

Biographical Sketch

NAME JOSEPH A. MALDJIAN, M.D.		POSITION TITLE Professor of Radiology Section Chief, Neuroradiology Vice Chair, Research, Dept of Radiology	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Princeton University , Princeton, NJ	B.A.	1980-1984	Biochemistry
UMDNJ-New Jersey Medical School, Newark, NJ	M.D.	1984-1988	Medicine
Saint Barnabas Medical Center, Livingston, NJ	Intern	1988-1989	Internal Medicine
Mount Sinai Medical Center, New York, NY	Resident	1989-1993	Diagnostic Radiology
Hospital of the University of Pennsylvania, Phil, PA	Fellow	1993-1995	Neuroradiology

PERSONAL STATEMENT

Dr. Maldjian is Professor of Radiology and Biomedical Engineering, Section Chief of Neuroradiology, Vice Chair of Research in Radiology, as well as director of the Advanced Neuroscience Imaging Research (ANSIR) Laboratory at Wake Forest. His background as a neuroradiologist is unique, with expertise in interpretation of all neuroimaging modalities, detailed knowledge of advanced MR analysis methods (including volumetric analysis, fMRI, perfusion and diffusion tensor analysis), as well as extensive expertise in software development for a variety of neuroimaging processing applications. He has been funded through the NIH for development of the highly successful pickatlas software package for automated ROI based analysis, as well as the Biologic Parametric Mapping toolbox for multimodal image analysis. He is fluent in IDL, MATLAB, C, UNIX shell programming, in addition to some pulse programming experience for the General Electric (GE) MR platform. He has been involved in functional MRI studies since the inception of this technology in the early 1990's, developing interfaces between real-time neurosurgical workstations and functional MRI, and publishing several of the early articles validating fMRI against intraoperative mapping using these interfaces. His lab at Wake Forest has been at the forefront of functional imaging processing methods, implementing a fully automated processing pipeline in 2001 including features such as distributed grid processing, automated error recovery, and data provenance. This has most recently enabled Wake Forest to become the leading institution in the world in clinical Arterial Spin Label (ASL) imaging, with seamless translation of image acquisition, automated post-processing, and insertion into the Picture Archiving and Display System (PACS), with over 15000 clinical ASL MRI studies performed over the last 3 years. The current lab focus is on multimodal high dimensional methods for imaging data analysis using machine learning techniques, functional network connectivity and graph theory, as well as integration with non-image based data with the ultimate aim toward clinical diagnostic translation.

Professional Experience

7/93-6/95	Instructor, Clinical Radiology, University of Pennsylvania Medical Center, Department of Radiology, Philadelphia, PA.
7/95 - 6/97	Assistant Professor of Clinical Radiology, Department of Radiology, UMDNJ-New Jersey Medical School.
7/1/97-11/30/00	Assistant Professor of Radiology, University of Pennsylvania Medical Center, Department of Radiology, Philadelphia, PA.
12/1/00-6/30/05	Associate Professor of Radiology, Wake Forest University School of Medicine, Winston-Salem, NC
12/1/00-present	Associate in Biomedical Engineering, Wake Forest University School of Medicine
7/1/05-present	Professor of Radiology, Wake Forest University School of Medicine, Winston-Salem, NC

Hospital and Administrative Appointments

7/95 - 6/97	Director, Functional Imaging Laboratory (UMDNJ-New Jersey Medical School)
9/97 – 11/30/00	Assistant Director, Neuroradiology Fellowship Program, Hospital of the University of Pennsylvania
7/97-11/30/00	Physician liaison, CAMRIS (Center for Advanced Magnetic Resonance Imaging and Spectroscopy), Hospital of the University of Pennsylvania
12/1/00-present	Director, ANSIR (Advanced Neuroscience Imaging Research Core), Wake Forest University School of Medicine
8/26/03-7/1/07	Chair, Magnetic Resonance Imaging Committee, Wake Forest University School of Medicine
3/07-present	Section Chief, Neuroradiology, Wake Forest University School of Medicine
2010-present	Vice Chair of Research, Dept of Radiology, Wake Forest University School of Medicine

Specialty Certification

1993	American Board of Radiology
1995	Certificate of Added Qualification, Neuroradiology, ABR
2005	Maintenance of Certification, Neuroradiology, ABR

Honors and Awards

1984	Magna Cum Laude, Biochemistry, Princeton University
1992-1993	Chief Resident, Department of Radiology, Mount Sinai Medical Center, NY, NY
1993-1994	Sanofi-Winthrop Fellow in Neuroradiology, Hospital of the University of Pennsylvania
1999-2000	American Roentgen Ray Society Scholar
2009	ISMRM Outstanding Teacher Award (Advanced Neuroimaging Course, Honolulu, Hawaii)

National Committee assignments

2011-2012	President, American Society for Functional Neuroimaging
2010-2011	Vice President, American Society for Functional Neuroimaging
2008-2012	American Society for Functional Neuroimaging, Executive Committee
2008-2012	American Society for Functional Neuroimaging, Research Committee
2010-2012	American Society for Functional Neuroimaging, Clinical Practice Committee
2010-2012	American Society for Functional Neuroimaging, Program/Education Committee
2010-2012	American Society for Functional Neuroimaging, Publications Committee
2011	American Society of Neuroradiology, Executive Committee
2011	American Society of Neuroradiology, Education Committee
2010	American Society of Neuroradiology, Program Committee
2009-2011	American Society of Neuroradiology, Research Committee
2009	Secretary, American Society for Functional Neuroimaging
2008	Treasurer, American Society for Functional Neuroimaging
2004	Vice President, American Society for Functional Neuroimaging
2002	Public Information Advisory Board, Radiological Society of North America
2002	American Society of Neuroradiology, Functional MRI Advisory Board
1997-1999	American Society of Neuroradiology, Research Committee

NIH Consultancies

2006	NIH, Neuroscience Blueprint RFA Review – Neural Imaging (Ad-Hoc member)
2004 - present	NIBIB, T32/training grant Review Panel (Ad-Hoc member)
2001 - 2002	NINDS, NST Review Panel (Ad-Hoc member)
2000 - 2004	NCI ZCA1 SRRB-9 Special Emphasis Panel (Ad-Hoc member)
1998 - 2004	NIH SBIR/STTR Special Study Section 8 (Ad-Hoc member)

Editorial Boards

2002-2009	American Journal of Neuroradiology
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Ad-Hoc Reviewer

2001-present	Neurology
2001-present	Neuroimage
1998-present	American Journal of Neuroradiology
1998-present	American Journal of Roentgenology
2003-present	Journal of Neuroimaging

National/International Meeting Organizing Committees

American Society of Neuroradiology, (ASFN content), Seattle, WA, June, 2011.

American Society of Functional Neuroradiology, Orlando, Florida, March, 2012.

ISMRM-ASNR Workshop: Advanced Brain Imaging: Beyond State-of-the-Art, Mclean,VA September, 2012.

