Douglas C. Noll

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EDUCATION

1981-1985	Bucknell University, Lewisburg, PA B.S., Electrical Engineering, Summa Cum Laude, May 1985
1985-1986	Stanford University, Stanford, CA M.S., Electrical Engineering, June 1986
1987-1991	Stanford University, Stanford, CA Ph.D., Electrical Engineering, August 1991 Thesis: Reconstruction Techniques for Magnetic Resonance Imaging Advisor: Dr. Albert Macovski

PROFESSIONAL EXPERIENCE

1985-1987	Member of Technical Staff, AT&T Bell Laboratories, Whippany, NJ
1990	Teaching Fellow, Department of Electrical Engineering, Stanford University
1991-1997	Assistant Professor of Radiology (primary), University of Pittsburgh, Pittsburgh, PA
1992-1997	Assistant Professor of Electrical Engineering, University of Pittsburgh
1991-1995	Visiting Assistant Professor of Computer Science Carnegie Mellon University, Pittsburgh, PA
1997-1998	Associate Professor of Radiology (primary), University of Pittsburgh
1997-1998	Acting Administrative Director, MR Research Center University of Pittsburgh Medical Center, Pittsburgh, PA
1998-2005	Associate Professor of Biomedical Engineering (primary), University of Michigan
1999-2006	Associate Professor of Radiology, University of Michigan
2006-2007	Interim Chair of Biomedical Engineering, University of Michigan
1998-Present	Co-Director, Functional MRI Laboratory, University of Michigan
2005-Present	Professor of Biomedical Engineering (primary), University of Michigan
2006-Present	Professor of Radiology, University of Michigan
2007-Present	Chair of Biomedical Engineering, University of Michigan
2007-Present	Ann and Robert H. Lurie Professor of Biomedical Engineering, University of Michigan

PROFESSIONAL AND SCIENTIFIC SOCIETIES

Institute of Electrical and Electronics Engineers, 1983-present

International Society of Magnetic Resonance in Medicine, 1990-present
(formerly Society of Magnetic Resonance in Medicine and Society of Magnetic Resonance)

International Organization for Human Brain Mapping, 1998-2003

Biomedical Engineering Society, 2005-present

American Institute for Medical and Biological Engineering, 2001-present

HONORS AND AWARDS

Dean's List, Bucknell University (8 semesters), 1981-1985

President's Award for Outstanding Academic Achievement, Bucknell University, 1984

Tau Beta Pi Engineering Honor Society, 1984

Graduated Summa Cum Laude, Bucknell University, 1985

Cum Laude Poster Award, Society of Magnetic Resonance Imaging, 1991

Isador I. Rabi Award, Society of Magnetic Resonance, 1994

Elected to Board of Trustees, International Society of Magnetic Resonance in Medicine, 2000.

Outstanding Achievement Award, Dept. of Biomedical Engineering, University of Michigan, 2000

Elected Fellow, American Institute for Medical and Biological Engineering, 2001.

Trudy Huebner Service Excellence Award, College of Engineering, University of Michigan, 2003.

Outstanding Teacher Award, International Society of Magnetic Resonance in Medicine Annual Meeting, 2005.

Outstanding Teacher Award, International Society of Magnetic Resonance in Medicine Annual Meeting, 2006.

Outstanding Teacher Award, International Society of Magnetic Resonance in Medicine Annual Meeting, 2007.

PUBLICATIONS

Refereed Journal Articles:

Publication summary from ISI Web, October 2007 - Total citations: > 6,000, H-index: 35.

1. Noll DC, Nishimura DG, Macovski A. Homodyne detection in magnetic resonance imaging. IEEE Trans. on Medical Imaging, 10(2):154-163, 1991.
2. Noll DC, Meyer CH, Pauly JM, Nishimura DG, Macovski A. A homogeneity correction method for MR imaging with time-varying gradients. IEEE Trans. on Medical Imaging, 10(4):629-637, 1991.
3. Noll DC, Pauly JM, Meyer CH, Nishimura DG, Macovski A. De-blurring for non-2D Fourier transform magnetic resonance imaging. Magnetic Resonance in Medicine, 25:319-333, 1992.
4. Bergin CJ, Noll DC, Pauly JM, Glover GH, Macovski A. MRI of lung parenchyma - A solution to susceptibility, Radiology, 183:673-676, 1992.
5. Glover GH, Noll DC. Consistent projection reconstruction techniques for MRI. Magnetic Resonance in Medicine, 29:345-352 , 1993.

6. Schneider W, Noll DC, Cohen JD. Functional topographic mapping of human visual cortex using conventional MRI. Nature, 365:150-153 1993.

7. Cohen JD, Noll DC, Schneider W. Functional magnetic resonance imaging: Overview and methods for psychological research. Behavior Research Methods, Instruments, & Computers, 25(2):101-113, 1993.

8. Noll DC. Variable Averaging RARE. Magnetic Resonance in Medicine, 31:323-327, 1994.

9. Schneider W, Casey BJ, Noll DC. Mapping activation stimulus rate dependence for characters across multiple visual processing stages with fMRI. Human Brain Mapping, 1:117-133, 1994.

10. Cohen JD, Forman SD, Braver TS, Casey BJ, Servan-Schreiber D, Noll DC. Activation of prefrontal cortex in a non-spatial working memory task with functional MRI. Human Brain Mapping, 1:293-304, 1994.

11. Noll DC, Cohen JD, Meyer CH, Schneider W. Spiral k-space MRI of cortical activation. J. Magnetic Resonance Imaging, 5:49-56, 1995 (Recipient of the 1994 Isador I. Rabi Award from the Society of Magnetic Resonance).

12. Pelc NJ, Drangova M, Pelc LR, Zhu Y, Noll DC, Bowman B, Herfkens RJ. Tracking of cyclical motion using phase contrast cine MRI velocity data. J. Magnetic Resonance Imaging, 5:339:345, 1995.

13. Forman SD, Cohen JD, Fitzgerald M, Eddy WF, Mintun MA, Noll DC. Improved assessment of significant change in functional magnetic resonance imaging (fMRI): Use of a cluster size threshold. Magnetic Resonance in Medicine, 33:636-647, 1995.

14. Noll DC, Webb JA, Warfel TE. Parallel Fourier inversion by the scan-line method. IEEE Trans. on Medical Imaging, 14:454-463, 1995.

15. Casey BJ, Cohen JD, Jezzard P, Turner R, Noll DC, Trainor RJ, Giedd J, Kaysen D, Hertz-Pannier L, Rapoport JL. Activation of prefrontal cortex in children during a non-spatial working memory talk with functional MRI. NeuroImage, 2:221-229, 1995.

16. Baumann SB, Noll DC, Kondziolka D, Schneider W, Nichols T, Mintun MA, Lewine J, Yonas H, Sclabassi R. Comparison of functional MRI with PET and MEG to identify the motor cortex in a patient with arteriovenous malformation. J. Image Guided Surgery, 1:191-197, 1995.

17. Small SL, Noll DC, Perfetti CA, Hlustik P, Wellington R, Schneider W. Localizing the lexicon for reading aloud: Replication of a PET study using fMRI. NeuroReport, 7:961-965, 1996.

18. Eddy WF, Fitzgerald M, Noll DC. Improved registration of MR images using Fourier domain interpolation. Magnetic Resonance in Medicine, 36:923-931, 1996.

19. Witt TC, Kondziolka D, Baumann SB, Noll DC, Small SL, Lundsford LD. Preoperative Cortical Localization with Functional MRI for Using in Stereotactic Radiosurgery. Sterotactic and Functional Neruosurgery, 66:24-29, 1996.

20. Braver TS, Cohen JD, Jonides J, Smith EE, Noll DC. A parametric study of prefrontal cortex involvement in human working memory. NeuroImage, 5:49-62, 1997.

21. Cohen JD, Perlstein WM, Braver TS, Nystrom LE, Noll DC, Jonides J, Smith EE. Temporal dynamics of brain activation during a non-spatial working memory task. Nature, 386:604-608, 1997.

22. Genovese CR, Noll DC, and Eddy WF. Estimating test-retest reliability in functional MR imaging I: Statistical methodology. Magnetic Resonance in Medicine, 38:497-507, 1997.

