

**KENNETH R. PUGH**

*Department of Pediatrics (Neurology)  
Yale University School of Medicine  
P.O. Box 3333  
New Haven, Connecticut 06510  
(203) 764-9156; (203) 865-6163  
)  
(203) 865-8963 fax  
pugh@haskins.yale.edu*

*21 Lyle Dr.  
Madison, Connecticut  
06443  
(203) 421-5579*

- 
- 
- Education**      B.S. (Psychology), *summa cum laude*, New York Institute of Technology, Spring 1982.  
M.A. (Experimental Psychology), The Ohio State University, 1987.  
Ph.D. (Experimental Psychology), The Ohio State University, 1990.
- Current positions**
- 1) **Associate Professor**, Department of Pediatrics (Adolescent Medicine) Yale University School of Medicine, New Haven, Connecticut; **Director** of the Yale Reading Center.
  - 2) **President and Director of Research**, Haskins Laboratories, New Haven, Connecticut
- Academic history**
- Research Assistant**, Department of Sensory Biophysics, The Ohio State University: 1983 – 1985.
- Teaching Associate**, Department of Psychology, The Ohio State University: 1985 – 1987.
- Graduate Research Associate**, Department of Linguistics, The Ohio State University: 1987.
- Instructor**, Department of Psychology, Denison University: 1988 – 1989.
- Visiting Assistant Professor**, Department of Psychology, Holy Cross College: 1989 – 1992.
- Visiting Assistant Research Professor**, Department of Psychology, University of Connecticut: 1991 – 1993.

**Visiting Assistant Professor**, Department of Psychology, Dartmouth College, NH: 1992 – 1994.

**Senior Scientist**, Haskins Laboratories, New Haven, CT: 1990 – 2008.

**Associate Research Scientist (Assistant Professor level)**, Department of Pediatrics (Neurology) Yale University School of Medicine: 1994 – May 1996.

**Research Scientist (Associate Professor level)**, Department of Pediatrics (Neurology) Yale University School of Medicine: June 1996 – May 2007.

**Associate Professor**, Department of Pediatrics (Adolescent Medicine) Yale University School of Medicine: June 2007 – present.

**President and Director of Research**, Haskins Laboratories, New Haven, CT: 2008-present.

***Professional societies***

**Psychonomic Society**

**International Dyslexia Association (Scientific Advisory Board)**

**Rodin Remediation Academy (Sweden)**

***Service activities***

**October 2005-October 2009:** Four year standing appointment to the **Language and Communication Study Section** at the Center for Scientific Review, National Institutes of Health.

**2002 – 2003.** Member of the *Rand Corporation Panel on New Directions for Children's Research and Development Policy*. Co-sponsored/funded by The White House Office of Science and Technology Policy, the National Institutes of Health, and the National Science Foundation, this 25 member panel is charged with drafting a report targeting needed changes in funding and policy in the broadly defined area of developmental science.

**Corresponding Member of the Rodin Remediation Academy**, Stockholm, Sweden (from March, 2003-Present).

**Scientific Advisory Board, Elected Member**, International Dyslexia Association, Washington DC. 2004-Present

**Ad-hoc reviewer:** for numerous journals including *Psychological Review*, *Journal of Experimental Psychology: Human Perception and*

*Performance, Journal of Memory and Language, Perception and Psychophysics, Nature, Brain, Neuroimage, and others.*

### **Awards & honors**

- Presidential Fellowship**, The Ohio State University, 1987 – 1988. Awarded in university-wide dissertation competition; included full stipend.
- Psychology Award** (for highest four-year GPA), New York Institute of Technology, 1982.
- Professor Carl Atkins (English) Award**, New York Institute of Technology, 1982.
- Jules Singer Award** (for outstanding contribution to the intellectual and cultural climate of the college), New York Institute of Technology, 1982.
- Harry Schure Award** (presented by faculty for outstanding service and academic achievement), New York Institute of Technology, 1982.
- Nu Epsilon Tau Honor Society**, New York Institute of Technology, 1981.

### **Publications**

- Johnson, N. F., Pugh, K. R., & Blum, A. (1989). More on the way we "see" letters from words within memory. *Journal of Memory and Language*, 28, 155-163.
- Pugh, K., Rexer, K., & Katz, L. (1994). Evidence of flexible coding in visual word recognition. *Journal of Experimental Psychology: Human Perception and Performance*, 20, 807-825.
- Pugh, K., Rexer, K., Peter, M., & Katz, L. (1994). Neighborhood effects in visual word recognition: Effects of letter delay and nonword context difficulty. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 20, 639-648.
- Johnson, N. F., & Pugh, K. R. (1994). An examination of cohort models of visual word recognition: On the role of letters in word-level processing. *Cognitive Psychology*, 240-346.
- Shaywitz, B., Pugh, K., Constable, T., Shaywitz, S., Bronen, R., Fulbright, R., Shankweiler, D., Katz, L., Fletcher, J., Skudlarski, P., & Gore, J. (1994). Localization of semantic processing using functional magnetic resonance imaging. *Annals of Neurology*, 36, 504-505.
- Pugh, K., Rexer, K., & Katz, L. (1995). Flexible coding in visual word recognition. *Haskins Laboratories Status Report on Speech Research*, 1-27, (SR-114, 1-26).

