

## BIOGRAPHICAL SKETCH

NAME Christopher Daniel Smyser	POSITION TITLE Assistant Professor of Neurology		
eRA COMMONS USER NAME (credential, e.g., agency login) CHRISMYSER			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Iowa, Iowa City, IA	B.S.E.	1998	Biomedical Engineering
University of Iowa, Iowa City, IA	M.D.	2004	Medicine
University of Iowa, Iowa City, IA	Resident	2004-2006	Pediatrics
Washington University, St. Louis, MO	Resident	2006-2009	Pediatric Neurology

### A. Personal Statement

I am a practicing pediatric neurologist driven to provide optimal neurological outcomes for all infants at increased risk for neurodevelopmental disability. My research is built on a background in engineering. Prior to entering medical school, I was employed as an engineer at the University of Iowa, where I designed and implemented hardware and software tools allowing efficient processing of functional magnetic resonance imaging (fMRI) data using complex statistical modeling. During my Pediatric Neurology training, I commenced my research in neonatal neuroimaging as a member of the Washington University Neonatal Developmental Research (WUNDER) Laboratory. My efforts have focused upon the application of advanced neuroimaging techniques, including functional connectivity magnetic resonance imaging (fcMRI) and diffusion tensor imaging (DTI), to the study of premature and healthy, term-born infants in an effort to characterize development of the earliest functional and anatomic cerebral connections. My clinical activities are dedicated to providing service on and directing the Neonatal Neurology Clinical Program at Washington University. This Program provides inpatient and outpatient services designed to provide comprehensive neurological care for all infants at risk for adverse neurodevelopmental outcomes. This combination of experiences has yielded new insight into human brain development, development, providing a platform for future investigation dedicated to defining the impact of prematurity and brain injury in infants via development and application of new neuroimaging approaches.

### B. Professional Experience

#### Employment

1998-2000	Engineer, Department of Neurology, University of Iowa Hospitals and Clinics, Iowa City, IA
2004-2006	Pediatrics Resident, University of Iowa Hospitals and Clinics, Iowa City, IA
2006-2009	Pediatric Neurology Resident, Washington University, St. Louis, MO
2008-2009	Chief Resident, Department of Neurology, Washington University, St. Louis, MO
2009-present	Assistant Professor of Neurology and Pediatrics, St. Louis Children's Hospital, Washington University, St. Louis, MO
2011-present	Postdoctoral Training Program in Clinical Investigation, Institute of Clinical and Translational Sciences, Washington University, St. Louis, MO
2012-present	Director, Neonatal Neurology Clinical Program, Department of Neurology, Washington University, St. Louis, MO

#### Honors

1998	Graduate with Highest Distinction, University of Iowa College of Engineering
2003	Member Alpha Omega Alpha National Honor Medical Society, Alpha of Iowa Chapter
2008	Steven M. Rothman Award for Outstanding Teaching, Department of Neurology, Washington University School of Medicine
2009	Leonard Berg Prize for Research, Department of Neurology, Washington University School of Medicine

2010	NIH/NINDS Loan Repayment Program Award
2010	Scientific Award, Child Neurology Foundation
2011	Neurological Sciences Academic Development Award (NSADA) Career Development Award, Washington University Department of Neurology
2012	NIH/NINDS Loan Repayment Program Award
2013	Ethel and Jack Hausman Clinical Research Scholars Award, Cerebral Palsy International Research Foundation
2013	Program in Brain and Immuno-Imaging Award, The Dana Foundation

### **Professional Societies**

2008-present	Child Neurology Society
2012-present	International Society of Magnetic Resonance in Medicine
2013-present	American Neurological Association
2013-present	Organization for Human Brain Mapping
2013-present	Society for Pediatric Research

### **Licensure/Boards**

2009-present	Missouri Medical License Number 2009009278
2009-present	Board Certification in Neurology with Special Qualifications in Child Neurology

