



## Prof. Maryanne Wolf

Professor-in-Residence, Director, Center for Dyslexia, Diverse Learners, and Social Justice



### Most important awards, prizes and academies

*Highest awards for use of neuroscience in dyslexia and education:* International Dyslexia Association (Geschwind and Orton Awards), Australian Society for Learning Disabilities (Eminent Researcher of the Year), The Dyslexia Foundation (Einstein Award), Reading League (Benita Blachman Award for Application of Research into Practice), National Institute for Child Health and Human Development Shannon Award for Innovative Research, Windward Dyslexia Research Award. *Research Awards and Honorary Doctorates:* Fulbright Research Fellowship in Germany, Walter Ong Award, Christopher Columbus Award for Intellectual Discovery, Women in Science Award, Alice Garside Award, Margot Marek Award, Distinguished Scholar Award (Tufts University), Professional Achievement Award (St. Mary's College/Notre Dame), Livingston Fellow (Harvard), Chapman University Presidential Fellow. *Highest awards for Teaching:* American Psychological Association, Massachusetts Psychological Association. *Selected Boards:* Stanford Center for Advanced Studies in the Behavioral Sciences, Canadian Children's Literacy Foundation.

### Summary of scientific research

My research program in cognitive neuroscience and education investigates the development of the reading brain and the major impediments to its development, from genetically based dyslexia to environmentally based illiteracy to, most recently, pandemic-related regression in learning. My colleagues and I construct developmental models of the reading brain circuitry and the multiple component processes involved in its development. The implications for education include more comprehensive conceptualizations of dyslexia, new forms of assessment and prediction before reading begins, and differential forms of intervention and instruction that enhance the development of literacy in any child, in any culture or environment. More global implications involve the use of knowledge about reading brain circuitry to construct digital tablets that promote literacy in Ethiopia, Uganda, South Africa, India, and rural United States for non-literate children who have either no schools or inadequate instruction. In related research, we seek to contribute to the genetic understanding of dyslexia that highlights markers in less studied populations of children of Latino and African-American descent. Finally, I currently conduct research on the differential effects of print and digital media on reading development, particularly the development and elaboration of more cognitively demanding *deep reading* processes (e.g., background knowledge, analogical/inferential reasoning, empathy, critical analysis, and insight). The inherent plasticity of the reading brain makes it exquisitely vulnerable to change, particularly by digital mediums and environment. The effects of the Covid-19 crisis on children's learning has accelerated my study of the positive and negative effects of digital culture (particularly on attention) and on its potential for short-circuiting key aspects of the reading brain. Each of these ongoing directions represents cross-disciplinary efforts to confront problems of immediate and ultimate concern for children around the world, particularly among the disenfranchised members of our species.

## Main publications

*Selected Books:* Wolf, M. (2007) *Proust and the Squid: The Story and Science of the Reading Brain*, New York: HarperCollins (14 Translations); Wolf, M. (2016) *Tales of Literacy for the 21st Century*, Oxford: Oxford University Press; Wolf, M. (2018) *Reader, Come Home: The Reading Brain in a Digital World*. New York: HarperCollins (11 translations). *Selected Publications:* Wolf, M. The future of reading in a digital world: Promise and Peril, to appear in Pontifical Academy of Social Sciences volume on *Education: the Global Compact* (Eds. S. Zamagni, M. Sánchez Sorondo, M. Suárez-Orozco); Wolf, M. (2020) The future of reading. *Swiss Society for Future Studies*, Swiss Academy of Humanities and Social Sciences; Wolf, M. (2020) The future of the reading brain. In *The Future of Text: A 2020 Vision* (Eds. Frode Hegland); Truong, D., Thuy et al., Wolf, M., & Gruen, J. (2019), Multivariate genome wide association study of rapid automatized naming and rapid alternating stimulus in Hispanic and African-American youth, *Journal of Medical Genetics*, 56(8):557-566; Wolf, M. (2019) The reading brain: The canary in the mind, *Emerging Trends in the Social and Behavioral Sciences*; Wolf, M. (2019) Dyslexia, da Vinci, and deep reading, in M. Rubery and L. Price (Eds), *Further Reading*, Oxford: Oxford University Press; Wolf, M. (2018) The science and poetry in learning (and teaching) to read. *Phi Delta Kappan*, 100(4), 13-17; Wolf, M. (2018). The "Forgotten Boys": Promoting academic readiness for African-