- Shaywitz, B., Pugh, K., Constable, T., Shaywitz, S., Bronen, R., Fulbright, R., Shankweiler, D., Katz, L., Fletcher, J., Skudlarski, P., & Gore, J. (1995). Localization of semantic processing using functional magnetic resonance imaging. *Human Brain Mapping, 2*, 149-158.
- Shaywitz, B., Shaywitz, S., Pugh, K., Constable, T., Skudlarski, P., Fulbright, R., Bronen, R., Fletcher, J., Shankweiler, D., Katz, L., & Gore, J. (1995). Sex differences in the functional organization of the brain for language. *Nature, 373*, 607-609.
- Pugh, K., Shaywitz, B., Constable, T., Shaywitz, S., Skudlarski, P., Fulbright, R., Bronen, R., Shankweiler, D., Katz, L., Fletcher, J., & Gore, J. (1996). Cerebral organization of component processes in reading. *Brain, 119*, 1221-1238.
- Pugh, K., Shaywitz, B. A., Shaywitz, S. E., Fulbright, R. K., Byrd, D., Skudlarski, P., Shankweiler, D. P., Katz, L., Constable, R. T., Fletcher, J., Lacadie, C., Marchione, K., & Gore, J. C. (1996). Auditory selective attention: An fMRI investigation. *NeuroImage, 4*, 159-173.
- Shaywitz, B., Shaywitz, S., Pugh, K., Constable, T., Skudlarski, P., Bronen, R., Fulbright, R., Shankweiler, D., Katz, L., & Gore, J. (1996). The neurobiology of developmental reading disorders as viewed through the lens of neuroimaging technology. In R. Reid Lyon and J Rumsey (Eds.) *Neuroimaging: A window to the neurological foundations of learning and behavior*. Baltimore: Paul H. Brookes .
- Fulbright, R. K., Shaywitz, S. E., Shaywitz, B. A, Pugh, K. R., Skudlarski, P., Constable, R. T., Fletcher, J. M., Liberman, A. M., Shankweiler, D. P., Katz, L., Lacadie, C., Bronen, R. A., Marchione, K. E., Gore, & J. C. (1997). Neuroanatomy of reading and dyslexia. *Child & Adolescent Psychiatric Clinics of North America*. Vol 6(2), 431-445.
- Pugh, K., Shaywitz, B., Shaywitz, S., R., Shankweiler, D., Katz, L., Fletcher, J., Constable, R. T., Skudlarski, P., Fulbright, R., Bronen, R. & Gore, J. (1997). Predicting reading performance from neuroimaging profiles: The cerebral basis of phonological effects in printed word identification. *Journal of Experimental Psychology: Human Perception and Performance, 23*, 299-318.
- Shaywitz, B., Shaywitz, S., Pugh, K., Skudlarski, P., Fulbright, R., Constable, T., Bronen, R., Fletcher, J., Liberman, A., Shankweiler, D., Katz, L., Lacadie, C., & Gore, J. (1997). *Functional magnetic resonance imaging as a tool to understand reading and reading disability*. In R.W. Thatcher, R. Reid Lyon, and N. Krasnegor (Eds.) *Developmental neuroimaging: Mapping the development of brain and behavior*. Orlando, FL: Academic Press.
- Shaywitz, B., Shaywitz, S., Pugh, K., R., Fulbright, Constable, T., Mencl, E., Skudlarski, Liberman, A. R., Shankweiler, D., Katz, L., Fletcher, J., Lacadie, C., Marchione, K., Gatenby, C., & Gore, J. (1998). Functional disruption in the organization of the brain for reading in dyslexia. *Proceedings of the National Academy of Sciences, 95*, 2636-2641.