Peer Reviewed Journal Publications

1. Shapiro RS, **Maldjian JA**, Stancato-Pasik A, Ramos R. Hepatic mass in Budd-Chiari Syndrome: CT and MRI findings. *Comput Med Imaging Graph* 1993; 17:457-460.
2. Lidov MW, **Maldjian JA**, Glajchen N, Som PM. MR appearance of intraocular silicone oil. *J Comput Assist Tomogr* 1994; 18:131-132.
3. **Maldjian JA**, Norton KI, Groisman GM, Som PM. Inflammatory pseudotumor of the maxillary sinus in a pediatric patient. *AJNR Am J Neuroradiol* 1994; 15:784-786.
4. Atlas SW, Howard R, **Maldjian JA**, Alsop D, Detre J, Listerud J, D'Esposito M, Judy K, Zager E, Stecker M. Functional magnetic resonance imaging of regional brain activity in patients with intracerebral gliomas: findings and implications for clinical management. *Neurosurgery* 1996; 38:329-338.
5. Maldjian PD, Miller JA, **Maldjian JA**, Baker SR. An automated film masking and illuminating system versus conventional radiographic viewing equipment: a comparison of illuminating system versus conventional radiographic viewing equipment: a comparison of observer performance. *Acad Radiol* 1996; 3:827-833.
6. Wolansky L, Evans A, Belitsis K, Shaderowfsky P, Gonzales R, **Maldjian JA**, Lee H, Pak J. Fast inversion recovery for myelin suppression (FIRMS): a new MRI pulse sequence for highlighting cerebral gray matter. *Clinic Imaging* 1996; 20:164-170.
7. Alsop DC, Detre JA, D'Esposito M, Howard RS, **Maldjian JA**, Grossman M, Listerud J, Flamm ES, Judy KD, Atlas SW. Functional activation during an auditory comprehension task in patients with temporal lobe lesions. *Neuroimage* 1996; 4:55-59.
8. **Maldjian JA**, Atlas SW, Howard R, Greenstein E, Alsop D, Detre J, Listerud J, D'Esposito M, Flamm E. Functional magnetic resonance imaging of regional brain activity in patients with intracerebral arteriovenous malformations before surgical or endovascular therapy. *J Neurosurg* 1996; 84:477-483.
9. Holodny AI, Arutiunov NV, Kornienko WN, Gonzales R, Vaicys C, Petraikin AV, **Maldjian JA**. Aqueductal stenosis leading to herniation of the frontal horn of the lateral ventricle into the frontal sinus. *J Comput Assist Tomogr* 1997; 21:837-839.
10. **Maldjian JA**, Liu WC, *Hirschorn D, Murthe R, Semanchuk W*. Wavelet transform-based image compression for transmission of MR data. *AJR Am J Roentgenol* 1997; 169:23-26.
11. **Maldjian JA**, Schulder M, Liu WC, Mun IK, *Hirschorn D, Murthy R, Carmel PK, Kalnin A*. Intraoperative functional MRI using a real-time neurosurgical navigation system. *J Comput Assist Tomogr* 1997; 21:910-912.
12. Schulder M, **Maldjian JA**, Liu WC, Mun IK, Carmel PW. Functional image-guided surgery of intracranial tumors. *J Stereotact Funct Neurosurg* 1997; 68:98-105.
13. Schulder M, **Maldjian JA**, Liu WC, Holodny AI, Kalnin AJ, Mun IK, Carmel PW. Functional image-guided surgery of intracranial tumors in or near sensorimotor cortex. *J Neurosurg* 1998; 89:412-418.
14. *Roychowdhury S, Maldjian JA, Galetta SL, Grossman RI*. Postanoxic encephalopathy: diffusion MR findings. *J Comput Assist Tomogr* 1998; 22:992-994
15. **Maldjian JA**, Patel RS. Cerebral Neoplasms in Adults, *Neuroimaging Clin N AM*. 2001; 11(3) 547-569 (rep. from *Seminars in Roentgenology* 1999 34(2), 102-122).
16. Maldjian C, Adam R, **Maldjian JA**, Smith R. MRI appearance of the pelvis in the post Cesarean-section patient. *Magn Reson Imaging* 1999; 17:223-227.

17. Holodny AI, Schulder M, Liu WC, **Maldjian JA**, Kalnin AJ. Decreased activation of the motor and sensory cortex adjacent to a glioblastoma multiform using BOLD fMRI: implications for fMRI guided neurosurgery. *AJNR Am J Neuroradiol* 1999; 20:609-612.
18. Maldjian C, Adam R, Akhtar N, **Maldjian JA**, Boyko O, Bonakdarpour A. Volume (3-D) fast spin echo (VFSE) imaging of the lumbar spine. *Acad Radiol* 1999; 6:229-342.
19. Maldjian C, Adam R, Pelosi M 3rd, Rudelli RD, **Maldjian JA**. MRI appearance of placenta percreta and placenta accreta. *Magn Reson Imaging* 1999; 17:965-971.
20. Yousem DM, **Maldjian JA**, Hummel T, Alsop D, Geckle R, Doty R. Gender effects on odor-stimulated functional magnetic resonance imaging. *Brain Res* 1999; 818:480-487.
21. Yousem DM, **Maldjian JA**, Hummel T, Alsop D, Geckle R, Kraut M, Doty R. The effect of age on odor-stimulated functional magnetic resonance imaging. *AJNR Am J Neuroradiol* 1999; 20:600-608.
22. Mosier K, Liu WC, **Maldjian JA**, Sha R, Modi B. Lateralization of cortical function in swallowing: an fMRI study. *AJNR Am J Neuroradiol* 1999; 20:1520-1526.
23. **Maldjian JA**, Gottschalk A, Patel RS, Pincus D, Detre J, Alsop D. Mapping of secondary somatosensory cortex activation induced by vibrational stimulation: an fMRI study. *Brain Res* 1999; 824:291-295.
24. **Maldjian JA**, Gottschalk A, Patel RS, Detre J, Alsop D. The sensory somatotopic map of the human hand demonstrated at 4 Tesla. *Neuroimage* 1999, 10:55-62.
25. *Liu A*, **Maldjian JA**, Bagley LJ, Sinson GP, Grossman RI. Traumatic brain injury: findings at diffusion-weighted MR imaging. *AJNR Am J Neuroradiol* 1999; 20:1636-1641.
26. Mosier KM, Patel R, Liu W-C, Kalnin AJ, **Maldjian JA**, Baredes S. Cortical representation of swallowing in normal adults: functional implications. *Laryngoscope* 1999; 109:1-7
27. Lange G, DeLuca J, **Maldjian JA**, Lee H-J, Tiersky LA, Natelson BH. Brain MRI abnormalities exist in a subset of patients with chronic fatigue syndrome. *J Neurol Sci* 1999; 171:3-7.
28. **Maldjian JA**, Patel RS. Adult supratentorial neoplasms. *Semin in Roentgenol* 1999; 34:102-122.
29. McGarvey ML, Ferrante FM, *Patel RS*, **Maldjian JA**, Stecker M. Irreversible spinal cord injury as a complication of subarchnoid ethanol neurolysis. *Neurology* 2000, 54:1522-1524.
30. Maldjian C, Adam R, Rudelli R, **Maldjian JA**, Chew Q, Bonakdarpour A. Elastofibroma of the neck. *Skeletal Radiol* 2000; 29:109-111.
31. Holodny AI, Schulder M, Liu WC, Wolko J, **Maldjian JA**, Kalnin AJ. The effect of brain tumors on BOLD fMRI activation in the adjacent motor cortex: implications for image-guided neurosurgery. *AJNR Am J Neuroradiol* 2000; 21:1415-1422.
32. Chalela JA, Alsop DC, Gonzalez-Atavalez JB, **Maldjian JA**, Kasner SE, Detre JA. Magnetic resonance perfusion imaging in acute ischemic stroke using continuous arterial spin labeling. *Stroke* 2000; 31:680-687.
33. Levy-Reis I, Casasanto D, French JA, Alsop DA, **Maldjian JA**, Gonzalez-Atavalez JB, Detre JA. Absence of function and cortical reorganization in nevus linear subaceous syndrome (NLSS). *J Neuroimaging* 2000; 10(4): 225-228.
34. *Roychowdhury S*, **Maldjian JA**, Grossman RI. Multiple sclerosis: comparison of trace apparent diffusion coefficients with MR enhancement pattern of lesions. *AJNR Am J Neuroradiol* 2000; 21:869-874.
35. Gur RC, Alsop D, Glahn D, Petty R, Swanson CL, **Maldjian JA**, Turetsky BI, Detre JA, Gee J, Gur RE. An fMRI study of sex differences in regional activation to a verbal and a spatial task. *Brain Lang* 2000; 74:157-170.
36. **Maldjian JA**, Listerud J. Automated teaching file/slide database for digital images. *AJR Am J Roentgenol* 2000; 175:1249-1251.
37. Killgore WDS, Casasanto DJ, Yurglin-Todd D, **Maldjian JA**, Detre JA. Functional Activation of the Left Amygdala and Hippocampus during Associative Encoding of Faces. *Neuroreport* 2000, 11(10), 2259-2263.
38. *Patel RS*, Yousem DM, **Maldjian JA**, Zager EL. Incidence and clinical significance of frontal sinus or orbit entry during pterional (front temporal) craniotomy. *AJNR Am J Neuroradiol* 2000, 21:1327-1330.
39. **Maldjian JA**, Burdette JH. Neuroimaging expands with functional MRI. *Diagnostic Imaging* December 2001; Advanced MR Supplement.
40. **Maldjian JA**, Grossman RI. Future Applications of DWI in MS. *JNS* 186 (2001) S55-S57
41. **Maldjian JA**, Listerud J, *Moonis G*, *Siddiqi F*. Computing diffusion rates in T2-dark hematomas and areas of low T2 signal. *AJNR Am J Neuroradiol* 2001, 22:112-118.
42. **Maldjian JA**, Detre JA, Killgore WDS, Judy K, Alsop D, Grossman M, Glosser G. Neuropsychologic performance following resection of an activation cluster involved in cognitive memory function. *AJR Am J Roentgenol* 2001: 176:541-544.
43. Chalela JA, *Wolf RL*, **Maldjian JA**, Kasner SE. MRI Identification of Early White Matter Injury In Anoxic-Ischemic Encephalopathy. *Neurology* 2001; 56(4):481-485.

