

**CURRICULUM VITAE**  
**JERROLD L. BOXERMAN, M.D., Ph.D., F.A.C.R.**

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EDUCATION

Undergraduate: Massachusetts Institute of Technology  
Cambridge, MA  
S.B. (*Electrical Engineering*)  
June 1989

Graduate: Massachusetts Institute of Technology  
Cambridge, MA  
S.M. (*Electrical Engineering and Computer Science*)  
June 1989

Massachusetts Institute of Technology  
Cambridge, MA  
Ph.D. (*Medical Engineering*)  
June 1995

Medical School: Harvard Medical School  
Boston, MA  
M.D.  
June 1996

POST-GRADUATE TRAINING

Research Fellowship: The Johns Hopkins Hospital  
Baltimore, MD  
Post-doctoral Research Associate  
Diagnostic Radiology, MRI Division  
1996-1997

Residency: The Johns Hopkins Hospital  
Baltimore, MD  
Diagnostic Radiology  
1997-2001 (Chief Resident, 2000)

Fellowship: The Johns Hopkins Hospital  
Baltimore, MD  
Neuroradiology  
October 2000-February 2001, July 2001-August 2002

## HONORS AND AWARDS

Massachusetts Institute of Technology Cambridge, MA

1987 Inductee, Tau Beta Pi Engineering Honor Society  
1987 Inductee, Eta Kappa Nu Electrical Engineering Honor Society  
1989-1992 National Science Foundation Graduate Scholarship

Massachusetts General Hospital, NMR Center Charlestown, MA

1992, 1994 Johnson & Johnson Research Fellowship  
1993 Clement Vaturi Research Fellowship

Harvard Medical School Boston, MA

1995 Honors in core medicine, medicine sub-internship, surgery,  
radiology, neurology, and obstetrics and gynecology clerkships

Johns Hopkins Department of Radiology Baltimore, MD

2000 **Chief Resident**, Diagnostic Radiology

Brown University / Rhode Island Hospital Providence, RI

2003-2004 **Teacher of the Year**, Diagnostic Radiology Residency Program,  
Brown University / Rhode Island Hospital

2016 Recognized as a **Fellow, American College of Radiology**

## PROFESSIONAL LICENSES AND BOARD CERTIFICATION

2001-Present American Board of Radiology (Lifetime certificate)  
2002-Present State of Rhode Island, Medical License No. MD10844  
2002-Present State of Massachusetts, Medical License No. 213422  
2004 American Board of Radiology, initial Certificate of Added  
Qualification in *Neuroradiology*  
2014 American Board of Radiology, Recertification of Added  
Qualification in *Neuroradiology*

## ACADEMIC APPOINTMENTS

2002-2003 Assistant Professor of Diagnostic Imaging,  
Clinical Educator Track  
Alpert Medical School, Brown University

2004-2012	Assistant Professor of Diagnostic Imaging, Teaching Scholar Track Alpert Medical School, Brown University
2012-2019	Associate Professor of Diagnostic Imaging, Teaching Scholar Track Alpert Medical School, Brown University
2019-present	Professor of Diagnostic Imaging, Teaching Scholar Track Alpert Medical School, Brown University

#### HOSPITAL APPOINTMENTS AND POSITIONS

2001-2002	Practicing Radiologist Johns Hopkins Bayview Medical Center, Baltimore, MD
2001-2002	Practicing Radiologist American Radiology, Baltimore, MD
2002-Present	Attending Neuroradiologist Department of Diagnostic Imaging Rhode Island Hospital, Providence, RI
2002-Present	Attending Radiologist The Miriam Hospital, Providence, RI
2002-Present	Attending Radiologist Women & Infants Hospital, Providence, RI
2015-Present	Attending Radiologist Roger Williams Medical Center, Providence, RI
2015-Present	Attending Radiologist Saint Joseph's Health Services, North Providence, RI

#### OTHER APPOINTMENTS AND POSITIONS

2004-2011	<b>Co-Chair</b> (Greg Sorensen, M.D.), American College of Radiology Imaging Network (ACRIN) Brain / Head and Neck Committee
2005-2007	Associate Residency Program Director, Department of Diagnostic Imaging, Rhode Island Hospital
2006-Present	Member, Medical Advisory Board, Imaging Biometrics, LLC, Milwaukee, WI