23. Noll DC, Genovese CR, Nystrom L, Vazquez A, Forman SD, Eddy WF, Cohen JD. Estimating test-retest reliability in functional MR imaging II: Application to motor and cognitive activation studies. Magnetic Resonance in Medicine, 38:508-517, 1997.

24. Noll DC, Boada FE, Eddy WF. A spectral approach to analyzing slice selection in planar imaging: Optimization for through-plane interpolation. Magnetic Resonance in Medicine, 38:151-160, 1997.

25. Noll DC. Multi-shot rosette trajectories for spectrally selective MR imaging. IEEE Trans. on Medical Imaging, 16:372-377, 1997.

26. Barch DM, Braver TS, Nystrom LE, Forman SD, Noll DC, Cohen JD. Dissociating effort from active memory in prefrontal cortex: an fMRI study. Neuropsychologia, 35:1373-1380, 1997.

27. Boada FE, Gillen JS, Noll DC, Shen GX, Thulborn KR. k-space trajectory design for fast quantitative sodium imaging. International Journal of Imaging Systems and Technology, 8:544-550, 1997.

28. Goddard NH, Hood G, Cohen JD, Eddy WF, Genovese GR, Noll DC. Online analysis of functional MRI datasets on parallel platforms. Journal of Supercomputing, 11:295-318, 1997.

29. Casey BJ, Trainor RJ, Orendi JL, Schubert AB, Nystrom NE, Giedd JN, Castellanos X, Haxby J, Noll DC, Cohen JD, Forman SD, Dahl RE, Rapoport JL. A developmental functional MRI study of prefrontal activation during performance of a Go-No-Go task. J. Cognitive Neuroscience, 9:835-847, 1997.

30. Talagala SL, Noll DC. Functional MRI using steady-state arterial water labeling. Magnetic Resonance in Medicine, 39:179-183, 1998.

31. *Vazquez AL, Noll DC. Non-linear aspects of the blood oxygenation response in functional MRI. NeuroImage, 7:108-118, 1998.

32. Noll DC, *Peltier SJ, Boada FE. Simultaneous multislice acquisition using rosette trajectories (SMART): A new imaging method for functional MRI. Magnetic Resonance in Medicine, 39:709-716, 1998.

33. Carter CS, Braver TS, Barch DM, Botvinick M, Noll DC, Cohen JD. Anterior cingulate cortex, error detection, and the on line monitoring of performance. Science, 280:747-749, 1998.

34. *Hlustik P, Noll DC, Small SL. Suppression of vascular artifacts in functional magnetic resonance images using MR angiograms. NeuroImage, 7:224-231, 1998.

35. Small SL, Flores D, Noll DC. Different neural circuits subserve reading before and after therapy for acquired dyslexia. Brain and Language, 62:298-308, 1998.

36. *Stenger VA, Noll DC, Boada FE. Partial k-space reconstruction for 3D gradient echo functional MRI: A comparison of phase correction methods. Magnetic Resonance in Medicine, 40:481-490, 1998.

37. Noll DC, Genovese CR, Vazquez AL, O'Brien JL*, Eddy WF. Evaluation of respiration artifact correction techniques in functional MRI using receiver operator characteristic analyses. Magnetic Resonance in Medicine, 40:633-639, 1998.

38. Casey BJ, Cohen JD, O'Craven K, Davidson RJ, Irwin W, Nelson CA, Noll DC, Hu X, Lowe MJ, Rosen B, Truwitt C, Turski P. Reproducibility of fMRI results across four institutions using a spatial working memory task. NeuroImage, 8:249-261, 1998.

39. *Stenger VA, Peltier SJ, Boada FE, Noll DC. 3D spiral cardiac/respiratory ordered fMRI data acquisition at 3 Tesla. Magnetic Resonance in Medicine, 41:983-991, 1999.

40. *Peltier SJ, Noll DC. Noise compensation for simultaneous multislice acquisition using rosette trajectories (SMART). Magnetic Resonance in Medicine, 41:1073-1076, 1999.

41. Kinahan PE, Noll DC. A direct comparison between whole-brain PET and BOLD fMRI measurements of single subject activation response. NeuroImage, 9:430-438, 1999.

42. Thomas KM, King SW, Franzen PL, Welsh TF, Berkowitz AL, Noll DC, Birmaher V, Casey BJ. A developmental functional MRI study of spatial working memory. NeuroImage, 10:327-338, 1999.

43. Baumann SB, Noll DC. A modified electrode cap for EEG recordings in MRI scanners. Clinical Neurophysiology, 110:2189-2193, 1999.

44. Barch DM, Sabb FW, Carter CS, Braver TS, Noll DC, Cohen JD. Overt verbal responding during fMRI scanner: Empirical investigations of problems and potential solutions. Neuroimage. 10:642-57, 1999.

45. Carter CS, MacDonald AM, Ross LL, Stenger VA, Noll DC, Cohen JD. Parsing executive processes: strategic versus evaluative functions of the anterior cingulate cortex. Proc. of the Nat. Acad. Sci., USA, 97(4):1944-8, 2000.

46. Barch DM, Sabb FW, Braver TS, Noll DC. Anterior cingulate and the monitoring of response conflict: Evidence from an fMRI study of overt verb generation. J. Cognitive Neuroscience, 12(2):298-309, 2000.

47. Nystrom, LE, Braver TS, Sabb FW, Delgado MR, Noll DC, Cohen JD. Working memory for letters, shapes and locations: fMRI evidence against stimulus-based regional organization in human prefrontal cortex. NeuroImage, 11, 424-446, 2000.

48. Stenger VA, Boada FE, Noll DC. Three-dimensional tailored RF pulses for the reduction of susceptibility artifacts in gradient echo functional MRI. Magnetic Resonance in Medicine, 44:525-531, 2000.

49. Delgado MR, Nystrom LE, Fissel C, Noll DC, Fiez JA. Tracking the hemodynamic responses to reward and punishment in the striatum. J. Neurophysiology, 84:3072-3077, 2000.

50. Barch DM, Carter CS, Braver TS, Sabb FW, MacDonald A, Noll DC, Cohen JD. Selective deficits in prefrontal cortex function in medication-naive patients with schizophrenia. Archives of General Psychiatry, 58(3):280-8, 2001.

51. Hlustik P, Solodkin A, Gullapalli RP, Noll DC, Small SL. Somatotopy in Human Primary Motor and Somatosensory Hand Representations Revisited, Cereb. Cortex, 11:312-321, 2001.

52. Casey BJ, Forman SD, Franzen P, Berkowitz A, Braver TS, Nystrom LE, Thomas KM, Noll DC. Sensitivity of prefrontal cortex to changes in target probability: A functional MRI study. Human Brain Mapping, 13:26-33, 2001.

53. Burton MW, Noll DC, Small SL. The anatomy of auditory word processing: Individual Variability. Brain & Language, 77(1):119-31, 2001.

54. Perlstein WM, Carter CS, Noll DC, Cohen JD. Relation of prefrontal cortex dysfunction to working memory and symptoms in schizophrenia. American Journal of Psychiatry, 158(7):1105-13, 2001.

55. Solodkin A, Hlustik P, Noll DC, Small SL. Lateralization of motor circuits and handedness during finger movements. European Journal of Neurology, 8:425:434, 2001.

56. Hlustik P, Solodkin A, Gullapalli RP, Noll DC, Small SL. Functional lateralization of the human premotor cortex during sequential movements. Brain & Cognition, 49:54-62, 2002.

57. Stenger VA, Boada FE, Noll DC. Multishot 3D slice-select tailored RF pulses for MRI. Magnetic Resonance in Medicine, 48:157-165, 2002.

58. Small SL, Hlustik P, Noll DC, Genevese C, Solodkin A. Cerebellar hemispheric activation ipsilateral to the paretic hand correlates with functional recovery after stroke. Brain, 125:1544-1557, 2002.

59. *Peltier SJ, Noll DC. T2* dependence of low-frequency functional connectivity. NeuroImage, 16:985-992, 2002.

60. Hernandez L, Badre D, Noll DC, Jonides J. Temporal sensitivity of event related fMRI. NeuroImage, 17:1018-1026, 2002.

