of Cohesion, Readability, and Lexical Difficulty. *Journal of Research in Reading*.

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McCarthy, P. M., Cai, Z., and McNamara D. S., (in press). Computational Replication of Human Assessments of Paraphrase. In C. H. Lane and H. W. Guesgen (Eds.), *Proceedings of the 22nd International Florida Artificial Intelligence Research Society Conference*. Menlo Park, CA: The AAAI Press.

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Weston, J., Crossley, S.A., and McNamara, D.S. (2010). Differences in Freewriting Quality: Perspectives, Approaches, and Applications. In P.M. McCarthy and C. Boonthum (Eds.), *Applied Natural Language Processing and Content Analysis: Identification, Investigation, and Resolution*. Hershey, PA: IGI Global.

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Institution: The University of Memphis
Principal Investigator: Andrew Olney
Project Title: Guru: A Computer Tutor that Models Expert Human Tutors
Grant: R305A080594

Baker, R.S., D'Mello, S.K., Rodrigo, M.T., and Graesser, A.C. (2010). Better to Be Frustrated than Bored: The Incidence, Persistence, and Impact of Learners' Cognitive-Affective States during Interactions with Three Different Computer-Based Learning Environments. *International Journal of Human-Computer Studies, 68*: 223-241.

D'Mello, S. K., Olney, A., and Person, N. (in press). Mining Collaborative Patterns in Tutorial Dialogues. *Journal of Educational Data Mining.*

D'Mello, S., Craig, S., and Graesser, A. (2009). Multi-Method Assessment of Affective Experience and Expression during Deep Learning. *International Journal of Learning Technology, 4(3/4)*:165-187.

D'Mello, S. K. and Graesser, A. C. (2009). Automatic Detection of Learners' Emotions from Gross Body Language. *Applied Artificial Intelligence, 23(2)*: 123-150.

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D'Mello, S., King, B., Chipman, P., and Graesser, A.C. (in press). Towards Spoken Human-Computer Tutorial Dialogues. *Human Computer Interaction*.

D'Mello, S. K., and Graesser, A. C. (2009). Automatic Detection of Learner's Affect from Gross Body Language. *Applied Artificial Intelligence, 23*: 123–150.

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Graesser, A.C. (2009). Cognitive Scientists Prefer Theories and Testable Principles with Teeth. *Educational Psychologist, 44:* 193-197.

Louwerse, M. M., Graesser, A. C., McNamara, D. S., and Lu, S. (2009). Embodied Conversational Agents as Conversational Partners. *Applied Cognitive Psychology, 23*: 1244-1255.

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Rus, V., McCarthy, P.M., McNamara, D.S., and Graesser, A.C. (in press). Identification of Sentence-to-Sentence Relations Using a Text Entailer. *Research on Language and Computation.*

Wiley, J., Goldman, S. R., Graesser, A. C., Sanchez, C. A., Ash, I. K., and Hemmerich, J. A. (2009). Source Evaluation, Comprehension, and Learning in Internet Science Inquiry Tasks. *American Educational Research Journal*. 46 (4): 1060-1106.

Interventions for Struggling Adolescent and Adult Readers and Writers

FY 2007

Principal Investigator: Daryl Mellard
Institution: University of Kansas
Project Title: Improving Adults' Reading Outcomes with Strategic Tutoring and Content Enhancement Routines
Grant: R305B070129

Mellard, D.F., and Woods, K.L. (2011, accepted). Literacy and numeracy among Job Corps students: Opportunities for targeted academic infusion in CTE. *Career and Technical Education Research Journal*.

FY 2008

Principal Investigator: Sharon Vaughn
Institution: University of Texas, Austin
Project Title: Project Collaborative Strategic Reading (CSR): Interventions for Struggling Adolescent and Adult Readers and Writers
Grant: R305A080608

Vaughn, S., Klingner, J. K., Boardman, A. G., Swanson, E. A., Roberts, G., Mohammed, S. S., and Stillman, S.J. (2011). Efficacy of Collaborative Strategic Reading with middle school students. *American Educational Research Journal, 48*(3), 938-964, first published on May 31, 2011 doi:10.3102/0002831211410305.

Mathematics and Science Education

FY 2003

Institution: Carnegie Mellon University
Principal Investigator: Kenneth Koedinger
Project Title: Using Web-Based Cognitive Assessment Systems for Predicting Student Performance on State Exams
Grant: R305K030140

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FY 2004

Institution: Education Development Center
Principal Investigator: Margaret Clements
Project Title: Examination of the Impact of Big Math for Little Kids (BMLK) on Pre-K and Kindergarten Students' Learning of Math
Grant: R305K040001

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Institution: Educational Testing Service
Principal Investigator: Caroline Wiley
Project Title: Developing and Using Diagnostic Items in Math and Science
Grant: R305K040051

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Institution: University of Oregon
Principal Investigator: David Chard
Project Title: Early Learning in Mathematics: a Prevention Approach
Grant: R305K040081

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FY 2005

Institution: Ohio State University Research Foundation
Principal Investigator: Douglas Owens
Project Title: Classroom Connectivity in Promoting Mathematics and Science Achievement
Grant: R305K050045

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Institution: New York University
Principal Investigator: Jan Plass
Project Title: Molecules and Minds: Simulations for Chemistry Education
Grant: R305K050140

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Institution: Purdue University
Principal Investigator: Panayota Mantzicopolous
Project Title: The Scientific Literacy Project: Enhancing Young Children's Scientific Literacy through Reading and Inquiry-Centered Adult-Child Dialog
Grant: R305K050038

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Samarapungavan, A., Mantzicopoulos, P., and Patrick, H. (2011). What Kindergarten Students Learn in Inquiry-Based Science Classrooms. *Cognition and Instruction, 29(4)*: 416-470.

Institution: State University of New York at Buffalo
Principal Investigator: Douglas Clements
Project Title: Scaling up TRIAD: Teaching Early Mathematics for Understanding With Trajectories and Technologies
Grant: R305K050157

Brown, C.S., Sarama, J., and Clements, D.H. (2007). Thinking About Learning Trajectories in Preschool. *Teaching Children Mathematics, 14*: 178-181.

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Institution: University of Illinois
Principal Investigator: Arthur Baroody
Project Title: Developing an Intervention to Foster Early Number Sense and Skill
Grant: R305K050082

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Baroody, A.J., and Varma, S. (in press). The Active Construction View of Basic Number Fact Knowledge: New Directions for Cognitive Neuroscience. In J. Baek, A. E. Kelly, and L. Kalbfleisch (Eds.), *Neuropsychology and Mathematics Education.*

Institution: University of Southern California
Principal Investigator: Carole Beal
Project Title: Animal Watch: An Intelligent Tutoring System for Grade 6 Mathematics
Grant: R305K050086

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FY 2006

Institution: SRI International
Principal Investigator: Jeremy Roschelle
Project Title: Getting Fractions Right with Technology-Mediated Peer-Assisted Learning (Techpals)
Grant: R305K060011

Rafanan, K., Roschelle, J., Bhanot, R., Gorges, T., and Penuel, W. (2008). Measuring Mathematics Discourse in Technology-Supported Collaborative Activities. *Proceedings of the International Conference of the Learning Sciences, 3:* 117-118.

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Institution: University of Minnesota
Principal Investigator: Asha Jitendra
Project Title: Enhancing the Mathematical Problem Solving Performance of Sixth Grade Students Using Schema-based Instruction
Grant: R305K060002

Jitendra, A.K., Star, J.R., Starosta, K., Leh, J.M., Sood, S., Caskie, G., Hughes, C.L., and Mack. T.R. (2009). Improving Seventh Grade Students' Learning of Ratio and Proportion: The Role of Schema-Based Instruction. *Contemporary Educational Psychology, 34(3):* 250-264.

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Institution: Vanderbilt University
Principal Investigator: Richard Lehrer
Project Title: Assessing Data Modeling and Statistical Reasoning
Grant: R305K060091

Lehrer, R., and Schauble, L (in press). Invention in the Classroom: Structuring Natural Variability as Distribution. In T. Koschmann (Ed.), *Theorizing Practice*, Mahwah, NJ: Erlbaum.

FY 2007

Institution: Teachers College, Columbia University
Principal Investigator: Herbert Ginsburg
Project Title: mCLASS: Math: Development and Analysis of an Integrated Screening, Progress Monitoring, and Cognitive Assessment System for K-3 Mathematics
Grant: R305B070325

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Institution: University of Alaska
Principal Investigator: Jerry Lipka
Project Title: Determining the Potential Efficacy of 6th Grade Math in a Cultural Context
Grant: R305A070218

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Institution: University of California, Berkeley
Principal Investigator: Geoffrey Saxe
Project Title: Teaching Fractions and Integers: The Development of a Research-Based Instructional Practice
Grant: R305B070299

Saxe, G.B., Gearhart, M., Shaughnessy, M., Earnest, D., Cremer, S., Sitabkhan, Y., Platas, L., and Young, A. (2009). A Methodological Framework and Empirical Techniques for Studying the Travel of Ideas in Classroom Communities. In Schwartz, T., Dreyfus, R. Hershkovitz (Eds.), *Transformation of Knowledge in Classroom Interaction* (pp. 203-222). New York, NY: Routledge.

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Institution: University of Massachusetts, Dartmouth
Principal Investigator: Stephen Hegedus
Project Title: Democratizing Access to Core Mathematics Grades 9-12
Grant: R305B070430

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Institution: University of Virginia
Principal Investigator: Mable Kinzie
Project Title: Pre-K Mathematics and Science for At-Risk Children: Outcomes-Focused Curricula and Support for Teaching Quality
Grant: R305A07068

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Institution: Worcester Polytechnic Institute
Principal Investigator: Neil Heffernan
Project Title: Making Longitudinal Web-Based Assessments Give Cognitively Diagnostic Reports to Teachers, Parents and Students While Employing Masterly Learning
Grant: R305A070440

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FY 2008

Institution: Pacific Institutes for Research
Principal Investigator: Scott Baker
Project Title: Early Learning in Mathematics: Efficacy in Kindergarten Classrooms
Grant: R305A080114

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Institution: University of Illinois, Urbana-Chamaign
Principal Investigator: Arthur Baroody
Project Title: Fostering Fluency With Basic Addition and Subtraction
Grant: R305A080479

Baroody, A.J. (2011). Learning: A Framework. In F. Fennell (Ed.), *Special Education and Mathematics: Helping Children with Learning Difficulties Achieve Mathematical Proficiency*. Reston, VA: National Council of Teachers of Mathematics.