2011-Present	<b>Vice-Chair for Brain</b> (Chair: Dan Barboriak, M.D.), American College of Radiology Imaging Network (ACRIN) Head and Neck / Neuro Committee
2013-Present	Member, ECOG-ACRIN Scientific Advisory Committee
2014-Present	Member, Jumpstarting Brain Tumor Drug Development Coalition's Imaging Standardization Steering Committee; <b>Co-chair</b> of the Perfusion DSC-MRI Working Group
2014-Present	Member, Quantitative Imaging Biomarker Alliance (QIBA) DSC Perfusion Measure Workgroup
2015-Present	Member, GBM International Adaptive Trial Imaging Committee
2018-Present	Member, National Cancer Institute (NCI) Clinical Trials and Translational Research Advisory Committee (CTAC) <i>ad hoc</i> Working Group on Glioblastoma

### JOURNAL REVIEWER

1999-Present	Reviewer, <i>Journal of Magnetic Resonance Imaging</i>
2001-Present	Reviewer, <i>Magnetic Resonance in Medicine</i>
2006-Present	Reviewer, <i>American Journal of Neuroradiology</i>
2007-Present	Reviewer, <i>Radiology</i> <b>2011 Editor's Recognition Award, Reviewing with Distinction</b>
2011-Present	Reviewer, <i>Clinical Neurology and Neurosurgery</i>
2015-Present	Reviewer, <i>Neuro-Oncology</i>

### HOSPITAL COMMITTEES

2006-2009	Member, Stroke Center Executive Committee, Rhode Island Hospital
2014-2015	Member, search committee for neuro-oncologist, Department of Neurology, Rhode Island Hospital
2017-Present	Member, Education Committee, Department of Diagnostic Imaging, Rhode Island Hospital Primary responsibility: resident applicant interviews

### UNIVERSITY COMMITTEES

2006-Present	<b>Medical Director</b> and Member of Scientific Advisory Committee, 3T MRI Research Facility, Institute for Brain Science, Brown University (Jerome Sanes, chair)
2012-Present	<b>Co-chair</b> for Neuroradiology, Radiology Committee of the Brown University Oncology Group (Howard Safran, chair)
2016-2017	<b>Member</b> , Brown Institute for Brain Science committee reviewing BIBS/NPNI New Frontiers Awards (John Davenport, chair)

## MEMBERSHIP IN SOCIETIES

1992-Present	International Society, Magnetic Resonance in Medicine (ISMRM)
1997-Present	American Roentgen Ray Society (ARRS)
1997-Present	Radiological Society of North America (RSNA)
2000-Present 2016	American College of Radiology (ACR) <b>Awarded Fellow status</b>
2001-Present	American Society of Neuroradiology (ASNR), <b>Senior Member</b>
2006-2008,	Member, research committee
2016-Present	Grant reviewer, ASNR Foundation awards
2007-Present	Member, education committee Outstanding presentations subcommittee
2007-Present	Abstract reviewer for annual scientific meeting
2002-Present	Rhode Island Medical Society (RIMS)
2002-Present	Rhode Island Radiology Society (RIRS)
2008-2009	<b>Secretary</b>
2009-2010	<b>Treasurer</b>
2010-2011	<b>Vice-President</b>
2011-2012	<b>President</b>
2004-Present	New England Roentgen Ray Society (NERRS)
2005-2007	Association of Program Directors in Radiology (APDR)
2006-2007	Member, Annual Survey Committee
2006-2007	Member, Electronic Communication and Publications Committee
2005-Present	Association of University Radiologists (AUR)
2012-Present	American Society of Functional Neuroradiology (ASFNR)
2015-Present	Member, Clinical Practice Committee
2015-Present	Member, Research Committee
2016-Present	Eastern Neuroradiological Society (ENRS)

## ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Weisskoff RM, Chesler D, **Boxerman JL**, Rosen BR. Pitfalls in MR measurement of tissue blood flow with intravascular tracers: Which mean transit time? Magn Reson Med 1993; 29(4):553-558. PMID: 8464373.
2. Weisskoff RM, Zuo CS, **Boxerman JL**, Rosen BR. Microscopic susceptibility variation and transverse relaxation: Theory and experiment. Magn Reson Med 1994; 31(6):601-610. PMID: 8057812.