American males with dyslexia, Special Issue for *Reading and Writing Quarterly*, (Eds. S. Robinson & C. Thompson); Lovett, M., Frijters, J., Wolf, M., Steinbach, K., Sevcik, R., & Morris, R. (2017) Early intervention for children at risk for reading disabilities: The impact of grade at intervention and individual differences on intervention outcomes, *Journal of Educational Psychology*, 109:354-368; Wolf, M., Ullman-Shade, C., Gottwald, S. (2017), Lessons from the reading brain for reading development and dyslexia, *Australian Journal of Learning Difficulties*; Gottwald, S., Morris, R., Wolf, M., & Galyean, T. (2017) Bringing the bottom billion into basic literacy: How we can and why we must, *New Directions for Child and Adolescent Development* (158):93-104. Wolf, M., Gottwald, S., Breazeal, C., Galyean, T., & Morris, R. (2016); "I hold your foot": Lessons from the reading brain for addressing the challenge of global literacy, in A.M. Battro, P. Lena, M. Sánchez Sorondo, & J. von Braun (Eds), *Children and sustainable development* (pp 225-238), Springer Verlag; Ozernov-Palchik, O., Wolf, M., & Patel, A.D. (2017), Relationships between early literacy and nonlinguistic rhythmic processes in kindergarteners, *Journal of Experimental Child Psychology*, Ozernov-Palchik, O., Norton, E., Sideris, G., Beach, S., Wolf, M., Gabrieli, J., Gaab., N. (2016); Longitudinal stability of pre-reading skill profiles of kindergarten children: Implications for early screening and theories of reading, *Developmental Science*; Wolf, M., Charles Taylor, Deep Reading, and the "Cracked Kettle", Berggruen Institute, November, 2016; Jacobson, L.A, Taylor, K., Lipkin, P., Boada, R., Frijters, J., Lovett, M., Hill, D., Willcutt, E., Gottwald, S., Wolf, M., Bosson-Heenan, J., Gruen, J., Mahone, E.M. (2016) Executive functions contribute uniquely to reading competence in minority youth, *Journal of Learning Disabilities*, 1-12, DOI:10.1177/002219415618501; Wolf, M. (2016). Global literacy initiative: An update. Chapter in A. Battro, K. Fisher and M. L. Majadalani (Eds.), *Mind, Brain and Education at ERICE: Ten Years*, 213-218. Wolf, M., Gottwald, S., Galyean, T., Morris, R., & Breazeal, C. (2014) The reading brain, global literacy and the eradication of poverty, in A. Battro, I. Potrykus, & M. Sánchez Sorondo (eds), *Bread and Brain, Education and Poverty*, Pontifical Academy of Sciences, Vatican City; Wolf, M., Gottwald, S., Galyean, T., & Morris, R. (2013) Global literacy and socially excluded peoples, in J. Sachs & M. Sánchez Sorondo (eds), *The Emergency of the Socially Excluded*, Pontifical Academy of Social Sciences, Vatican City; Holper, L., Goldin, A.P., Shalom, D.E., Battro, A., Wolf, M. & Sigman, M. (2013). The teaching and the learning brain: A cortical hemodynamic marker of teacher-student interactions in the Socratic dialog, *International Journal of Educational Research*, 59, 1-10; Wolf, M. (2013), The wraith of memory, *American Interest*, IX, 1, 85-89; Pierce, M., Wechsler-Zimring, A., Noam, G., Wolf, M., & Katzir, T. (2013) Behavioral problems and reading difficulties among language minority and monolingual urban elementary school students, *Reading Psychology*, 34(2), 182-205; Norton, E.S. & Wolf, M. (2012), Rapid Automatized Naming (RAN) and reading fluency: Implications for understanding and treatment of reading disabilities, *Annual Review of Psychology*, 63(11), 427-452, DOI:10.1146/annurev psy 120710-100431; Wolf, M. & Gottwald, S. (2012), The unfolding legacy of Carol Chomsky: How insights into child language changed the development of written language, in N. Chomsky and M. Piatelli-Palmerini (Eds.), *Rich Languages, Poor Inputs*, Oxford: Oxford University Press, Linguistics; Wolf, M. (2012) How the brain adapted itself to read: The first writing systems, in S. Blum (Ed.), *Making sense of language*, Oxford, England: Oxford University Press; Wolf, M. &