- Constable, R.T., Skudlarski, Mencl, E.M., Pugh, K.R., Fulbright, R., Lacadie, C., Marchione, K., Shaywitz, S.E., & Shaywitz, B.A. (1998). Quantifying and comparing region-of-interest activation patterns in function brain MR imaging, *Methodology Considerations. Magnetic Resonance Imaging*, 15(3), 289-300.
- Fulbright RK, Jenner AR, Mencl WE, Pugh, KR, Shaywitz BA, Shaywitz SE, Frost SJ, Skudlarski P, Constable RT, Lacadie CM, Marchione KE, Gore JC. (1999). The cerebellum's role in reading: a functional MR imaging study. *American Journal of Neuroradiology* 20: 1925-1930.
- Pugh, K., Mencl, E.W., Shaywitz, B. A., Shaywitz, S. E., Fulbright, R. K., Skudlarski, P., Constable, R. T., Marchione, K., Jenner A.R., Shankweiler, D. P., Katz, L., Fletcher, J., Lacadie, C., & Gore, J. C.. (2000). The angular gyrus in developmental dyslexia: Task-specific differences in functional connectivity in posterior cortex, *Psychological Science*, 11, 51-56.
- Shaywitz, S., Shaywitz, B., Pugh, K., Fulbright, R., Constable, R. T., Mencl, W.E., Naftolin, F., Skudlarski, P., Fletcher, J., Marchione, K., Lacadie, C., Gatenby, C., Klorman, R., & Gore, J. (1999). Estrogen changes functional organization of brain in postmenopausal women. *Journal of the American Medical Association*, 281, 1197-1202.
- Shaywitz, B. A, Fletcher, J. M, Pugh, K. R., Klorman, R., Shaywitz, S. E. Progress in imaging attention deficit hyperactivity disorder (1999). *Mental Retardation & Developmental Disabilities Research Reviews*. Vol 5(3), 185-190.
- Shaywitz, S., Fletcher, J.M., Holahan, J., Shneider, A., Marchione, K. Steubing, K., Francis, D., Pugh, K. & Shaywitz, B. (1999). Persistence of dyslexia: The Connecticut Longitudinal Study at adolescence, *Pediatrics*, 104, 1-9.
- Shaywitz SE, Pugh KR, Jenner AR, Fulbright RK, Fletcher JM, Gore JC, Shaywitz BA. (2000). The neurobiology of reading and reading disability (dyslexia) In *Handbook of Reading Research Vol. III*. ML Kamil, PB Mosenthal, PD Pearson, R Barr (Eds.). Lawrence Erlbaum, Manwah NJ
- Shaywitz, Bennett A; Pugh, Kenneth R; Fletcher, Jack M; Shaywitz, Sally E. What cognitive and neurobiological studies have taught us about dyslexia. [Chapter] Greenhill, Laurence L. (Ed). (2000). Learning disabilities: Implications for psychiatric treatment. *Review of psychiatry series*; vol 19, no. 5. (pp. 59-95).
- Constable, R.T, Carpentier, A., Pugh, K.R., Westerveld, M. Oszunar, Y., & Spencer, D.D. (2000). Investigation of the human hippocampal formation using a randomized event-related paradigm and Z-Shimmed functional MRI. *Neuroimage*, 12, 55-62.
- Ni, W., Constable, R.T., Mencl, W.E., Pugh, K.R., Fulbright, R.K., Shaywitz, S.E., Shaywitz, B.A., Gore, J.C., & Shankweiler, D. An event-related neuroimaging study distinguishing form and content in sentence processing. *Journal of Cognitive Neuroscience*, 12:1, 120-133, (2000).

- Pugh, K.R., Mencl, W.E., Jenner, A.J., Katz, L., Frost, S.J., Lee, J.R., Shaywitz, S.E., & Shaywitz, B.A. (2000). Functional neuroimaging studies of reading and reading disability (developmental dyslexia). *Mental Retardation and Developmental Disabilities Review*, 6(3), 207-213.
- Mencl, W.E., Pugh, K.R., Shaywitz, S.E., Shaywitz, B.A., Fulbright, R.K., Constable, R.T., Skudlarski, P., Katz, L., Marchione, K.E., Lacadie, C., & Gore, J.C. (2000). Network Analysis of Brain Activations in Working Memory: Behavior and Age Relationships. *Microscopy Research and Technique*, 51,64-74.
- Pugh, K.R., Mencl, W.E., Jenner, A.J., Katz, L., Frost, S.J., Lee, J.R., Shaywitz, S.E., & Shaywitz, B.A. (2001). Neurobiological studies of reading and reading disability. *Journal of Communication Disorders* , 34, 479-492.
- Pugh, K.R., Shaywitz, B.A., Shaywitz, Mencl, W.E., Jenner, A.J., Lee, J.R., Fulbright, R.K., Constable, R.T., Skudlarski, P., Katz, L., Lacadie, C., & Gore, J.C. (2001a). Establishing developmental trajectories and brain/behavior relations in non-impaired and reading disabled children. *Neuroimage*, 13,6, S589.
- Shaywitz, S., Shaywitz, B., Pugh, K., Fulbright, R., Constable, T., Mencl, W.E., Skudlarski, P., Marchione, K., Fletcher, J., Klorman, R., Lacadie, C. & Gore, J. (2001). The functional neural architecture of components of attention in language processing tasks. *Neuroimage* 13, 4, 601-612.
- Carpentier A., Pugh K.R., Westerveld, M., Studholme, C., Skrinjar, O, Thompson, J.L., Spencer, D.D., & Constable, R.T. (2001). Functional MRI of Language Processing: Dependence on Input Modality and Temporal Lobe Epilepsy. *Epilepsia* , 42, 1241-1254.
- Pugh, K.R., Mencl, W.E., Jenner, A.J., Lee, J.R., Katz, L., Frost, S.J., Shaywitz, S.E., & Shaywitz, B.A. (2001). Neuroimaging studies of reading and reading disability . *Learning Disabilities Research and Practice*, 16, 4, 240-249.
- Shaywitz, B.A., Shaywitz, S.E., Pugh, K., R., Mencl, W.E., Fulbright, R.K., Skudlarski, P., Constable, R.T., Marchione, K.E., Fletcher, J.M., Lyon, G.R., & Gore, J.C. (2002). Disruption of posterior brain systems for reading in children with developmental dyslexia. *Biological Psychiatry*, 52, 101-110.
- Shaywitz, S.E., Shaywitz, B.A., Fulbright, R.K., Skudlarski, P., Mencl, W.E., Constable, R.T., Pugh, K.R., Holohan, J.M., Marchione, K.E., Fletcher, J.M., Lyon, G.R., & Gore, J.C. (2003). Neural systems for compensation and persistence: Young adult outcome of childhood reading disability. *Biological Psychiatry*, Biological Psychiatry. Vol 54(1), 25-33.
- Jacobsen LK, Mencl WE, Pugh KR, Skudlarski P, Krystal JK (2004). Preliminary evidence of hippocampal dysfunction in adolescent MDMA ("ecstasy") users: possible relationship to neurotoxic effects, *Psychopharmacology*,173, 383-390.