44. **Maldjian JA**, Chalela J, Kasner SE, Liebeskind D, Detre JA. Automated CT segmentation and analysis for acute MCA stroke. *AJNR Am J Neuroradiol* 2001; 22(6):1050-1055.
45. *Wolf RL*, Alsop DC, Levy-Reis I, Meyer PT, **Maldjian JA**, Gonzalez-Atavales J, French JA, Alavi A, Detre JA. Detection of mesial temporal lobe hypoperfusion in patients with temporal lobe epilepsy by use of arterial spin labeled perfusion MR imaging. *AJNR Am J Neuroradiol* 2001; 22:1334-1341.
46. *Chepuri NB*, Yen Y-F, Burdette JH, Li H, Moody DM, **Maldjian JA**. Diffusion anisotropy in the corpus callosum. *AJNR Am J Neuroradiol* 2002; 23:803-808.
47. **Maldjian JA**, Laurienti PJ, *Driskill L*, Burdette JH. Multiple reproducibility indices for evaluation of cognitive functional MR imaging paradigms. *AJNR Am J Neuroradiol* 2002; 23:1030-1037.
48. Laurienti PJ, *Field AS*, Burdette JH, **Maldjian JA**, Yen Y-F, Moody DM. Dietary caffeine consumption modulates fMRI measures. *NeuroImage* 2002; 17:751-757.
49. **Maldjian JA**, Listerud J, Khalsa S. Integrating post-processed functional MR images with picture archiving and communication systems. *AJNR Am J Neuroradiol* 2002; 23:1393-1397.
50. Franklin TR, Acton PD, **Maldjian JA**, Gray JD, Croft JR, Dackis CA, O'Brien CP, Childress AR. Decreased gray matter concentration in the insular, orbitofrontal, cingulate and temporal cortices of cocaine patients. *Biol Psychiatry* 2002; 51:134-142.
51. Langleben DD, Schroeder L, **Maldjian JA**, Gur RC, McDonald S, Ragland JD, O'Brien CP, Childress AR. Brain activity during simulated deception: an event-related functional magnetic resonance study. *Neuroimage* 2002; 15:727-732.
52. Casasanto DJ, Killgore WDS, **Maldjian JA**, Glosser G, Alsop DC, Cooke AM, Grossman M, Detre JA. Neural correlates of successful and unsuccessful verbal memory encoding. *Brain Lang* 2002; 80:287-295.
53. Gur RC, Schroeder L, Turner T, McGrath C, Chan RM, Turetsky BI, Alsop D, **Maldjian JA**, Gur RE. Brain activation during facial emotion processing. *NeuroImage* 2002; 16(3 Pt 1):651-662.
54. Gur RE, McGrath C, Chan RM, Schroeder L, Turner T, Turetsky BI, Kohler C, Alsop D, **Maldjian JA**, Ragland JD, Gur RC. An fMRI study of facial emotion processing in schizophrenia. *Am J Psychiatry* 2002; 159:1992-1999.
55. Gunning-dixon FM, Gur RC, Perkins AC, Schroeder L, Turner T, Turetsky BI, Chan RM, Loughhead JW, Alsop DC, **Maldjian JA**, Gur RE. Age-related differences in brain activation during emotional face processing. *Neurobiol Aging* 2003; 24:285-295.
56. Laurienti PJ, Wallace MT, **Maldjian JA**, Susi CM, Stein BE, Burdette JH. Cross-modal sensory processing in the anterior cingulate and medial prefrontal cortices. *Hum Brain Mapping* 2003; 19:213-223.
57. *Wolf RL*, Alsop DC, McGarvey ML, **Maldjian JA**, Wang J, Detre JA. Susceptibility contrast and arterial spin labeled perfusion MRI in cerebrovascular disease. *J Neuroimaging* 2003; 13:17-27.
58. Laurienti PJ, *Field AS*, Burdette JH, **Maldjian JA**, Yen Y-F, Moody DM. Relationship between caffeine-induced changes in resting cerebral perfusion and blood oxygenation level-dependent signal. *AJNR Am J Neuroradiol* 2003; 24:1607-1611.
59. **Maldjian JA**, Laurienti PJ, Burdette JH, Kraft RA. An automated method for neuroanatomic and cytoarchitectonic atlas-based interrogation of fMRI data sets. *NeuroImage* 2003; 19:1233-1239.
60. Laurienti PJ, Burdette JH, **Maldjian JA**. Separating neural processes using mixed event-related and epoch-based fMRI paradigms. *J Neurosci Methods* 2003; 131:41-50.
61. Wang J, Alsop DC, Song HK, **Maldjian JA**, Tang K, Salvucci AE, Detre JA. Arterial transit time imaging with flow encoding arterial spin tagging (FEAST). *Magn Reson Med* 2003; 50:599-607.
62. **Maldjian JA**, Laurienti PJ, Burdette JH. Precentral gyrus discrepancy in electronic versions of the Talairach atlas. *NeuroImage* 2004; 21:450-455.
63. Ances BM, McGarvey ML, Abrahams JM, **Maldjian JA**, Alsop DC, Zager EL, Detre JA. Continuous arterial spin labeled perfusion magnetic resonance imaging in patients before and after carotid endarterectomy. *J Neuroimaging*. 2004 Apr; 14(2):133-8.
64. Laurienti PJ, Kraft RA, **Maldjian JA**, Burdette JH, Wallace MT. Semantic congruence is a critical factor in multisensory behavioral performance. *Exp Brain Res* 2004; 158:405-414.
65. Laurienti PJ, Burdette JH, **Maldjian JA**, Wallace MT. Enhanced Multisensory Integration in Older Adults. *Neurobiology of Aging*. 2006 Aug; 27(8): 1155-63.
66. *Ryali S*, *Casanova R*, Laurienti PJ, Peiffer AM, **Maldjian JA**. Estimation of False Discovery Rates for Wavelet-Denoised Statistical Parametric Maps. *Neuroimage* 2006, 33, 72-84
67. Maravilla KR, **Maldjian JA**, Schmalfluss IM, Kuhn MJ, Bowen BC, Wippold FJ 2nd, Runge VM, Knopp MV, Kremer S, Wolansky LJ, Anzalone N, Essig M, Gustafsson L. Contrast enhancement of central nervous system lesions: multicenter intraindividual crossover comparative study of two MR contrast agents. *Radiology* 2006 240(2):389-400.

