

Curriculum Vitae

Yuko Munakata

Business Address:

Department of Psychology and Neuroscience, 345 UCB
University of Colorado, Boulder
Boulder, CO 80309-0345
(303)735-5499 (voice)/492-2967 (fax)
munakata@colorado.edu
<http://psych.colorado.edu/~munakata>

Employment

Professor, Department of Psychology and Neuroscience, University of Colorado, Boulder, 2007-present.
Associate Professor, Department of Psychology, University of Colorado, Boulder, 2002-2007.
Adjunct Professor, Department of Psychology, University of Denver, 2002-present.
Associate Professor, Department of Psychology, University of Denver, 2001-2002.
Assistant Professor, Department of Psychology, University of Denver, 1997-2001.

Degrees

Ph.D., Psychology, Carnegie Mellon University, 1996.
Thesis: "Adaptive Processes in Cognitive Change: A Unified Framework for Understanding Infants' Successes and Failures in Object Permanence Tasks". James L. McClelland advisor.
M.S., Psychology, Carnegie Mellon University, 1993.
B.A. with Honors, with Distinction, Psychology, Stanford University, 1991.
B.S., Symbolic Systems, Stanford University, 1991.

Additional education

McDonnell-Pew Program in Cognitive Neuroscience Postdoctoral Fellow, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, 1996-1997.
Interdisciplinary program in Neural Processes in Cognition, University of Pittsburgh and Carnegie Mellon University, 1992-1996.
McDonnell Summer Institute in Cognitive Neuroscience, Dartmouth College, 1992.

Research interests

Origins of knowledge
Working memory, inhibition, and cognitive control
Neural network models and neural bases of cognitive development
Learning mechanisms and representational change

Honors and awards

Fellow, Association for Psychological Science, 2011-present.

Faculty Fellowship for sabbatical, University of Colorado, Boulder, Council on Research & Creative Work, 2009-2010.

Top Prof Award, University of Colorado Boulder Mortar Board, 2005.

Boyd R. McCandless Young Scientist Award, American Psychological Association, Division 7, 2001.

Top Professor Award, University of Denver Mortar Board, 1999.

International Conference on Infant Studies Student Award, 1994.

Lloyd W. Dinkelspiel Award for outstanding contribution to undergraduate education, Stanford University, 1991.

J. Merrill Carlsmith Prize for outstanding senior in the Social Sciences, Stanford University, 1991.

Undergraduate Commencement Speaker, Department of Psychology, Stanford University, 1991.

Psi Chi President, Stanford Chapter, 1990-1991.

National Honor Society Scholarship, 1987-1991.

Parent Teacher Association Scholarship, 1987-1991.

Grants and Fellowships**External Research Grants**

NICHD R01, "Representations yielding task-dependent flexibility." Total direct costs: \$1,250,000. 2010-2015.

NIH Predoctoral NRSA, "Prefrontal mechanisms for retrieval and selection in cognitive control." Sponsor for Hannah R. Snyder. 2009-2012.

NIMH IBSC Center, "Determinants of Executive Function and Dysfunction." Total direct costs: \$8,060,400 (\$1,800,000 for components associated with: PI on Project 5 (Development), co-I on Administrative Core). Marie Banich, PI.

NICHD R01, "Representations yielding task-dependent behavior." Total direct costs: \$900,000. 2003-2009.

James S. McDonnell Foundation 21st Century Science Collaborative Activity Award, Bridging Brain, Mind, and Behavior Program. "Developmental Cognitive Neuroscience." Awarded to Adele Diamond, BJ Casey, and Yuko Munakata. Total direct costs: \$250,000. 2001-2004.

NIH Predoctoral NRSA, "Exploring hippocampal function in Down Syndrome." Sponsor for Jennifer M. Stedron. 2002-2004.

NIH Postdoctoral NRSA, "Why do infants fail to search for hidden objects?" Sponsor for Jeanne L. Shinsky. 2001-2003.

NICHD FIRST Award, "Representations yielding infant task-dependent behavior." Total direct costs: \$350,000. 1998-2003.

NSF LIS Grant, "Discrete representations in working memory: Developmental, neuropsychological, and computational investigations." Awarded to Mike Mozer, Yuko Munakata, Randall C. O'Reilly, and Akira Miyake. Total direct costs: \$800,000. 1998-2002.

NIH B/START Award, "Active and latent representations in infancy." Total direct costs: \$25,000. 1998-1999.

McDonnell-Pew Research Grant, "The development and neural basis of object permanence." Awarded to James L. McClelland, Yuko Munakata, Mark H. Johnson, and Robert S. Siegler. Total direct costs: \$60,000. 1993-1997.

External Conference and Travel Grants

ONR conference grant, “Processes of change in brain and cognitive development,” 2004.

Sackler Institute for Developmental Psychobiology conference grant, “Processes of change in brain and cognitive development,” 2004.

Travel grant for research visit of two weeks to Centre for Brain and Cognitive Development, Birkbeck College, London. Yuko Munakata and Randall C. O’Reilly. 2001.

Travel grant for 29th Carnegie Symposium on Cognition, Mechanisms of Cognitive Development: Behavioral and Neural Perspectives. Pittsburgh, October 1998.

Internal Grants

University of Colorado, Boulder Undergraduate Research Opportunities Program. Sponsor for Arielle Jensen (2011), Kelly Brennan (2011, 2010), Andrei Semenov (2011, 2010), Amy Turner (2011, 2010, 2009), Bidita Dutta (2009), Garrett Hedman (2009), Meghan Cronk (2009), Julia Stadele (2009 and 2008), Sean Burns (2008), Amanda Bennett (2008), Meghan Wright (2008), Kelly Reid (2008), Natalie Hutchison (2008), Joedy Hulings (2007), Daniel Cashmore (2006), Deidre Lichty (2006), Meghan Wright (2006), Jessica Miltenberger (2006), Sara McQuiston (2005), Kristin Stupiansky (2005), Amanda Bowles (2004), Julia Scott (2004), Meghan Ryan (2003), Jennifer Brace (2002).

Coleman Institute conference grant, “Processes of change in brain and cognitive development,” 2004.