- Jacobsen LK, D'Souza DC, Mencl WE, Pugh KR, Skudlarski P, Krystal JH (2004). Nicotine effects on brain function and functional connectivity in schizophrenia, *Biological Psychiatry*, 55, 850-858.
- Constable, R.T., Pugh K.R., Berroya E., Mencl, W.E., Westerveld. M., Ni, W., & Shankweiler., D. (2004). Sentence Complexity and Input Modality Effects in Sentence Comprehension: An fMRI Study. *NeuroImage*, 22, 11-21.
- Papanicolaou, A.C., Pugh, K.R., Simos, P.G., & Mencl, W.E. (2004). Functional Brain Imaging: An Introduction to Concepts and Applications. In P. McCardle and V. Chhabra (Eds.), *The Voice of Evidence in Reading Research* (pp. 385-416). Baltimore: Paul H. Brookes Publishing Company.
- Shaywitz, B.A, Shaywitz, S.E, Blachman, B., Pugh, K.R., Fulbright, R, Skudlarski, P, Mencl, E.M. Constable, R.T., Holahan, J., Marchione, K.E., Fletcher, J., Lyon, G.R. & Gore, J. (2004). Development of Left Occipito-Temporal Systems for Skilled Reading Following a Phonologically-Based Intervention in Children.. *Biological Psychiatry*. 55, 926-933.
- Sandak, R., Mencl, W. E., Frost, S. J., Rueckl, J. G., Katz, L., Moore, D., Mason, S. M., Fulbright, R. K., Constable, R. T., Pugh, K. R. (2004). The neurobiology of adaptive learning in reading: A contrast of different training conditions. *Cognitive, Affective, & Behavioral Neuroscience*, 4, 67-88.
- Sandak, R., Mencl, W.E., Frost, S., & Pugh, K. (2004) The neurobiological basis of skilled and impaired reading: recent findings and new directions. *Scientific Studies of Reading*, 8, 273-292.
- Shankweiler, D., Palumbo, L. C., Ni, W., Mencl, W. E., Fulbright, R., Pugh, K., Constable, R. T., Harris, K. S., Kollia, B. & van Dyke, J. (2004). Unexpected recovery of language function after massive left-hemisphere infarct: Coordinated psycholinguistic and neuroimaging studies. *Brain & Language*, 91, 181-183.
- Frost, S. J., Mencl, W. E., Sandak, R., Moore, D. L., Rueckl, J., Katz, L., Fulbright, R. K., & Pugh, K. R. (2005). An fMRI study of the trade-off between semantics and phonology in reading aloud. *Neuroreport*, 16, 621-624.
- Jacobsen LK, Krystal JH, Mencl WE, Westerveld M, Frost SJ, Pugh KR. (2005) Effects of smoking and smoking abstinence on cognition in adolescent tobacco smokers, *Biological Psychiatry*, 57, 56-66.
- Katz, L., Lee, C. H., Tabor, W., Frost, S. J., Mencl, W. E., Sandak, R., Rueckl, J. G., Pugh, K. R. (2005). Effects of printed word repetition in lexical decision and naming on behavior and brain activation, *Neuropsychologia*, 43, 2068-2083.
- Pugh, K. R., Sandak, R., Frost, S. J., Moore, D., & Mencl, W. E. (2005). Examining reading development and reading disability in English language learners: Potential contributions from functional neuroimaging. *Learning Disabilities Research & Practice*, 20 (1), 24-30.