3. **Boxerman JL**, Bandettini PA, Kwong KK, Baker JR, Davis TL, Rosen BR, Weisskoff RM. The intravascular contribution to fMRI signal change: Monte Carlo modeling and diffusion-weighted studies *in vivo*. *Magn Reson Med* 1995; 34(1):4-10. PMID: 7674897.
4. **Boxerman JL**, Hamberg LM, Rosen BR, Weisskoff RM. MR contrast due to intravascular magnetic susceptibility perturbations. *Magn Reson Med* 1995; 34(4):555-566. PMID: 8524024.
5. Sorensen AG, Wray SH, Weisskoff RM, **Boxerman JL**, Davis TL, Caramia F, Kwong KK, Stern CE, Baker JR, Breiter H, Gazit IE, Belliveau JW, Brady TJ, Rosen BR. Functional MR of brain activity and perfusion in patients with chronic cortical stroke. *AJNR Am J Neuroradiol* 1995; 16(9):1753-1762. PMID: 8693971.
6. Lev MH, Kulke SF, Sorensen AG, **Boxerman JL**, Brady TJ, Rosen BR, Buchbinder BR, Weisskoff RM. Contrast-to-noise ratio in functional MRI of relative cerebral blood volume with sprodiamide injection. *J Magn Reson Imaging* 1997; 7(3):523-527. PMID: 9170037.
7. **Boxerman JL**, Rosen BR, Weisskoff RM. Signal-to-noise analysis of cerebral blood volume maps from dynamic NMR imaging studies. *J Magn Reson Imaging* 1997; 7(3):528-537. PMID: 9170038.
8. Bluemke DA, **Boxerman JL**, Atalar E, McVeigh ER. Segmented k-space cine breath-hold cardiovascular MR imaging: I. Principles and technique. *AJR Am J Roentgenol* 1997; 169(2):395-400. PMID: 9242742.
9. Bluemke DA, **Boxerman JL**, Mosher T, Lima JAC. Segmented k-space cine breath-hold cardiovascular MR imaging: II. Evaluation of aortic vasculopathy. *AJR Am J Roentgenol* 1997; 169(2):401-407. PMID: 9242743.
10. **Boxerman JL**, Mosher TJ, McVeigh ER, Atalar E, Lima JAC, Bluemke DA. Advanced MR imaging techniques for evaluation of the heart and great vessels. *Radiographics* 1998; 18(3):543-564. PMID: 9599382.
11. Reeder SB, Faranesh AZ, **Boxerman JL**, McVeigh ER. In vivo measurement of T2\* and field inhomogeneity maps in the human heart at 1.5 T. *Magn Reson Med* 1998; 39(6):988-998. PMID: 9621923.
12. Dennie J, Mandeville JB, **Boxerman JL**, Packard SD, Rosen BR, Weisskoff RM. NMR imaging of changes in vascular morphology due to tumor angiogenesis. *Magn Reson Med* 1998; 40(6):793-799. PMID: 9840821.
13. Kawamoto S, Shirai N, Strandberg JD, **Boxerman JL**, Bluemke DA. Nontraumatic osteonecrosis: MR perfusion imaging evaluation in an experimental model. *Acad Radiol* 2000; 7(2):83-93. PMID: 10730163.