61. *Sutton BP, Noll DC, Fessler JA. Fast, iterative image reconstruction for MRI in the presence of field inhomogeneities. IEEE Trans. on Medical Imaging, 22(2):178-188, 2003.

62. Perlstein WM, Dixit NK, Carter CS, Noll DC, Cohen JD. Prefrontal cortex dysfunction mediates deficits in working memory and prepotent responding in schizophrenia. Biological Psychiatry, 53(1):25-38, 2003.

63. Phan KL, Taylor SF, Welsh RC, Decker LR, Noll DC, Nichols TE, Britton JC, Liberzon I. Activation of the medial prefrontal cortex and extended amygdala by individual ratings of emotional arousal: a fMRI study. Biological Psychiatry, 53(3):211-5, 2003.

64. *Peltier SJ, Polk TA, Noll DC. Detecting low-frequency functional connectivity in fMRI using a self-organizing map (SOM) algorithm. Human Brain Mapping, 20(4):220-226, 2003.

65. Stenger VA, Boada FE, Noll DC. Variable-density spiral 3D tailored RF pulses. Magnetic Resonance in Medicine, 50:1100-1106, 2003.

66. Park DC, Welsh RC, Marshuetz C, Gutchess AH, Mickels J, Polk TA, Noll DC, Taylor SF. Working memory for complex scenes: Age differences in frontal and hippocampal activations. J. Cognitive Neuroscience, 15(8):1122-34, 2003.

67. Hernandez-Garcia L, *Lee GR, Vazquez AL, Noll DC. Fast, pseudo-continuous arterial spin labeling for functional imaging using a two-coil system. Magnetic Resonance in Medicine, 51:577-585, 2004.

68. *Sutton BP, Noll DC, Fessler JA. Dynamic field map estimation using a spiral-in/spiral-out acquisition. Magnetic Resonance in Medicine, 51:1194-1204, 2004.

69. Seidler RD, Noll DC, Thiers G. Feedforward and Feedback Processes in Motor Control. NeuroImage, 22(4):1775-83, 2004.

70. Hlustik P, Solodkin A, Noll DC, Small SL. Cortical plasticity duing three-week motor skill learing. J. Clin. Neurophys., 21:180-191, 2004.

71. Saekho S, Boada FE, Noll DC, Stenger VA. A small-tip angle 3D tailored RF slab-select pulse for reduced B1 inhomogeneity at 3T. Magnetic Resonance in Medicine, 53:479-484, 2005.

72. Noll DC, Fessler JA, Sutton BP. Conjugate phase MRI reconstruction with spatially variant sample density compensation. IEEE Transactions on Medical Imaging, 24:325-36, 2005.

73. Wager TD, Vazquez AL, Hernandez-Garcia L, Noll DC. Accounting for nonlinear BOLD effects in fMRI: Parameter estimates and a model for prediction in rapid event-related studies. NeuroImage, 25:206-18, 2005.

74. Fessler JA, *Lee S, *Olafsson VT, Shi H, Noll DC. Toeplitz-based iterative image reconstruction for MRI with correction for magnetic field inhomogeneity. IEEE Transactions on Signal Processing, 53:3393-3402, 2005.

75. *Yip C-Y, Fessler JA, Noll DC. Iterative RF pulse design for multidimensional, small-tip-angle selective excitation. Magnetic Resonance in Medicine, 54(4):908-917, 2005.

76. Hernandez-Garcia L, *Lee GR, *Vazquez AL, Noll DC. Quantification of Perfusion FMRI using a numerical model of arterial spin labeling accounting for dynamic transit time effects. Magnetic Resonance in Medicine, 54(4):955-964, 2005.

77. *Martinez FM., Swanson S, Noll DC, Anderson DJ. Magnetic Resonance Compatibility of Multichannel Silicon Microelectrode Systems for Neural Recording and Stimulation: Design criteria, test, and recommendations. IEEE Transactions on Biomedical Engineering, 53(3):547-558, 2006.

78. Marshuetz C, Reuter-Lorenz PA, Smith EE, Jonides J, Noll DC. Working memory for order and the parietal cortex: an event-related functional magnetic resonance imaging study. Neuroscience, 139(1):311-6, 2006.

79. *Vazquez AL, *Lee GR, Hernandez-Garcia L, Noll DC. Application of Selective Saturation to Image the Dynamics of Arterial Blood Flow during Brain Activation using MRI. Magnetic Resonance in Medicine, 55(4):816-25, 2006.

80. Saekho S, Yip CY, Noll DC, Boada FE, Stenger VA. Fast-kz three-dimensional tailored radiofrequency pulse for reduced B1 inhomogeneity. Magnetic Resonance in Medicine, 55(4):719-24, 2006.

81. Seidler RD, Noll DC, Chintalapati PR. Basal ganglia activation associated with sensorimotor adaptation. Experimental Brain Research, 175(3):544-55, 2006.

82. *Vazquez AL, Cohen ER, Gulani V, Hernandez-Garcia L, Zheng Y, Lee GR, Kim S-G, Grotberg JB, Noll DC. Vascular Dynamics and BOLD fMRI: CBF Level Effects and Analysis Considerations. NeuroImage, 32(4):1642-55, 2006.

83. Stenger VA, Giurgi MS, Boada FE, Noll DC. Excitation UNFOLD (XUNFOLD) to improve the temporal resolution of multishot tailored RF pulses. Magnetic Resonance in Medicine, 56(3):692-7, 2006

84. *Grissom W, Yip CY, Zhang Z, Stenger VA, Fessler JA, Noll DC. A spatial domain method for the design of RF pulses in multi-coil parallel excitation. Magnetic Resonance in Medicine, 56(3):620-9, 2006.

85. *Yip CY, Fessler JA, Noll DC. Advanced three-dimensional tailored RF pulse for signal recovery in T2*-weighted functional MRI. Magnetic Resonance in Medicine, 56(5):1050-9, 2006.

86. *Martinez-Santiestaban FM, Swanson S, Noll DC, Anderson DJ. Magnetic field perturbation of neural recording and stimulating microelectrodes. Phys. Med. Biol., 52(8):2073-88, 2007.

87. *Lee GR, Hernandez-Garcia L, Noll DC. Functional imaging with turbo-CASL: Transit time and multislice imaging considerations. Magnetic Resonance in Medicine, 57(4):661-9, 2007.

88. Zhang Z, Yip CY, Grissom W, Noll DC, Boada FE, Stenger VA. Reductions of B1 inhomogeneity with transmit SENSE slice-select pulses. Magnetic Resonance in Medicine, 57(5):842-7, 2007.

89. *Yip CY, Grissom WA, Fessler JA, Noll DC. Joint design of trajectory and RF pulses for parallel excitation. Magnetic Resonance in Medicine, 58(3):598-604, 2007.

90. Langenecker SA, Kennedy SE, Guidotti LM, Briceno EM, Own LS, Hooven T, Young EA, Akil H, Noll DC, Zubieta JK. Frontal and Limbic Activation During Inhibitory Control Predicts Treatment Response in Major Depressive Disorder. Biol Psychiatry, 62(11):1272-80, 2007.

91. Anguera JA, Russell CA, Noll DC, Seidler RD. Neural correlates associated with intermanual transfer of sensorimotor adaptation. Brain Res. [Epub ahead of print] 2007.

(* - graduate student or post-doctoral trainee being advised or co-advised on project)

Conference and Workshop Papers:

1. Nishimura DG, Noll DC, Glover GH, Macovski A. Partial K-space reconstruction for magnetic resonance angiography by selective inversion recovery. in Proc of the Ann International Conference of IEEE EMBS, 11:593-596, November 9-12, 1989.

2. Noll DC, Pauly JM, Nishimura DG, Macovski. MR reconstruction from projections using half the data. in Medical Imaging V: Image Physics, R.H. Schneider, Ed., Proc. SPIE, 1443:29-36, 1991.

3. Noll DC, Schneider W. Theory, Simulation, and Compensation Strategies of Physiological Motion Artifacts in Functional MRI. in Proc of the IEEE International Conf on Image Processing, 3:40-44, November 13-16, 1994.

4. Noll DC. What makes functional MRI work? in Proceedings of the 27th Symposium on the Interface, Computing Science and Statistics. 27:181-186, 1996.