University of Colorado, Boulder Department of Psychology conference grant, “Processes of change in brain and cognitive development,” 2004.

University of Colorado, Institute of Cognitive Science conference grant, “Processes of change in brain and cognitive development,” 2004.

Science of Learning Center Undergraduate Research Fellowship. Sponsor for Deidre Lichty, 2006.

University of Denver Partners In Scholarship Grant. Sponsor for Kimberly Hartrick (2002), Jennifer Huddleston (2002), Laura Landgraf (2002), Poonam Hooda (2002), Eric Flyckt (2001), Christina Von Stroh (2001), Christa Hutaff (2000), Abbie Jones and Jeremy Weltman (2000), David Bauer and Jens Tobiassen (1999), Erik Johnston (1999).

University of Denver Center for Teaching and Learning Curriculum Development Grant, “Learning about the mind by simulating the brain.” 1997-1998.

Fellowships

McDonnell-Pew Program in Cognitive Neuroscience Postdoctoral Training Grant, “Active and latent memory representations: A computational and empirical approach.” 1996-1997.

Department of Defense National Defense Science and Engineering Fellowship, 1991-1994.

National Science Foundation Fellowship, 1991-1994 (declined).

Department of Psychology and Center for the Study of Language and Information Fellowship, Stanford University, 1990.

Publications

Journal papers

Munakata, Y., Snyder, H. R., & Chatham, C.H. (in press). Developing cognitive control: Three key transitions. *Current Directions in Psychological Science*.

Chatham, C. H., Yerys, B. E., and Munakata, Y. (in press). Why won’t you do what I want? The informative failures of children and models. *Cognitive Development*.

Chatham, C. H., Claus, E. D., Kim, A., Curran, T., Banich, M. T., & Munakata, Y. (in press). Cognitive control reflects context monitoring, not stopping, in response inhibition. *PLoS ONE*.

- Wendelken, C.*, Munakata, Y.*, Baym, C., Souza, M., and Bunge, S. (in press). Flexible Rule Use: Common neural substrates in children and adults. *Developmental Cognitive Neuroscience*. * = joint first authorship.
- Kharitonova, M. and Munakata, Y. (2011). The role of representations in executive function: Investigating a developmental link between flexibility and abstraction. *Front. Psychology*, 2: 347. doi: 10.3389/fpsyg.2011.00347
- Snyder, H. R., Banich, M. T., & Munakata, Y. (2011). Choosing our words: Retrieval and selection processes recruit shared neural substrates in left ventrolateral prefrontal cortex. *Journal of Cognitive Neuroscience*, 23, 3470-3482. NIHMS296950.
- Munakata, Y.*, Herd, S. A.*, Chatham, C. H., Depue, B.E., Banich, M. T., & O'Reilly, R. C. (2011). A unified framework for inhibitory control. *Trends in Cognitive Sciences*, 15, 453-459. doi:10.1016/j.tics.2011.07.011. * = shared first authorship.
- Snyder, H. R., Hutchinson, N., Nyhus, E., Curran, T., Banich, M. T., O'Reilly, R. C. & Munakata, Y. (2010). Neural inhibition enables selection during language processing. *Proceedings of the National Academy of Sciences*, 107, 16483-16488.
- Snyder, H. R. & Munakata, Y. (2010). Becoming self-directed: Abstract representations support endogenous flexibility in children. *Cognition*, 116, 155-167.
- Shinsky, J.L. & Munakata, Y. (2010). Something old, something new: A developmental transition from familiarity to novelty preferences with hidden objects. *Developmental Science*, 13, 378-384.
- Kharitonova, M., Chien, S., Colunga, E. & Munakata, Y. (2009). More than a matter of getting "unstuck": Flexible thinkers use more abstract representations than perseverators. *Developmental Science*, 12, 662-669.
- Blackwell, K. A., Cepeda, N. J. & Munakata, Y. (2009). When simple things are meaningful: Working memory strength predicts children's cognitive flexibility. *Journal of Experimental Child Psychology*, 103, 241-249.
- Chatham, C. H., Frank, M. J., & Munakata, Y. (2009). Pupillometric and behavioral markers of a developmental shift in the temporal dynamics of cognitive control. *Proceedings of the National Academy of Sciences*, 106(14), 5529-5533. doi: 10.1073/pnas.0810002106
- Snyder, H. R. & Munakata, Y. (2008). So many options, so little time: The roles of association and competition in underdetermined responding. *Psychonomic Bulletin & Review*, 15: 1083-1088.
- Cepeda, N. J. & Munakata, Y. (2007). Why do children persevere when they seem to know better: Graded working memory, or directed inhibition? *Psychonomic Bulletin & Review*, 14: 1058-1065.
- Yerys, B. E. & Munakata, Y. (2006). When labels hurt but novelty helps: Children's perseveration and flexibility in a card-sorting task. *Child Development*, 77: 1589-1607.
- Brace, J. J., Morton, J. B., & Munakata, Y. (2006). When actions speak louder than words: Improving children's flexibility in a card-sorting task. *Psychological Science*, 17: 665-669.
- Shinsky, J.L. & Munakata, Y. (2005). Familiarity breeds searching: Infants reverse their novelty preferences when reaching for hidden objects. *Psychological Science*, 16: 596-600.
- Morton, J. B. & Munakata, Y. (2005). What's the difference? Contrasting modular and neural network approaches to understanding developmental variability. *Journal of Developmental & Behavioral Pediatrics*, 26: 128-139.
- Stedron, J. M., Sahni, S. D., and Munakata, Y. (2005). Common mechanisms for working memory and attention: The case of perseveration with visible solutions. *Journal of Cognitive Neuroscience*, 17, 623-631.
- Johnson, M.H. & Munakata, Y. (2005). Processes of change in brain and cognitive development. *Trends in Cognitive Sciences*, 9, 152-158.
- Munakata, Y., Casey, B. J., & Diamond, A. (2004). Developmental cognitive neuroscience: Progress and potential. *Trends in Cognitive Sciences*, 8, 122-128.
- Munakata, Y. & Pfaffly, J. (2004). Hebbian learning and development. *Developmental Science*, 7, 141-148.
- Munakata, Y. (2004). Computational cognitive neuroscience of early memory development. *Developmental Review*, 24, 133-153.