Ullman-Shade, C. (2012), The emerging, evolving reading brain in a digital culture: Implications for new readers, children with reading difficulties, and children without schools, *Journal of Cognitive Education and Psychology*, 11(3), 230-240; Kovelman, I., Norton, E., Gaab, N., Christodoulou, I., Lieberman, D., Triantafyllou, C., Wolf, M., Whitfield-Gabrieli, S., & Gabrieli, J. (2012), Brain basis of phonological awareness for auditory language in children and its dysfunction in dyslexia, *Cerebral Cortex*, 22(4), 754-764, DOI:10.1093/cercor/bhr094; Moritz, C., Yapolsky, S., Papadelis, G., Thomson, J., & Wolf, M. (2012), Links between early rhythm skills, musical training, and phonological awareness, *Reading and Writing*, 26(5), 739-769; W.M. (2011/print 2012), Multiple-component remediation for developmental reading disabilities: IQ, SES, and race as factors on remedial outcome, *Journal of Learning Disabilities*, 45(2), 99-127; Frijters, J.C., Lovett, M.W., Steinbach, K.A., Wolf, M., Sevcik, R.A., & Morris, R.D. (2011), Neurocognitive predictors of reading outcomes for children with reading disabilities, *Journal of Learning Disabilities*, 44 (2), 150-166; Wolf, M. (2010) *The RAVE-O Program*, A Curriculum for Reading Comprehension and Fluency, Longview, CO: Cambium/Sopris Learning; Wolf, M., Gottwald, S., Miller, L., Norton, E., & Galante, W. (2009), How the origins of the reading brain instruct our knowledge of reading intervention, chapter in P. McCardle & K. Pugh (Eds.), *Helping children learn to read: Current issues and new directions in the integration of cognition, neurobiology and genetics of reading and dyslexia*, Austin: Pro-Ed; Wolf, M., Barzillai, M., Miller, L., Gottwald, S., Spencer, K., Norton, E. (2009). The RAVE-O Intervention: Connecting neuroscience to classroom practice, *Mind, Brain, and Education*, Special Issue. 3(2), p. 84-93; Wolf, M. & Barzillai, M. (2009), The importance of "deep reading" in a digital culture, *Educational Leadership*, (Special Issue on Future of Literacy) 66(6), 32-35; Wolf, M. (2008). Dyslexia and the Japanese reading brain. Translation into Japanese for *Journal for Japanese Academy of Learning Disabilities*; Wolf, M. (2008), A triptych of the reading brain: Evolution, development, pathology, and its intervention, chapter in A. Damasio, K. Fischer, & P. Lena, (Eds), *The educated brain*, Cambridge, UK: Cambridge University Press; Wolf, M., & O'Brien, B. (2006), From the Sumerians to images of the reading brain: Insights for reading theory and intervention, in Glenn D. Rosen (Ed.) *The Dyslexic Brain: New Pathways in Neuroscience Discovery*, pp 5-19. Timonium, MD: York Press; Wolf, M. (2005), "I have always been a teacher", in W. Vukfist, B. Beins, C. Burke, T. Benson, R., Siney, and A. Amdstadter (Eds.), *The teaching of psychology in autobiography: Perspectives from psychology's best teachers*, American Psychological Association; Wolf, M., O'Brien, B., Gottwald, S., & Christodoulou, J. (2005) Letters, neurons, and Pascal: A triptych of the reading brain's evolution, development, pathology, and intervention, in K. Fischer & A. Battro (Eds.), *Mind, Brain, and Education* (p. 181-197), Cambridge, UK: Cambridge University Press; Wolf, M., & Ashby, J. (2005), A brief history of time, phonology, and other dimensions of developmental dyslexia, in K. Fischer, J. Bernstein, & M.H. Immordino-Young (Eds.), *Mind, Brain, and Education in Learning Disorders*, p. 61-79, Cambridge, UK: Cambridge University Press; Katzir, T., Breznitz, A., Shaul, S., & Wolf, M. (2004), Universal and the unique: A cross-linguistic investigation of reading and reading fluency in Hebrew- and English-speaking children with dyslexia, *Journal of Reading and Writing*, 17(7-8), 739-768; Misra, M., Katzir, T., Wolf, M. & Poldrack, P. (2004), Neural systems underlying Rapid Automatized Naming (RAN) in skilled readers: Unraveling the puzzle of RAN-

reading relationships, *Scientific Studies of Reading. Special Issue on Neuroanatomy of Reading*, 8, 241-256.

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