- Pugh, K. R., Sandak, R., Frost, S. J., Moore, D., & Mencl, W. E. (2006). Examining Reading Development and Reading Disability in Diverse Languages and Cultures: Potential Contributions from Functional Neuroimaging. *Journal of American Indian Education*, 45(3), 60-76.
- Jacobsen, L.K., Pugh, K.R., Mencl, W.E., & Gelernter, J. (2006). C957T polymorphism of the dopamine D2 receptor gene modulates the effect of nicotine on working memory performance and cortical processing efficiency. *Psychopharmacology*, 188, 530-540.
- Jacobsen, L.K., Slotkin, T.A., Westerveld, M., Mencl, W.E., & Pugh, K.R. (2006). Visuospatial memory deficits emerging during nicotine withdrawal in adolescents with prenatal exposure to active maternal smoking. *Neuropsychopharmacology*, 31, 1550-1561.
- Cutting, L.E., Clements, A.M., Courtney, S., Rimrodt, S., Schafer, J., Bisesi, J., & Pekar, J.J., Pugh, K.R. (2006). Differential components of sentence comprehension: Beyond single word reading and memory. *Neuroimage*, 15:29, 429-438.
- Ment, L.R., Peterson, B.S., Vohr, B., Allan, W., Schneider, K.C., Lacadie, C., Katz, K.H., Maller-Kesselman, J., Pugh, K.R., Duncan, C.C., Makuch, R.W., & Constable, R.T. (2006). Cortical recruitment patterns in prematurely-born children compared to controls during a passive listening fMRI task. *Journal of Pediatrics*, 149(4), 490-498.
- Pugh, K. R., Sandak, R., Frost, S. J., Moore, D., & Mencl, W. E., (2006). Neurobiological investigations of skilled and impaired reading. In D. K. Dickinson & S. B. Neuman (Eds.), Handbook of Early Literacy Research, Vol. II. New York: Guilford Publications.
- Pugh, K. R., Frost, S. J., Sandak, R., Gillis, M., Moore, D., Jenner, A. R., & Mencl, W. E. (2006). What does reading have to tell us about writing: Preliminary questions and methodological challenges in examining the neurobiological foundations of writing and writing disabilities. In C. MacArthur, S. Graham, & J. Fitzgerald (Eds.). Handbook of Writing Research. New York: Guilford.
- Pugh, K. R., Sandak, R., Frost, S. J., Moore, D., Rueckl, J. G., & Mencl, W. E. (2006). Neurobiological studies of skilled and impaired reading: A work in progress. In G. D. Rosen (ed.), The Dyslexic Brain: New Pathways in Neuroscience Discovery. Baltimore: York Press.
- Jacobsen, L.K., Pugh, K.R., Constable, R.T., Westerveld, M., & Mencl, W.E. (2007). Functional correlates of verbal memory deficits emerging during nicotine withdrawal in abstinent adolescent cannabis users. *Biological Psychiatry*, 61, 31-40.
- Pugh, K.R. (in press). A neurocognitive overview of reading acquisition and dyslexia across languages. *Developmental Science*.

Pugh, K. R., Frost, S. J., Sandak, R., Landi, N., Rueckl, J. G., Constable, R.T, Fulbright, R., Katz, L., & Mencl, W. E (in press). Effects of stimulus difficulty and repetition on printed word identification: An fMRI comparison of Non-Impaired and Reading Disabled Adolescent cohorts. *Journal of Cognitive Neuroscience*.

Frost, S. J., Sandak, R., Mencl, W. E., Landi, N., Moore, D., Della Porta, G., Rueckl, J. G., Katz, L., & Pugh, K. R. (2008). Neurobiological and behavioral studies of skilled and impaired word reading. In E. Grigorenko & A. Naples (Eds.). *Single-Word Reading: Biological and Behavioral Perspectives*. Mahwah: Erlbaum.

***Representative Invited addresses: Universities***

*Functional magnetic resonance imaging studies of language processing.* Talk given at the University of Connecticut, November, 1993

*Flexible coding in visual word recognition.* Talk given at the State University of New York (Albany), October, 1993.

*Behavioral and functional imaging studies of language processing.* Talk given at the University of Southern Maine, May 1993.

*Functional imaging studies of language processing: Brain/ behavior relations.* Talk given at the Dartmouth College, June 1995.

*Functional imaging studies of language processing: Brain/ behavior relations.* Talk given at the Wesleyan University, April 1996.

*Functional imaging studies of language processing: Brain/ behavior relations.* Talk given at the Cognitive Science Institute, University of Pennsylvania, September, 1996.

*Functional imaging studies of language processing: Brain/ behavior relations.* Talk given at the University of Arizona, May 1997

*Functional imaging studies of language processing: Brain/ behavior relations.* Talk given at the Hospital for Sick Children, Toronto CA, November, 1997.

*Functional imaging studies of language processing:: Implications for the study of dyslexia,* Talk given at Wesleyan University, October, 1998.