68. Zimmerman RD, **Maldjian JA**, Brun NC, Horvath B, Skolnick BE. Radiologic estimation of hematoma volume in intracerebral hemorrhage trial by CT scan. *AJNR* 2006 27(3):666-70.
69. Kuhn MJ, Picozzi P, **Maldjian JA**, Schmalfuss IM, Maravilla KR, Bowen BC, Wippold FJ 2nd, Runge VM, Knopp MV, Wolansky LJ, Gustafsson L, Essig M, Anzalone N.J Evaluation of intraaxial enhancing brain tumors on magnetic resonance imaging: intraindividual crossover comparison of gadobenate dimeglumine and gadopentetate dimeglumine for visualization and assessment, and implications for surgical intervention. *Neurosurg* 2007 106(4):557-66.
70. *Casanova R*, *Ryali S*, *Baer A*, Laurienti PJ, Burdette JH, Hayasaka S, Flowers F, Wood J, **Maldjian JA**. Biological Parametric Mapping: A Statistical Toolbox for Multi-Modality Brain Image Analysis. *Neuroimage* 2007, Vol. 34,137-143.
71. *Hugenschmidt CE*, *Peiffer AM*, Kraft RA, Casanova R, Deibler AR, Burdette JH, **Maldjian JA**, Laurienti PJ. Relating imaging indices of white matter integrity and volume in healthy older adults. *Cerebral Cortex* 2007 18(2), 433-42.
72. *Peiffer AM*, *Hugenschmidt CE*, **Maldjian JA**, Casanova R, Srikanth R, Hayasaka S, Burdette JH, Kraft RA, Laurienti PJ. (2007) Aging and the interaction of sensory cortical function and structure. *Human Brain Mapping*
73. *Casanova R*, *Ryali S*, Serences J, Yang L, Kraft R, Laurienti PJ, **Maldjian JA**. The impact of temporal regularization on estimates of the BOLD hemodynamic response function: a comparative analysis. *NeuroImage* 2008; 40:1606-18.
74. Underhill HR, Yuan C, Terry JG, Chen H, Espeland MA, Hatsukami TS, Saam T, Chu B, Yu W, Oikawa M, Takaya N, Yarnykh VL, Kraft RA, Carr JJ, **Maldjian JA**, Tang R, Crouse JR 3rd. Differences in Carotid Arterial Morphology and Composition Between Individuals with and Without Obstructive Coronary Artery Disease; A Cardiovascular Magnetic Resonance Study. *J Cardiovasc Magn Reson*, 2008; June 12;10 (1);31.
75. *Peiffer AM*, **Maldjian JA**, Laurienti PJ. Resurrecting Brinley Plots for a Novel Use: Meta-Analyses of Functional Brain Imaging Data in Older Adults. *International Journal of Biomedical Imaging*, vol. 2008, Article ID 167078, 7 pages, doi:10.1155/2008/167078.
76. *Mozolic JL*, *Joyner D*, *Hugenschmidt CE*, *Peiffer AM*, Kraft RA, **Maldjian JA**, Laurienti PJ. Cross-modal deactivations during modality-specific selective attention. *BMC Neurology*, 2008; 8:35
77. Rowley HA, Scialfa G, Gao PY, **Maldjian JA**, Hassell D, Kuhn MJ, Wippold FJ 2nd, Gallucci M, Bowen BC, Schmalfuss IM, Ruscalleda J, Bastianello S, Colosimo C. Contrast-enhanced MR imaging of brain lesions: a large-scale intraindividual crossover comparison of gadobenate dimeglumine versus gadodiamide. *AJNR Am J Neuroradiol*. 2008 Oct; 29(9): 1684-91.
78. *Hairston WD*, Hodges DA, **Maldjian JA**, Burdette JH. Closing the mind's eye: deactivation of visual cortex related to auditory task difficulty. *NeuroReport* 2008,19 (2), 151-54.
79. **Maldjian JA**, Laurienti PJ, Burdette JH, Kraft RA. Clinical Implementation of Spin Tag Perfusion MRI. *JCAT* 2008 32(3): 403-406.
80. *Pollock JM*, *Deibler AR*, *West TG*, Burdette JH, Kraft RA, **Maldjian JA**. Arterial Spin Labeled MRI in hyperperfused seizure focus: a Case Report. *JCAT* 2008 32(2):291-292.
81. *Deibler AR*, *Pollock JM*, Kraft RA, Tan H, Burdette JH, **Maldjian JA**. Arterial Spin Labeling in Routine Clinical Practice Part I: Technique and Artifacts. *AJNR* 2008 29:1228-34.
82. *Deibler AR*, *Pollock JM*, Kraft RA, Tan H, Burdette JH, **Maldjian JA**. Arterial Spin Labeling in Routine Clinical Practice Part II: Hypoperfusion Patterns. *AJNR* 2008 29:1235-41.
83. *Deibler AR*, *Pollock JM*, Kraft RA, Tan H, Burdette JH, **Maldjian JA**. Arterial Spin Labeling in Routine Clinical Practice Part III: Hyperperfusion Patterns. *AJNR* 2008 29:1428-35.
84. *Pollock JM*, *Whitlow CT*, *Deibler AR*, Burdette JH, Kraft RA, Tan H, **Maldjian JA**. Anoxic Injury Associated Cerebral Hyperperfusion Identified with Arterial Spin Labeled MRI. *AJNR* 2008 29:1302-7.
85. *Pollock JM*, *Deibler AR*, Burdette JH, Kraft RA, Tan H, Evans AB, **Maldjian JA**. Migraine associated cerebral hyperperfusion with arterial spin-labeled MR imaging. *AJNR* 2008 29:1494-7.
86. *Hairston WD*, **Maldjian JA**. An adaptive staircase procedure for the E-Prime programming environment. *Comput Methods Programs Biomed*. 2009 Jan;93(1): 104-8.
87. Rumboldt Z, Rowley HA, Steinberg F, **Maldjian JA**, Ruscalleda J, Gustafsson L, Bastianello S. Multicenter, double-blind, randomized, intra-individual crossover comparison of gadobenate dimeglumine and gadopentetate dimeglumine in MRI of brain tumors at 3 tesla. *J Magn Reson Imaging*. 2009 Apr;29(4):760-7.
88. *Addicott MA*, *Yang LL*, *Peiffer AM*, Burnett LR, Burdette JH, Chen MY, Hayasaka S, Kraft RA, **Maldjian JA**, Laurienti PJ. The effect of daily caffeine use on cerebral blood flow: how much caffeine can we tolerate? *Human Brain Mapping* 2009 (in press).

89. *Pollock JM, Deibler AR, Whitlow CT, Burdette JH, Kraft RA, Tan H, Maldjian JA.* Hypercapnia-Induced Cerebral Hyperperfusion: An Underrecognized Clinical Entity. *AJNR*, 2009 Feb;30(2):378-85.
90. *Pollock JM, Whitlow CT, Burdette JH, Kraft RA, Tan H, Maldjian JA.* Pulsed Arterial Spin Labeled MRI Evaluation of Tuberosus Sclerosis. *AJNR* 2009 Apr; 30(4):815-20.
91. *Tan H, Maldjian JA, Burdette JH, Deibler AR, Pollock JM, and Kraft RA,* A Fast, Effective Filtering Method for Improving Clinical Pulsed Arterial Spin Labeling MRI. *JMRI*, 2009, Apr 22;29(5):1134-1139.
92. **Maldjian JA, Baer AH, Kraft RA, Laurienti PJ, Burdette JH.** Fully automated processing of fMRI data in SPM: from MRI scanner to PACS. *Neuroinformatics*. 2009 Spring;7(1):57-72.
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Note: *Fellows/Residents/post-doc/students in italics*

Book Chapters, Reviews, Editorials

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Grant Support

CURRENT

R01 NS 0075107 (PI: Maldjian/Freedman/Divers) 2011-2016
 NIH: Cerebrovascular Disease and Cognitive Performance in African Americans

This project will evaluate cerebrovascular disease (CBVD) in African Americans (AA) with type 2 diabetes, and compare results to existing MRI and cognitive data in a cohort of European Americans with type 2 diabetes. The goal is to determine whether racial differences exist in the relationship between CBVD and cognitive performance and to identify the environmental and inherited causes of CBVD in the high risk and understudied AA community.

R01 NS058700 (PI: Bowden) 2008-2013
 NIH: Cerebrovascular Disease and Cognition in Diabetes

The relationships between MRI measures (white matter lesion score, diffusion anisotropy index, mean white matter perfusion, total brain volume, total white matter volume, total gray matter volume), cognitive ability, and extensive clinical measures available from the Diabetes Heart Study will be evaluated to identify correlates of cerebrovascular disease and cognitive ability.

COMPLETED

R01 (PI: Maldjian) 8/01/04-05/31/10
 NIBIB: 1R01EB004673-01A2 \$2,296,568
 Integrated Tool for Biological
 Parametric Mapping

The major goal of this proposal is to develop a scaleable tool for the integration of multimodal imaging data into an extensible user-friendly environment. In this Phase I proposal this tool will be used to correlate activation patterns for a cross-modal sensory processing task in specific areas of the temporoparietal cortex with diffusion and spectroscopy imaging in a cohort of dyslexics. Dr. Maldjian's role is to develop the software tools, and perform the data analysis.