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Institution: University of Illinois, Urbana-Chamaign
Principal Investigator: Sarah Lubienski
Project Title: A Longitudinal Study of Gender and Mathematics Using ECLS Data
Grant: R305A080147

Robinson, J.P., and Lubienski, S.T. (2011). The Development of Gender Gaps in Mathematics and Reading Achievement Gaps: Exploring Direct Cognitive Assessments and Teacher Ratings. *American Educational Research Journal, 48*(2): 268-302..

Institution: University of Oregon
Principal Investigator: Scott Baker
Project Title: Early Learning in Mathematics: Efficacy in Kindergarten Classrooms
Grant: R305A080699

Clarke, B., Smolkowski, Baker, S.K., Fien, H., Doabler, C.T., and Chard, D.J. (2011). The Impact of a Comprehensive Tier I Core Kindergarten Program on the Achievement of Students at risk in Mathematics. *Elementary School Journal, 111*(4): 561-584.

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FY 2009

Institution: Rutgers University
Principal Investigator: Cindy Hmelo-Silver
Project Title: Systems and Cycles: Using Structure-Behavior-Function Thinking as a Conceptual Tool for Understanding Complex Natural Systems in Middle School Science
Grant: R305A090210

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Middle School and High School Reform

FY 2008

Institution: MDRC
Principal Investigator: Julie Edmunds
Project Title: Dual Enrollment—Early College
Grant: R305R060022

Edmunds, J. A., Bernstein, L., Glennie, E., Willse, J., Arshavsky, N., Unlu, F., Bartz, D., Silberman, T., Scales, W.D. and Dallas, A. (2010). Preparing Students for College: The Implementation and Impact of the Early College High School Model. *Peabody Journal of Education, 85*:3, 348-364.

Institution: Consortium of Chicago Public Schools
Principal Investigator: Elaine Allensworth
Project Title: Chicago Public School Reform
Grant: R305R060059

Allensworth, E., Nomi, T., Nicholas, N., and Valerie, L. (2009). College Preparatory Curriculum for All: Academic Consequences of Requiring Algebra and English I for Ninth Graders in Chicago. *Educational Evaluation and Policy Analysis,* 31 (4): 367-391.

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Durwood, C., Krone, E. and Mazzeo, C. (2009.) *Are Two Algebra Classes Better Than One? The Effects of Double-Dose Instruction in Chicago*. Policy Brief of the Consortium on Chicago School Research, Chicago, IL.

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Roderick, M. and Stoker, G. (2010). Bringing Rigor to the Study of Rigor: Are Advanced Placement Courses a Useful Approach to Increasing College Access and Success for Urban and Minority Youths? *Handbook of Research on Schools, Schooling, and Human Development*, Chapter 14: 216-237.

Roderick, M.R., Coca, V., and Kelly-Kemple, T. (in press). *The Postsecondary Transitions of CPS Students in the International Baccalaureate Diploma Programme*.

Institution: Harvard University
Principal Investigator: Richard Murnane
Project Title: The Consequences for High School Students of Failing State Exit Exams: Evidence from Massachusetts
Grant: R305A080127

Papay, J., Murnane, R.J. and Willett, J.B. (2010). The Consequences of High School Exit Examinations for Low-Performing Urban Students: Evidence from Massachusetts. *Education Evaluation and Policy Analysis, 32(1)*: 5-23.

National Research and Development Centers

FY 2004

Institution: Johns Hopkins University
Principal Investigator: Bob Slavin
Project Title: Center for Data-Driven Reform in Education (CDDRE)
Grant: R305A040082

Journal Articles

Cheung, A., and Slavin, R. (2005). Effective Reading Programs for English Language Learners and Other Language Minority Students. *Bilingual Research Journal, 29*(2): 241-267.

Slavin, R. (2008). Evidence-Based Reform in Education: What Will It Take? *European Educational Research Journal, 7*(1): 124-128.

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Slavin, R., and Lake, C. (2008). Effective Programs in Elementary Mathematics; A Best-Evidence Synthesis. *Review of Educational Research, 78*(3): 427-515.

Slavin, R., Lake, C., and Groff, C. (2009). Effective Programs in Middle and High School Mathematics. *Review of Educational Research*, *79(2)*, 839-911.

Books

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Chambers, B., Cheung, A., and Slavin, R. (2006). A Review of Research on Alternative Early Childhood Program. In Spodek, B. and Saracho, O (Eds.), *Handbook of Research on the Education of Young Children* (pp. 347-360). Mahwah, NJ: Lawrence Erlbaum.

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Center Website: http://www.cddre.org/

Institution: University of North Carolina-Chapel Hill
Principal Investigator: Thomas Farmer
Project Title: National Research Center on Rural Education Support (NRCRES)
Grant: R305A004056

Journal Articles

Amendum, S., Vernon-Feagans, L., and Ginsberg, M. C. (in press). The Effectiveness of a Classroom Teacher Webcam-Coaching Program for Struggling Readers: The Targeted Reading Intervention. *Elementary School Journal*.

Carver, R., King, R., Hannum, W. H., and Fowler, B. (2007). Toward A Model of Experiential Elearning. *Journal of Online Learning and Teaching*, *3*(3). Retrieved From http://Jolt.Merlot.Org/Vol3no3/Hannum.Htm.

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Farmer, T. W., Dadisman, K., Latendresse, S. J., Thompson, J., Irvin, M. J., Zhang, L. (2006). Educating Out and Giving Back: Adults' Conceptions of Successful Outcomes of African American High School Students from Impoverished Rural Communities. *Journal of Research in Rural Education, 21(10):*1-12.

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Farmer, T. W., Irvin, M. J., Thompson, J. H., Hutchins, B. C., and Leung, M.-C. (2006). School Adjustment and The Academic Success of Rural African American Early Adolescents In The Deep South. *Journal of Research in Rural Education, 21:* 1 – 14.

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Farmer, T.W., Hamm, J.V., Petrin, R.A., Robertson, D.R., Murray, R.A., Meece, J., and Brooks, D.S. (2010). Supporting Early Adolescent Learning and Social Strengths: Promoting Productive Contexts for Students At-Risk for EBD During the Transition to Middle School. *Exceptionality, 18:* 94-106.

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Center Website: http://www.cse.ucla.edu/

Institution: University of Houston
Principal Investigator: David Francis
Project Title: Center for Research on the Educational Achievement and Teaching of English Language Learners (CREATE)
Grant: R305A050056

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Principal Investigator: Thomas Bailey
Project Title: National Center for Postsecondary Research
Grant: R305A060010

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Principal Investigator: Jane Hannaway
Project Title: Center for Applied Data Analysis in Education Research (CALDER)
Grant: R305A06018

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Institution: Vanderbilt University
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Koedel, C., and Betts, J. (2009b). *Does Student Sorting Invalidate Value-Added Models of Teacher Effectiveness: An Extended Analysis of the Rothstein Critique*. NCPI Working Paper Series No. 2009-01. Nashville, TN.

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Kotlikoff, L. (2009). *Teacher Retirement Ponzi Schemes.* NCPI Conference Paper Series No. 2009-02. Nashville, TN.
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McCaffrey, D., Han, B., and Lockwood, J.R. (2008). *From Data to Bonuses: a Case Study of the Issues Related to Awarding Teachers Pay on the Basis of Their Students' Progress*. NCPI Working Paper Series No. 2008-14. Nashville, TN.

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Springer, M., Ballou, D., and Peng, A. (2008). *Impact of the Teacher Advancement Program on Student Test Score Gains: Findings From an Independent Appraisal*. NCPI Working Paper Series No. 2008-19. Nashville, TN.

Springer, M.G., and Winters, M.A. (2009). *New York City's School-Wide Bonus Pay Program: Early Evidence From a Randomized Trial.* NCPI Working Paper Series No. 2009-02. Nashville, TN.

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Tran, D., and Huang, E. (2009). *Early Career Teachers' Perceptions of Traditional Versus Innovative Benefits Packages*. NCPI Conference Paper Series No. 2009-15. Nashville, TN.

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West, M., and Chingos, M. (2008). *Teacher Effectiveness, Mobility, and Attrition in Florida: A Descriptive Analysis*. NCPI Working Paper Series No. 2008-12. Nashville, TN.

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National Center on Performance Incentives. (2008). *Designing Incentive Systems for Schools*. NCPI Policy Brief.

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National Center on Performance Incentives. (2008). *Missouri's Teacher Career Ladder Program*. NCPI Policy Brief.

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Springer, M. (2008). *Teacher Advancement Program: Findings from an Independent Appraisal.* Available at http://www.performanceincentives.org/lectures/2008conference.asp?video_id=6

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Teske, P., Ryan, J., Goldhaber, D., and Hannaway, J. (2008). *Legal and Political Dynamics of Pay for Performance*. Available at http://www.performanceincentives.org/lectures/2008conference.asp?video_id=12

Weingarten, R. (2008). *Keynote Address for Performance Incentives: Their Growing Impact on American K-12 Education.* Available at http://www.performanceincentives.org/lectures/2008conference.asp?video_id=1

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Ballou, D. (2009). *Pensions and Retirement Timing: Lessons from California.* 2009 conference rejoinder.

Forman, J. (2009). *Comments on Session V: Legal Framework and Governance.* 2009 conference rejoinder.

Greene, J. (2008). *The Effect of Performance-Pay in Little Rock, Arkansas on Student Achievement.* PowerPoint presentation available at http://www.performanceincentives.org/lectures/slides/Greene.pdf

Jacob, B. (2008). *Teacher Attitudes on Pay for Performance: Evidence from Hillsborough County, Florida.* PowerPoint presentation available at http://www.performanceincentives.org/lectures/slides/Jacob.pdf

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McCaffrey, D. (2008). *From Data to Bonuses: A Case Study of the Issues Related to Awarding Teachers Pay on the Basis of Their Students' Progress.* PowerPoint presentation available at http://www.performanceincentives.org/lectures/slides/McCaffrey.pdf

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Neal, D. (2008). *Designing Incentive Systems for Schools*. PowerPoint presentation available at http://www.performanceincentives.org/lectures/slides/Neal.pdf

Nelson, F. H. (2009). *Transform or Tweak: Concerns About the Financial Sustainability and Labor Market Effects of Teacher Retirement Systems*. 2009 conference rejoinder.