*Functional imaging studies of language processing:: Implications for the study of dyslexia,* Talk given at Vanderbilt University, October, 1998.

*Functional imaging studies of language processing:: Implications for the study of dyslexia,* Talk given in "The literacy Challenge in America" series sponsored by the University of Rhode Island, March, 1999.

*Functional imaging studies of language processing:: Establishing Brain/behavior relations in reading and reading disability.* Talk given at National Yang-Ming University (Taiwan), March 1999.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Talk given at Northwestern University, April 2000.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Talk given at Massachusetts General Hospital, May 2000.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Talk given at McGill University (Dept. of Communication Disorders) October, 2000.

*Functional imaging studies of language processing: Establishing Brain/behavior relations.* Talk  
given at the Helsinki University of Technology, Helsinki, Finland, February, 2001.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Talk given at Childrens Hospital Medical Center, University of Cincinnati; March  
2001.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Talk given at Kansas University Medical Center, March 2001.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Talk given at The Kennedy Krieger Institute, Johns Hopkins University, March 2002.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Distinguished Lecture given at the University of Maryland (Dept. of Special  
Education, sponsor), March, 2003.

*Functional imaging studies of language processing:: Establishing Brain/behavior relations in  
reading and reading disability.* Distinguished Lecture Series presentation given at the John  
F. Kennedy Center for Research on Human Development, Brain Awareness Symposia,  
Vanderbilt University, March 2003.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Invited talk given at the Cognitive Science Institute, University of Pennsylvania,  
September, 2003.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Lecture given at Dalhousie University, Halifax, CA, April, 2003.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Invited Lecture given at University of Massachusetts, April, 2004.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Annual Hearst Lecture given at University of Northern Iowa, April, 2004.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*  
Invited lecture given at the Research Laboratory in Electronics (speech group),  
Massachusetts Institute of Technology, Sept., 2004.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*

Invited lecture given at the Linguistics Society of America: Summer Institute, Massachusetts Institute of Technology, July, 2005.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*

Invited lecture given at the University Laboratory of Physiology, Oxford University, England, Oct. 3<sup>rd</sup>, 2005.

*Successful and struggling readers: What's different about what their brains are doing and what can our teaching do?* Distinguished Speaker Program, California State University (Northridge), CA, February, 2007.

*Reading and the brain: New findings and directions.* Invited lecture given at the Waisman Center, University of Wisconsin, October 2007.

*Functional imaging of reading and reading disability: Establishing brain/behavior relations.*

Invited lecture given at the City University of New York Graduate Center (Dept. of Linguistics) New York, NY, March 2008.

***Representative Invited addresses: Conferences***

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Talk given at the Presidential Symposium, Annual Meeting of the Otolaryngology Research Organization, St. Petersburg FL, January, 1997

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Talk given at the Annual Meeting of the Learning Disabilities Association of America, Chicago IL, February, 1997

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Plenary lecture given at the International Conference on Mental Retardation: Genes, Brain, and Behavior, at the Institute for Basic Research in Learning Disabilities, Staten Island, NY, July, 1997

*Functional imaging studies of reading and reading disability:* Talk given at YAI Learning Disabilities Conference, Tarrytown, NY; October, 1998.

*Functional imaging studies of language processing: implications for the study of dyslexia.* Symposium Talk given at Annual Meeting of the Eastern Psychological Association, April, 1999.

*Neuroimaging and intervention studies in reading disability.* Talk given at the Second Annual Meeting of the Society for the Scientific Study of Reading, Montreal, CA, April, 1999.

*Functional imaging studies of language processing: implications for the study of dyslexia.* Address given at the second annual Claremont Conference on Applied Developmental Psychology, May, 1999.

*Neuroimaging and intervention studies in reading disability.* Talk given at the Annual Meeting of the McDonnell-Pew Program in Cognitive Neuroscience, San Diego, CA, June, 1999.

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Invited lecture given at the International Congress of Psychology 2000; July 26 2000; Stockholm Sweden.

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Invited lecture given at the International Dyslexia Association Meeting, Washington D.C. November, 2000

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Invited lecture given at the American Speech and Hearing Association Convention, Washington D.C. November, 2000.

*Functional imaging studies of language processing:: Establishing Brain/behavior relations in reading and reading disability.* given at a conference on Mind, Language, and Movement at National Yang-Ming University (Taiwan), December, 2000.

*Functional imaging studies of language processing: Establishing Brain/ behavior relations.* Invited lecture given at the Finland National Conference on Dyslexia, Jyvaskyla Finland. February, 2001.

*Functional imaging studies reading disability. Outcome of a phonological awareness intervention study.* Invited lecture given at the International Dyslexia Association Meeting, Albuquerque NM November, 2001.