R03 (PI: **Maldjian**) 8/01/08-7/31/10
NIBIB/NIMH EB008670 \$100,000
WFU_Pickatlas Interoperability

The major goal of this proposal is to further develop the Pickatlas software to include non-human primate atlases and extend operability beyond the SPM platform.

R01 Supplement -Training Grant (PI: **Maldjian**) 07/01/2006-06/30/2007
NIBIB: 1R01EB004673-02S2
Uncovering Brain Anatomy/Function Relationships
using Biologic Parametric Mapping

The objective of this supplement is to provide a structured year of research training to a clinical resident (Dr. Andrew Deibler) under the mentorship of a NIBIB funded investigator (Dr. Maldjian). The training year will include didactic course work, mastery of brain imaging research skills, and an introduction to basic neurophysiologic research. In this supplement, the BPM toolbox developed in the parent grant will be used to perform a multiple variable regression analysis to evaluate age-related relationships between functional MRI activation and structural anatomy.

R01 Supplement -Training Grant (PI: **Maldjian**) 01/01/2006-12/31/2006
NIBIB: 1R01EB004673-02S1
Cerebral Diffusion and Perfusion
Correlation using Biologic Parametric
Mapping

The objective of this supplement is to provide a structured year of research training to a clinical resident (Dr. John Kaufman) under the mentorship of a NIBIB funded investigator (Dr. Maldjian). The training year will include didactic course work, mastery of brain imaging research skills, and an introduction to translational genomics research. In this supplement, the BPM toolbox developed in the parent grant will be used to combine information from diffusion imaging and perfusion imaging in a diabetic patient population.

R01 EB03880 (Laurienti) 4/18/05-1/31/09
NIBIB \$1,650,596
Effect of caffeine on functional and
perfusion MRI

The broad, long-term objective of this project is to gain a more thorough understanding of the effects of acute and chronic caffeine consumption on brain activity and blood flow. Dr. Maldjian's role is to assist in the data analysis.

N01 HC 95182 (Williamson) 2003-2009
NIH \$793,373
Accord MIND - Southeast

This aspect of ACCORD-MIND oversees 12 field sites in the southeastern U.S. recruiting and following participants to understand the relative impact of aggressive glycemic, blood pressure and lipid therapy on cognition in persons with diabetes and to further define the relationship between diabetes and cognitive function through cognition and MRI assessment. Dr. Maldjian's role is to assist in the interpretation of the MRI data.

R01 HL 076378-01 (Crouse) 2004-2008
NICHD/NCMRR \$1,433,900.00
Carotid Atherosclerosis Progression (total multicenter
Study (CAMP) study budget)

The major goal of this proposal is to use MRI to test the hypothesis that extracranial carotid (EC) wall thickness:area:volume and plaque thickness:area:volume (ECMRI) are greater in coronary artery

disease(CAD) compared to no CAD patients at baseline, progress faster over 2 years, and that risk factors (including inflammatory markers, genetic factors) impact more on progression in CAD cases and that fast progression relates to incident cardiovascular events. Dr. Maldjian's role is to assist in the interpretation of the MRI data.

N01-HC-95165 Burke (PI)	1999-2009
NIH/NHLBI	\$5,992,754
Multi Ethnic Study of Atherosclerosis -Field Center	

This study seeks to identify characteristics of persons with subclinical atherosclerosis that predict progression to clinical heart disease events. In addition, we will seek to determine characteristics related to clinical heart disease; to identify new measures of subclinical disease; and to develop methods for identifying the highest risk asymptomatic persons for application in future screening and intervention studies. Dr. Maldjian's role is to assist in the interpretation of the carotid MRI data.

R01 HD 40984-01 (Wittenberg)	2002-2005
NICHD/NCMRR	\$1,906,960.00
Motor Map Plasticity in ConstraintTherapy for Stroke	(total multicenter study budget)

The major goal of this proposal is to evaluate the effect of a well-defined physical intervention (constraint-induced movement therapy) on cortical motor reorganization following stroke using transcranial magnetic stimulation and function magnetic resonance imaging. This project will validate the concept that physiological cortical motor changes after stroke are closely correlated with motor improvement and are influenced by a physical intervention. Dr. Maldjian's role is to assist in the functional MRI data acquisition and analysis using existing tools.

P01 HD 35955 (Pons)	12/98-11/03
NICHD/NCMRR	
Project 1: Cortical Plasticity after stroke: a Magnetic Stimulation Mapping Study	

The major goal of the subproject of this program project grant is to demonstrate the neurophysiological changes that occur with recovery of motor function after stroke using transcranial magnetic stimulation and correlate those changes with functional MRI. Dr. Maldjian's role is to assist in the functional MRI data acquisition and analysis using existing tools.

Title: "American Roentgen Ray Scholar Program"

Grant sponsor: American Roentgen Ray Society

Principal Investigator: Joseph A Maldjian, M.D.

Period: 07/01/1999 - 06/30/2000

Overall Aim: Career Development in Neuroimaging. Specific Aims: To spend a year of intensive study in areas closely related to functional MRI. This included MRI pulse programming for the GE Signa scanner, spin-tag perfusion imaging, cognitive neuroscience, and neurophysiology (program of study at the University of Pennsylvania). Supplemental course work included Mathematical Statistics (Stats 430 and 431), Cognitive Neuroscience (INSC 590), and Recovery after Neural Injury (INSC 618).

5% salary support (\$6,295), PI Dr. Bruce Turetsky, "Olfactory ERPS & Fronto-Limbic Pathology in Schizophrenia", NIH. 1998-199.

Principal Investigator, J. Maldjian, Radiology Departmental Research Grant, "High Resolution Functional MR imaging at 4 Tesla" \$9960. 1998-1999.

Principal Investigator, J. Maldjian, GE Medical Systems minigrant, "Subclinical Stroke in Carotid Angiography" \$15,836. 1998-1999.

Principal Investigator, J. Maldjian, University of Pennsylvania Research Foundation, "Functional MRI in Neurosurgical Patients" \$30,000. 1998-1999.

Principal Investigator, J. Maldjian, UMDNJ Foundation, "Real-time intraoperative functional MRI in patients with brain tumors." \$25,000. 1997-1998.

Co-investigator with A. Kalnin, MD, as principal investigator, UMDNJ Foundation, "Diffusion and Perfusion imaging in intractable seizures", \$25,000. 1997-1998.

Co-investigator with G. Lange, Ph.D. as principal investigator, Chronic Fatigue Syndrome Cooperative Center NIH pilot project mini-grant. "Functional magnetic resonance imaging of auditory processing deficits in Chronic Fatigue Syndrome" \$22,500. 1995-1997. GR # 4116309921.