Podgursky, M. (2008). *Market-Based Pay Reform for Public School Treachers*. PowerPoint presentation available at http://www.performanceincentives.org/lectures/slides/Podgursky.pdf

Quinn, J. (2009). *Comments on Session IV: Labor Market Effects.* 2009 conference rejoinder.
Springer, M. (2008). *Opening Remarks: Performance Incentives: Their Growing Impact on American K-12 Education.* PowerPoint presentation available at http://www.performanceincentives.org/lectures/slides/SpringerOpening.pdf

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Center Website: http://www.performanceincentives.org/

FY 2008

Institution: Harvard University
Principal Investigator: Thomas Kane
Project Title: National Center for Teacher Effectiveness: Validating Measures of Effective Math Teaching
Grant: R305C090023

Journal Articles:

Staiger, D. O. and Rockoff, J. E. (in press). Searching for Effective Teachers with Imperfect Information. *Journal of Economic Perspectives.*

Center Website: http://www.gse.harvard.edu/~pfpie/index.php/ncte/

Institution: 21st Century Partnership for STEM Education
Principal Investigator: Joseph F. Merlino
Project Title: National Center on Cognition and Science Instruction
Grant: R305C080009

Center Website: http://www.cogscied.org/

FY 2009

Institution: University of Nebraska, Lincoln
Principal Investigator: Susan Sheridan
Project Title: National Center for Research on Rural Education
Grant: R305C090022

Center Website: http://www.nrcres.org/

FY 2010

Institution: Vanderbilt University
Principal Investigator: Thomas Smith
Project Title: National Center on Scaling Up Effective Schools
Grant: R305C100023

Center Website: http://www.scalingupcenter.org

Preschool Curriculum Evaluation Research

Preschool Curriculum Evaluation Research Consortium (2008). *Effects of Preschool Curriculum Programs on School Readiness* (NCER 2008-2009). U.S. Department of Education, National Center for Education Research. Washington, DC: U.S. Government Printing Office.

FY 2002

Institution: Purdue University
Principal Investigator: Douglas Powell
Project Title: Impact of the Project Approach on Children's School Readiness and School Achievement
Grant: R305J020027

Powell, D.R., Burchinal, M.R., File, N., and Kontos, S.J. (2008). An Eco-Behavioral Analysis of Children's Engagement in Public School Preschool. *Early Childhood Research Quarterly, 23*: 108-123.

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Institution: University of California at Berkeley
Principal Investigator: Prentice Starkey
Project Title: A Longitudinal Study of the Effects of a Pre-Kindergarten Mathematics Curriculum on Low-Income Children's Mathematical Knowledge
Grant: R305J020026

Klein, A., Starkey, P., Sarama, J., Clements, D.H., and Iyer, R. (2008). Effects of a Pre-Kindergarten Mathematics Intervention: A Randomized Experiment. *Journal of Research on Educational Effectiveness, 1*: 155-178.

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Starkey, P. (2007). Fostering the Learning of Mathematics in Low-Income Children. *Dialog Briefs,* 10(2): 1-7. Alexandria, VA: National Head Start Association.

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Starkey, P., and Klein, A. (2008). Sociocultural Influences on Young Children's Mathematical Knowledge. In O.N. Saracho and B. Spodek (Eds.), *Contemporary Perspectives on Mathematics in Early Childhood Education* (pp. 253-276). Charlotte, NC: Information Age Publishing.

Starkey, P., Klein, A., and Nishida, T. (in press). Effects of a Pre-Kindergarten Mathematics Curriculum on Classroom Quality and Children's Development. In P. Starkey and A. Klein (Eds.), *Curricular Intervention in Public Preschool Programs.*

Starkey, P., Klein, A., Clements, D., and Sarama, J. (2004). A Longitudinal Study of the Effects of a Pre-Kindergarten Mathematics Curriculum on Low-Income Children's Mathematical Knowledge. In F. Lamb-Parker (Ed.), *Proceedings of Head Start's Seventh National Research Conference*: *Promoting Positive Development in Young Children.* Washington, D.C.: Administration for Children and Families.

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Institution: University of New Hampshire
Principal Investigator: Jeff Priest
Project Title: Granite Ladders: An Experimental Evaluation of an Early Literacy Curriculum for New Hampshire's Preschoolers
Grant: R305J020027

Preschool Curriculum Evaluation Research Consortium (2008). *Effects of Preschool Curriculum Programs on School Readiness* (NCER 2008-2009). U.S. Department of Education, National Center for Education Research. Washington, DC: U.S. Government Printing Office.

Institution: University of North Carolina at Charlotte
Principal Investigator: Richard Lambert
Project Title: Evaluation of the Effects of Creative Curriculum on Classroom Quality and Child Outcomes in Head Start
Grant: R305J020039

Preschool Curriculum Evaluation Research Consortium (2008). *Effects of Preschool Curriculum Programs on School Readiness* (NCER 2008-2009). U.S. Department of Education, National Center for Education Research. Washington, DC: U.S. Government Printing Office.

Institution: University of North Florida
Principal Investigator: Cheryl Fountain
Project Title: Evaluation of the Early Literacy and Learning Model (ELLM): A Curriculum and Instructional Support System
Grant: R305J020040

Preschool Curriculum Evaluation Research Consortium (2008). *Effects of Preschool Curriculum Programs on School Readiness* (NCER 2008-2009). U.S. Department of Education, National Center for Education Research. Washington, DC: U.S. Government Printing Office.

Institution: University of Texas Health Science Center
Principal Investigator: Susan Landry
Project Title: Evaluation of Pre-Kindergarten Curricula in Head Start and Public School Settings
Grant: R305J020014

Assel, M.A., Landry, S.H., Swank, P.R., and Gunnewig, S. (2007). An Evaluation of Curriculum, Setting, and Mentoring on the Performance of Children Enrolled in Pre-Kindergarten. *Reading and Writing: An Interdisciplinary Journal, 20*: 463-494.

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Institution: Vanderbilt University
Principal Investigator: Dale Farran
Project Title: Focus in Early Childhood Curricula: Helping Children Transition to School
Grant: R305J020020

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Varol, F., and Farran, D. (2006). Early Mathematical Growth: How to Support Young Children's Mathematical Development, *Early Childhood Education Journal, 33(6):* 1082-3301.

FY 2003

Institution: Florida State University
Principal Investigator: Christopher Lonigan
Project Title: Evaluating the Effectiveness of Preschool Literacy Curriculum for Children At-Risk
Grant: R305J030093

Preschool Curriculum Evaluation Research Consortium. (2008). *Effects of Preschool Curriculum Programs on School Readiness* (NCER 2008-2009). U.S. Department of Education, National Center for Education Research. Washington, DC: U.S. Government Printing Office.

Institution: Success for All Foundation
Principal Investigator: Bette Chambers
Project Title: Randomized Evaluation of Curiosity Corner with Follow-Up into SFA and Control Elementary Programs
Grant: R305J030138

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Institution: University of California at Berkeley
Principal Investigator: Anne Cunningham
Project Title: A Longitudinal Study of the Effectiveness of a Pre-K Multisensory Literacy Curriculum
Grant: R305J030037

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Institution: University of Missouri
Principal Investigator: Kathy Thornburg
Project Title: Project Construct: A Catalyst for Early Achievement
Grant: R305J030103

Preschool Curriculum Evaluation Research Consortium. (2008). *Effects of Preschool Curriculum Programs on School Readiness* (NCER 2008-2009). U.S. Department of Education, National Center for Education Research. Washington, DC: U.S. Government Printing Office.

Institution: University of Virginia
Principal Investigator: Laura Justice
Project Title: Evaluation of the Language-Focused Curriculum
Grant: R305J030084

Justice, L.M., Cottone, E.A., Mashburn, A., and Rimm-Kaufman, S.E. (2008). Relationships Between Teachers and Preschoolers Who are at Risk: Contribution of Children's Language Skills, Temperamentally-Based Attributes, and Gender. *Early Education and Development, 19*: 1-22.

Justice, L.M., Mashburn, A., Pence, K., and Wiggins, A. (2008). Experimental Evaluation of a Comprehensive Language-Rich Curriculum in At-Risk Preschools. *Journal of Speech, Language, and Hearing Research, 51*: 1-19.

Justice, L. M., Pence, K., and Wiggins, A. (2008). Training teachers to Use the Language-Focused Curriculum. In B. Bunce, *The Language-Focused Curriculum, 2nd edition*. Baltimore, MD: Paul H Brookes.

Justice, L.M., Pence, K., Bowles, R., and Wiggins, A.K. (2006). An Investigation of Four Hypotheses Concerning the Order by Which 4-Year-Old Children Learn the Alphabet Letters. *Early Childhood Research Quarterly, 21*: 374-389.

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Pence, K., Beckman, A., Justice, L.M., and Bowles, R. (2009). Preschoolers' Exposure to Language Stimulation in Classrooms Serving At-Risk Children: The Contribution of Group Size and Activity Context. *Early Education and Development, 20(1) 53-79.*

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Postsecondary Education

FY 2006

Institution: Florida State University
Principle Investigator: Shouping Hu
Title: State Merit Aid Program and Student College Choice and Success: Evaluating the Efficacy of Florida's Bright Futures program
Award number: R305A110609

Hu, S., Trengove, M., and Zhang, L. (in press). Toward a Greater Understanding of the Effects of State Merit Aid Programs: Examining Existing Evidence and Exploring Future Research Direction. In J. Smart and M. Paulsen (eds.), *Higher Education: Handbook of Theory and Research*. New York, NY: Springer.

FY 2007

Institution: Correctional Education Association
Principal Investigator: Stephen Steurer
Project Title: Developing a Program of Postsecondary Academic Instruction Over the Corrections Learning Network
Grant: R305B070077

Meyer, S.J., Fredericks, L., Borden, C.M., and Richardson, P.L. (2010). Implementing Postsecondary Academic Programs in State Prisons: Challenges and Opportunities. *Journal of Correctional Education, 61*(2), 148-183.