### **C. Publications**

1. Smyser C, Grabowski TJ, Frank RJ, Haller J, Bolinger L. A time-aware architecture for parametric analysis of fMRI data. *Magnetic Resonance in Medicine* 2001; 45(2):289-298.
2. Smyser C, Grabowski TJ, Rainville P, Bechara A, Razavi M, Mehta S, Eaton BL, Bolinger L. Measurement, time-stamping, and analysis of electrodermal activity in fMRI. *Proceedings of the International Society of Optical Engineering (SPIE)* 2002; 4683:470-475.
3. Smyser CD, Inder TE, Shimony JS, Hill JE, Degnan AJ, Snyder AZ, Neil JJ. Longitudinal analysis of neural network development in preterm infants. *Cerebral Cortex* 2010; 20(12):2852-2862. PMID: PMC2978240.
4. Smyser CD, Snyder AZ, Neil JJ. Functional connectivity MRI in infants: Exploration of the functional organization of the developing brain. *NeuroImage* 2011; 56(3):1437-1452. PMID: PMC3089442.
5. Mirzaa GM, Paciorkowski AR, Smyser CD, Willing MC, Lind A, Dobyns WB. The microcephaly-capillary malformation syndrome. *American Journal of Medical Genetics* 2011; 155(9):2080-7. PMID: PMC3428374.
6. Smith GC, Gutovich J, Smyser CD, Pineda R, Newnham C, Tjoeng TH, Vavasseur C, Wallendorf M, Neil JJ, Inder TE. Impact of stress in the NICU on brain development in preterm infants. *Annals of Neurology* 2011; 70(4):541-549.
7. Smyser CD, Kidokoro H, Inder TE. "MRI of the brain at term equivalent age in extremely premature neonates – to scan or not to scan?" *Journal of Paediatrics and Child Health* 2012; 48(9):794-800. PMID: PMC3595093
8. Lee M, Smyser CD, Shimony JS. Resting state fMRI: A review of methods and clinical applications. *American Journal of Neuroradiology* 2013; 34(10):1866-72. PMC Journal – In Process.
9. McDonnell LM, et al. Mutations in *STAMBIP*, encoding a deubiquitinating enzyme, cause microcephaly-capillary malformation syndrome. *Nature Genetics* 2013; 45(5):556-62.
10. Smyser CD, Snyder AZ, Shimony JS, Blazey TM, Inder TE, Neil JJ. Effects of white matter injury on resting state fMRI measures in prematurely-born infants. *PLoS One* 2013; 8(7):e68098. PMID: PMC3706620
11. Ortinau CM, Inder TE, Smyser CD. "Predictive value of neonatal magnetic resonance imaging in preterm infants." *NeoReviews* 2013; 14(10):e490-500.
12. Anderson JL, Levy PT, Leonard KB, Smyser CD, Tychsen L, Cole FS. "Congenital lymphocytic choriomeningitis virus: when to consider the diagnosis. *Journal of Child Neurology* 2013; 2013 May 10 [Epub ahead of print].
13. Pineda RG, Neil JJ, Dierker D, Smyser CD, Wallendorf M, Kidokoro H, Reynolds LC, Walker S, Rogers CE, Mathur AM, Van Essen DC, Inder TE. Alterations in brain structure and neurodevelopmental outcome in preterm infants hospitalized in different neonatal intensive care unit environments. *Journal of Pediatrics* 2013; 2013 Oct 17 [Epub ahead of print].

14. Estep ME, Smyser CD, Anderson PJ, Ortinau CM, Wallendorf M, Katzman CS, Doyle LW, Thompson DK, Neil JJ, Inder TE, Shimony JS. "Diffusion Tractography and Neuromotor Outcome in Very Preterm Children with White Matter Abnormalities." *Pediatric Research* 2013; (in press).
15. Al-Kateb H, Khanna G, Filges I, Grange DK, Smyser CD, Kulkarni S, Shinawi M. "Scoliosis and Vertebral Anomalies: Additional Abnormal Phenotypes Associated with Chromosome 16p11.2 Rearrangement" *American Journal of Medical Genetics* 2013; (in press).