- Munakata, Y. & McClelland, J.L. (2003). Connectionist models of development. *Developmental Science*, 6, 413-429.
- Munakata, Y., Morton, J. Bruce, & Yerys, B.E. (2003). Children's perseveration: attentional inertia and alternative accounts. *Developmental Science*, 6, 471-473.
- Luo, Y., Baillargeon, R., Brueckner, L., & Munakata, Y. (2003). Reasoning about a hidden object after a delay: Evidence for robust representations in 5-month-old infants. *Cognition*, 88, B23-B32.
- Shinsky, J.L. & Munakata, Y. (2003). Are infants in the dark about hidden objects? *Developmental Science*, 6, 273-282.
- Munakata, Y. & O'Reilly, R. C. (2003). Developmental and computational neuroscience approaches to cognition: The case of generalization. *Cognitive Studies*, 10, 76-92.
- Munakata, Y., Edgin, J. O., & Stedron, J. M. (2002). The best is yet to come: The promise of models of developmental disorders. *Behavioral and Brain Sciences*, 25 765-766.
- Morton, J.B. & Munakata, Y. (2002). Are you listening? Exploring a knowledge action dissociation in a speech interpretation task. *Developmental Science*, 5, 435-440.
- Munakata, Y., Bauer, D., Stackhouse, T., Landgraf, L., & Huddlestone, J. (2002). Rich interpretation vs. deflationary accounts in cognitive development: The case of means-end skills in 7-month-old infants. *Cognition*, 83, B43-B53.
- Casey, B.J. & Munakata, Y. (2002). Converging methods in developmental science: An Introduction. *Developmental Psychobiology*, 40, 197-199.
- Morton, J.B. & Munakata, Y. (2002). Active versus latent representations: A neural network model of perseveration, dissociation, and decalage in childhood. *Developmental Psychobiology*, 40, 255-265.
- Munakata, Y. & Stedron, J.M. (2002). Modeling infants' perception of object unity: What have we learned? *Developmental Science*, 5, 176-177.
- Munakata, Y., Sahni, S.D., & Yerys, B.E. (2001). An embodied theory in search of a body: Challenges for a dynamic systems model of infant perseveration. *Brain and Behavioral Sciences*, 24, 56-57.
- Shinsky, J.L. & Munakata, Y. (2001). Detecting transparent barriers: Clear evidence against the means-end deficit account of search failures. *Infancy*, 2, 395-404.
- Munakata, Y. (2001). Graded representations in behavioral dissociations. *Trends in Cognitive Sciences*, 5(7), 309-315.
- Munakata, Y., & Yerys, B.E. (2001). All together now: When dissociations between knowledge and action disappear. *Psychological Science*, 12(4), 335-337.
- Munakata, Y., Santos, L.R., Spelke, E.S., Hauser, M.D., & O'Reilly, R.C. (2001). Visual representation in the wild: How rhesus monkeys parse objects. *Journal of Cognitive Neuroscience*, 13(1), 44-58.
- Munakata, Y. (2000). Challenges to the violation-of-expectation paradigm: Throwing the conceptual baby out with the perceptual processing bathwater? *Infancy*, 1(4), 471-477.
- Munakata, Y. (1998). Infant perseveration and implications for object permanence theories: A PDP Model of the $A\bar{B}$ task. *Developmental Science*, 1(2), 161-184.
- Munakata, Y. (1998). Infant perseveration: Rethinking data, theory, and the role of modelling. *Developmental Science*, 1(2), 205-211.
- Munakata, Y., McClelland, J.L., Johnson, M.H., & Siegler, R.S. (1997). Rethinking infant knowledge: Toward an adaptive process account of successes and failures in object permanence tasks. *Psychological Review*, 104, 686-713.
- Munakata, Y. (1997). Perseverative reaching in infancy: The roles of hidden toys and motor history in the $A\bar{B}$ task. *Infant Behavior and Development*, 20(3), 405-416.
- Siegler, R.S. & Munakata, Y. (1993). Beyond the immaculate transition: Advances in the understanding of change. *SRCD Newsletter*.

Manuscripts submitted or in preparation

- Cepeda, N. J., Blackwell, K. A., & Munakata, Y. (under revision). Speed isn't everything: Complex processing speed measures mask individual differences and developmental changes in executive control.
- Snyder, H. R., Henderson, R. K., Whisman, M. A., & Munakata, Y. (in prep). Dysphoria can counteract deficits associated with anxiety: The case of executive function.
- Miyake, A., Rieter, M.M., Alexander, L.E., Altamirano, L.J., Gustavson, D.E., Lurquin, J.H., & Munakata, Y. (in prep). Environmental and training effects on executive functions: A critical evaluation.

Books

- O'Reilly, R. C., Munakata, Y., Frank, M. J., Hazy, T. E., and Contributors (2012). Computational Cognitive Neuroscience. Wiki Book, 1st Edition. URL: <http://ccnbook.colorado.edu>
- Munakata, Y. & Johnson, M.H. (Eds.) (2006). *Processes of Change in Brain and Cognitive Development: Attention and Performance XXI*. Oxford University Press.
- Johnson, M.H., Munakata, Y. & Gilmore, R.O. (Eds.) (2002). *Brain Development and Cognition: A Reader (2nd Edition)*. Oxford: Blackwell Publishers.
- O'Reilly, R.C. & Munakata, Y. (2000). *Computational Explorations in Cognitive Neuroscience: Understanding the Mind by Simulating the Brain*. Cambridge: MIT Press.
- Diamond, A., Casey, B.J., & Munakata, Y. (in preparation). Textbook of Developmental Cognitive Neuroscience.