Meyer, S. J. (2011). Factors Affecting Student Success in Postsecondary Academic Correctional Education programs. *Journal of Correctional Education, 62*(2), 132-164.

Institution: University of California, Davis
Principal Investigator: Michal Kurlaender
Project Title: The Effects of Institutional Practices on Postsecondary Trajectories – Matriculation, Persistence and Time to Degree
Grant: R305B07377

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Institution: The University of Texas at Dallas
Principal Investigator: Isaac McFarlin Jr.
Project Title: The Effects of College Remediation on Students Academic and Labor Market Outcomes
Grant: R305B070581

Martorell, P. and Isaac McFarlin Jr., I. (2011). Help or Hindrance? The Effects of College Remediation on Academic and Labor Market Outcomes. *Review of Economics and Statistics*, 93(2): 436-454

Reading and Writing

FY 2002

Institution: Ohio State University
Principal Investigator: Ian Wilkinson
Project Title: Group Discussions as a Mechanism for Promoting High-Level Comprehension of Text
Grant: R305G02075

Murphy, P.K., Wilkinson, I.A.G., Soter, A.O., Hennessey, M.N., and Alexander, J.F. (2009). Examining the Effects of Classroom Discussion on Students' High-Level Comprehension of Text: a Meta-Analysis. *Journal of Educational Psychology*, *101(3)*: 740-764.

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Institution: Pacific Institutes for Research
Principal Investigator: Scott Baker
Project Title: The Story Read Aloud Project: The Development of an Innovative Instructional Approach to Promote Comprehension and Vocabulary in First Grade Classrooms
Grant: R305G020057

Santoro, L.E., Chard, D.J., Howard, L., and Baker, S.K. (2008). Making the Very Most of Classroom Read-Alouds to Promote Comprehension and Vocabulary. *Reading Teacher, 61*(5): 396-408.

Institution: University of Colorado
Principal Investigator: Thomas Landauer
Project Title: Research on and With Novel Educational Technologies for Comprehension
Grant: R305G02027

Dennis, S. (2005). An Exemplar-Based Approach to Unsupervised Parsing. In B.G. Bara, L. Barsalou and M. Bucciarelli (Eds.), *Proceedings of the 27th Annual Conference of the Cognitive Science Society* (pp. 583-588). Hillsdale, NJ: Erlbaum.

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Steyvers, M., Griffiths, T.L., and Dennis, S. (2006). Probabilistic Inference in Human Semantic Memory. *Trends in Cognitive Sciences, 10*(7): 327-334.

Institution: University of Memphis
Principal Investigator: Danielle McNamara
Project Title: Coh-Metrix: Automated Cohesion and Coherence Scores to Predict Text Readability and Facilitate Comprehension
Grant: R305G020018

Best, R.M., Floyd, R.G., and McNamara, D.S. (2008). Differential Competencies Contributing to Children's Comprehension of Narrative and Expository Texts. *Reading Psychology*, *29*: 137-164.

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Institution: University of Pittsburgh
Principal Investigator: Charles Perfetti
Project Title: Word Learning and Comprehension: New Laboratory Approaches and Classroom Studies
Grant: R305G02006

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FY 2003

Institution: Carnegie Mellon University
Principal Investigator: James Callan
Project Title: Reader-Specific Lexical Practice for Improved Reading Comprehension
Grant: R305G030123

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Institution: Florida State University
Principal Investigator: Richard Wagner
Project Title: Origins of Individual and Developmental Differences in Reading Comprehension
Grant: R305G03104

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Institution: Pennsylvania State University
Principal Investigator: Bonnie Meyer
Project Title: Intelligent Tutoring Using the Structure Strategy to Improve Reading Comprehension of Middle School Students
Grant: R305G030072

Meyer, B.J.F., and Wijekumar, K. (2007). A Web-Based Tutoring System for the Structure Strategy: Theoretical Background, Design, and Findings. In D.S. McNamara (Ed.), *Reading Comprehension Strategies*: *Theories, Interventions, and Technologies* (pp. 347-374). Mahwah, NJ: Erlbaum.

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Institution: Teachers College, Columbia University
Principal Investigator: Joanna Williams
Project Title: Teaching Elementary Students to Comprehend Expository Text
Grant: R305G03283

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Institution: University of Connecticut
Principal Investigator: Michael Coyne
Project Title: Project VITAL: Vocabulary Intervention Targeting At-Risk Learners
Grant: R305G030250

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Institution: University of Illinois, Champaign-Urbana
Principal Investigator: Richard Anderson
Project Title: Improving Comprehension and Writing through Reasoned Argumentation
Grant: R305G030070

Li, Y., Anderson, R.C., Nguyen-Jahiel, K., Dong, T., Archodidou, A., Kim, I., Kuo, L.J., Clark, A.M., Wu, X., Jadallah, M., and Miller, B. (2007). Emergent Leadership in Children's Discussion Groups. *Cognition and Instruction, 25*(1): 75-111.

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Institution: University of Illinois, Champaign-Urbana
Principal Investigator: Georgia Garcia
Project Title: Instruction of Reading Comprehension: Cognitive Strategies or Cognitive Engagement
Grant: R305G03140

Stahl, K.A.D., Garcia, G.E., Bauer, E.B., Pearson, P.D., and Taylor, B.A. (2006). Making the Invisible Visible: The Development of a Comprehension Assessment System. In K.A.D. Stahl and McKenna (Eds.), *Reading Research at Work*: *Foundations of Effective Practice* (pp. 425-436). New York, NY: Guilford Press.

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FY 2004

Institution: Northern Illinois University
Principal Investigators: Joseph Magliano and Keith Millis
Project Title: Assessing Reading Comprehension With Verbal Protocols and Latent Semantic Analysis
Grant: R305G04055

Britt, M.A., Wiemer, K., Millis, K.K., Magliano, J.P., Wallace, P., and Hastings, P. (in press). Understanding and Reasoning with Text. To appear in P. McCarthy and C. Boonthum (Eds), *Applied Natural Language Processing and Content Analysis: Identification, Investigation,and Resolution*. IGI Global Publisher.

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Institution: State University of New York, Buffalo
Principal Investigator: James Collins
Project Title: Writing Intensive Reading Comprehension: Effects of Comprehension Instruction With and Without Integrated Writing Instruction on Fourth and Fifth Grade Students' Reading Comprehension and Writing Performance
Grant: R305G04153

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Institution: University of Colorado
Principal Investigator: Barbara Wise
Project Title: ICARE: Independent Comprehensive Adaptive Reading Evaluation System
Grant: R305G04097

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Principal Investigator: Michael Hock
Project Title: Improving Adolescent Reading Comprehension: a Multi-Strategy Reading Intervention
Grant: R305G04011

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Institution: University of Memphis
Principal Investigator: Danielle McNamara
Project Title: iSTART: Interactive Strategy Trainer for Active Reading and Thinking
Grant: R305G040046

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Institution: University of Minnesota
Principal Investigator: Paul van den Broek
Project Title: Improving Comprehension of Struggling Readers: Connecting Cognitive Science and Educational Practice
Grant: R305G04021

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Institution: University of Pittsburgh
Principal Investigator: Margaret McKeown
Project Title: Toward More Meaningful Decisions About Comprehension Instruction
Grant: R305G040049

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Institution: Vanderbilt University
Principal Investigator: Douglas Fuchs
Project Title: Scaling Up Peer Assisted Learning Strategies to Strengthen Reading Achievement
Grant: R305G04104

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Institution: Washington Research Institute
Principal Investigator: Patricia Vadasy
Project Title: Quick Reads Supplementary Tutoring Efficacy and Replication Trials
Grant: R305G04103

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Institution: CAST, Inc.
Principal Investigator: Bridget Dalton
Project Title: Improving Reading Comprehension for Struggling Readers: Understanding the Roles of Vocabulary Development, Guided Strategy Use, and Spanish Language Supports in a Digital Reading Environment
Grant: R305G050029

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Institution: Ohio State University (original award to University of Virginia)
Principal Investigator: Laura Justice
Project Title: Print Referencing Efficacy
Grant: R305G050005 (original award number R305G050057)

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Principal Investigator: Jorge Gonzalez
Project Title: Project Words of Oral Reading and Language Development (Project WORLD)
Grant: R305G050121

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Institution: University of California, Riverside
Principal Investigator: Robert Calfee
Project Title: The Read-Write Cycle: An Integrated Model for Instruction and Assessment of Reading Comprehension through Reading and Writing in the Disciplines
Grant: R305G050069

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Institution: University of California, Riverside
Principal Investigator: Rollanda O'Connor
Project Title: Variations in Procedures to Improve Reading Fluency and Comprehension
Grant: R305G050122

O'Connor, R.E., White, A., and Swanson, H.L. (2007). Repeated Reading Versus Continuous Reading: Influences on Reading Fluency and Comprehension. *Exceptional Children, 74*(1): 31-46.

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Institution: University of Connecticut
Principal Investigator: Donald Leu
Project Title: Developing Internet Comprehension Strategies Among Adolescent Students at Risk to Become Dropouts
Grant: R305G050154

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Institution: University of Houston
Principal Investigator: David Francis
Project Title: Diagnostic Assessment of Reading Comprehension: Development and Validation
Grant: R305G050201

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Institution: University of Illinois at Chicago
Principal Investigators: Kimberly Lawless
Project Title: Assessing Readers Struggling to Comprehend Multiple Sources of Information
Grant: R305G050091

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FY 2006

Institution: University of California, Santa Cruz
Principal Investigator: Judith Scott
Project Title: Vocabulary Development through Writing: A Key to Academic Success
Grant: R305G060140

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FY 2007

Institution: University of Colorado
Principal Investigator: Barbara Wise
Project Title: Early ICARE: Early Independent Comprehensive Adaptive Reading Evaluation System
Grant: R305A070231

Brojde, C. and Wise, B. (2008). An Evaluation of the Testing Effect with Third Grade Students. In B.C. Love, K. McRaie and V.M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (pp. 1362-1367). Washington, DC: Cognitive Science Society.