*Functional imaging studies of language processing:: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at Dept. of Education Improving America's Schools Meeting, Reno, NV, November, 2001.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at the Annual Meeting of the American Association for the Advancement of Science, Boston MA, 2002.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at the Annual Meeting of the Rodin Remediation Academy, Munich Germany, September 2002.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at the Max Plank Institute for Psycholinguistics, Nijmegen, Netherlands, September, 2002.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited Lecture given at the M.I.N.D. Institute Symposium, University of California, Davis, August 2002.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at the Organization for Economic Cooperation and Development (OECD)/ CERI meeting on Brain and Literacy, Brockton, MA, February, 2003.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Keynote lecture to be given at the 43rd Annual Meeting of the Society for Psychophysiological Research, Chicago, IL., October 2003.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at the 30<sup>th</sup> Annual Conference of the New York Branch of the International Dyslexia Association, New York, March 2003.

*Functional imaging studies of language processing: Establishing Brain/behavior relations in reading and reading disability.* Invited talk given at the "Learning and the Brain Conference", co-sponsored by the Kosik Lab of Neurobiology at Harvard Medical School and the Boston University School of Education, Boston, MA, April, 2003.

*Neuroimaging and reading disability.* Invited talk given at "Brain and Plasticity Conference"; sponsored by Academia Sinica and National Yang Ming University Taipei, Taiwan, Feb. 2004.

*Neuroimaging of reading development and reading disability.* Invited talk given at the Dyslexia Foundation Conference, Lake Como, Italy, June 2004.

*Neuroimaging and reading disability.* Invited talk at the First Oxford/Kobe Dyslexia conference, Kobe, Japan, March, 2004.

*Neuroimaging and reading disability.* Keynote address at the World Organization of Early Childhood Educators. Madrid, Spain, March 2004.

*Neuroimaging and reading disability.* Invited talk at Continuing Medical Education conference at Johns Hopkins School of Medicine, Sept, 2004.

*Neuroimaging and reading disability.* Symposium talk at the American Psychological Association Annual Meeting, Honolulu, HI, July, 2004.

*Neuroimaging and reading disability.* Invited talk at the International Dyslexia Association Annual Meeting, Philadelphia Penn, Oct, 2004.

*Neurology and Education.* Invited lecture to over 2000 attendees at the 5<sup>th</sup> World Conference on Early Childhood Education held in Morelia, Mexico, April, 2005.

*Neurology and Language Development.* Invited lecture to over 1,500 attendees at the 5<sup>th</sup> Annual Encounter on Pre-school Education and Child Development, Monterrey Mexico, June, 2005.

*Neuroimaging and reading disability.* Keynote address at a Continuing Medical Education Conference on Neurodevelopmental Disorders, Hospital for Sick Children, Toronto, CA, June 2005.

- Functional imaging and reading in different orthographies.* Invited lecture given at an OECD sponsored international conference entitled: "Shallow vs. Non-Shallow Orthographies and Learning to Read", Cambridge University, Cambridge England, Sept 29, 2005.
- Neuroimaging studies of skilled reading and reading disability: New findings and directions.* Invited talk given at the International Conference of Cognitive Neuroscience, Academia Sinica, Taipei, Taiwan, December, 2005.
- Functional neuroimaging and cognitive development. Invited talk given at "Neuro-mathematics and Education symposium", co-sponsored by OECD and the National Science Foundation, Copenhagen Denmark, February, 2006.
- Neuroimaging and language development.* Invited keynote presentation given at Encuentro Internacional De Educadores: La innovacion en la practica pedagogica, Lima Peru, February, 2006.
- Neuroimaging and reading disability.* Invited talk given at the Council for Exceptional Children Annual Meeting, Salt Lake City, Utah, March 2006.
- Neuroimaging and reading disability.* Invited talk at the International Reading Association Annual Meeting, Chicago, IL, May 2006.
- Neurology and Language Development.* Invited lecture given at the 6<sup>th</sup> Annual Encounter on Pre-school Education and Child Development, Monterrey Mexico, May, 2006.
- Neural Basis of developmental learning disabilities.* Invited talk given at "The Summer School on Numeracy, Reading, Dyslexia and Dyscalculia: Brain development, culture and remediation", University of Jyvaskyla, Finland, June 2006.
- Neuroimaging and Language development.* Invited lecture given at the Rodin Remediation Academy Conference, Georgetown University, Washington, DC, October 2006.
- Neuroimaging and Language development.* Invited lecture given at the First Conference of Sino-Western Exchanges in Cognitive Neuroscience, October 25-27 2006, in Beijing, China.
- Neuroimaging and Language development. Invited lecture given at "Dyslexia as a challenge of science. Review of findings: genetics, neuroscience and psychology of dyslexia."* International workshop sponsored by European Union-Neurodys Project, and the Academy of Finland, Helsinki Finland, November, 2006.
- Neuroimaging and reading disability: Update and new directions.* Invited talk at the International Dyslexia Association Annual Meeting, Indianapolis, Indiana, November, 2006.
- Neuroimaging and reading disability: An update and new directions.* . Invited talk given at the Second Oxford/Kobe Dyslexia conference, Kobe, Japan, April, 2007.