Book chapters

- Munakata, Y., Michaelson, L., Barker, J., and Chevalier, N. (submitted). Executive functioning during infancy and childhood. To appear in R. E. Tremblay, M. Boivin & R. DeV. Petersthe (Eds.), *Encyclopedia on Early Childhood Development*.
- Munakata, Y., Chatham, C. H., and Snyder, H. R. (in press). Mechanistic accounts of frontal lobe development. To appear in D.T. Stuss & R.T. Knight (Eds.), *Principles of Frontal Lobe Function, 2nd edition*.
- Morton, J. B. and Munakata, Y. (2009). Connectionist approaches to perseveration: Understanding universal and task-specific aspects of children's behavior. In J. P. Spencer, M. Thomas, & J. L. McClelland (Eds.) *Toward a Unified Theory of Development: Connectionism and Dynamic Systems Theory Re-Considered*, Oxford University Press, pp. 141-164.
- Munakata, Y., Stedron, J.M., Chatham, C. H., and Kharitonova, M. (2008). Neural network models of cognitive development. In C. A. Nelson & M. Luciana (Eds.), *Handbook of Developmental Cognitive Neuroscience, 2nd Edition*, Cambridge, MA: MIT Press, pp. 367-382.
- Munakata, Y., O'Reilly, R. C., and Morton, J. B. (2007). Developmental and computational approaches to variation in working memory. In A. Conway, C. Jarrold, M. Kane, A. Miyake, & J. Towse (Eds.) *Variation in Working Memory*, Oxford University Press.
- Munakata, Y. (2006). Information processing approaches to development. In W. Damon & R. Lerner (Series Eds.) & D. Kuhn & R. S. Siegler (Vol. Eds.), *Handbook of child psychology: Vol 2: Cognition, perception, and language (6th ed.)*, New York: Wiley, pp. 426-463.
- Munakata, Y., Morton, J. B., and Stedron, J. M. (2003). The role of prefrontal cortex in perseveration: Developmental and computational explorations. In P. Quinlan (Ed.), *Connectionist Models of Development*, East Sussex: Psychology Press.
- O'Reilly, R.C. & Munakata, Y. (2002). Psychological function in computational models of neural networks. In Gallagher, M. & Nelson, R. (Eds.) *Handbook of Psychology, Vol 3, Biological Psychology*, New York: Wiley.
- Munakata, Y. (2002). Cognitive development, connectionist models. In M. Arbib (Ed.), *The Handbook of Brain Theory and Neural Networks (2nd Ed.)*, Cambridge, MA: MIT Press.

- O'Reilly, R.C. & Munakata, Y. (2002). Computational neuroscience and cognitive modeling. In Nadel, L. (Ed.) *Encyclopedia of Cognitive Sciences*, London: Macmillan.
- Munakata, Y. and Stedron, J.M. (2002). Memory for hidden objects in early infancy: Behavior, theory, and neural network simulation. In J.W. Fagen & H. Hayne (Eds.), *Advances in Infancy Research*, Volume 14 (pp. 25-69), Norwood, NJ: Ablex Publishing Corporation.
- Munakata, Y. and Stedron, J.M. (2001). Neural network models of cognitive development. In C.A. Nelson & M. Luciana (Eds.), *Handbook of Developmental Cognitive Neuroscience* (pp. 159-171), Cambridge, MA: MIT Press.
- Munakata, Y. (2001). Task-dependency in infant behavior: Toward an understanding of the processes underlying cognitive development. Lacerda, von Hofsten, & Heimann (Eds.), *Emerging Cognitive Abilities in Early Infancy* (pp. 29-52). Mahwah, NJ: Lawrence Erlbaum Associates.

Technical reports and manuscripts

- Munakata, Y., McClelland, J.L., Johnson, M.H., & Siegler, R.S. (1994). Now you see it, now you don't: A gradualistic framework for understanding infants' successes and failures in object permanence tasks. Technical Report PDP.CNS.94.2, Carnegie Mellon University, Department of Psychology.

Book and conference reviews

- Munakata, Y. (1999). Insights into mechanisms of cognitive development. *Trends in Cognitive Sciences*, 3(1), 1-2.
- Munakata, Y. (1994). Cognitive cliffhangers and cakes. Review of *The Computational Infant* for *The Times Higher Education Supplement*. November 25, 1994.

Conference presentations

Invited

- Munakata, Y. (2011). The development of proactive, endogenous control. Invited talk at the Minnesota Symposium on Child Psychology, Minneapolis, October.
- Munakata, Y., Snyder, H. R., & Chatham, C. H. (2010). Neural network models and mechanisms of cognitive control in preschoolers. Invited talk at the NICHD Workshop on Executive Function in Preschool Children: Current Knowledge and Research Opportunities, Bethesda, June.
- Munakata, Y. (2010). Developing cognitive control. Keynote address at The Ohio State University Center for Cognitive Science COGFEST, May.
- Munakata, Y. (2007). Developing cognitive flexibility: Learning mechanisms and representational change. Invited talk at the Meeting-of-Minds Workshop of the Cognitive Systems for Cognitive Assistants, Paris, September.
- Morton, J.B. & Munakata, Y. (2005). Neural network approaches to cognitive flexibility: A-not-B and other cases of perseveration. Invited talk at the Connectionist and Dynamic Systems Approaches to Development Conference, Iowa City, June.
- Munakata, Y. (2003). The development of flexibility and the prefrontal cortex: Computational and behavioral investigations. Invited talk at the Developmental Brain Science Memorial Symposium, Hokkaido University, Sapporo, Japan, December.
- Munakata, Y., O'Reilly, R. C., and Morton, J. B. (2003). Variation in working memory: Developmental and computational approaches. Invited talk at the Variation in Working Memory Conference, Chicago, July.
- Munakata, Y. (2003). Developmental dissociations in memory and flexibility: Evidence for modules or graded representations? Invited talk to the Perceptual Expertise Network, Boulder, February.
- Munakata, Y. (2002). Active vs. latent representations in the development of flexible behavior. Invited talk at the workshop on "Mechanism of Brain and Mind: Mechanism of Intelligence Development", Tateshina, Japan, August.