Abstracts/Poster Presentations

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2. **Maldjian JA**, and Hermann G. Expert Systems in Radiologic Diagnosis: An Application Program, Fourteenth Annual Symposium on Computer Applications in Medical Care, November, 1990, Washington, DC.
3. **Maldjian JA**, and Hermann G. Bonepro: A PC-based Teaching Tool for the Analysis of the Solitary Bone Tumor. American Roentgen Ray Society 92nd Annual Meeting, May, 1992, Orlando, Florida.
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7. Howard RS, **Maldjian JA**, van Buchem M, Alsop D, Detre J, D'Esposito M, Listerud J, Judy K, Atlas SW. Anatomical and Semiquantitative Analysis of Speech and Motor Cortex Activity using BOLD Functional MR Imaging (fMRI) in Patients with Infiltrative Gliomas, *ASNR*, April 1995, Chicago, Illinois.
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9. Zukerberg BW, Tse K, Buchpiguel C, Ozgen P, Atlas S, **Maldjian JA**, Howard RS, Alavi A. Comparison of Dynamic Thallium Brain SPECT and MRI in the Diagnosis of Recurrent Brain Tumor from Radiation Necrosis. *Annual Meeting of the Society of Nuclear Medicine*, June 1995, Minneapolis, Minnesota.
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19. Mosier K, Liu WC, **Maldjian JA**. Functional MRI of swallowing. *SMRM*, April 1997, Vancouver, Canada.
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65. Hugenschmidt CE, Peiffer AM, Casanova R, Maldjian JA, Burdette JH, & Laurienti PJ. Preservation of Default Mode Functioning in Healthy Aging Adults. Program No. 49TH. 2007 Abstract, Human Brain Mapping Conference, Chicago, IL: 2007.
66. Yang LL, Casanova R, Peiffer AM, Addicott MA, Kraft RA, Maldjian JA, Burdette JH, Hayasaka S, Burnett LR, Chen MY & Laurienti PJ. Evaluating BOLD signal time course in pharmacological functional MRI. Program No. 119.6. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2007. Online.
67. Addicott MA, Peiffer AM, Yang LL, Kraft RA, Maldjian JA, Burdette JH, Burnett LR, Chen MY, & Laurienti PJ. The effects of caffeine on cerebral Perfusion in Withdrawal and Native States. Program No. 369M. 2007 Abstract, Human Brain Mapping Conference, Chicago, IL: 2007.
68. Yang L, Casanova R, Peiffer A, Addicott M, Kraft RA, Maldjian JA, Burdette JH, Hayasaka S, Burnett L, Chen M, Laurienti PJ. "Functional MRI time course metrics as a measure of neural activity when drugs affect vascular tone." Society for Neuroscience, 2007. Abstract and Oral Presentation.
69. Ramon Casanova, Satoru Hayasaka, Paul J. Laurienti, Joseph A. Maldjian Multiple hypotheses testing and family-wise error rate (FWER) control in the context of SPM analyses with voxel-wise covariates: A simulation study.
70. Ramon Casanova, Srikanth Ryali, John T. Serences, Paul J. Laurienti, Joseph A. Maldjian A comparative study of hemodynamic response function (HRF) deconvolution methods.
71. Burnett L, Kraft RA, Maldjian JA, Burdette JH, Chen M, Yang L, Laurienti PJ. "Caffeine Induces BOLD Signal Decreases in Subjects Without Pre-scan Withdrawal." Organization for Human Brain Mapping, 2006. Abstract and Poster Presentation.
72. Whitlow CT, Pollock JM, Mussat-Whitlow BJ, Kraft RA, Tan H, Burdette JH, Maldjian JA. Changes in Global Rates of Cerebral Perfusion Associated with Normal Development as Measured with MR Arterial Spin Labeling. American Society of Neuroradiology 46th Annual Meeting, 2008, New Orleans, Louisiana.
73. Pollock JM, West TG, Deibler A, Kraft R, Tan H, Maldjian JA. MRI Perfusion Imaging: from ASL to DSC. Southern Radiological Conference. Mobile, AL. 2008.
74. Pollock JM, West TG, Deibler A, Kraft R, Maldjian JA,. Arterial Spin Labeling in Stroke management and Brain Tumor Evaluation: Experience in over 6000 cases. American Society of Functional Neuroradiology. Orlando. 2008.
75. Whitlow CT, Pollock JM, Kraft RA, Mussat-Whitlow B, Tan H, Burdette JH, Maldjian JA. Age-Related Changes in Global Rates of Cerebral Perfusion in Normal Children, Adolescents, and Young Adults: A Magnetic Resonance Arterial Spin Labeling Investigation. American Society of Functional Neuroradiology. Orlando 2008.
76. Whitlow CT, Pollock JM, Kraft RA, Mussat-Whitlow B, Tan H, Burdette JH, Maldjian JA. Evolving Temporal Changes in Cerebral Blood Flow Associated with Posterior Reversible Encephalopathy Syndrome: A Magnetic Resonance Arterial Spin Labeling Investigation. American Society of Functional Neuroradiology. Orlando 2008.
77. Pollock JM, West TG, Deibler A, Kraft R, Tan H, Maldjian JA. Cerebral Hyperperfusion with Arterial Spin Labeling: Clinical Experience in over 2000 cases. Educational Exhibit #364. American Roentgen Ray Society. Washington D.C. 2008.
78. Tan H, Maldjian JA, Burdette JH, Deibler AR, Pollock JM, Kraft RA. PASL Filtering: A Method of Improving Clinical Perfusion Imaging. Presented at ISMRM, Toronto, Canada. May 2008.
79. Hayasaka S, Laurienti P, Maldjian J. A Framework for Analyzing and Visualizing Multi-Modality Cross-Correlation. Organization for Human Brain Mapping Conference, Melbourne, Australia. June 2008.
80. Hairston, W. D., Casanova, R., Burdette, J., Wood, F., & Maldjian, J. (June, 2008). Cross-modal temporal integration in dyslexia explored with Biological Parametric Mapping. *Annual Meeting of Organization for Human Brain Mapping*, June 2008, Melbourne, Australia.
81. Yang LL, Addicott MA, Peiffer AM, Kraft RA, Maldjian JA, Burdette JH, Burnett LR, Chen MY, & Laurienti PJ. Caffeine is not a universal BOLD contrast booster. 2008 Abstract, Human Brain Mapping Conference, Melbourne, Australia: 2008.
82. Addicott MA, Yang LL, Casanova R, Peiffer AM, Maldjian JA, Burdette JH, Burnett LR, & Laurienti PJ. The effects of chronic caffeine use on the temporal dynamics of the BOLD signal. 2008 Abstract, Human Brain Mapping Conference, Melbourne, Australia: 2008.

83. Whitlow CT, Pollock JM, Mussat-Whitlow BJ, Kraft RA, Tan H, Burdette JH, Maldjian JA. Changes in Global Rates of Cerebral Perfusion Associated with Normal Development as Measured with MR Arterial Spin Labeling. American Society of Neuroradiology 46th Annual Meeting, 2008, New Orleans, Louisiana.
84. Shear, S.K., Hairston, W.D., Wood, F. Flowers, D.L., Maldjian, J, Laurienti, P., and Burdette, J. (July 2008). Measuring the Neural Correlates of Dyslexia with Diffusion Tensor Imaging. Linguistics Society of America Summer Meeting, Ohio State University, Columbus, Ohio.
85. Pollock JM, Deibler A, Burdette JH, Kraft A, Tan H, Evans AB, Maldjian JA. Arterial Spin Labeled MRI in Migraine Evaluation. American Society of Neuroradiology. New Orleans 2008.
86. W.D. Hairston, J.H. Burdette, F. B. Wood, M.T. Wallace, J.A. Maldjian. (Nov 2008). Biological Parametric Mapping reveals an interaction in cross-modal suppression related to dyslexia. *Annual Meeting of the Society for Neuroscience*, November 2008, Washington, DC.
87. Hodges, D., Hairston, W. D., Maldjian, J, and Burdette, J. (August 2008). Cross-modal Deactivations are Minimized in Conductors. International Conference on Music Perception and Cognition, Sapporo, Japan.
88. Whitlow CT, Pollock JM, Mussat-Whitlow BJ, Kraft RA, Tan H, Burdette JH, Maldjian JA. Age-Related Changes in Global Rates of Cerebral Perfusion From Birth to Age 92: A Magnetic Resonance Arterial Spin Labeling Investigation. Radiological Society of North America's 94th Scientific Assembly and Annual Meeting, 2008, Chicago, Illinois.
89. Whitlow CT, Casanova R, Wagner B, Maldjian JA. Effect of resting-state fMRI-BOLD acquisition duration on small world networks. Second Biennial International Conference on Resting-State Functional Brain Connectivity, October 2010, Milwaukee, Wisconsin.
90. Whitlow CT, Maldjian JA. Effect of Resting-State fMRI Repetition Time on Accuracy of Computed Graph Theory Metrics of Brain Network Connectivity. American Society for Functional Neuroradiology Annual Meeting, 2011, Phoenix, Az (Best poster award).
91. Whitlow CT, Maldjian JA. Effect of Resting-State fMRI BOLD Acquisition Duration on Accuracy of Computed Graph Theory Metrics of Brain Network Connectivity. American Society for Functional Neuroradiology Annual Meeting, 2011, Phoenix, Az.
92. Urban JE, Maldjian JA, Whitlow CT, Takhounts EG, Stitzel JD. Semi-Automated Landmark Identification Using Label Maps in an MNI Atlas. OHSU Injury Biomechanics Symposium. May, 2011.
93. Luis R, Shumaker SA, Williamson J, Wagner B, Whitlow CW, Maldjian JA, Espeland MA. A new High-dimensional machine learning approach for identifying Alzheimer's Disease from MRI structural images. ISMRM Annual Meeting, May 2011, Montreal, Canada.
94. Whitlow CT, Maldjian JA. Characterization of Glial Cell Intratumoral fMRI Resting-State Networks Using Graph Theoretical Analysis. Cancer Imaging and Radiation Therapy Symposium. April 2011, Atlanta, GA.
95. Whitlow CT, Maldjian JA. Graph Theory Network Metrics Computed from Clinical Task-based fMRI acquired during presurgical motor and language mapping of patients with brain tumors. Cancer Imaging and Radiation Therapy Symposium. April 2011, Atlanta, GA.
96. Whitlow CT, Maldjian JA. Altered functional network connectivity in patients with brain tumors: a resting-state fMRI and graph theory investigation. Cancer Imaging and Radiation Therapy Symposium. April 2011, Atlanta, GA.
97. Whitlow CT, Maldjian JA. Effect of resting-state fMRI repetition time on accuracy of computed graph theory network metrics. American Society of Neuroradiology 49th Annual Meeting, 2011, Seattle, Washington.
98. Whitlow CT, Maldjian JA. Pulsed arterial spin labeling time-series data can be used to accurately compute graph theory metrics of global distributed brain connectivity. American Society of Neuroradiology 49th Annual Meeting, 2011, Seattle, Washington.
99. Whitlow CT, Maldjian JA. Characterization of glial cell intratumoral fMRI resting-state networks using graph theoretical analysis: A preliminary investigation. American Society of Neuroradiology 49th Annual Meeting, 2011, Seattle, Washington.
100. Urban JE, Maldjian JA, Moreno DP, Whitlow CT, Stitzel JD. Eight Annual World Congress on Brain, Spinal Cord Mapping and Image Guided Therapy (IBMISPS) Generation of an MNI Atlas in Simulated Injury Monitor (SIMon) Finite Element Head Model Space. June, 2011, San Francisco, CA.