*Neuroimaging of reading development and reading disability.* Invited talk to be given at the 10<sup>th</sup> Extraordinary Brain Symposium sponsored by the Dyslexia Foundation, Campos Dos Jordae, Brazil, June 2007.

*Neuroimaging and early brain and language development.* Invited keynote presentation given at 2<sup>nd</sup> Encuentro International De Educadores Lima Peru, February, 2008.

*Neuroimaging and language development.* Invited lecture given at the Greenland Ministry of Education conference on early childhood, Nuuk Greenland, November 2007.

***Invited addresses: National Institutes of Health***

*Conditions necessary for the development of tasks for functional neuroimaging studies.* Address given at a conference at the National Institutes of Health entitled "Neuroscience and Neurodevelopmental Disorders," March 22, 1996.

*Understanding reading performance and reading disabilities from functional neuroimaging profiles.* Address given to the National Advisory Child Health and Human Development Council, June 3, 1996.

*Future of Imaging Technologies in MR/DD Research.* Talk given at the 31st Annual Gatlinburg Conference, sponsored by NIH; NICHD, Charleston SC March, 1997.

*fMRI studies of reading development,* Given at an NIH inter-institute pediatric neuroimaging conference "Making the connection: Coordinating neuroimaging and functional paradigms for understanding pediatric neurodevelopment". Leesburg VA, September 29, 1999.

*Functional neuroimaging studies of reading and reading disability: Establishing brain/behavior relationships.* Cross-institute address given as part of the NIH Behavioral and Social Sciences Research Lecture Series, Bethesda MD, February 15, 2000.

*Functional neuroimaging studies of reading and reading disability: Establishing brain/behavior relationships.* Keynote lecture at the NIH /ASHA co-sponsored meeting "Emergent and Early Literacy Workshop; Rockville MD; Sept 21, 2000.

*Examining reading development and reading disability in English language learners: Potential contributions from functional neuroimaging.* Invited lecture given at the National Symposium on Learning Disabilities in English Language Learners, Washington, D.C., October 14-15, 2003. Co-sponsored by NICHD, and Department of Education.

*Functional neuroimaging studies of reading and reading disability: Establishing brain/behavior relationships.* Invited lecture given at NABSE (National Alliance for Black School Educators) meeting sponsored by National Institute for Literacy and supported by NICHD, April, 2004, Washington DC.

*Examining reading development and reading disability in English language learners: Potential contributions from functional neuroimaging.* Improving Academic Performance Among American Indian, Alaska Native, & Native Hawaiian Students: Assessment & Identification of Learning & Learning Disabilities, Invited lecture given at NICHD/DOE sponsored conference, March, 2005, Santa Fe, New Mexico.

*Examining reading development and reading disability in English language learners: Potential contributions from functional neuroimaging.* Improving Academic Performance Among American Indian, Alaska Native, & Native Hawaiian Students: Assessment & Identification of Learning & Learning Disabilities, Invited lecture given at NICHD/DOE sponsored follow-up conference, August, 2005, Washington DC.

**Current Research Support**

- R01 HD 048830 (Pugh) 08/01/05-05/31/10  
 NICHD \$378,287  
*Neurobiological Foundations of (dis)ability*  
 This study is designed to examine reading development in one normally developing and two reading disabled cohorts at critical points in its establishment with yoked genetics, neurochemistry, neuroimaging, and behavioral measures.
- P01 HD 01994 (Fowler) 12/01/06-11/30/11  
 NICHD \$948,283  
*Nature and Acquisition of the Speech Code*  
 The theme of this research program is the central role of the phonology of language both in spoken language use and in the adaptation of the spoken language to reading.
- R01HD 046130 (Scarborough) 09/26/03 – 07/31/08  
 NICHD \$751,021  
*Research in Adolescent Literacy*  
 This project proposes to examine the effectiveness of several research-driven methods for improving the reading abilities of struggling adolescent readers.
- R01 NS 38467 (Constable) 04/01/02 – 03/31/07  
 NINS \$213,750  
*Functional MRI for Neurosurgical Planning in Epilepsy*  
 The goal of this grant is to develop fMRI techniques for studying language processing in patients and control subjects and to evaluate the impact of disease on the distribution of language systems in the brain.
- RO1-DA17333 Jacobsen (PI) 9/30/04 - 8/29/09  
 NIDA  
*Brain Functional Correlates of MDMA Use in Adolescents*  
 This study will test for evidence of cognitive deficits and brain functional changes in adolescent MDMA users and determine whether observe changes improve with sustained abstinence from MDMA use.
- R01 HD 40353 (Shankweiler) 04/01/06-03/31/11  
 NICHD \$290,325  
*Neurobehavioral Mechanisms in Reading Comprehension*  
 This proposal focuses on closing the gap between comprehension of discourse in speech and print which is characteristic of unskilled readers.