5. Eddy WF, Fitzgerald M, Genovese C, Mockus A, Noll DC. Functional Image Analysis Software - Computational Olio. in COMPSTAT, Proceedings in Computational Statistics, 12th Symposium, Physica-Verlag, pp. 39-49, 1996.

6. Noll DC, Boada FE. Spectrally selective k-space for high-speed chemical shift imaging. in Syllabus for Workshop on Minimum MR Data Acquisition Methods: Making More with Less, Marco Island, Florida, October 20, 2001, pp. 3-6.

7. *Sutton BP, Noll DC, Fessler JA. Simultaneous Estimation of Image and Inhomogeneity Field Map. in Syllabus for Workshop on Minimum MR Data Acquisition Methods: Making More with Less, Marco Island, Florida, October 20, 2001, pp. 15-18.

8. *Sutton BP, Noll DC, Fessler JA. Fast, Iterative, Field-corrected image reconstruction for MRI. in 2002 IEEE International Symposium on Biomedical Imaging. Washington, DC, July 7-10, 2002, paper TP-CS-1.2.

9. Noll DC. Rapid MR image acquisition in the presence of background gradients. in 2002 IEEE International Symposium on Biomedical Imaging. Washington, DC, July 7-10, 2002, paper WA-SS-1.4.

10. *Martinez FM., Noll DC, Anderson DJ. Magnetic Resonance Compatibility of Multichannel Silicon Microelectrode Systems for Neural Recording and Stimulation in the Central Nervous System. Proceedings of the 1st International IEEE EMBS Conference on Neural Engineering. Capri Island, Italy. March 20-22, 2003. pp. 157-160.

11. Fessler JA, Noll DC. Iterative image reconstruction in MRI with separate magnitude and phase regularization. In 2004 IEEE International Symposium on Biomedical Imaging, Arlington, VA, April 15-18, 2004, pp. 209-212.

12. Olafsson V, Fessler JA, Noll DC. Spatial resolution analysis of iterative image reconstruction with separate regularization of real and imaginary parts. In Proc. IEEE Intl. Symp. Biomed. Imag. (ISBI), paper no. TH-PM-PS1.2, 2006.

13. Fessler JA, Yeo D, Noll DC. Regularized fieldmap estimation in MRI. In Proc. IEEE Intl. Symp. Biomed. Imag., pp. 706–9, 2006.

14. Funai, A, Fessler JA, Grissom W, Noll DC. Regularized B1+ estimation in MRI. In Proc. IEEE Intl. Symp. Biomed. Imag. (ISBI), paper no. FR-PM-OS6a.4, 2007.

15. Fessler JA, Noll DC. Model-based MR image reconstruction with compenstation for through-plane field inhomogeneity. In Proc. IEEE Intl. Symp. Biomed. Imag. (ISBI), paper no. SA-AM-AA1a.3, 2007.

Invited Papers, Book Chapters, and Other Publications:

1. Noll DC. Methodological considerations for spiral k-space functional MRI. International Journal of Imaging Systems and Technology, 6:175-183, 1995.

2. Casey BJ, Cohen JD, Noll DC, Schneider W, Rapoport JL. Functional Magnetic Resonance Imaging. in Bigler ED (Ed.), Neuroimaging II: Clinical Applications (pp. 299-329), Plenum Press, New York, 1996.

3. Noll DC, Stenger VA, Vazquez AL, Peltier SJ. Spiral Scanning in Functional MRI. in Moonen CTW, Bandettini PA (Eds.), Medical Radiology: Functional MRI. Springer-Verlag, Heidelberg, pp.149-160, 1999.

4. Noll DC. Technical challenges in functional neuroimaging. In 2004 IEEE International Symposium on Biomedical Imaging, Arlington, VA, April 15-18, 2004, pp. 1208-1211.

5. Noll DC, Vazquez A. Contrast mechanisms and acquisition methods in functional MRI. In Proceedings of the 26th Annual International Conference of the IEEE EMBS, San Francisco, Sept. 1-5, 2004, pp. 5219-5222.

Selected Abstracts and Short Conference Proceedings:

1. Macovski A, Noll DC. Homodyne detection for improved SNR and partial K-space reconstruction. Book of Abstracts, Soc. of Magnetic Resonance in Medicine 7th Ann. Mtg., Vol 2, p 815, Aug. 1988.

2. Macovski A, Noll DC. Applications of homodyne detection using separate reference acquisition. Book of Abstracts, Soc. of Magnetic Resonance in Medicine 7th Ann. Mtg., Vol 2 p 983, Aug. 1988.

3. Noll DC, Nishimura DG, Macovski A. Motion robust water-fat separation. Magnetic Resonance Imaging, Program and Abstracts, Soc. of Magnetic Resonance Imaging 7th Ann. Mtg., Vol 1 Supp. 1 p 86, February 25-March 1, 1989.

4. Noll DC, Meyer CH, Macovski A. Partial K-space reconstruction for square spiral fast scanning. Book of Abstracts, Soc. of Magnetic Resonance in Medicine 8th Ann. Mtg., Vol 2, p 826, Aug. 1989.

5. Noll DC, Pauly JM, Nishimura DG, Macovski A. Reducing imaging time in short T_2 and lung imaging. Soc. of Magnetic Resonance in Medicine 9th Ann. Mtg., Works-in-Progress, Aug. 1990.

6. Meyer CH, Noll DC, Pauly JM, Macovski, A, Nishimura DG. Developments in spatial-spectral selective excitation, Book of Abstracts, Soc. of Magnetic Resonance in Medicine 9th Ann. Mtg., Aug. 1990.

7. Macovski A, Meyer CH, Noll DC. Rapid imaging by time-varying gradients. Journal of Magnetic Resonance Imaging 1(2):138, 1991.

8. Noll DC, Meyer CH, Pauly JM, Nishimura DG, Macovski A. A homogeneity correction method for MR imaging with time-varying gradients. Journal of Magnetic Resonance Imaging 1(2):138, 1991.

9. Noll DC, Meyer CH, Pauly JM, Nishimura DG, Macovski A. Automatic deblurring for non-2DFT MR imaging. Book of Abstracts, Soc. of Magnetic Resonance in Med. 10th Ann. Mtg., p. 198, Aug. 1991.

10. Bergin CJ, Noll DC, Pauly JM, Glover G, Macovski A. MRI of lung parenchyma: A solution to susceptibility. Book of Abstracts, Soc. of Magnetic Resonance in Med. 10th Ann. Mtg., p. 205, Aug. 1991.

11. Noll DC, Tadjudin S. Considerations for projection-reconstruction abdominal imaging. Book of Abstracts, Soc. of Magnetic Resonance in Medicine 11th Ann. Mtg., p 667, August 1992.

12. *Warfel TE, Noll DC. Parallel deblurring for non-spin-warp imaging. Book of Abstracts, Soc. of Magnetic Resonance in Medicine, 11th Ann. Mtg., p 473, August 1992.

13. Noll DC. Variable averaging RARE. Works in Progress, Soc. of Magnetic Resonance in Medicine 11th Ann. Mtg., p 4528, August 1992.

14. Noll DC, Meyer CH, Cohen JD, Schneider W. Spiral scan imaging of cortical activation. J. Magnetic Resonance Imaging 3(P):44, 1993.

15. Noll DC, Cohen JD, Schneider W. Artifacts in functional MRI using conventional scanning. Proc., Soc. of Magnetic Resonance in Medicine 12th Ann. Mtg., p 1407, August 1993.

16. Cohen JD, Forman SD, Casey BJ, Noll DC. Spiral-scan imaging of dorsolateral prefrontal cortex during a working memory task. Proc., Soc. of Magnetic Resonance in Medicine 12th Ann. Mtg., p 1405, August 1993.

17. Schneider W, Casey BJ, Noll DC. Functional MRI mapping of individual stages of visual processing. Proc., Soc. of Magnetic Resonance in Medicine 12th Ann. Mtg., p 56, August 1993.

18. Forman SD, Cohen JD, Mintun MA, Noll DC. Improved assessment of significant change in functional magnetic resonance imaging (fMRI): Use of the contiguity threshold. Proc., Soc. of Magnetic Resonance, 2nd Mtg., p. 632, August 1994.