Wise, B. and Van Vuuren, S. (2007). Choosing Software Gems to Improve Your Child's Reading. *Perspectives*, 33(3): 34-38

Institution: Florida State University
Principal Investigator: Carol Connor
Project Title: Child-Instruction Interactions in Reading: Examining Causal Effects of Individualized Instruction in Second and Third Grade
Grant: R305B070074

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Principal Investigator: Patricia Vadasy
Institution: Washington Reading Institute
Project Title: Efficacy of Sound Partners Supplemental Tutoring for ELL Students, Grades K-1
Grant Award Number: R305A070324

Vadasy, P.F., and Sanders, E.A. (2010). Efficacy of Supplemental Phonics Instruction for Low-Skilled Kindergarteners in the Context of Language-Minority Status and Classroom Phonics Instruction. *Journal of Educational Psychology, 102*, 786–803.

FY 2008

Institution: Carnegie Mellon University
Principal Investigator: David (Jack) Mostow
Project Title: Developing Vocabulary in an Automated Reading Tutor
Grant: R305A080157

Duan, W., and Yates, A. (2010). Extracting Glosses to Disambiguate Word Senses. *Human Language Technologies: The 2010 Annual Conference of the North American Chapter of the Association for Computational Linguistics, Los Angeles, CA*: 627–635.

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2009

Institution: University of Maryland, College Park
Principal Investigator: Rebecca Silverman
Project Title: Investigating Vocabulary Breadth and Depth and Comprehension in English Monolingual and Spanish-English Bilingual Elementary School Students
Grant: R305A090152

Proctor, C.P. (2011). "Getting Started in English": Teaching for Vocabulary Depth with Bilingual Learners. In J.R. Paratore and R.L. McCormack (Eds.), *After Early Intervention, Then What? Teaching Struggling Readers in Grades 3 and Beyond* (2nd ed.) (pp. 42-65). Newark DE: International Reading Association.

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2010

Institution: Ohio State University
Principal Investigator: George Newell
Project Title: Teaching and Learning Argumentative Writing in High School English Language Arts Classrooms
Grant: R305A100786

Newell, G.E., Beach, R.W., Smith, J. and Van Der Heide, J. (2011). Teaching and Learning Argumentative Reading and Writing: A Review of Research. *Reading Research Quarterly*, 46(3), 273-304. dx.doi.org/10.1598/RRQ.46.3.4

Social and Behavioral Context to Support Academic Learning

FY 2009

Institution: Johns Hopkins University
Principal Investigator: Catherine Bradshaw
Project Title: Examining Variation in the Impact of School-Wide Positive Behavioral Interventions and Supports (PBIS)
Grant: R305A090307

Bradshaw, C. P., Mitchell, M. M., O'Brennan, L. M., and Leaf, P. J. (2010). Multilevel Exploration of Factors Contributing to the Overrepresentation of Black Students in Office Disciplinary Referrals. *Journal of Educational Psychology, 102 (2)*: 508-520.

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FY 2003

Institution: New York University
Principal Investigator: Lawrence Aber
Project Title: Reading, Writing, Respect and Resolution: The Impact of a Social and Character Development and Literacy Program on Teachers and Children
Grant: R305L030003

Brown, J.L., Jones, S.M., LaRusso, M.D., and Aber, J.L. (2010). Improving Classroom Quality: Teacher Influences and Experimental Impacts of the 4Rs Program. *Journal of Educational Psychology, 102*(1): 153-167.

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Institution: Oregon State University
Principal Investigator: Brian Flay
Project Title: Positive Action for Social and Character Development
Grant: R305L030072

Flay, B. R., and Allred, C. G. (2010). The Positive Action Program: Improving Academics, Behavior and Character by Teaching Comprehensive Skills for Successful Learning and Living. In Lovat, T. and Toomey, R. (Eds*). International Research Handbook on Values Education and Student Wellbeing, Part 2* (pp 471-501). Dirtrecht: Springer.

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Institution: University of North Carolina at Chapel Hill
Principal Investigators: Thomas Farmer, Mark Fraser
Project Title: Social and Character Development in Rural Youth: The Competence Support Program.
Grant: R305L030162

Farmer, T. W., Petrin, R. A., Robertson, D. L., Fraser, M. W., Hall, C. M., Day, S. H., and Dadisman, K. (in press). Peer Relations of Bullies, Bully-Victims, and Victims: The Two Social Worlds of Bullying in Second Grade Classrooms. *The Elementary School Journal, 110* (3).

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Wike, T. L., and Fraser, M. W. (2009). School Shootings: Making Sense of the Senseless. *Aggression and Violent Behavior, 14*(3), 162-169.

State and Local Programs and Policies

2010

Institution: Harvard University
Principal Investigator: Richard Murnane
Project Title: Intended and Unintended Consequences of State High-Stakes Testing: Evidence from Standards-Based Reform in Massachusetts
Grant: R305E100013

Papay, J.P., Willett, J.B., and Murnane, R.J. (2011). Extending the Regression-Discontinuity Approach to Multiple Assignment Variables. Journal of Econometrics, 161(2): 203-207.

Papay, J.P., Murnane, R.J., and Willett, J.B. (2011). High-School Exit Examinations and the Schooling Decisions of Teenagers: A Multi-Dimensional Regression-Discontinuity Analysis. National Bureau of Economic Research Working Paper w17112.

Papay, J.P., Murnane, R.J., and Willett, J.B. (2011). How Performance Information Affects Human-Capital Investment Decisions: The Impact of Test-Score Labels on Educational Outcomes. National Bureau of Economic Research Working Paper w17120.

Statistical and Research Methodology in Education

FY 2009

Institution: MDRC
Principal Investigator: Howard Bloom
Project Title: Statistical Properties of Regression Discontinuity Analysis and Comparative Interrupted Time Series Analysis for Estimating Impacts
Grant: R305D090008

Bloom, H. S. (in press). Modern Regression Discontinuity Analysis. *Journal of Research on Educational Effectiveness*.

Institution: Rand Corporation
Principal Investigator: Howard Bloom
Project Title: Statistical Properties of Regression Discontinuity Analysis and Comparative Interrupted Time Series Analysis for Estimating Impacts
Grant: R305D090011

McCaffrey D.F., and Lockwood, J.R. (2011). Missing Data in Value-Added Modeling of Teacher Effects. *Annals of Applied Statistics, 5*(2A), 773-797.

Institution: RAND Corporation
Principal Investigator: John Engberg
Project Title: Estimation and Inference in Education Research When Actions by Participants Impact Validity and Availability of Data
Grant: R305D090016

Davis, B., Engberg, J., Epple, D.N., Sieg, H., Zimmer, R. (2010). *Evaluating The Gifted Program Of An Urban School District Using A Modified Regression Discontinuity Design.* National Bureau of Economic Research, Working Paper 16414: http://Www.Nber.Org/Papers/W16414

Institution: NORC
Principal Investigator: Stephen Raudenbush
Project Title: Development of Accessible Methodologies and Software in Hierarchical Models with Missing Data
Grant: R305D090022

Shin, Y. and Raudenbush, S.W. (2010). A Latent Cluster-Mean Approach to the Contextual Effects Model With Missing Data. *Journal of Educational and Behavioral Statistics*, *35(1)*: 26-53.

Shin, Y. and Raudenbush, S. W. (in press). The Causal Effect of Class Size on Academic Performance: Multivariate Instrumental Variable Estimators With Tennessee Class Size Data Missing at Random. *Journal of Educational and Behavioral Statistics.*

FY 2010

Institution: MDRC
Principal Investigator: Howard Bloom
Project Title: Regression Discontinuity Designs with Assignment Based on Multiple Rating Scores: Statistical Properties and Issues in the Context of Educational Evaluation
Grant: R305D100027

Reardon, S., and Robinson, J. (in press). Regression Discontinuity Designs with Multiple Rating Scores in the Context of Educational Evaluation. *Journal of Research on Educational Effectiveness*.

Institution: Northwestern University
Principal Investigator: Thomas Cook
Project Title: Better Warranted Quasi-Experimental Practice for Evidence Based Practical Research
Grant: R305D100033

Cook, T.D., Pohl, S., and Steiner, P.M. (in press). Die Relative Bedeutung der Kovariatenwahl, Reliabilität und Art der Datenanalyse zur Schätzung Kausaler Effekte aus Beobachtungsdaten. *Zeitschrift Fuer Evaluation.*

Cook, T.D., Wong, M., and Steiner, P.M. (in press). Evaluating National Programs: A Case Study of the No Child Left Behind Program in the United States. In T. Bliesener, A. Beelmann and M. Stemmler (Eds.), *Antisocial Behavior and Crime: Contributions of Developmental and Evaluation Research to Prevention and Intervention.* Cambridge, MA: Hogrefe Publishing.

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Shadish, W.R. (2011). The Truth About Validity. *New Directions for Evaluation, 2011*(130), 107-117.

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Steiner, P.M., Cook, T.D., and Shadish, W.R. (2011). On the Importance of Reliable Covariate Measurement in Selection Bias Adjustments Using Propensity Scores. *Journal of Educational and Behavioral Statistics, 36*(2), 213.

Cook, T.D. (2010). An Alien Parachutes Into Economic Research on Low-Income Populations. *Focus, 27*(2), 27-32.

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Cook, T.D., Wong, M., and Wong, V.C. (2010) The Evolution of Head Start: Why the Combination of Politics and Science Changed Program Management More Than Program Design. In N. L. Stein and S. Raudenbush (Eds.), *Developmental Science Goes to School*. New York, NY: Taylor and Francis, Inc.

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Cook, T.D., and Steiner, P.M. (2009). Some Empirically Viable Alternatives to the Randomized Experiment. *Journal of Policy Analysis and Management, 28*(1), 165-166.

Cook, T.D., Steiner, P.M., and Pohl, S. (2009). Assessing How Bias Reduction Is Influenced by Covariate Choice, Unreliability and Data Analytic Mode: An Analysis of Different Kinds of Within-Study Comparisons in Different Substantive Domains. *Multivariate Behavioral Research, 44*, 828–847.

Pohl, S., Steiner, P.M., Eisermann, J., Soellner, R., and Cook, T.D. (2009). Unbiased Causal Inference From an Observational Study: Results of a Within-Study Comparison. *Educational Evaluation and Policy Analysis, 31*(4), 463–479.