- Munakata, Y. (2002). Developmental dissociations in memory and flexibility: Evidence for modules or graded representations? Boyd McCandless Award talk at the American Psychological Association Annual Convention, Chicago, August.
- Munakata, Y. (2002). Can babies really do math? Moderator of invited debate between Dr. Karen Wynn and Dr. Leslie Cohen, XIII Biennial International Conference on Infant Studies, Toronto, April.
- Munakata, Y. (2001). Prefrontal cortex and perseveration: Computational and behavioral investigations. Invited talk at the International Society for Behavioral Neuroscience Conference, Marrakech, Morocco, May.
- Munakata, Y. (2001). Computational approaches to understanding prefrontal function and development. Talk in invited symposium: Development and organization of prefrontal function, chaired by Dr. BJ Casey at the biennial meeting of the Society for Research in Child Development, Minneapolis.
- Munakata, Y. (2000). Understanding inhibition and task-dependent behavior through working memory development. Conference on The Relations of Prefrontal Cortex Development to Children's Cognitive and Social Behavior, Philadelphia, May.
- Munakata, Y. (1995). Look but don't touch: What failures in infant reaching may tell us about successes in looking. Poster in invited symposium: Failures of object permanence in infancy and beyond: What do the exceptions tell us about the rule? chaired by Dr. Renee Baillargeon at the biennial meeting of the Society for Research in Child Development, Indianapolis.
- Munakata, Y. (1994). Task-dependency in infant behavior: Toward an understanding of the processes underlying cognitive development. Conference on Transitions in Perception, Cognition, and Action, Grangarde, Sweden, August.

Contributed

- Munakata, Y. (2012). The importance of activation in inhibition. Talk presented at the NIMH Center on Executive Function and Dysfunction, Conference on The Role of Inhibition in Executive Function, Boulder, January.
- Snyder, H. R., Henderson, R. K., Whisman, M. A., & Munakata, Y. (2011). The role of competitive neural inhibition in language production: Insights from the effects of trait anxiety on selecting among competing words. Talk given at the Neurobiology of Language Conference, Annapolis, November. Recipient of an Abstract Merit Award.
- Kharitonova, M., Curran, T., & Munakata, Y. (2011). High working memory is associated with a stronger conflict adaptation effect. Poster presented at the Cognitive Neuroscience Society Meeting, San Francisco, April.
- Kharitonova, M., Curran, T., & Munakata, Y. (2010). ERP explorations of the relationship between filtering irrelevant information and working memory capacity. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Montreal, April.
- Snyder, H.R., Banich, M.T., & Munakata, Y. (2010). Selection and controlled retrieval: shared neural substrates, differential modulation by anxiety and depression. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Montreal, April.
- Chatham, C. H., Claus, E. D., Curran, T., Banich, M. T., Kim, A., Munakata, Y. (2010). The Prefrontal Mechanism Underlying Inhibitory Control: Monitoring or Stopping? Poster presented at the 20th Annual Rotman Research Institute Conference on The Frontal Lobes, Toronto, March. Awarded "Outstanding Trainee Poster."
- Snyder, H.R., Hutchison, N., Nyhus, E., Curran, T., Banich, M.T., & Munakata, Y. (2009). Mechanisms for selection and controlled retrieval during language production. Poster presented at the University of Pennsylvania Center for Cognitive Neuroscience conference, Philadelphia, October.
- Snyder, H.R., Hutchison, N., Nyhus, E., Curran, T., & Munakata, Y. (2009). So many options: Roles of neural inhibition and abstract representations in selection. Poster presented at the Annual Conference of the Cognitive Science Society, Amsterdam, July.

- Blackwell, K.A., Cepeda, N.J., & Munakata, Y. (2009, October). Stop one thing or stop everything: Developmental trade-offs in global vs. selective inhibition. Poster presented at the biennial meeting of the Cognitive Development Society, San Antonio.
- Kharitonova, M., Curran, T., Munakata, Y., Kitajo, K., & Yamaguchi, Y. (2009; October). Theta oscillations reflect individual differences in working memory capacity. Poster presented at the Society for Neuroscience meeting, Chicago, IL.
- Blackwell, K.A., Cepeda, N.J., & Munakata, Y. (2009). Why do children perseverate? Contributions from working memory and directed inhibition to flexible behavior. Poster presented at the biennial meeting of the Society for Research in Child Development, Denver, April.
- Blackwell, K. A. & Munakata, Y. (2009). Is saying "that was wrong" enough? Factors influencing children's use of negative feedback to overcome perseveration. Poster presented at the biennial meeting of the Society for Research in Child Development, Denver, April.
- Kharitonova, M., Hulings, J. & Munakata, Y. (2009). A synergy between task-switching and abstraction in 3-year-olds. Poster presented at the biennial meeting of the Society for Research in Child Development, Denver, April.
- Snyder, H.R. & Munakata, Y. (2009). Becoming self-directed: abstract representations support endogenously cued switching in children. Poster presented at the Society for Research in Child Development, Denver, April.
- Snyder, H. R., Hutchison, N. & Munakata, Y. (2009). Mechanisms for retrieval and selection during language production. Poster presented at the Cognitive Neuroscience Society Meeting, San Francisco, March.
- Kharitonova, M., Curran, T., Miyake, A., & Munakata, Y. (2008). The relationship between working memory and filtering efficiency reverses with task demands: An ERP and behavioral study. Poster presented at the Cognitive Neuroscience Society Meeting, San Francisco.
- Chatham, C. H. & Munakata, Y. (2007). Reacting as the future unfolds: Cognitive control in children. Poster presented at the biennial meeting of the Cognitive Development Society, Santa Fe.
- Cepeda, N. J., McQuiston, S., Wright, M., Ryan, M. K., Scott, J., and Munakata, Y. (2007). Object permanence knowledge in 5-month-old Infants: A graded working memory account. Poster presented at the biennial meeting of the Society for Research in Child Development, Boston.
- Kharitonova, M., Chien, S., Colunga, E., and Munakata, Y. (2007). The emergence of human intelligence: An early synergy of flexibility and generalization. Poster presented at the biennial meeting of the Society for Research in Child Development, Boston.
- Stupiansky, K. N. & Munakata, Y. (2006). Exploring the foundations of infant cognitive flexibility. Poster presented at the 76th Annual Convention of the Rocky Mountain Psychological Association, Park City, April.
- Cepeda, N. J. & Munakata, Y. (2005). What mechanisms underlie task shifts – directed inhibition, or working memory plus competition? Poster presented at the biennial meeting of the Cognitive Development Society, San Diego.
- Kharitonova, M., Chien, S., Colunga, E., and Munakata, Y. (2005). More than a matter of getting "unstuck": Flexible thinkers use more abstract representations than perseverators. Poster presented at the biennial meeting of the Cognitive Development Society, San Diego.
- Brace, J. J., Morton, J. B., & Munakata, Y. (2005). Practice makes perfect: Improving children's flexibility on a card-sorting task. Poster presented at the biennial meeting of the Society for Research in Child Development, Atlanta.
- Shinsky, J. & Munakata, Y. (2005). Developmental Changes in the Role of Object Familiarity in Infants' Search. Poster presented at the biennial meeting of the Society for Research in Child Development, Atlanta.
- Brace, J. J. & Munakata, Y. (2004). Practice makes perfect: Improving children's flexibility on a card-sorting task. Poster presented at the Rocky Mountain Psychological Association, Reno, April.

