
BIOGRAPHICAL SKETCH

NAME Meyerand, Mary Elizabeth		POSITION TITLE Associate Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Yale University, New Haven, CT	B.S.	1990	Molecular Biophysics & Biochemistry
University of North Carolina, Chapel Hill, NC	M.S.	1992	Biomedical Engineering
Medical College of Wisconsin, Milwaukee, WI	Ph.D.	1996	Biophysics

A. Positions and Honors**Professional Experience**

February 1996-March 1998 Research Associate, Dartmouth Medical School, Hanover, NH
 April 1998-September 1998 Research Assistant Professor, Dartmouth Medical School, Hanover, NH
 October 1998-November 2003 Assistant Professor of Medical Physics, University of Wisconsin-Madison
 November 2003-present Associate Professor of Medical Physics, University of Wisconsin-Madison
 August 2005-present Co-Chair Clinical Neuroengineering Training Program, University of Wisconsin
 August 2006-present Director Small animal MRI facility, University of Wisconsin

Honors and Awards

College scholarship, Westinghouse Science Talent Search Winner (1986)
 Research Assistantship, University of North Carolina, (1990-1992)
 Stipend and Scholarship, Medical College of Wisconsin, (1992-1994)
 Magna Cum Laude for presentation of *Localized Spectroscopy with Null Gradient Receiver Coils*, 9th SMRI, (1991)

U.S. Patents

U.S. Patent #4,630,440: issued December 23, 1986. Process and Apparatus for Obtaining Electrical Power from Ocean Waves.
 U.S. Patent #5,150,052: issued September 22, 1992. Apparatus and Method for Magnetic Resonance Spectral Imaging
 U.S. Patent #5,469,060: issued November 21, 1995. Time Encoded Magnetic Resonance Imaging License # P01404US Diffusion Tensor MRI Post Processing Algorithm. Issued January 2001.
 U.S. Patent #7,127,281: issued September 6, 2006. Patient Support System and Method for Studies of Lumbar Vertebra Rotation.

B. Selected peer-reviewed publications

Quigley M, Cordes D, Wendt G, Turski P, Moritz C, Haughton V, **Meyerand ME**. Effect of focal and nonfocal cerebral lesions on functional connectivity studied with MR imaging. *Am J Neuroradiol* 22(2):294-300, 2001.
 Arfanakis K, Cordes D, Haughton VM, Carew JD, **Meyerand ME**. Independent component analysis applied to diffusion tensor MRI. *Magn Reson Med* 47(2):354-63, 2002.
 Arfanakis K, Haughton VM, Carew JD, Rogers BP, Dempsey RJ, **Meyerand ME**. Diffusion tensor MR imaging in diffuse axonal injury. *AJNR Am J Neuroradiol* 23(5):794-802, 2002.
 Dunn JF, O'Hara JA, Zaim-Wadghiri Y, Lei H, **Meyerand ME**, Grinberg OY, Hou H, Hoopes PJ, Demidenko E, Swartz HM. Changes in oxygenation of intracranial tumors with carbogen: a BOLD MRI and EPR oximetry study. *J Magn Reson Imaging*. 16(5):511-21, 2002.
 Haughton VM, Rogers B, **Meyerand ME**, Resnick DK. Measuring the axial rotation of lumbar vertebrae in vivo with MR imaging. *AJNR Am J Neuroradiol* 23(7):1110-6, 2002.