Invited Talks

International and National Meetings

Maldjian JA, Hot Topics: CNS Protocols, International Society of Magnetic Resonance in Medicine Seventh Annual Meeting, May, 1999, Philadelphia, PA.

- Maldjian JA**, Imaging and Functional MRI in Stroke, The Eastern Neuroradiological Society 10th Annual Meeting, August 1998, Baltimore, MD.
- Maldjian JA**, Functional MRI, Diffusion Imaging, Perfusion Imaging, Functional Neuroanatomy, Acute Stroke Imaging, Imaging of Brain Trauma, Imaging in HIV and Related Infections. National Magnetic Resonance Imaging Symposium and Workshop. October, 1999. Lucknow, India.
- Maldjian JA**. Moderator. Neuroradiology Speak, Hear, See. RSNA Chicago, Ill. November 2000.
- Maldjian JA**, Arterial Spin Label MRI: Clinical Applications. American Society of Functional Neuroradiology, San Antonio, Texas, February, 2009.
- Maldjian JA**, Arterial Spin Label MRI: Clinical Applications. International Society of Magnetic Resonance in Imaging, Honolulu, Hawaii, April, 2009.
- Maldjian JA**, Arterial Spin Labeling. Radiologic Society of North America Annual Meeting. Chicago, Ill. December, 2009.
- Maldjian JA**, Perfusion Imaging: How Does it Work and What Should I Use. International Society of Magnetic Resonance in Imaging Annual Meeting. Stockholm, Sweden May, 2010.
- Maldjian JA**, Arterial Spin Label MRI: Clinical Applications. American Society of Functional Neuroradiology, Phoenix, AZ, February, 2011.
- Maldjian JA**, Perfusion MRI (ASL): Case Review. International Society of Magnetic Resonance in Imaging, Montreal, CA, May, 2011.
- Maldjian JA**, Arterial Spin Label MRI. American Society of Neuroradiology, Seattle, WA, June, 2011.
- Maldjian JA**, Resting State fMRI: Methodologic Issues and clinical applications. American Society of Neuroradiology, Seattle, WA, June, 2011.
- Maldjian JA**, President's Introductory/Closing Comments. American Society of Functional Neuroradiology, Orlando, Florida, March, 2012.
- Maldjian JA**, Implementing Functional Imaging in the Clinical Setting: ASL. American Society of Neuroradiology, New York, NY, April, 2012.
- Maldjian JA**, Applications: ASL in Neuroradiology. International Society of Magnetic Resonance in Imaging, Melbourne, Australia, May, 2012.
- Maldjian JA**, Machine Learning in Neuroradiology I. International Society of Magnetic Resonance in Imaging, Melbourne, Australia, May, 2012.
- Maldjian JA**, Resting State fMRI in Preoperative Planning (Breakout Session). ISMRM-ASNR Workshop: Advanced Brain Imaging: Beyond State-of-the-Art, Mclean, Virginia, September, 2012.

Grand Rounds/Seminars

- Maldjian JA**, An Overview of Functional MRI, VA CFS Center, February 1, 1996, East Orange, NJ.
- Maldjian JA**, Functional MRI: Current Concepts, Neurosurgical Grand Rounds, UMDNJ-University Hospital, March 1996, Newark, NJ.
- Maldjian JA**, Functional MRI, Neuroradiology Club, UMDNJ-NJMS January 1997, Newark, NJ.
- Maldjian JA**, Functional MRI: Diffusion, Perfusion, Activation Imaging. Grand Rounds, Department of Radiology, Hospital of the University of Pennsylvania, January 1998, Philadelphia, Pa.
- Maldjian JA**, Functional MRI, Imaging in Engineering and Medicine. Institute for research in Cognitive Science, Hospital of the University of Pennsylvania, April 13, 1998.
- Maldjian JA**, Functional MRI. Neurosurgical Grand Rounds, Hospital of the University of Pennsylvania, March 2, 2000
- Maldjian JA**, Functional MRI Workshop, UMDNJ-New Jersey Medical School, May 2001, Newark, NJ.
- Maldjian JA**, Functional Connectivity. Wake Forest University School of Medicine, Winston-Salem, NC, July 11, 2001.
- Maldjian JA**, Functional MRI. Radiology Grand Rounds. Wake Forest University School of Medicine, Winston-Salem, NC, January 9, 2002.
- Maldjian JA**, Functional MRI: Resistance is Futile. UCLA School of Medicine, Los Angeles, CA, June 9, 2003.
- Maldjian JA**, Biologic Parametric Mapping: The Next Generation (of software tools). Wake Forest University School of Medicine, Winston-Salem, NC, August 13, 2003.

- Maldjian JA**, Arterial Spin Label MRI: Clinical Applications. Radiology Grand Rounds. Wake Forest University School of Medicine, Winston-Salem, NC, February, 2009.
- Maldjian JA**, Arterial Spin Label MRI: Clinical Applications. Radiology Visiting Professor. Medical College of Virginia, Richmond, VA, April, 2009.
- Maldjian JA**, Resting State fMRI: Methodologic Issues and clinical applications. Neuroradiology fellows Seminar, Wake Forest University School of Medicine, September, 2011.
- Maldjian JA**, Measuring and Managing Productivity. Vice Chairs of Radiology Research Meeting. Oak Brook, Ill, October, 2011.
- Maldjian JA**, Applications of ASL to Brain Imaging. Annual Newton Lecture. UCSF Department of Radiology. San Francisco, California, October, 2012.
- Maldjian JA**, Advanced Applications: Machine Learning and Resting State fMRI. UCSF Department of Radiology. San Francisco, California, October, 2012.