- Shinsky, J. & Munakata, Y. (2004). Infants' novelty preferences reverse when objects are hidden: Shedding light on potential mechanisms of object concept development. Poster presented at the XIV Biennial International Conference on Infant Studies, Chicago, April.
- Yerys, B. E. & Munakata, Y. (2003). Labels hurt but novelty helps: Factors influencing 3-year-olds' flexibility on a card-sorting task. Poster presented at the biennial meeting of the Society for Research in Child Development, Tampa.
- Munakata, Y. (2002). Workshop on computational models. Course on the Biology of Developmental Disabilities, Cold Spring Harbor, July.
- Munakata, Y. (2002). Connectionist approaches to memory development. Paper presented at the XIII Biennial International Conference on Infant Studies, Toronto, April.
- Shinsky, J. & Munakata, Y. (2002). Are infants in the dark about hidden objects? Poster presented at the XIII Biennial International Conference on Infant Studies, Toronto, April.
- Munakata, Y. (2002). Two approaches to understanding knowledge dissociations: Ancillary deficits and graded representations. Paper presented at the XIII Biennial International Conference on Infant Studies, Toronto, April.
- Stedron, J.M. & Munakata, Y. (2002). A neural network model of perseveration. Paper presented at the XIII Biennial International Conference on Infant Studies, Toronto, April.
- Munakata, Y. (2002). Perseveration and dissociation: Implications for knowledge and learning. Talk presented at the 35th Winter Conference on Brain Research, Snowmass, January.
- Munakata, Y. & Yerys, B. E. (2001). Perseveration in card sorting: Do children know more or less than we think? Talk presented at the biennial meeting of the Cognitive Development Society, Virginia Beach.
- Yerys, B. E. & Munakata, Y. (2001). More flexible than you think: Feedback improves children's switching in a card-sorting task. Poster presented at the biennial meeting of the Cognitive Development Society, Virginia Beach.
- Munakata, Y. (2001). Graded representations in developmental dissociations. Talk presented in symposium: Modeling evolution and development through artificial neural networks. Xth European Conference on Developmental Psychology, Uppsala, Sweden.
- Munakata, Y. (2001). Workshop on computational models of prefrontal function. Course on the Biology of Developmental Disabilities, Cold Spring Harbor.
- Munakata, Y. (2001). Comparing connectionist and dynamic systems models: The case of infant perseveration. Talk presented at the biennial meeting of the Society for Research in Child Development, Minneapolis.
- Munakata, Y. (2001). Discussant for symposium: Language as a tool for thought, chaired by Sophie Jacques and Phil Zelazo at the biennial meeting of the Society for Research in Child Development, Minneapolis.
- Munakata, Y., Guzzetta, L., Spelke, E.S. & Miller, E.K.. (2000). Infants' task-dependent memory for hidden objects: The role of active and latent representations. Poster presented at the XIII Biennial International Conference on Infant Studies, Brighton, England.
- Stedron, J.M., Munakata, Y., & O'Reilly, R.C. (2000). Spatial reorientation in young children: A case of modularity? Poster presented at the 2000 meeting of the International Conference on Infant Studies, Brighton, England.
- O'Reilly, R.C., Mozer, M., Miyake, A., & Munakata, Y. (1999). Discrete representations in working memory: A hypothesis and computational investigations. Talk presented at the International Conference of Cognitive Science, Tokyo.
- Munakata, Y. (1998). Exploring developmental dissociations through neural network models. Talk presented at the Neural Information Processing Systems workshops, Breckenridge, CO.
- Munakata, Y. and Aguiar, A. (1998). Re-searching infant perseveration: Brains, dynamics, problems, and simulations. Symposium organized for the biennial meeting of the International Conference on Infant Studies, Atlanta.

- Munakata, Y. (1998). Infant perseveration and implications for cognitive development: A neural network model of the A \bar{B} task. Talk presented at the biennial meeting of the International Conference on Infant Studies, Atlanta.
- Munakata, Y. (1997). A single, graded knowledge system: The power of weakness to explain task-dependent behavior. Talk presented at the biennial meeting of the Society for Research in Child Development, Washington, D.C.
- Munakata, Y. & McClelland, J.L. (1996). Young habits die hard: When hidden toys do not matter to 10-month-olds in the A \bar{B} task. Poster presented at the Tenth International Conference on Infant Studies, Providence.
- Munakata, Y., Jonsson, B., von Hofsten, C., & Spelke, E.S. (1996). When it helps to occlude and obscure: 6-month-olds' predictive tracking of moving toys. Poster presented at the Tenth International Conference on Infant Studies, Providence.
- Munakata, Y. (1995). Now you see it, now you don't: Object permanence and implications for the study of brain development and cognition. Poster presented at the second annual meeting of the Cognitive Neuroscience Society, San Francisco.
- Munakata, Y., McClelland, J.L., Johnson, M.H., & Siegler, R.S. (1994). Now you see it, now you don't: A gradualistic framework for understanding infants' successes and failures in object permanence tasks. Student award paper and poster presented at the Ninth International Conference on Infant Studies, Paris.
- Munakata, Y. (1993) Little by little: Toward a gradualistic account of object permanence. Poster presented at the 60th anniversary meeting of the Society for Research in Child Development, New Orleans, LA.