14. Beache GM, Herzka DA, **Boxerman JL**, Post WS, Gupta SN, Faranesh AZ, Solaiyappan M, Bottomley PA, Weiss JL, Shapiro EP, Hill MN. Attenuated myocardial vasodilator response in patients with hypertensive hypertrophy revealed by oxygenation-dependent magnetic resonance imaging. *Circulation* 2001; 104(11):214-1217. PMID: 11551869.
15. **Boxerman JL**, Schmainda KM, Weisskoff RM. Relative cerebral blood volume maps corrected for contrast agent extravasation significantly correlate with glioma tumor grade whereas uncorrected maps do not. *AJNR Am J Neuroradiol* 2006; 27(4):859-867. PMID: 16611779.
16. Goldman M, **Boxerman JL**, Rogg JM, Noren G. The Utility of Apparent Diffusion Coefficient in Predicting the Outcome of Gamma Knife Treated Brain Metastases Prior to Changes in Tumor Volume: a Preliminary Study. *J Neurosurg* 2006 Dec; 105(Suppl):175-182. PMID: 18503353.
17. **Boxerman JL**, Hawash K, Bali B, Clarke T, Rogg J, Pal DK. Is Rolandic epilepsy associated with abnormal findings on cranial MRI? *Epilepsy Research* 2007; 75(2-3):180-185. PMID: 17624735.
18. **Boxerman JL**, Rogg JM, Donahue JE, Machan JT, Goldman MA, and Doberstein CE. Pre-operative MR Evaluation of Pituitary Macroadenomas: Imaging Features that Predict Successful Transsphenoidal Surgery. *AJR Am J Roentgenol.* 2010 Sep;195(3):720-8. PMID: 20729452.
19. Koo EH, **Boxerman JL**, Murphy MA. Cortical Blindness Following a Near-Drowning Incident. *J Neuroophthalmol* 2011; 31(4):347-9. PMID: 21775894.
20. **Boxerman JL**, Prah DE, Paulson ES, Machan JT, Bedekar D, Schmainda KM. The Role of Preload and Leakage Correction in Gadolinium-Based Cerebral Blood Volume Estimation Determined by Comparison with MION as a Criterion Standard. *AJNR Am J Neuroradiol* 2012 33(6):1081-87. PMID: 22322605.
21. Jayaraman MV, **Boxerman JL**, Davis LM, Haas RA, Rogg JM. Incidence of Extrinsic Compression of the Internal Jugular Vein in Unselected Patients Undergoing CT Angiography. *AJNR Am J Neuroradiol* 2012 33(7):1247-50. PMID: 22322614.
22. Raghavan D, **Boxerman JL**, Rogg JM, Cosgrove R. Glioblastoma Multiforme: Utilization of Advanced MRI Techniques for Preoperative Planning. *Med Health RI* 2012 Feb;95(2):42-3. PMID: 22474872.
23. **Boxerman JL**, Jayaraman MV, Mehan WA, Rogg JM, Haas RA. Clinical Stroke Penumbra: Use of NIH Stroke Scale as a Surrogate for CT Perfusion in Patient Triage for Intra-arterial MCA Stroke Therapy. *AJNR Am J Neuroradiol* 2012 33(10):1893-900. (Selected for *AJNR News Digest, March 2016*) PMID: 22627795.

24. Raghavan D, **Boxerman JL**, Jeyapalan S, Rogg JM. Radiation Necrosis of a High-Grade Glioma. *Med Health RI* 2012 May;95(5):159-60. PMID: 22808637.
25. Jeyapalan S, **Boxerman JL**, Donahue J, Goldman M, Kinsella T, Dipetrillo T, Evans D, Elinzano H, Constantinou M, Stopa E, Puthawala Y, Cielo D, Santaniello A, Oyelese A, Mantripragada K, Rosati K, Isdale D, Safran H. Paclitaxel Poliglumex, Temozolomide and Radiation for Newly Diagnosed High-Grade Glioma: A Brown University Oncology Group Phase II Study. *Am J Clin Oncol.* 2014 Oct;37(5):444-9. PMID: 23388562.
26. **Boxerman JL**, Paulson ES, Prah M, Schmainda KM. The Effect of Pulse Sequence Parameters and Contrast Agent Dose on Percent Signal Recovery in DSC-MRI: Implications for Clinical Applications. *AJNR Am J Neuroradiol* 2013 34(7):1364-9. PMID: 23413249.
27. Spader HS, Ellermeier A, O’Muircheartaigh J, Dean III, DC, Dirks H, **Boxerman JL**, Cosgrove GR, Deoni SCL. Advances in Myelin Imaging with Potential Clinical Application to Pediatric Imaging. *Neurosurg Focus* 2013 34(4):E9. PMID: 23544415.
28. Ratai EM, Zheng Z, Snyder B, **Boxerman JL**, Safriel Y, Gilbert M, Sorensen AG, Barboriak D. Magnetic Resonance Spectroscopy as an Early Indicator of Response to Anti-angiogenic Therapy in Patients with Recurrent Glioblastoma: ACRIN 6677 / RTOG 0625. *Neuro Oncol.* 2013 Jul;15(7):936-44. PMID: 23645534.
29. Swenson DW, Nickel BJ, **Boxerman JL**, Klinge PM, Rogg JM. Prenatal MRI Characterization of Brainstem Glioma. *Pediatr Radiol.* 2013 Oct;43(10):1404-7. PMID: 23677423.
30. **Boxerman JL**, Zheng Z, Safriel Y, Larvie M, Snyder BS, Jain R, Chi TL, Sorensen AG, Gilbert MR, Barboriak DP. Early Post-Bevacizumab Progression on Contrast-Enhanced MRI as a Prognostic Marker for Overall Survival in Recurrent Glioblastoma: Results from the ACRIN 6677 / RTOG 0625 Central Reader Study. *Neuro Oncol.* 2013 Jul;15(7):945-54. PMID: 23788270.
31. Semmineh NB, Xu J, **Boxerman JL**, Delaney GW, Cleary PW, Gore JC, Quarles CC. An efficient computational approach to characterize DSC-MRI signals arising from three-dimensional heterogeneous tissue structures. *PLoS One.* 2014 Jan 8;9(1):e84764. PMID: 24416281.
32. Shiroishi MS, Castellazzi G, **Boxerman JL (co-first author)**, Essig M, Nguyen TB, Provenzale JM, Enterline DS, Anzalone N, Dorfler A, Rovira A, D’Amore F, Wintermark M, Law M. Principles of T<sub>2</sub>\*-Weighted Dynamic Susceptibility Contrast MRI Technique in Brain Tumor Imaging. *J Magn Reson Imaging.* 2015 Feb;41(2):296-313. PMID: 24817252.