Shadish, W.J., and Cook, T.D. (2009). The Renaissance of Experiments. *Annual Review of Psychology, 60*, 607-629.

Steiner, P.M., Wroblewski, A., and Cook, T.D. (2009) Randomized Experiments and Quasi-Experimental Designs in Educational Research. In K. Ryan and B.J. Cousins (Eds.), *The Sage Handbook of Educational Evaluation*. London: Sage Publications.

Institution: University of California – Los Angeles
Principal Investigator: Li Cai
Project Title: Non-linear Multilevel Latent Variable Modeling with a Metropolis-Hastings Robbins-Monro Algorithm
Grant: R305D100039

Cole, D.A., Cai, L., Martin, N.C., Findling, R.L., Youngstrom, E.A., Garber, J., et al. (in press). Structure and Measurement of Depression in Youth: Applying Item Response Theory to Clinical Data. *Psychological Assessment*.

Yang, J. S., Hansen, M., and Cai, L. (in press). Characterizing Sources of Uncertainty in IRT Scale Scores. *Educational and Psychological Measurement*.

Cai, L., Yang, J.S., and Hansen, M. (2011). Generalized Full-Information Item Bifactor Analysis. *Psychological Methods, 16,* 221–248.

Preston, K., Reise, S., Cai, L., and Hays, R. D. (2011). Using the Nominal Response Model to Evaluate Response Category Discrimination in the PROMIS Emotional Distress Item Pools. *Educational and Psychological Measurement, 71,* 523-550.

Swartz, R.J., Schwartz, C., Basch, E., Cai, L., Fairclough, D.L., McLeod, L., Mendoza, T., and Rapkin, B. (2011). The King's Foot of Patient-Reported Outcomes: Current Practices and New Developments for the Measurement of Change. *Quality of Life Research, 20,* 1159-1167.

Cai, L. (2010). A Two-Tier Full-Information Item Factor Analysis Model With Applications. *Psychometrika, 75,* 581-612.

Institution: University of California – Merced
Principal Investigator: William Shadish
Project Title: A d-Estimator for Single Case Designs
Grant: R305D100046

Shadish, W.R., and Sullivan, K.J. (in press). Characteristics of Single-Case Designs Used to Assess Intervention Effects in 2008. *Behavior Research Methods*.

FY 2011

Institution: University of Wisconsin – Madison
Principal Investigator: David Kaplan
Project Title: Bayesian Inference for Experimental and Observational Studies in Education
Grant: R305D110001

Kaplan, D., and Chen, J. (in press). A Two-Step Bayesian Approach for Propensity Score Analysis: Simulations and Case Study. *Psychometrika*.

Kaplan, D., and Depaoli, S. (in press). Bayesian Structural Equation Modeling. In R. Hoyle (ed.), *Handbook of Structural Equation Modeling*. New York: Guilford Publications, Inc.

Kaplan, D., and Depaoli, S. (in press). Bayesian Statistical Methods. In T. D. Little (ed.), *Oxford Handbook of Quantitative Methods*. Oxford: Oxford University Press.

Institution: Stanford University
Principal Investigator: Sean Reardon
Project Title: Addressing Practical Problems in Achievement Gap Estimation: Nonparametric Methods for Censored Data
Grant: R305D110018

Ho, A.D., and Reardon, S.F. (in press). Estimating Achievement Gaps From Test Scores Reported in Ordinal "Proficiency" Categories. *Journal of Educational and Behavioral Statistics.*

Teacher Quality – Mathematics and Science

FY 2003

Institution: LessonLab Research Institute
Principal Investigator: James Stigler
Project Title: Algebra Learning for All
Grant: R305M030154

Santagata, R. (2009). Designing Video-Based Professional Development for Mathematics Teachers in Low-Performing Schools. *Journal of Teacher Education*, *Theme Issue: Innovative Uses of Technology in Teacher Education*, 60(1): 38-51.

Santagata, R., Kersting, K., Givvin, K., and Stigler, J.W. (2011). Problem Implementation as a Lever for Change: An Experimental Study of the Effects of a Professional Development Program on Students' Mathematics Learning. *Journal for Research Educational Effectiveness,4*:.1-24

Spencer, J., Park, J., and Santagata, R. (2010). Keeping the mathematics on the table in urban, mathematics professional development: A model that integrates dispositions toward students. In M.Q. Foote (Ed.). *Mathematics Teaching and Learning in K-12: Equity and Professional Development*.(pp 199-218). New York, NY: Palgrave/Macmillan.

FY 2005

Institution: SRI International
Principal Investigator: William R. Peneul
Project Title: Comparing the Efficacy of Three Approaches to Improving Teaching Quality in Science Education: Curriculum Implementation, Design, and Adaptation
Grant: R305M050226

Penuel, W. R., Benbow, A., Mably, C., McWilliams, H., McAuliffe, C., and Hayden, M. M. (2009). Teaching for Understanding in Earth Science: Comparing Impacts on Planning and Instruction in Three Professional Development Designs for Middle School Science Teachers. *Journal of Science Teacher Education, 20*(5): 415-436.

Penuel, W. R., and Gallagher, L. P. (2009). Comparing Three Approaches to Preparing Teachers to Teach for Deep Understanding in Earth Science: Short-Term Impacts on Teachers and Teaching Practice. *The Journal of the Learning Sciences, 18*(4): 461-508.

Shear, L., and Penuel, W. R. (in press). The Benefits (and Costs) of a Florida District's Content-Specific Professional Development Programs in Earth Science. *Journal of Staff Development.*

Institution: South Carolina Department of Education
Principal Investigator: Christina Schneider
Project Title: Investigating the Efficacy of a Professional Development Program in Classroom Assessment for Middle School Reading and Mathematics
Grant: R305M050270

Schneider, M.C. & Meyer, J.P. (in press). Investigating the Efficacy of a Professional Development Program in Formative Classroom Assessment in Middle School English Language Arts and Mathematics. *Journal of Multidisciplinary Evaluation*.

Institution: University of Cincinnati
Principal Investigator: Carla Johnson
Project Title: Utah's Improving Science Teacher Quality Initiative
Grant: R305M050005

Johnson, C. C., and Sherry Marx (2009).Transformative Professional Development: a Model for Urban Science Education Reform. *Journal of Science Teacher Education. 20(2): 113-134.*

Johnson, C.C. (2010). Transformative Professional Development for In-Service Teachers: Enabling Change in Science Teaching to Better Meet the Needs of Hispanic ELL Students. In Sunal, D.W., Sunal, D.S., Mantero, M., and Wright, E. (Eds.), *Teaching Science with Hispanic ELLs in K-16 Classrooms*. (pp 233-252). Charlotte, NC: Information Age Publishing.

Johnson, C.C., and Fargo, J.D. (2010). Urban School Reform through Transformative Professional Development: Impact on Teacher Change and Student Learning of Science. *Urban Education*, 45 (1): 4-29.

Jennings-Bolshakova, V. L., Johnson, C.C., and Czerniak, C.M. (in press). Urban Science Self-Efficacy: Teacher and Student Voices. *Cultural Studies of Science Education.*

Johnson, C.C. (2011). The Road to Culturally Relevant Science: Exploring How Teachers Navigate Change in Pedagogy. *Journal of Research in Science Teaching.*

FY 2006

Institution: University of California.
Principal Investigator: Roland Tharp
Project Title: Integrating Science and Diversity Education: A model of Pre-Service Elementary Teacher Preparation
Grant: R305M060065

Bravo, M. A. (2011). Leveraging Spanish-Speaking ELs Native Language to Access Science. *National Clearinghouse for English Language Acquisition 3*, 21-23.

Stoddart, T., Solís, J. L., Tolbert, S., and Bravo, M. A(2010). A framework for the effective science teaching of English Language Learners in elementary schools. In D. W. Sunal, C. S. Sunal and E. L. Wright (Eds.), *Teaching science with Hispanic ELLs in K-16 classrooms* (Vol. Research in Science Education, pp. 151-182). Charlotte, NC.: Information Age Publishing.

Solís, J. L., Bravo, M. A. and Stoddart, T. (2009). Integrating Science and Diversity Education: A Model for Pre-service Elementary Teacher Preparation Programs. Proceedings from the National Association of Research In Science Teaching Annual Meeting. Garden Grove CA

Bravo, M. A. and Cervetti, G. N. (2009). Teaching Vocabulary Through Text and Experience. In A. E., Farstrup and S. Samuels (Eds.), *What Research Has to Say About Vocabulary Instruction* (pp. 130-149). Newark, DE: International Reading Association Inc.

Institution: LessonLab, Inc.
Principal Investigator: Nicole Kersting
Project Title: Using Video Clips of Classroom Instruction as Item Prompts to Measure Teacher Knowledge of Teaching Mathematics: Instrument Development and Validation
Grant: R305M060057

Kersting, N. (2008)**.** Using Video Clips as Item Prompts to Measure Teachers' Knowledge of Teaching Mathematics. *Educational and Psychological Measurement, 68*:845-886.

Kersting, N. B., Givvin, K., Sotelo, F., and Stigler, James (2010). Teacher's Analysis of Classroom Video Predicts Student Learning of Mathematics: Further Explorations of a Novel Measure of Teacher Knowledge. *Journal of Teacher Education*, 61 (1-2): 172-181.

FY 2009

Institution: University of Cincinnati
Principal Investigator: Carla Johnson
Project Title: INSPIRE: Urban Teaching Fellows Program
Grant: R305A090145

Johnson, C.C.,(2011). Targeting turbulence: Lessons learned – potential solutions to challenges, in Johnson, C.C. (Ed.) *Secondary STEM Educational Reform,* Palgrave MacMillan

Johnson, C.C(2011). Defining Turbulence in STEM Educational Reform, in Johnson, C.C. (Ed.) *Secondary STEM Educational Reform,* Palgrave MacMillan.