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142. *Yip CY, Fessler JA, Noll DC. Iterative spectral-spatial pulse design: Toward full use of design freedom. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2998, Seattle, May 6-12, 2006.

143. *Grissom W, *Yip CY, Zhang A, Stenger VA, Fessler JA, Noll DC. A Spatial Domain Method for the Design of RF Pulses in Multi-Coil Parallel Excitation. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 3015, Seattle, May 6-12, 2006.

144. *Lee S, Fessler JA, Noll DC. A dynamic R2*-and-field-map-corrected imaging for single shot rosette trajectories. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2515, Seattle, May 6-12, 2006.

145. *Kim, YC, Noll DC. Parallel Imaging in Functional MRI: Comparison of Spiral SENSE and GRAPPA and of Calibration Update Schemes. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2817, Seattle, May 6-12, 2006.

146. Zhang Z, *Yip, CY, *Grissom WA, Boada FE, Noll DC, Stenger VA. Reduction of B1 Inhomogeneity Using Transmit SENSE Slice-Select Pulses. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 602, Seattle, May 6-12, 2006.

147. *Lee GR, Hernandez-Garcia L, Noll DC. Effect of Tag Dispersion on Fast ASL Methods. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 671, Seattle, May 6-12, 2006.

148. *Donald BM, Welsh RC, Fessler JA, Noll DC. Multi-Shot DWI with Iterative Phase and Field Inhomogeneity Corrections. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 1045, Seattle, May 6-12, 2006.

149. *Martinez Santiesteban FM, Swanson SD, Noll DC, Anderson DJ. Object Orientation Independence of Susceptibility Weighted Imaging by Using a Sigmoid-Type Phase Window. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2399, Seattle, May 6-12, 2006.

150. *Olafsson VT, Lee S, Fessler JA, Noll DC. Fast Toeplitz Based Iterative SENSE Reconstruction. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2459, Seattle, May 6-12, 2006.

151. Nam H, *Grissom W, Noll DC, Wight SM. Application of RF Current Sources in Transmit SENSE. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2562, Seattle, May 6-12, 2006.

152. *Lee GR, Hernandez-Garcia L, Gulani V, Noll DC. Dynamic Relationship Between Arterial Transit Time and Perfusion ASL Quantification. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2685, Seattle, May 6-12, 2006.

153. *Olafsson VT, Fessler JA, Noll DC. Dynamic Updates of R2* and Field Map in fMRI Using a Spiral-In Quick-Spiral-Out K-Space Trajectory. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2838, Seattle, May 6-12, 2006.

154. *Pandey KK, Noll DC. Improved Activation Detection in fMRI Studies Using Acquisition and Reconstruction Methods Robust to Susceptibility and Motion Artifacts. Int. Soc. Magn. Reson. In Med. (ISMRM), 14th Sci. Mtg, p. 2992, Seattle, May 6-12, 2006.

155. *Grissom WA, Fessler JA, Noll DC. Time-Segmented Spin Domain Method for Fast Large-Tip-Angle RF Pulse Design in Parallel Excitation. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 676, Berlin, May 19-25, 2007.

156. *Yip CY, *Grissom WA, Fessler JA, Noll DC. Joint Design of Trajectory and RF Pulses for Parallel Excitation. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 1685, Berlin, May 19-25, 2007.

157. *Grissom WA, Fessler JA, Noll DC. Additive-Angle' Method for Fast Large-Tip-Angle RF Pulse Design in Parallel Excitation. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 1689, Berlin, May 19-25, 2007.

158. *Lee S, Fessler JA, Noll DC. Iterative Reconstruction for SMART Imaging. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 1905, Berlin, May 19-25, 2007.

159. *Olafsson V, Ulfarsson M, Fessler JA, Noll DC. Reducing Effects of Drift in fMRI Data Using Joint Reconstruction of R2* and Field Maps. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 1978, Berlin, May 19-25, 2007.

160. Pourabdollah-Nejad S, Bagher-Ebadian H, Jiang Q, Noll DC, Alexander DC, Ewing JR, Jafari-Khouzani1 K, Chopp M. Information Extraction from Ischemic Stroke MR Images Using Independent Component Analysis Technique. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 2275, Berlin, May 19-25, 2007.

161. *Vazquez AL, Gulani V, Hernandez-Garcia L, Noll DC. Dynamics of the Blood Oxygenation Response: Tissue CMRO2 Contributions and Impact for Functional MRI. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 3191, Berlin, May 19-25, 2007.

162. *Grissom WA, Kurpad K, Nam H, Fessler JA, Wright SM, Noll DC. Parallel Excitation on a 3T Human MRI Scanner Using Current Source Amplifiers and Iterative RF Pulse Design. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 3260, Berlin, May 19-25, 2007.

163. *Lee GR, Hernandez-Garcia L, Noll DC. Rapid Measurement of Transit Time, CBF, M0 and T1 with Turbo-CASL. Joint Ann. Mtg. of ISMRM-ESMRMB, p. 3483, Berlin, May 19-25, 2007.

(* - graduate student or post-doctoral trainee being advised or co-advised on project)

Patents:

1. Noll DC. U.S. Patent No. 5,243,284. Method of magnetic resonance imaging from projections using partial data collected in k-space, 1993.

2. Pelc NJ, Noll DC, Pauly JM. U.S. Patent No. 5,257,626. Method of noninvasive myocardial motion analysis using bidirectional motion integration in phase contrast MRI maps of myocardial velocity, 1993.

3. Noll DC, Pauly JM, Macovski A. U.S. Patent No. 5,311,132. Method of enhancing the focus of magnetic resonance images, 1994.

PROFESSIONAL ACTIVITIES

Invited Seminars and Talks:

1. An Introduction to MRI and its Applications. Invited speaker, Pittsburgh Instrumentation and Analysis Society. Pittsburgh, PA. June 10, 1993.
2. Identifying functionally important areas of the brain using MRI. Invited speaker, Forum on Medical Robotics and Computer Assisted Surgery. Shadyside Hospital, Pittsburgh, PA. June 12, 1993.
3. Imaging of brain function using MRI: An analysis of artifacts. Invited speaker, Electrical Engineering Graduate Seminar Series. University of Illinois, Urbana-Champaign. October 27, 1994.
4. Theory, Simulation, and Compensation Strategies of Physiological Motion Artifacts in Functional MRI. Invited speaker, 1994 IEEE Int. Conf. on Image Processing. Austin, TX. November 16, 1994.
5. Functional MRI - Methods for Image Acquisition and Artifact Correction. Invited speaker, Depts. of Radiology and Clinical Psychology, University of Florida, Gainesville. February 8, 1995.
6. High Performance Computing in Functional MRI: Image Reconstruction and Registration. Invited speaker, The Second Workshop on Advanced Computing in Biological Imaging, The National Center for Supercomputing Applications and The Beckman Institute, University of Illinois, Urbana-Champaign. April 29, 1995.
7. What makes functional MRI work? Invited speaker, Interface `95 - 27th Symposium on the Interface: Computing Science and Statistics. Pittsburgh, PA. June 22, 1995.
8. Biomedical imaging. Invited speaker, Electrical Engineering Undergraduate Seminar Series. University Pittsburgh, Pittsburgh, PA. November 13, 1995.
9. Magnetic resonance imaging. Invited speaker, Bioengineering Undergraduate Seminar Series. University Pittsburgh, Pittsburgh, PA. March 19 and 26, 1996.
10. K-space traversal patterns. Invited faculty, Mini-categorical course on Echo-planar imaging, Fourth Scientific Meeting, Int. Society of Magnetic Resonance in Med., New York, NY. May 1, 1996.
11. Movement correction in functional MRI. Invited speaker, Fifth Annual Little Rock Workshop on Advances in NMR Engineering. Lake Raystown Resort, PA, May 19-21, 1996.
12. Theoretical Issues in Data Analysis. Invited panelist, fMRI2Day Workshop - Satellite workshop of the 2nd International Conf. on Functional Mapping of the Human Brain, Boston, MA, June 17, 1996.
13. Magnetic resonance imaging. Invited speaker, Bioengineering Undergraduate Seminar Series. University Pittsburgh, Pittsburgh, PA. April 1 & 8, 1997.
14. Development of Standards for fMRI. Invited speaker, MR Engineering Study Group Meeting, Fifth Scientific Meeting, Int. Society of Magnetic Resonance in Med., Vancouver, BC. April 15, 1997.
15. Movement correction in functional magnetic resonance imaging. Invited speaker, Workshop on Statistics in the Health Sciences, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, MN, July 16, 1997.
16. Simultaneous multislice acquisitions using rosette trajectories (SMART): A new imaging method for fMRI. Invited speaker, Graduate Seminar Series, Department of Biophysics, Medical College of Wisconsin, Nov. 7, 1997.
17. Functional MRI - Applications and New Developments in Image Acquisition. Visiting Professor, Department of Radiology, University of Illinois at Chicago, Feb. 4, 1998.