Professional activities

Editorial

- Review Editorial Board, *Frontiers in Developmental Psychology*, 2012-present.
- Associate Editor, *Psychological Review*, 2003-2006.
- Editorial Board, *Infancy*, 2003-2007.
- Consulting Editor, *Monographs of the Society for Research in Child Development*, 2003-2004.
- Co-editor, special issue of *Trends in Cognitive Sciences*, Developmental cognitive neuroscience, 2005.
- Co-editor, special issue of *Developmental Psychobiology*, Converging methods in developmental science, 2002.
- Co-editor, The Developing Mind Series, Lawrence Erlbaum Associates.
- Editorial Consultant, *Child Development*, 1999-2002.

Reviewing

- NIH Biobehavioral and Behavioral Processes Study Section, 2000-2002.
- NSF Proposal Reviewer (ad hoc).
- NSERC Individual Research Grants Reviewer (ad hoc).
- International Conference on Infant Studies "Cognition, Memory, and Learning" Review Panel (Member, 2005; Member, 2003; Chair, 2001; Member, 1999).
- Society for Research in Child Development "Infancy: Physical and Cognitive Processes" Review Panel Member 2004, 2002.
- Ad hoc reviewing for: *Advances in Infancy Research*, Blackwell Publishers, *British Journal of Developmental Psychology*, *Cerebral Cortex*, *Cognition*, *Cognitive Development*, *Cognitive Science*, *Current Psychology Letters*, *Developmental Cognitive Neuroscience*, *Developmental Psychology*, *Developmental Review*, *Developmental Science*, Houghton Mifflin, *Human Development*, *Infancy*, *Journal of Child Psychology and Psychiatry*, *Journal of Cognition and Development*, *Journal of Cognitive Development*, *Journal of Experimental Child Psychology*, MIT Press, *Nature Protocols*, *Neural Networks*, *Psychological Bulletin*, *Psychological Review*, *Psychological Science*, *The Times Higher Education Supplement*, *Trends in Cognitive Sciences*.

Advisory

International Association for the Study of Attention and Performance Advisory Council, 2003-.

Eleanor Maccoby Book Award Committee, 2003.

Boyd R. McCandless Committee Chair, 2002.

Sackler Institute Perception, Attention, and Memory Panel Consultant, 2000.

Advisory Committee, "Definition and development of the phenotype in autism." S. Rogers & B. Pennington, Principal investigators, National Institute of Child Health and Development, 1999-present.

Conference organization

Annual conferences of NIMH Center on Executive Function and Dysfunction, Boulder. 2009: "The Functional Organization of Prefrontal Cortex for Executive Function." 2010: "Genetic and Experiential Influences on Executive Function." 2011: "How do Executive Function and Emotion Interact?" 2012: "The Role of Inhibition in Executive Function." Contributed to organizing these conferences as Associate Director of the Center.

Attention and Performance XXI, "Processes of Change in Brain and Cognitive Development," Winter Park, Colorado, July 2004.

Computational Cognitive Neuroscience Conference, Organizing Committee, 2004-2006.

Media coverage

How our brains get tripped up when we're anxious, September 2010. ScienceDaily Article, as reproduced on NPR, RedOrbit, and PhysOrg.com. This research was also featured on upi.com, Time Healthland, and mediLexicon.

Why toddlers don't do what they're told, March 2009. LiveScience Article, as reproduced on msn front page, US News and World Report, and Yahoo! News. This research was also featured in Slate, Slashdot, Spiegel, la Repubblica, and around the blogosphere.

Interview for Scientific American story: "Reaching in the dark: How babies learn that unseen toys don't just vanish," by Marina Krakovsky, July 2005.

Radio interview on cognitive development research, Issues Today Radio, March 27, 2005.

Radio interview on cognitive development research, Colorado Matters, Colorado Public Radio, March 4, 2005.

Interview and story for The Denver Post: "A middle ground on babies' smarts," by Katy Human, December 13, 2004.

Interview and front page story for the Daily Camera: "Babies', children's brain power studied at CU," by Mary Butler, June 9, 2004.

Professional memberships

American Psychological Association

American Psychological Society

Cognitive Development Society

Cognitive Neuroscience Society

International Society for Behavioral Neuroscience

International Society on Infant Studies

Society for Research in Child Development

Teaching

Neural Network Models of Cognition (graduate and undergraduate).

Cognitive Development (graduate).

Advanced Topics in Cognitive Development (graduate).

Higher Level Cognition (graduate).

Cognitive Neuroscience (undergraduate).

Brain Development and Cognition (undergraduate and graduate).

Co-organizer of course on Biology of Developmental Disabilities, Cold Spring Harbor, July-August 2001 and June-July 2002.

Postdoctoral and Graduate student supervision

Nicolas Chevalier (Postdoctoral associate, 9/11-present).

Jane Barker (Graduate student, 8/11-present).

Laura Michaelson (Graduate student, 8/11-present).

Melanie Stollstorff (Postdoctoral associate, 9/10-present).

Hannah Snyder (Graduate student, 9/06-present). Masters thesis: "Becoming self-directed: Abstract representations support endogenously cued switching in children." Recipient of a Postdoctoral Fellowship from the Developmental Psychobiology Research Group, UC Denver.

Christopher Chatham (Graduate student, 9/05-present). Dissertation: What computations support response inhibition? The roles of context-monitoring, selective stopping, and strategic control. Masters thesis: "Developments in context processing: Reactive mechanisms isolated in preschoolers." Now a Postdoctoral Associate, Brown University.

Maria Kharitonova (Graduate student, 9/04-9/10). Dissertation: "The relationship between individual differences in working memory and filtering task-irrelevant information, in children and adults." Masters thesis: "Is there more to becoming 'unstuck'? Exploring the relationship between flexibility and generalization in young children." Now a Postdoctoral Associate, Children's Hospital Boston.