Teacher Quality – Reading and Writing

FY 2003

Institution: Haskins Laboratories
Principal Investigator: Susan Brady
Project Title: Mastering Reading Instruction: A Professional Development Project for First Grade Teachers
Grant: R305M030099

Brady, S., Gillis, M., Smith, T., Lavalette, M., Liss-Bronstein, L., Lowe, E., North, W., Russo, E., and Wilder, T.D. (2009). First Grade Teachers' Knowledge of Phonological Awareness and Code Concepts: Examining Gains From an Intensive Form of Professional Development. *Reading and Writing*: *An Interdisciplinary Journal, 22*(4): 425-455.

Institution: Instructional Research Group
Principal Investigator: Russell Gersten
Project Title: Teacher Quality Study: An Investigation of the Impact of Teacher Study Groups as a Means to Enhance the Quality of Reading Instruction for First Graders in High Poverty Schools in Two States
Grant: R305M030052

Dimino, J., and Taylor, M.J. (2009). *Learning How to Improve Vocabulary Instruction Through Teacher Study Groups*. Baltimore, MD: Paul H. Brookes.

Gersten, R., Dimino, J., and Jayanthi, M. (2007). Towards the Development of a Nuanced Classroom Observational System for Studying Comprehension and Vocabulary Instruction. In B. Taylor and J. Ysseldyke (Eds.), *Educational Interventions for Struggling Readers* (pp. 381-425). New York, NY: Teachers College Press.

Gersten, R., Dimino, J., Jayanthi, M., Kim, J, and Santoro, L. (in press). Teacher Study Group: Impact of the Professional Development Model on Reading Instruction and Student Outcomes in First Grade Classrooms. *American Educational Research Journal.*

Institution: University of Michigan
Principal Investigator: Joanne Carlisle
Project Title: Identifying Key Components of Effective Professional Development in Reading for First-Grade Teachers and Their Students
Grant: R305M030090

Carlisle, J.F., Cortina, K.S., and Katz, L.A. (2011). First-Grade Teachers Response to Three Models of Professional Development in Reading. *Reading and Writing Quarterly, 27,* 212-238.

Carlisle, J. F., and Berebitsky, D. (2010). Literacy Coaching as a Component of Professional Development. *Reading and Writing: An Interdisciplinary Journal* (in press). Springer On-line First, *DOI: 10.1007/s11145-009-9224-4*

Carlisle, J. F., Kelcey, B., Berebitksy, D., and Phelps, G. (in press). Embracing the Complexity of Instruction: A Study of the Effects of Teachers' Instruction on Students' Reading Comprehension. *Scientific Studies of Reading*.

FY 2004

Institution: Florida State University
Principal Investigator: Douglas Harris
Project Title: Assessing Teacher Effectiveness: How Can We Predict Who Will Be a High Quality Teacher?
Grant: R305M040121

Harris, D. (2008). The Policy Uses and Policy Validity of Value-Added and Other Teacher Quality Measures. In D.H. Gitomer (Ed.), *Measurement Issues and the Assessment of Teacher Quality*. (pp. 99-130). Thousand Oaks, CA: SAGE Publications.

Harris, D., and Rutledge, S. (in press). Models and Predictors of Teacher Effectiveness: A Review of the Evidence with Lessons from (and for) Other Occupations. *Teachers College Record.*

Harris, D., and Sass, T. (2007). *Teacher Training, Teacher Quality, and Student Achievement.* National Center for the Analysis of Longitudinal Data in Education Research (CALDER). Working Paper #3. Washington, DC: Urban Institute.

Rutledge, S., and Harris, D. (2008). Certify, Blink, Hire: An Examination of the Process and Tools of Teacher Selection. *Leadership and Policy in Schools*, *7*(3): 237-263.

Institution: Purdue University
Principal Investigator: Douglas Powell
Project Title: Professional Development in Early Reading (Classroom Links to Early Literacy)
Grant: R305M040167

Diamond, K.E., Gerde, H.K., and Powell, D.R. (2008). Development in Early Literacy Skills during the Pre-Kindergarten Year in Head Start: Relations between Growth in Children's Writing and Understanding of Letters. *Early Childhood Research Quarterly, 23*: 467-478.

Douglas R.P. and Diamond, K.E. (in press). Improving the Outcomes of Coaching-Based Professional Development Interventions. In D. K. Dickinson and S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 3). New York, NY: Guilford.

Gerde, H.K., and Powell, D.R. (2009). Teacher Education, Book-Reading Practices, and Children's Language Growth across One Year of Head Start. *Early Education and Development, 20(2)*: 211-237.

Powell, D.R., Diamond, K.E., Bojczyk, K.E., and Gerde, H.K. (2008). Head Start Teachers' Perspectives on Early Literacy. *Journal of Literacy Research, 40*: 422-460.

Powell, D.R., Diamond, K.E., and Koehler, M.J. (2010). Use of a Case-Based Hypermedia Resource in an Early Literacy Coaching Intervention with Pre-Kindergarten Teachers. *Topics in Early Childhood Special Education, 29*(4): 239-249.

Institution: RAND
Principal Investigator: Richard Buddin
Project Title: Teacher Licensure Tests and Student Achievement
Grant: R305M040186

Buddin, R. and Zamarro, G. (2009). *Middle School Student Achievement* (WR-671-IES). Santa Monica, CA: RAND Education Working Paper.

Buddin, R. and Zamarro, G. (2009). Teacher Qualifications and Student Achievement in Urban Elementary Schools, *Journal of Urban Economics*. 66 (2): 103-115.

Buddin, R., and Zamaro, G. *Teacher Quality, Teacher Licensure Tests, and Student Achievement* (WR-555-IES). Santa Monica, CA: RAND Education Working Paper.

Buddin, R., and Zamarro, G. (2009). *Teacher Effectiveness in Urban High Schools* (WR-693-IES). Santa Monica, CA: RAND Education Working Paper.

Le, V.N. and Buddin, R. (2005). *Examining the Validity Evidence for California Teacher Licensure Exams* (WR 334-EDU). Santa Monica, CA: RAND Education.

Mariano, L. T. and Kirby, S.N. (2009). Achievement of Students in Multigrade Classrooms: Evidence from the Los Angeles Unified School District (WR-685-IES). Santa Monica, CA: RAND Education Working Paper.

Institution: University of Chicago
Investigator: Anthony Bryk
Title: Can Literacy Professional Development be Improved with Web-based Collaborative Learning Tools: A Randomized Field Trial
Grant: R305M040086

Atteberry, A., and Bryk, A. S. (2010). Analyzing the Role of Social Networks in School-Based Professional Development Initiatives. In A. J. Daly (Ed.), *The Ties of Change: Social Network Theory and Application in Education*. Cambridge, MA: Harvard Press.

Atteberry, A., Bryk, A. S., and Walker, L. (in press). Analyzing Teacher Engagement in Literacy Coaching Activities. *Elementary School Journal*.

Biancarosa, G., Bryk, A. S., and Dexter, E. (2010). Assessing the Value-added Effects of Literacy Collaborative Professional Development on Student Learning. *Elementary School Journa, 111(1):* 7-34.

Institution: University of North Carolina, Chapel Hill
Principal Investigator: Virginia Buysee
Project Title: Improving Teacher Quality to Address the Language and Literacy Skills of Latino Children in Pre-Kindergarten Programs
Grant: R305M040032

Buysse, V., Castro, D. C., and Peisner-Feinberg, E. (2010). Effects of a Professional Development Program on Classroom Practices and Outcomes for Latino Dual Language Learners. *Early Childhood Research Quarterly, 25 (1):* 94-206.

Castro, D. C., Peisner-Feinberg, E., and Buysse, V. (2010). Language and Literacy Development in Latino Dual Language Learners: Promising Instructional Practices. In O. Saracho and B. Spodek (Eds.), *Language and Cultural Diversity in Early Childhood Education* (pp. 65-93). Charlotte, NC: Information Age.

Castro, D. C., Páez, M., Dickinson, D., and Frede, E. (in press). Promoting Language and Literacy in Dual Language Learners: Research, Practice and Policy. Child Development Perspectives.

Gillanders, C. and Castro, D. C. (in press) Storybook Reading for Young English Language Learners. *Young Children.*

FY 2005

Institution: Florida State University
Principal Investigator: Alysia Roehrig
Project Title: Identifying the Conditions under Which Large Scale Professional Development Policy Initiatives Are Related to Teacher Knowledge, Instructional Practices, and Student Reading Outcomes
Grant: R305M050122

Roehrig, A.D., Turner, J.E., Grove, C.M., Schneider, N., and Liu, Z. (2009). Degree of Alignment Between Beginning Teachers' Practices and Beliefs About Effective Classroom Practices. *The Teacher Educator*, 44: 164-187.

Roehrig, A.D., Duggar, S.W., Moats, L., Glover, M., and Mincey, B. (2008). When Teachers Work to Use Progress Monitoring Data to Inform Literacy Instruction: Identifying Potential Supports and Challenges. *Remedial and Special Education, 29*: 364-382.

Roehrig, A.D., Bohn, C.M., Turner, J.E., and Pressley, M. (2008). Mentoring Beginning Primary Teachers for Exemplary Teaching Practices. *Teaching and Teacher Education,* 24: 684-702.

Institution: Texas A and M University
Principal Investigator: Deborah Simmons
Project Title: Enhancing the Quality of Expository Text Instruction through Content and Case-Situated Professional Development
Grant: R305M050121

Simmons, D., Hairrell, A., Edmonds, M., Vaughn, S., Larsen, R., Willson, V., Rupley, W., and Byrns, G. (2010). A Comparison of Multiple-Strategy Methods: Effects on Fourth-Grade Students' General and Content-Specific Reading Comprehension and Vocabulary Development. *Journal of Research on Education Effectiveness,* 3 (2): 121-156.

Institution: University of Michigan
Principal Investigator: Joanne Carlisle
Project Title: Assessment of Pedagogical Knowledge of Teachers of Reading
Grant: R305M050087

Carlisle, J.F., Cortina, K.S., and Katz, L.A. (in press). First-Grade Teachers' Response to Three Models of Professional Development in Reading. *Reading and Writing Quarterly*.