18. Temporal dynamics in functional MRI. Invited speaker, Biomedical Engineering Graduate Seminar Series. University Michigan, Ann Arbor, MI. December 7, 1998.

19. EPI Overview. Invited Faculty, Eighth Annual Meeting, Soc. of Magnetic Resonance Technologists, Philadelphia, May 22, 1999.

20. The physiological origins of non-linearities in the BOLD response. Invited speaker, Graduate Seminar Series, Department of Biophysics, Medical College of Wisconsin, Sept. 10, 1999.

21. Fast scan sequences for functional MRI. Invited speaker, Biomedical Imaging Symposium: Beyond Diagnostics, University of Michigan, Sept. 18, 1999.

22. Technical issues in functional MRI. Invited speaker, Methods in Cognitive Neuroscience Seminar, Department of Psychology, University of Michigan, Sept. 29, 1999.

23. Functional MRI: Noise and Resting State Activity. Invited speaker, Biomedical Engineering Seminar Series, University of Illinois at Chicago. September 7, 2001.

24. Role of parallel imaging in high field fMRI. Invited speaker, 9th Annual Meeting of the Organization for Human Brain Mapping, June 21, 2003.

25. Temporal BOLD Characteristics. Invited speaker, 11th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Toronto. July 10, 2003.

26. Gridding procedures for non-Cartesian k-space trajectories. Invited speaker, 11th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Toronto. July 10, 2003.

27. Advances in MRI. Invited speaker, Workshop on Medical Imaging Analysis, 25th Ann. Int. Conf. of IEEE EMBS, Cancun, Mexico, September 17, 2003.

28. Better images of the working brain. Invited speaker, Smithgroup Distinguished Lecture, Beckman Institute, University of Illinois, Urbana-Champaign, October 10, 2003.

29. Technical Challenges in Neuroimaging. Invited speaker, 2004 IEEE International Symposium on Biomedical Imaging. Arlington, VA, April 17, 2004.

30. Temporal BOLD Characteristics. Invited speaker, 12th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Kyoto. May 15, 2004.

31. Artifacts…and correction strategies in fMRI. Invited speaker, 12th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Kyoto. May 20, 2004.

32. fMRI Acquisition. Invited speaker. Graduate Summer School: Mathematics in Brain Imaging. Institute for Pure and Applied Mathematics, UCLA. July 19, 2004.

33. Better images of the thinking brain: The challenges of magnetic susceptibility. Bioengineering Seminar Series, Yale University, December 1, 2004.

34. Better images of the thinking brain: The challenges of magnetic susceptibility. Biophysics Seminar Series, Medical College of Wisconsin, January 14, 2005.

35. Linearity of the fMRI response: Implications for paradigm design. Invited speaker, 13th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Miami. May 8, 2005.

36. Gridding for non-Cartesian k-space sampling. Invited speaker, 13th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Maimi. May 8, 2005. [Recipient of an Outstanding Teacher Award form the ISMRM]

37. Better Images of the Thinking Brain: The Challenge of Magnetic Susceptibility. Medical Physics Seminar Series. University of Wisconsin. December 5, 2005.

38. Better Images of the Thinking Brain: The Challenge of Magnetic Susceptibility. Frontiers in Biomedical Imaging Seminar Series, Case Western Reserve University. April 17, 2006.

39. MR Physics: What you need to know to talk to your physicist. Invited speaker, 2006 Annual Meeting of the Organization for Human Brain Mapping, Florence, Italy. June 11, 2006.

40. Better Images of the Thinking Brain: Advances in Image Reconstruction and Motion Correction. University of Pittsburgh Department of Radiology Grand Rounds. August 3, 2006.

41. RF pulse design for transmit SENSE. Invited speaker, 14th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Seattle. May 11, 2006. [Recipient of an Outstanding Teacher Award form the ISMRM]

42. Better Images of the Thinking Brain: Advances in Image Reconstruction and Motion Correction. Department of Imaging Physics Seminar, MD Anderson Cancer Center, Houston, TX. February 13, 2007.

43. Reconstruction from non-Cartesian k-space sampling. Invited speaker, Joint annual meeting ISMRM-ESMRMB 2007, Berlin, May 20, 2007. [Recipient of an Outstanding Teacher Award form the ISMRM]

44. Parallel transmission. Plenary speaker, Joint annual meeting ISMRM-ESMRMB 2007, Berlin, May 24, 2007.

45. MR Physics: What you need to know to talk to your physicist. Invited speaker, 2007 Annual Meeting of the Organization for Human Brain Mapping, Chicago, IL. June 10, 2007.

Sessions Chaired, Courses and Programs Organized:

1. Functional MR imaging - Models and mechanisms. Session chair, Fourth Scientific Meeting, Int. Society of Magnetic Resonance in Med., New York, NY. May 1, 1996.

2. Functional MR imaging - Models and mechanisms. Session chair, Fifth Scientific Meeting, Int. Society of Magnetic Resonance in Med., Vancouver, BC. April 15, 1997.

3. Functional MR imaging - Modeling and data analysis. Session chair, Sixth Scientific Meeting, Int. Society of Magnetic Resonance in Med., Sydney. April 21, 1998.

4. FMRI Acquisition Methods. Session chair, 8th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Denver. April 3, 2000.

5. FMRI: Noise Processes and Signal Recovery. Session chair, 9th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Glasgow. April 25, 2001.

6. FMRI Susceptibility Artifact Reduction and Sensitivity Enhancement. Session chair, 10th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Honolulu. May 21, 2002.

7. Weekend Educational Program. Chair of weekend program with 8 courses, 10th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Honolulu. May 18-19, 2002.

8. (Bio)Physics of fMRI. Educational session chair, 8th Int. Conf. on Functional Mapping of the Human Brain, June 2, 2002.

9. Imaging Techniques. Oral session chair, 8th Int. Conf. on Functional Mapping of the Human Brain, June 4, 2002.

10. MR Reconstruction. Session chair, 2002 IEEE International Symposium on Biomedical Imaging. Washington, DC, July 9, 2002.

11. Brain function and fMRI. Course organizer, 11th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Toronto. July 10-11, 2003.

12. Brain function and fMRI. Course organizer, 12th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Kyoto. May 15-16, 2004.

13. FMRI Imaging Techniques. Session chair, 12th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Kyoto. May 20, 2004.

14. Magnetic Resonance Imaging Workshop, Course organizer, 26th Annual Meeting of IEEE EMBS, San Francisco, September 1, 2004.

15. Functional Neuroimaging, Mini symposium organizer and speaker, 26th Annual Meeting of IEEE EMBS, San Francisco, September 4, 2004.

16. Transmit SENSE and RF pulses. Session chair, 13th Scientific Meeting, Int. Society of Magnetic Resonance in Med., Miami. May 9, 2005.

17. Parallel transmission. Session chair, Joint annual meeting ISMRM-ESMRMB 2007, Berlin, May 24, 2007.

RESEARCH SUPPORT

Active Grants and Contracts:

1. PI (0% effort), Small Bore 7T Magnetic Resonance Instrument, NIH 1 S10 RR22974-01, 06/01/2007 - 05/31/2008, TC $1,900,000.

2. PI (27% effort), Elimination of Head Movement Artifact in fMRI, NIH 1 R01 EB02683-01, 09/01/2003 - 07/31/2008, TC $1,789,390.

3. PI (20% effort), Signal Recovery in Susceptibility Based Functional MRI, NIH 1 R01 DA15410-01, 09/10/2002-06/30/2008, TC $1,510,899.

