Tony J. Simon, Ph.D.

Clinical Interests

Dr. Simon is a pediatric cognitive neuroscientist. His research focuses on the neural basis of cognitive impairments seen in genetic disorders that produce mental retardation, developmental disability and psychopathology. Building on his influential theory of the foundations of numerical competence, Dr. Simon investigates how dysfunction in specific neurocognitive processing systems, such as attention and spatial or temporal processing, can generate a range of cognitive and behavioral impairments. His goal is to develop remedial intervention programs that will minimize such disability. Dr. Simon's current projects center on studies of spatiotemporal and numerical cognition in children with chromosome 22q11.2 deletion syndrome, also known as DiGeorge and VeloCardioFacial syndrome. He is also engaged in similar studies of girls with Turner syndrome. As part of the new NeuroTherapeutics Institute, Dr. Simon leads a grant with Dr. Susan Rivera on the neurocognitive basis of functional impairments in children and adults with the full range of fragile X gene mutations. Besides experimental cognitive processing analyses, Dr. Simon uses cutting-edge neuroimaging methods, such as functional magnetic resonance imaging (fMRI), Voxel Based Morphometrics and Diffusion Tensor Fiber Imaging, in order to study the structure, function and connective patterns in the developing brain.

Title

Associate Professor In-Residence

Specialty

Psychiatry

Department

MIND Institute

Address/Phone

UC Davis MIND Institute, 2825 50th St. Sacramento, CA 95817
Phone: 916-703-0280

Education

Ph.D., Sheffield University, Sheffield, 1985
B.A., Lancashire Polytechnic, Lancashire, 1981

Select Recent Publications

Takarae, Y., Schmidt, L., Tassone, F., Simon, T.J. (2009) Catechol-Omethyltransferase polymorphism modulates cognitive control in children with chromosome 22q11.2 deletion syndrome. *Cognitive and Behavioral Neuroscience*, 9:83-90.

Yushkevich P.A, Zhang H., Simon T.J., Gee J.C. (2008) structure-specific statistical mapping of white matter tracts. *Neuroimage*. 2008, 448-461.

Simon, T.J., Takarae, Y., DeBoer, T.L., McDonald-McGinn, D.M., Zackai, E.H., Ross, J.L. (2008) Overlapping Numerical Cognition Impairments In Children With Chromosome 22q11.2 Deletion

Or Turner Syndromes. *Neuropsychologia*, 46:82-94.

Simon, T.J., Wu, Z., Avants, B., Zhang, H., Gee, J.C., Stebbins, G.T. (2008) Atypical Cortical Connectivity and Visuospatial Cognitive Impairments are Related in Children with Chromosome 22q11.2 Deletion Syndrome. *Behavioral and Brain Functions*, 4:25.

Nordahl, C.W., Simon,T.J., Zierhut, C., Solomon, M., Rogers S.J., Amaral, D.G. (2008) Methods for acquiring structural MRI data in very young in very young children without the use of sedation. *Journal of Autism and Developmental Disorders*, 38:1581-1590.

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Simon, T.J. Cognitive Characteristics of Children with Genetic Syndromes. (2007) *Child & Adolescent Psychiatry Clinics of North America*, 16:599-616.

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Bish, J.P., Chiodo, R, Mattei, V., Simon, T.J. (2007) Domain specific attentional impairments in children with chromosome 22q11.2 deletion syndrome. *Brain and Cognition*, 64:265-273.

Cutler-Landsman, D., Simon, T.J., & Kates, W.R (2007) Introduction to education and the neurocognitive profile. In: Cutler-Landsman, D. (Ed). *Practical Handbook for Educating Children with Velo-Cardio-Facial Syndrome and Other Developmental Disabilities*. Plural Publishing, San Diego, CA. Pages 15-38.

Machado, A.M.C., Simon, T.J., Nguyen, V., McDonald-McGinn, D.M., Zackai, E.H., Gee, J.C. Corpus callosum morphology and ventricular size in chromosome 22q 11.2 deletion syndrome. (2007) *Brain Research*, 1131:197-210.