Katy Blackwell (Graduate student, 9/05-9/10). Dissertation: "Mechanisms of cognitive control: Contributions from working memory and inhibition to task-switching." Masters thesis: "Is saying 'That was wrong' enough?: Factors affecting children's use of feedback to overcome perseveration." Now an Assistant Professor, Hartwick College.

Nicholas Cepeda (Postdoctoral associate, 9/04-8/06). Now an Associate Professor, York University.

Sarina Chien (Postdoctoral associate, 9/03-8/04). Now an Assistant Professor, China Medical University, Taiwan.

Jeanne Shinsky (Postdoctoral associate, 9/99-8/03). Now a Lecturer, Royal Holloway, University of London.

Bruce Morton (Postdoctoral associate, 9/00-6/02). Now an Associate Professor, Western Ontario.

Ben Yerys (Masters advisor, 9/99-9/02). Masters thesis: "Perseveration in a card sorting task: Evidence for cognitive limitations and the role of language." Now an Assistant Professor at Children's National.

Jennifer Stedron (Ph.D. advisor, 3/98-6/04). PhD Thesis: "Cerebellar Function in Down Syndrome." Masters thesis: "Spatial reorientation in children: A case of modularity or hippocampal function?" Now a Program Director at the National Conference of State Legislatures, managing policy work in the areas of early childhood development and education, special education, extended learning opportunities, and education finance.

Leane Guzzetta (Masters advisor, 9/97-9/99, Thesis: "Active and latent memory in infancy").

Undergraduate student supervision

Typically supervise 8-12 undergraduates in the lab each term, and 2-4 honors thesis students each year.

Student awards

Abstract Merit Award from the Society for Neurobiology of Language, awarded to Hannah Snyder (2011).

Dozier Award for outstanding graduate student, Department of Psychology and Neuroscience, University of Colorado, Boulder, awarded to Chris Chatham (2011).

"Outstanding Trainee Poster" at the 20th Annual Rotman Research Institute Conference on The Frontal Lobes awarded to Chris Chatham (2010).

Sheryl R. Young Graduate Scholarship to Hannah R. Snyder (2009).

Imogene Jacobs Undergraduate Research Award to Meghan Wright (2008).

Sheryl R. Young Graduate Scholarship to Maria Kharitonova (2006).

Imogene Jacobs Undergraduate Research Award to Amanda Bowles (2005).

Psi Chi Allyn & Bacon Undergraduate Research Award to Jennifer Brace (2004). Project: "Practice makes perfect: Improving children's flexibility in a card-sorting task."

Psi Chi Summer Undergraduate Research Grant to Jennifer Brace (2002-2003). Project: "A study of children's flexibility in a card-sorting task."

Shaklee-Trowill Research Award for best senior thesis, to Laura Landgraf (2002). Thesis: "Happy is as happy sounds: Six year-olds' difficulty with conflicting speech cues."

Shaklee-Trowill Research Award for best senior thesis, to Erik Johnston (1999). Thesis: "Using computational modeling to understand object individuation in infants."

Invited talks

University of British Columbia, Department of Psychology Colloquium, December 2011.

Summer Institute in Cognitive Neuroscience Lecture, Santa Barbara, June 2011.

Center for the Neural Basis of Cognition Colloquium, Feb 2011.

University of Colorado, Boulder, Neuroscience Seminar, Feb 2011.

University of Denver, Neuroscience Research Group Colloquium, Nov 2010.

Carnegie Mellon University, Psychology Department Developmental Colloquium, November 2010.

University of California, Merced, Cognitive and Information Sciences Colloquium, April 2010.

University of California, San Diego, Psychology Department Colloquium, March 2010.

Stanford University, Psychology Department Developmental Colloquium, October 2009.

University of California, Berkeley, Psychology Department Developmental Colloquium, October 2009.

University of California, Berkeley, Institute of Cognitive and Brain Sciences Colloquium, September 2009.

Harvard University, Psychology Department Colloquium, March 2007.

University of Denver, Neuroscience Research Group Colloquium, May 2005.

University of Rochester, Brain and Cognitive Sciences Colloquium, April 2005.

University of Toronto, Department Colloquium, March 2005.

University of Arizona, Department Colloquium, January 2004.

Northwestern University, Cognitive Science Colloquium, October 2003.

University of Chicago, Developmental Seminar, May 2003.

University of California, Berkeley, Psychology Department Colloquium, January 2003.

Rutgers, Newark, Psychology Department Colloquium, September 2002.

University of Tokyo, Department of Systems Science Colloquium, August 2002.

RIKEN Brain Science Institute Colloquium, Japan, August 2002.

University of Otago, New Zealand, Psychology Department Colloquium, July 2002.

University of Colorado, Boulder, Psychology Department Colloquium, September 2001.
Institute of Child Health, Neurocognitive Development Unit, London, May 2001.
Centre for Brain and Cognitive Development, Birkbeck College, May 2001.
University of Wisconsin, Madison Psychology Department Colloquium, April 2001.
UCLA Psychology Department Colloquium, April 2001.
University of Delaware Psychology Department Colloquium, March 2001.
University College London, Gatsby Computational Neuroscience Unit Seminar, July 2000.
University of Pennsylvania, Institute for Research in Cognitive Science Seminar, April 2000.
University of Illinois, Champaign-Urbana Developmental Seminar, February 2000.
University of Denver Humanities Institute Lecture, February 2000.
University of Kyoto Department Seminar, July 1999.
University of Arizona Cognitive Science Series, April 1999.
Massachusetts Institute of Technology Brain & Cognitive Sciences Seminar, February 1999.
Stanford University Departmental Colloquium, October 1998.
Harvard University Cognition, Brain, and Behavior Colloquium, February 1997.
Yale University Developmental Seminar, February 1997.
University of Massachusetts, Amherst Developmental Seminar, February 1997.
Stockholm University Cognitive Science Center Seminar, December 1994.
Umea University Psychology Department Seminar, November 1994.
MRC, Cognitive Development Unit Seminar, London, June 1994.
Cornell University Psychology Department Seminar, September 1993.

Personal information

Born: October 19, 1969 in Marietta, GA

Citizenship: USA