33. Chodakiewitz Y, Brown S, **Boxerman JL**, Brody J, Rogg JM. Ipilimumab Treatment Associated Pituitary Hypophysitis: Clinical Presentation and Imaging Diagnosis. *Clin Neurol Neurosurg* 2014 Oct;125:125-30. PMID: 25127260.
34. **Boxerman JL**, Ellingson BM, Jeyapalan S, Elinzano H, Harris RJ, Rogg JM, Pope WB, Safran H. Longitudinal DSC-MRI for Distinguishing Tumor Recurrence from Pseudoprogression in Patients with a High-Grade Glioma. *Am J Clin Oncol*, 2017 Jun;40(3):228-34 [Epub ahead of print in 2014]. PMID: 25436828.
35. Schmainda KM, Zhang Z, Prah M, Snyder BS, Gilbert MR, Sorensen AG, Barboriak DP, **Boxerman JL**. Dynamic Susceptibility Contrast MRI Measures of Relative Cerebral Blood Volume as a Prognostic Marker for Overall Survival in Recurrent Glioblastoma: Results from the ACRIN 6677/RTOG 0625 Multi-Center Trial. *Neuro Oncol*. 2015 Aug;17(8):1148-56. PMID: 25646027.
36. Ellingson BM, Kim E, Woodworth DC, Marques H, **Boxerman JL**, Safriel Y, McKinstry RC, Bokstein F, Jain R, Chi TL, Sorensen AG, Gilbert MR, Barboriak DP. Diffusion MRI Quality Control and Functional Diffusion Map (fDM) Results in ACRIN-6677/RTOG-0625: A Multicenter, Randomized, Phase II Trial of Bevacizumab and Chemotherapy in Recurrent Glioblastoma. *Int J Oncol*. 2015 May;46(5):1883-92. PMID: 25672376.
37. Welker K, **Boxerman JL**, Kalnin A, Kaufmann T, Shiroishi M, Wintermark M. MR Perfusion Standards and Practice Subcommittee of the ASFNR Clinical Practice Committee: Guidelines for Clinical Performance of MR Dynamic Susceptibility Contrast Perfusion Imaging of the Brain. *AJNR Am J Neuroradiol*. 2015 Jun;36(6):E41-51. PMID: 25907520.
38. **Boxerman JL**, Ellingson BM. Response Assessment and MR Imaging Issues for Clinical Trials in High-Grade Gliomas. *Top Magn Reson Imaging*. 2015 Jun;24(3):127-36. PMID: 26049816.
39. Ellingson BM, Bendszus M, **Boxerman JL**, Barboriak DP, Erickson BJ, Smits M, Nelson SJ, Gerstner E, Alexander B, Goldmacher G, Wick W, Vogelbaum M, Weller M, Galanis E, Kalpathy-Cramer J, Shankar L, Pope WB, Knopp MV, Cha S, van den Bent MJ, Chang S, Al Yung WK, Cloughesy TF, Wen PY, Gilbert MR. Consensus Recommendations for a Standardized Brain Tumor Imaging Protocol (BTIP) in Clinical Trials. *Neuro Oncol*. 2015 Sep;17(9):1188-98. PMID: 26250565.
40. Goldmacher GV, Ellingson BM, **Boxerman JL**, Barboriak D, Pope WB, Gilbert M. Standardized Brain Tumor Imaging Protocol for Clinical Trials. *AJNR Am J Neuroradiol*. 2015 Oct;36(10):E65-6. PMID: 26359146.
41. Shiroishi MS, **Boxerman JL**, Pope WB. Physiologic MRI for Assessment of Response to Therapy and Prognosis in Glioblastoma. *Neuro Oncol*. 2016 Apr;18(4):467-78. PMID: 26364321.