4. Co-Investigator, 5% effort (S Taylor, PI), Neuroanatomy of Emotion in Treatment Resistant Psychosis, NIH R01 MH64148-01, 7/01/02 - 6/30/08, TC $1,754,916.

5. Co-Investigator, 5% effort (L Hernandez-Garcia, PI), Fast, Quantitative Perfusion-Based functional MRI, 1 R01 EB004346-01, 7/1/2005-6/30/2008, TC $593,348.

6. Co-Investigator, 2.5% effort (R Seidler, PI), Skill Acquisition in Older Adults, R01 NS045208-01, 8/15/05-8/14/09, TC $1,194,100.

7. Co-Investigator, 8.25% (J Jonides, PI), Training in Functional Magnetic Resonance Imaging, R25 MH071279-01, 07/01/05-06/30/10, TC $721,644.

8. Co-Investigator, 5% effort (R Zucker, PI), Neurocognitive Risk for Alcoholism into Adulthood, R01 AA012217-06, 9/20/2005-6/30/2010, TC $2,606,356.

Past Grants and Contracts:

1. Co-PI (JD Cohen, PI and Co-PI's WF Eddy, N Goddard), Computational and statistical methods for the analysis of neuroimaging data sets, NSF IBN-9418982, 1995-1996, TC 132,825.

2. Investigator (KR Thulborn, PI), Enhanced computer environment for functional imaging, NIH, 12/1/95-11/30/96, TC 100,000.

3. PI, Optimized MRI for functional brain mapping, The Whitaker Foundation, 04/01/94-03/31/97 TC 179,995.

4. Core Director (KR Thulborn, PI), Computational and Statistical Processing Core, Functional and Physiological Mapping of the Human Brain, NIH P01-NS35949-01, 9/1/97-05/31/02. (Role ended 5/31/98).

5. PI, High-resolution, spiral k-space MR imaging of brain function, NIH RO1-NS-32756-01, 9/05/94-5/15/98 TC 451,106.

6. PI, Optimized MRI for functional brain mapping: Head movement, The Whitaker Foundation, 8/1/97-7/31/98, TC 69,547.

7. PI (with Co-PI CR Genovese) Statistical methods for the analysis of functional MRI data, Center for the Neural Basis of Cognition (R.K. Mellon Foundation), 1995-1998 DC 29,930.

8. Investigator (JD Cohen, PI), Functional MRI studies of the function and organization of prefrontal cortex, NIMH R01-MH52864-01, 4/1/96-3/31/00, TDC 710,444 (est). (Role ended 6/30/98 on Dr. Cohen's departure from Univ. of Pittsburgh).

9. Investigator (W Schneider, PI), Mapping human attentional & memory control with FMRI, NIH RO1-HD32395-01A1, 2/1/95-1/31/99 TDC 860,000. (Role ended 11/30/98 on departure from Univ. of Pittsburgh).

10. Investigator/Consultant (W Schneider, PI), Brain imaging of human skill acquisition and workload processing, ONR, 7/1/95-12/30/98, TDC 362,126. (Role ended 11/30/98 on departure from Univ. of Pittsburgh).

11. Investigator (N Ryan, PI; BJ Casey, Project PI), The psychobiology of childhood anxiety and depression, NIH P01-41712-10, 10/1/96-6/30/01. (Role ended 11/30/98 on departure from Univ. of Pittsburgh).

12. Investigator (KR Thulborn, PI), Enhanced gradient performance for functional MR imaging, NIH S10-RR12016-01, 12/1/96-11/30/97, TC 100,000. (Role ended 11/30/98 on departure from Univ. of Pittsburgh).

13. Co-Investigator (JD Cohen, PI), Advanced Methods for Neuroimaging Data Analysis, NIH, RO1-DA/MH11469-01, 8/1/97-7/31/00.

14. Investigator/Consultant (SL Small, PI), Functional neuroanatomy of normal and impaired language, NIH R01-DL02621-01, 7/1/96-6/30/01.

15. Investigator (SL Small, PI), Functional MRI of motor recovery in stoke, NIH R01-NS35267-01, 12/1/96-11/30/01.

16. Co-PI, 0% effort, (J Jonides, PI), Acquisition of Magnetic Resonance Imaging Scanner for Functional Studies, NSF BCS-9977521, 9/1/99-8/31/02, TC 1,175,680.

17. Co-Investigator, 5% effort, (B Kim, PI), Enhanced Detection of fMRI Signals via Motion Correction, NIH R01 EB000309, 07/01/00-06/30/03, TC $809,749.

18. Co-Investigator, 8.25% effort, (D Park, PI), Imagery Visual Memory & aging: A NeuroImaging approach, NIH R01AG006265. (Role ended when PI left the University of Michigan).

19. PI, 0% effort, Quantitative mapping of functional brain activity using MRI, Raynor Foundation, 3/23/01-3/23/03, TC $60,000.

20. PI, 25% effort, Rapid, whole-brain functional MR imaging, NIH RO1 NS-32756-04A1, 5/15/98-1/31/04, TC 907,908.

21. Co-Investigator, 4.1% effort, (J Jonides, PI), Executive processes: Behavioral and Neuroimaging Studies, NIH R01 MH060655, 07/01/00-06/30/05, TC $1,664,096.

22. Co-Investigator, 4.1% effort, (P Reuter-Lorenz, PI), Neurocognitive Aging of Working Memory Storage and Executive Processes, NIH R01 AG018286, 08/01/00-07/31/05, TC $1,576,059.

23. PI, 0% effort, The BME Industrial Internship Program at Michigan, The Whitaker Foundation, TC 179,958, 5/01/03-4/31/06.

24. Co-Investigator, 0% effort (J Grotberg, PI), NASA Bioscience and Engineering Institute, 9/1/03-8/31/07, TC approximately $4,000,000.

TEACHING

Formal Courses:

Classes taught at University of Michigan:

BME 311 (formerly BME 499), Biomedical Signals and Systems [new course developed], Winter Term, 2004-05

BME 483, Introduction to MRI [new course developed], Winter Term 1999-2001.

BME/EECS 516, Medical Imaging Systems [extensive on-line notes available], Fall Term 1999-2004, 2006.

BME 499/Biostats 642, Introduction to Functional MRI, Summer Term, 2001-02, 2004-07.
(with L. Hernandez, T. Nichols, J. Jonides).

EECS 556, Image Processing, Winter Term 2002-03.

BME 295, Seminar in Biomedical Engineering, University of Michigan, Winter Term 2000.

BME 500, Biomedical Engineering Seminar, University of Michigan, Fall 2006, Winter 2007, Fall 2007.

BME 499, Biomedical Engineering Laboratory, University of Michigan, Fall 2007
(developed and taught a 1 Cr. statistics module for this class)

Classes taught elsewhere:

BioE 2393, Medical Imaging Systems (cross-listed as EE 2595, Special Topics in Signal Processing/ Communications) [new course developed], University of Pittsburgh, Spring Terms 1994, 1996 and 1998.

EE 278, Statistical Signal Processing, Stanford University, Summer Term 1990.

Supervision/Mentorship of Students, Post-doctoral and Visiting Scientists:

Current graduate students (estimated completion dates):

William Grissom (12/2007), Valur Olafsson (04/2008), Kiran Pandey (2008), Yoon Chung Kim (2009), Daehyun Yoon, Hesam Jahanian, Siamak Pourabdoullah, Hari Bharadwaj, Angela Harrivel

M.S. thesis advisees (completed):

Saldju Tadjudin, M.S., Electrical Engineering, University of Pittsburgh, 1992, "Partial k-space reconstruction for magnetic resonance imaging." (Co-advisor: Dr. C.C. Li)

Jennifer O'Brien, M.S., Bioengineering, University of Pittsburgh, 1995, "Characterization of physiological variations in functional magnetic resonance imaging."

Alberto Vazquez, M.S., Bioengineering, University of Pittsburgh, 1997, "Non-linear aspects of the blood oxygenation response in functional magnetic resonance imaging."