- Laird AR, Rogers BP, Carew JD, Arfanakis K, Moritz CH, **Meyerand ME**. Characterizing instantaneous phase relationships in whole-brain fMRI activation data. *Hum Brain Mapp* 16(2):71-80, 2002.
- Nelson L, Lapsiwala S, Haughton VM, Noyes J, Sadrzadeh AH, Moritz CH, **Meyerand ME**, Badie B. Preoperative mapping of the supplementary motor area in patients harboring tumors in the medial frontal lobe. *J Neurosurg* 97(5):1108-14, 2002.
- Nybakken GE, Quigley MA, Moritz CH, Cordes D, Haughton VM, **Meyerand ME**. Test-retest precision of functional magnetic resonance imaging processed with independent component analysis. *Neuroradiology* 44(5):403-6, 2002.
- Quigley MA, Haughton VM, Carew J, Cordes D, Moritz CH, **Meyerand ME**. Comparison of independent component analysis and conventional hypothesis-driven analysis for clinical functional MR image processing. *AJNR Am J Neuroradiol* 23(1):49-58, 2002.
- Witwer BP, Moftakhar R, Hasan KM, Deshmukh P, Haughton V, Field A, Arfanakis K, Noyes J, Moritz CH, **Meyerand ME**, Rowley HA, Alexander AL, Badie B. Diffusion-tensor imaging of white matter tracts in patients with cerebral neoplasm. *J Neurosurg* 97(3):568-75, 2002.
- Arfanakis K, Hermann B, Haughton V, Carew JD, Rogers BP, **Meyerand ME**. Diffusion tensor MRI in temporal lobe epilepsy. *Magnetic Resonance Imaging* 20: 511-519, 2002.
- Moritz CH, **Meyerand ME**. Power spectrum ranked independent component analysis of a periodic fMRI complex motor paradigm. *Hum. Brain Mapp.* 18(2): 111-122, 2003.
- Jaradat HA, Tomé WA, McNutt TR, **Meyerand ME**. On the incorporation of multi-modality image registration into the radiotherapy treatment planning process. *Technology in Cancer Research and Treatment* 2(1) 1-12, 2003.
- Quigley M, Cordes D, Turski P, Moritz C, Haughton V, Seth R, **Meyerand ME**. Role of the corpus callosum in functional connectivity. *AJNR Am J Neuroradiol* 24:208-212, 2003.
- Carew J.D., G. Wahba, X. Xie, E.V. Nordheim, **M.E. Meyerand**. Optimal spline smoothing of fMRI time series by generalized cross validation. *Neuroimage* 18: 950-961, 2003.
- Sailor J. **Meyerand ME**. Moritz CH. Fine J. Nelson L. Badie B. Haughton VM. Supplementary motor area activation in patients with frontal lobe tumors and arteriovenous malformations. *AJNR: American Journal of Neuroradiology.* 24(9):1837-42, 2003.
- Lazar M. Weinstein DM. Tsuruda JS. Hasan KM. Arfanakis K. **Meyerand ME**. Badie B. Rowley HA. Haughton V. Field A. Alexander AL. White matter tractography using diffusion tensor deflection. *Human Brain Mapping.* 18(4):306-21, 2003
- Laird A.R., B.P. Rogers, M.E. Meyerand (2004) A Comparison of Fourier and Wavelet Resampling Methods. *Magn Reson Med* 51: 00-00, 2004.
- McMillan A., Hermann B., Johnson S., Hansen R., Seidenberg M., **Meyerand M.E.** (2004) Voxel-based morphometry of unilateral temporal lobe epilepsy reveals abnormalities in cerebral white matter *Neuroimage* 23: 167-174.
- Moritz, C, Johnson S.C, McMillan K.M., Haughton V.M., **Meyerand M.E.** (2004) Functional MRI neuroanatomic correlates of the Hooper Visual Organization Test. *J Int Neuropsychol Soc* 10: 939-947.
- Johnson S.C., T.W. Schmitz, C.H. Moritz, M.E. **Meyerand**, H.A. Rowley, A.L. Alexander, K.W. Hansen, C.E. Gleason, C.M. Carlsson, M.L. Ries, S. Asthana, K. Chen, E.M. Reiman, G.E. Alexander (2006) Activation of Brain Regions Vulnerable to Alzheimer's Disease: The Effect of Mild Cognitive Impairment. *Neurobiology of Aging* Nov;27(11):1604-12.
- Koay, C.G., Alexander, A., Basser P., **Meyerand**, M.E. (2006) Investigation of Anomalous Estimates of Tensor-derived Quantities in DTI. *Magn Reson Med* 55: 930-936.
- McMillan, K.M., Laird A.R., Witt S.T., **Meyerand**, M.E. (2007) Self-paced working memory: validation of verbal variations of the n-back paradigm. *Brain Reseach* 1139: 133-142.
- McMillan, K.M., Rogers B.P., Koay C.G., Laird A.R., Price R.R., **Meyerand M.E.** (2007) An objective method for combining multi-parametric MRI datasets to characterize malignant tumors. *Medical Physics* 34(3): 1053-1061.

C. Research Support

Ongoing Research Support

- R01 CA118365-01A2 (PI: Meyerand) 03/01/07-02/28/11 NIH/NCI
Treatment Planning using Physiologic MRI Data
The objective of this research is to apply physiological MRI methods to characterize tumor physiology in human brain tumor patients.
- R01 NS044351-01 (PI: Hermann) 06/15/03-05/31/08 NIH/NINDS
Neuropsychological progression in new onset epilepsy
The objective of this grant is to utilize psychological and MRI-based indicators to follow the progression of pediatric temporal lobe epilepsy.
Role: Co-Inv.
- T90 DK070079 (PI: Yin) 09/30/04-08/31/09 NIH/NIDDK
Clinical Neuroengineering training grant
The objective of this grant is to create a graduate training program in clinical neuroengineering.
Role: Program Co-director
- TR 3761-A-10 (PI: Duncan) 10/01/05 – 09/30/10
National Multiple Sclerosis Society
Remyelination and Neuroprotective Strategies for Lesions in MS
Aim: Develop novel therapies aimed at myelin repair and neuroprotection in patients with MS, particularly through local transplantation of myelin-forming glial cell precursors and inhibition of microglial cell activation through minocycline.
Role: Co-investigator
- R01 CA109656 (PI: Tome) 04/01/05-03/31/08 NIH/NIBIB
Intracranial Conformal Avoidance Radiation Therapy
Aim: Determination of tolerance doses for eloquent normal brain
Role: Co-investigator
- S10 (PI: Meyerand) 01/01/05-12/31/07 NIH/NCRR
4.7T MRI scanner for small imaging applications