Postgraduate Courses

- Maldjian, JA**. Functional Neuroanatomy. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, Sep.1997.
- Maldjian, JA**. Functional MRI. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, Sep.1997.
- Maldjian, JA**. Brain Trauma. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, Sep.1997.
- Maldjian, JA**. Supratentorial Neoplasms. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, Sep.1997.
- Maldjian, JA**. Functional Neuroanatomy. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, Sep.1997.
- Maldjian, JA**. Functional Anatomy: Brain and Spine. Presented at the University of Pennsylvania Winter Continuing Education Meeting (Neuroradiology in Paradise). Kona, Hawaii, Feb 1998.
- Maldjian, JA**. Functional MRI. Presented at the University of Pennsylvania Winter Continuing Education Meeting (Neuroradiology in Paradise). Kona, Hawaii, Feb 1998.
- Maldjian, JA**. Brain Trauma. Presented at the University of Pennsylvania Winter Continuing Education Meeting (Neuroradiology in Paradise). Kona, Hawaii, Feb 1998.
- Maldjian, JA**. Supratentorial Neoplasms. Presented at the University of Pennsylvania Winter Continuing Education Meeting (Neuroradiology in Paradise). Kona, Hawaii, Feb 1998.
- Maldjian JA**. Functional MRI: Applications, Presented at the University of Pennsylvania Continuing Education Meeting (ABC's of MRI). Philadelphia, PA, June 1998.
- Maldjian, JA**. Functional Neuroanatomy. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, September 24-26, 1998.
- Maldjian, JA**. Functional MRI: Diffusion, Perfusion, EPI Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, September 24-26, 1998.
- Maldjian, JA**. Supratentorial Neoplasms. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: The Essentials). The Rittenhouse, Philadelphia, PA, September 24-26, 1998..
- Maldjian, JA**. Functional Neuroanatomy. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 3-7, 1999.
- Maldjian, JA**. Brain Trauma. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 3-7, 1999.
- Maldjian, JA**. Supratentorial Neoplasms. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 3-7, 1999.
- Maldjian, JA**. Brain Tumors. Presented at the University of Pennsylvania Summer Continuing Education Meeting (Clinical Magnetic Resonance Imaging). Hamilton Princess, Hamilton, Bermuda, June 7-11,1999.
- Maldjian, JA**. Functional MRI: Diffusion, Perfusion, EPI. Presented at the University of Pennsylvania Summer Continuing Education Meeting (Clinical Magnetic Resonance Imaging). Hamilton Princess, Hamilton, Bermuda, June 7-11,1999.

Maldjian, JA. Brain Trauma. Presented at the University of Pennsylvania Summer Continuing Education Meeting (Clinical Magnetic Resonance Imaging). Hamilton Princess, Hamilton, Bermuda, June 7-11,1999.

Maldjian JA. MRA : CNS Applications: Applications, Presented at the University of Pennsylvania Summer Continuing Education Meeting (Clinical Magnetic Resonance Imaging). Hamilton Princess, Hamilton, Bermuda, June 7-11,1999.

Maldjian, JA. Functional Anatomy of Brain and Spine. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 23-25, 1999.

Maldjian, JA. EPI, Diffusion and fMRI Concepts. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 23-25, 1999.

Maldjian, JA. Brain Case Review. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 23-25, 1999.

Maldjian, JA. Supratentorial Neoplasms. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 23-25, 1999.

Maldjian, JA. Functional MRI Applications. Presented at the University of Pennsylvania Continuing Education Meeting (Advanced MRI Fellowship). Hospital of the University of Pennsylvania, December, 1999.

Maldjian, JA. Functional MRI: Diffusion, Perfusion and BOLD Imaging. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 1-5, 2000.

Maldjian, JA. Imaging of Brain Trauma. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 1-5, 2000.

Maldjian, JA. Imaging in HIV and Related Infections. . Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 1-5, 2000.

Maldjian, JA. New MR Imaging Techniques. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, May 1-5, 2000.

Maldjian, JA. Functional Anatomy of Brain and Spine. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 21-23, 2000.

Maldjian, JA. EPI, Diffusion and fMRI Concepts. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 21-23, 2000.

Maldjian, JA. Brain Case Review. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 21-23, 2000.

Maldjian, JA. Supratentorial Neoplasms. Presented at the University of Pennsylvania Continuing Education Meeting (Neuroradiology: More Than The Essentials). The Rittenhouse, Philadelphia, PA, September 21-23, 2000.

Maldjian, JA. Functional MRI. Presented at the University of Pennsylvania Continuing Education Meeting (Neuro MR Fellowship). Hospital of the University of Pennsylvania, September 25-28, 2000.

Maldjian JA. Supratentorial Neoplasms. Presented at the Wake Forest University Continuing Education Summer Radiology Meeting. Hilton Head Island, South Carolina, June 24-28, 2002.

Maldjian JA. Brain Trauma. Presented at the Wake Forest University Continuing Education Summer Radiology Meeting. Hilton Head Island, South Carolina, June 24-28, 2002.

Maldjian JA. Functional MRI. Presented at the Wake Forest University Continuing Education Summer Radiology Meeting. Hilton Head Island, South Carolina, June 24-28, 2002.

Maldjian JA. Supratentorial Neoplasms. Presented at the Wake Forest University Continuing Education Winter Radiology Meeting. Curaçao, Netherlands Antilles, January 25-31, 2003.

Maldjian JA. Brain Trauma. Presented at the Wake Forest University Continuing Education Winter Radiology Meeting. Curaçao, Netherlands Antilles, January 25-31, 2003.

Maldjian JA. Neuroimaging in ADS. Presented at the Wake Forest University Continuing Education Winter Radiology Meeting. Curaçao, Netherlands Antilles, January 25-31, 2003.

Maldjian JA. Supratentorial Neoplasms. Presented at the Wake Forest University Continuing Education Winter Neuroradiology Meeting. White Sulphur Springs, West Virginia, March 20-23, 2003.

Maldjian JA. Brain trauma. Presented at the Wake Forest University Continuing Education Winter Neuroradiology Meeting. White Sulphur Springs, West Virginia, March 20-23, 2003.

Maldjian JA. Neuroimaging at 3 Tesla. Presented at the Wake Forest University Continuing Education Winter Neuroradiology Meeting. White Sulphur Springs, West Virginia, March 20-23, 2003.

Trainees/Mentorship

Dr. Maldjian has successfully mentored and advised numerous neuroradiology fellows, post-docs, radiology residents and medical students. Some of these include:

Elizabeth Moody	BME graduate student 2011-present
Megan Johnston	BME graduate student 2011-present
Jay Koonce, MD	neuroradiology fellow 2011-2012
Greg Westcott	Wake Forest med student 2011
Fabricio Goncalves, MD	visiting neuroradiology fellow 2010
Chris Whitlow, MD PhD	neuroradiology fellow 2009-2010 (currently WFU faculty)
Meredith Addicott, PhD	neuroscience thesis dissertation committee member, 2008-2009
Christina Hugenschmidt, PhD	neuroscience thesis dissertation committee member, 2005-2008
Jeff Pollock, MD,	neuroradiology fellow 2006-2008 (currently OHSU faculty)
Srikanth Ryali, PhD	Post-doctoral fellow 2004 – 2005 (currently at Stanford)
Ramon Luis, Ph.D.	Post-doctoral fellow 2004-2008 (currently faculty at Wake Forest)
W. David Hariston, Ph.D.	Post-doctoral fellow 2006-2008 (currently at Army Research Lab)
Andrew Deibler, MD	research radiology trainee 2007 (private practice)
John Kaufman, MD	research radiology trainee 2006 (UCSF neurorad fellow)
Narter Ari, Ph.D.	grad student in Medical Engineering 2002-2003 (GE MRI engineer)
Neeraj Chopuri, M.D.	neuroradiology fellow 2001-2002 (private practice)
Aaron Field, M.D., PhD	neuroradiology fellow 2001 (faculty UW, Madison)
Gul Moonis, MD,	neuroradiology fellow 1998-2000, Penn (currently faculty BI)
Bidyut Pramanik, MD,	neuroradiology fellow 1998-2000, Penn (currently faculty NYU)
Ron Wolf, MD, PhD	neuroradiology fellow 1998-2000, Penn (currently faculty Penn)
Annette Nusbaum, MD	radiology resident 1997-98, UMDNJ (currently faculty, NYU)
David Hirschorn, MD	med student 1996-97, UMDNJ (director Rad Inform, Staten Island Hosp)

Certification/Professional Societies

1993	Board certified, Diagnostic Radiology, American Board of Radiology
1995	Member, Radiological Society of North America
1995	Member, American College of Radiology
1995	Senior Member, American Society of Neuroradiology
1995	Neuroradiology, Certificate of Added Qualification, American Board of Radiology
1998	Member, International Society for Magnetic Resonance in Medicine
2005	Maintenance of Certification, Neuroradiology, ABR

Licensure:

NC, NJ, PA, NY

PERSONAL INTEREST

Classically trained pianist. <http://fmri.wfubmc.edu/cms/maldjianMusic>