Robert Santos, M.S., Bioengineering, University of Pittsburgh, 1999, "A Simulation Study of Magnetic Susceptibility in Gradient Echo fMRI at 3.0 T." (Co-advisor: Dr. F.E. Boada)

Ph.D. dissertation advisees (completed):

Scott J. Peltier, Ph.D., Applied Physics, University of Michigan, 2003, "Characterization and Compensation of Systematic Noise in Functional Magnetic Resonance Imaging."

Bradley P. Sutton, Ph.D., Biomedical Engineering, University of Michigan, 2003, "Physics based iterative reconstruction for MRI: Compensating and estimating field inhomogeneity and T2* relaxation." (Co-advisor: Dr. J.A. Fessler)

Alberto L. Vazquez, Ph.D., Biomedical Engineering, University of Michigan, 2005, "The dynamics of the blood oxygenation response in functional magnetic resonance imaging."

Francisco Martinez-Santiestaban, Ph.D., Biomedical Engineering, University of Michigan, 2006, "Magnetic resonance study of silicon microelectrodes." (Co-advisor: Dr. D.J. Anderson)

Sangwoo Lee, Ph.D., Electrical Engineering-Systems, University of Michigan, 2006, "Iterative Reconstruction Methods for Rosette Trajectories in Functional MRI." (Co-advisor: Dr. J.A. Fessler)

Gregory R. Lee, Ph.D., Biomedical Engineering, University of Michigan, 2007, "Functional Magnetic Resonance Imaging with Continuous Arterial Spin Labeling: A Novel Pulse Sequence and Quantitative Model." (Co-advisor: Dr. L. Hernandez-Garcia)

Chun-yu Yip, Ph.D. Electrical Engineering-Systems, University of Michigan, 2007, "RF Pulse Designs for signal recovery in T2*-weighted Functional Magnetic Resonance Imaging." (Co-advisor: Dr. J.A. Fessler)

Thesis/Dissertation committees (completed):

University of Pittsburgh: Jianyu Lian, Leping Zha, David Madio, Darryl S. Breitenstein, Ileana Hancu. M.S. Committees – Arthur Johnson, III, Sam Y. Chang.

Carnegie Mellon University: Mark Fitzgerald, Susan Slawson.

University of Michigan: Feng Yu, Christy Marshuetz, Yao Wang, Robinson Piramuthu, Gary Rymar, Amir Ghenei, Srikanth Kidambi, Satoru Hayashi, Wen-Lin Luo, Tor Wager, Javier DeAna, Tim Hall, Magnus Ulfarsson, Joonki Noh, Lei Xu, Appagi Panchangam.

Other Institutions: Raoqiong Tong Bennett, Medical College of Wisconsin; Charles Cunningham, University of Toronto.

Other student project advisees:

University of Pittsburgh: Jarad Prinkley.

University of Michigan: Srikanth Kidambi, Marc Berman, Dev Ghosh, Will Grissom, Shantanu Dhamija, Vijay Swaminthan, Jaemin Shin.

Other advisees:

V. Andrew Stenger, Ph.D., Research Associate, University of Pittsburgh, 1996-1998.

Sumati Krishnan, Ph.D., Research Associate, University of Michigan, 2005-2007.

SERVICE

Service to Profession:

Editorial Board:

Magnetic Resonance Imaging, 2001-present.

Magnetic Resonance in Medicine, 2005-present.

Journal Referee:

Magnetic Resonance in Medicine, 1989-1991, 1996-present.

Magnetic Resonance Imaging, 1990, 1997-1998, 2001-present.

IEEE Transactions on Medical Imaging, 1990-present.

Journal of Magnetic Resonance Imaging, 2002-present.

NeuroImage, 1998-present.

IEEE Transactions on Image Processing, 1994, 1996.

Human Brain Mapping, 1994-1995.

Journal of Magnetic Resonance, 1997-1999, 2002.

Society Committees:

International Society of Magnetic Resonance in Medicine

Governance Committee, MR Engineering Study Group, 1996-1998.

Subcommittee on Student Stipends, 1995-1999 (Chair, 1997-1999).

Ad Hoc Committee on Electronic Communications, 1999-2000.

Board of Trustees, 2000-03.

Education Committee, 2000-2003 (Vice-Chair, 2000-01; Chair, 2001-02).

Safety Committee, 2000-2003 (Chair, 2002-03).

Scientific Program Committee, 2001-02.

Ad Hoc Committee on Electronic Education, 2001-02.

Subcommittee for Young Investigator Awards, 2002-05.

Annual Meeting Program Committee, ,2007-present.

IEEE Engineering in Medicine and Biology Society

Program committee and theme co-chair for Engineering in Medicine and Biology Conf., 2004

Biomedical Engineering Society

Imaging and Optics Track co-chair for BMES Annual Meeting., 2004

External Advisory Committees:

Pittsburgh NMR Center for Biomedical Research, 2004-present.

UC Davis, Imaging Research Center, 2004-present.

Function BIRN (Biomedical Informatics Research Network), 2005-present.

Service to Government Agencies:

NSF, Site Visit Team, Biology Research Training Grant, 9/94.

NSF, Review Panel, Bioengineering and Aid to Persons with Disabilities, 9/95.

NIH, NIDCD Special Emphasis Review Panel, 11/95.

NSF, Ad Hoc Reviewer, Collaborative Research in Neuroscience, Computer and Mathematical Sciences and Engineering Program, 5/96

NIH, Multidisciplinary Sciences Special Emphasis Panel, 6/96, 10/96.

NIH, Ad Hoc Reviewer, Diagnostic Imaging Study Section, 6/97.

MRC/NSERC/SSHRC (Canada), Networks of Centres of Excellence Expert Panel, 6/98.

NIH, NIMH Special Emphasis Review Panel, 12/98.

NIH, Human Brain Project Special Emphasis Panel, 2/99.

NSF, Review Panel, Bioengineering and Aid to Persons with Disabilities, 11/99.

NIH, NIDA-K Panel, 11/00.

NIH, NIMH Conte Center Panel, 3/01.

NIH, NCRR Site Visit Panel, 11/02.

NIH, Brain Disorders and Clinical Neuroscience (ZRG1 BDCN-E10), 3/03, 7/03, 11/03, 3/04, 6/04, 11/04, 3/05, 6/05, 10/05, 2/06, 7/06.

NIH, NCRR Site Visit Panel (ZRG1 SBIB-L(40)), 9/06.

NIH, Clinical Neuroscience and Disease (CND BDCN-K(10)), 10/06, 6/07.

Service to University:

University of Michigan, Biomedical Engineering Department:

Curriculum Committee, Biomedical Engineering, 1999-2002

Executive Committee, 2000-present

Undergraduate Education Committee, Chair, 2000-2005

ABET Coordinator, 2004-2006.

Faculty Search Committee, Chair, 2004-2005, 2006-2007.

Interim Department Chair, 2006-2007.

Department Chair, 2007-present.

Other University of Michigan Service Duties:

Functional MRI Laboratory, Co-Director, 1998-present.

Life Science Undergraduate Curriculum Committee, Learning and Memory Subcommittee, 2000.

College of Engineering, Strategic Planning Steering Committee, 2002-2003.

Advisory Search Committee, UM Associate Vice President for Research, 2004

University of Pittsburgh:

Graduate Curriculum Committee, Bioengineering Program, 1994.

Undergraduate Curriculum Committee, Bioengineering Program, 1995.

Functional Imaging Research Program, Scientific Advisory Committee, 1995-1998.

Faculty Search Committee, Department of Electrical Engineering, 1995.

Department of Radiology, Research Committee, 1996-1998.

Pittsburgh NMR Center of Biomedical Research, Scientific Advisory Committee, 1998.

Community Service:

Lecture on basics of MRI and a tour of the Pittsburgh NMR Institute for Allegheny County school teachers as part of a Professional Enrichment Program (PEP) organized through the Duquesne University School of Education, Feb. 1993.

Lecture on basics of MRI and a tour of the MR Research Center for area high school students enrolled in Steel Center Vo-Tech Summer Sciences and Applied Technology Program, July, 1995.

Lecture on basics of MRI and functional MRI for the Macy Minorities in Medicine Summer Science Academy Program, University of Michigan Medical School, June 29, 1999.

Lecture on future directions in biomedical engineering at Green Hills School, February 27, 2001.