Institution: University of Michigan
Principal Investigator: Joanne Carlisle
Project Title: Assessment of Pedagogical Knowledge of Teachers of Reading
Grant: R305W060024

Carlisle, J. F., Kelcey, B., Berebitksy, D., and Phelps, G. (in press). Embracing the Complexity of Instruction: a Study of the Effects of Teachers' Instruction on Students' Reading Comprehension. *Scientific Studies of Reading.*

Joanne F. Carlisle, J. F., Kelcey, B., Rowan, B., andand Phelps, G. (2011): Teachers'Knowledge About Early Reading: Effects on Students' Gains in Reading Achievement, Journal of Research on Educational Effectiveness, 4:4, 289-321

Institution: University of Texas, San Antonio
Principal Investigator: Misty Sailors
Project Title: Teaching Teachers to Teach Critical Reading Strategies (CREST) through an Intensive Professional Development
Grant: R305M050021

Sailors, M. (2007). Supporting Teachers Through an Intensive Professional Development Model. In *Supporting Student Success.* Corpus Christi, TX: CEDER Yearbook.

Sailors, M. (2008). Improving Comprehension Instruction through Quality Professional Development. In S.E. Israel and G.G. Duffy (Eds.), *Handbook of Research on Reading Comprehension.* Mahwah, NJ: Erlbaum.

Sailors, M. and Price, L. (2010). Professional Development that Supports the Teaching of Cognitive Reading Strategy Instruction. *The Elementary School Journal,* 110(3): 301-322.

FY 2006

Institution: University of California, Irvine
Principal Investigator: Carol Olson
Project Title: The Pathway Project: A Cognitive Strategies Approach to Reading and Writing Instruction for Teachers of Secondary English Language Learners
Grant: R305W060016

Kim, J.S., Olson, C.B., Scarcella, R., Kramer, J., Pearson, M., van Dyk, D., Collins, P., and Land, R.E. (2011). A Randomized Experiment of a Cognitive Strategies Approach to Text-Based Analytical Writing for Mainstreamed Latino English Language Learners in Grades 6 to 12. *Journal of Research on Educational Effectiveness*, 4 (3), 231-263.

Institution: University of Pittsburgh
Principal Investigator: Lindsay Clare Matsumura
Project Title: Content-Focused Coaching for High Quality Reading Instruction
Grant: R305M060027

Matsumura, L.C., Garnier, H., Resnick, L.B. (2010). Implementing Literacy Coaching: The Role of School social Resources. *Educational Evaluation and Policy Analysis, 32(2)*: 249-272. doi: 10.3102/0162373710363743

Matsumura, L.C., Garnier, H.E., Correnti, R., Junker, B., and Bickel, D.D. (in press). Investigating the Effectiveness of a Comprehensive Literacy-Coaching Program in Schools with High Teacher Mobility. *Elementary School Journal*.

Matsumura, L.C., Sartoris, M., Bickel, D.D., and Garnier, H.E. (2009). Leadership for Literacy Coaching: The Principal's Role in Launching a New Coaching Program. *Educational Administration Quarterly, 45*(5): 655-693.

FY 2007

Institution: Purdue University
Principal Investigator: Douglas Powell
Project Title: Classroom Links to Vocabulary and Phonological Sensitivity Skills
Grant: R305B070605

Diamond, K. E., and Powell, D. R. (2011). An Iterative Approach to the Development of a Professional Development Intervention for Head Start Teachers. *Journal of Early Intervention, 391), 75-93*.

O'Leary, P. M., Cockburn, M. K., Powell, D. R., and Diamond, K. E. (2010). Head Start Teachers' Views of Phonological Awareness and Vocabulary Knowledge Instruction. *Early Childhood Education Journal*, *38*, 187-195.

Powell, D. R., and Diamond, K. E. (2011). Improving the Outcomes of Coaching-based Professional Development Interventions. In S. B. Neuman and D. K. Dickinson (Eds.), *Handbook of Early Literacy Research* (Vol. 3, pp. 295-307). New York: Guilford.

FY 2008

Institution: National Bureau of Economic Research
Principal Investigator: Jesse Rothstein
Project Title: Value-Added Models and the Measurement of Teacher Quality: Tracking or Causal Effects?
Grant: R305A080560

Rothstein, J. (2008). *Teacher Quality in Educational Production: Tracking, Decay, and Student Achievement*. National Bureau of Economic Research Working Paper 14442.

Institution: University of Pittsburgh
Principal Investigators: Linda Kucan and Annemarie Sullivan Palincsar
Project Title: The Iterative Design of Modules to Support Reading Comprehension Instruction
Grant: R305A080005

Kucan, L., Hapgood, S. and Palincsar, A. S. (in press). Teachers' Specialized Knowledge for Supporting Student Comprehension in Text-Based Discussions. *Elementary School Journal*.

Kucan, L., Palincsar, A.S., Khasnabis, D., and Chang, C. (2009). The Video Viewing Task: a Source of Information for Assessing and Addressing Teacher Understanding of Text-Based Discussion. *Teaching and Teacher Education*, 25: 415-423.
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Unsolicited and Other Awards

FY 2002

Institution: Florida State University
Principal Investigator: Barbara Foorman
Project Title: Scaling Up an Assessment-Driven Intervention Using the Internet and Hand-held Computers
Grant: R305W02001

Francis, D.J., Santi, K.L., Fletcher, J.M., Varisco, A., and Foorman, B. (2008). Form Effects on the Estimation of Students' Oral Reading Fluency Using DIBELS. *Journal of School Psychology, 46*(3): 315-342.

Foorman, B.R., Carlson, C.D., and Santi, K.L. (2007). Classroom Reading Instruction and Teacher Knowledge in the Primary Grades. In D. Haager, J. Klinger, and S. Vaughn (Eds.), *Evidence Based Reading Practices for Response to Intervention* (pp. 45-71). Baltimore, MD: Paul H. Brookes.

Institution: Southern Methodist University
Principal Investigator: Patricia Mathes
Project Title: Scaling-up Effective Intervention for Preventing Reading Difficulties in Young Children
Grant: R305W03257

Denton, C.A. (2004). *The Virtual Reading Coach.* Austin, TX: University of Texas. [Web-delivered coaching program to provide coaching support to reading intervention teachers.]

Denton, C.A. (2006). Responsiveness to Intervention as an Indication of Learning Disability. *Perspectives, 32(1)*: 4-7. Denton, C.A., and Hocker, J.K. (2006). *Responsive Reading Instruction: A Small-Group Reading Intervention for Students in Grade 1*. Longmont, CO: Sopris West.

Denton, C.A., Mathes, P.G., Swanson, E., Nimon, K., and Kethley, C. (2010). Effectiveness of a Supplemental Early Reading Intervention Scaled Up in Multiple Schools. *Exceptional Children, 76(4)*: 394-416.

Denton, C.A., Swanson, E.A., and Mathes, P.G. (2007). Assessment-Based Instructional Coaching Provided to Reading Intervention Teachers. *Reading and Writing, 20*(6): 569–590.

Hasbrouch, J.E., and Denton, C.A. (2005). *The Reading Coach: A How-To Manual for Success*. Longmont, CO: Sopris West.

Hasbrouck, J., and Denton, C.A. (2007, April). Student-Focused Coaching: A Model for Reading Coaches. *The Reading Teacher, 60(7)*: 690-693.

Mathes, P.G, and Torgetson, J.K. (2005). *Early Interventions in Reading, Level 1*. Columbus, OH: SRA. [Published version of the Proactive Intervention].

Mathes, P.G. (2005). *The Teacher's Tutor*. Columbus, OH: SRA. [Staff Development CD/DVD to supplement Early Interventions in Reading].

Mathes, P.G., Denton, C.A., and Cuevas, A. (2008). *The Coaching Solution*. Dallas,TX: Southern Methodist University. [Web-based teacher support and professional development platform].

Mathes, P.G., Denton, C.A., and Kethley, C. (in press). *Taking Effective Reading Interventions to Scale: A Saga.* ERS Spectrum.

Institution: University of Texas Health Science Center at Houston
Principal Investigator: Susan Landry
Project Title: Scaling Up a Language and Literacy Development Program at the Pre-Kindergarten Level
Grant: R305W02002

Landry, S.H., Anthony, J.L., Swank, P.R., and Monseque-Bailey, P. (2009). Effectiveness of Comprehensive Professional Development for Teachers of At-Risk Preschoolers. *Journal of Educational Psychology, 101*(2): 448-465

FY 2003

Institution: Georgetown University
Principal Investigator: Sharon Ramey
Project Title: Building Language for Literacy and Core Knowledge
Grant: R305J030120

Ramey, C.T., Ramey, S.L., and Stokes, B.R. (2009). Effective Pre-K Programs: Research Evidence About Program Dosage and Student Achievement. In R. Pianta (Ed.), *Pre-Kindergarten in the United States*. (pp. 79-105) Baltimore, MD: Paul H. Brookes Publishing.

Ramey, S.L., and Ramey, C.T. (2007). Establishing a Science of Professional Development for Early Education Programs: The Knowledge Application Information Systems (KAIS) Theory of Professional Development. In L.M. Justice and C. Vukelich (Eds.) *Achieving excellence in preschool language and literacy instruction*. (pp. 41-63) New York, NY: Guilford Press.

Ramey, S.L, Ramey, C.T., Crowell, N.A., Grace, C., and Timraz, N. (in press). The Dosage of Professional Development for Early Childhood Professionals: How the Amount, Density, and Duration of Professional Development May Influence Its Effectiveness. In J.A. Sutterby, ed., *Early Childhood Professional Development: Research and Practice Through the Early Childhood Educator Professional Development Grant.* Boston, MA: The Emerald Group.

Ramey, S.L., Ramey, C.T., and Lanzi, R.G. (2004). The Transition to School: Building on Preschool Foundations and Preparing for Lifelong Learning. In E. Zigler and S.J. Styfco (Eds.), *The Head Start Debates* (pp. 397-413). Baltimore, MD: Paul H. Brookes.

Institution: McLean Hospital
Principal Investigator: Gil Noam
Project Title: The New 3R's – Reading, Resilience, and Relationships in After-School Programs
Grant: R305W030036

Pierce, M.E., Katzir, T., Wolf, M., and Noam, G.G. (2007). Clusters of Second and Third Grade Dysfluent Urban Readers. *Reading and Writing, 20*(9): 885-907.

FY 2007

Institution: Northwestern University
Principal Investigator: Thomas Cook
Project Title: Improving Best Quasi-Experimental Practice
Grant: R305U070003

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