42. Elinzano H, Glantz M, Mrugala M, Kesari S, Kim L, Jeyapalan S, Pan E, Yunus S, Coyle T, Kinsella T, Evans D, Mantripragada K, **Boxerman JL**, Dipetrillo T, Donahue J, Hebda N, Mitchell K, Rosati K, Safran H. PPX and Concurrent Radiation for Newly Diagnosed Glioblastoma Without MGMT Methylation - A Randomized Phase II Study: BrUOG 244. *Am J Clin Oncol*. 2018 Feb;41(2):159-62 [Epub ahead of print in 2015]. PMID: 26658237.
43. Leu K, **Boxerman JL**, Lai A, Nghiemphu PL, Pope WB, Cloughesy TF, Ellingson BM. Bidirectional Contrast Agent Leakage Correction of DSC-MRI Improves Cerebral Blood Volume Estimation and Survival Prediction in Recurrent Glioblastoma Treated with Bevacizumab. *J Magn Reson Imaging*. 2016 Nov;44(5):1229-1237. PMID: 26971534.
44. Leu K, **Boxerman JL**, Cloughesy TF, Lai A, Nghiemphu PL, Pope WB, Ellingson BM. Improved Leakage Correction for Dynamic Susceptibility Contrast (DSC) Perfusion MRI Estimates of Relative Cerebral Blood Volume (rCBV) in Brain Tumors by Accounting for Interstitial Contrast Agent Washout Rate. *AJNR Am J Neuroradiol*. 2016 Aug;37(8):1440-6. PMID: 27079371.
45. Iyengar RJ, Klinge PM, Chen WS, **Boxerman JL**, Sullivan SR, Taylor HO. Management of Craniosynostosis at an Advanced Age: Controversies, Clinical Findings and Surgical Treatment. *J Craniofac Surg*. 2016 Jul;27(5):e435-41. PMID: 27380569.
46. **Boxerman JL**, Shiroishi MS, Ellingson BM, Pope WB. Dynamic Susceptibility Contrast MRI in Glioma: Review of Current Clinical Practice. *Magn Reson Imaging Clin N Am*. 2016 Nov;24(4):649-670. PMID: 27742108.
47. Dibble EH, **Boxerman JL**, Baird GL, Donahue J, Rogg JM. Toxoplasmosis versus Lymphoma: Cerebral Lesion Characterization Using DSC-MRI Revisited. *Clin Neurol Neurosurg*. 2017 Jan;152:84-89. PMID: 27940418.
48. Leu K, **Boxerman JL**, Ellingson BM. Effects of MRI Protocol Parameters, Preload Injection Dose, Fractionation Strategies, and Leakage Correction Algorithms on the Fidelity of Dynamic Susceptibility Contrast MRI Estimates of Relative Cerebral Blood Volume in Gliomas. *AJNR Am J Neuroradiol*. 2017 Mar;38(3):478-484. PMID: 28034995.
49. Ellingson BM, Chung C, Pope WB, **Boxerman JL**, Kaufmann TJ. Pseudoprogression, radionecrosis, inflammation or true tumor progression? Challenges associated with glioblastoma response assessment in an evolving therapeutic landscape. *J Neurooncol*. 2017 Sep;134(3):495-504. PMID: 28382534.

50. Semmineh NB, Stokes AM, Bell LC, **Boxerman JL**, Quarles CC. A Population-Based Digital Reference Object (DRO) for Optimizing Dynamic Susceptibility Contrast (DSC) MRI Methods for Clinical Trials. *Tomography*. 2017 Mar;3(1):41-49. PMID: 28584878.
51. **Boxerman JL**, Zhang Z, Safriel Y, Rogg JM, Wolf RL, Mohan S, Marques H, Sorensen AG, Gilbert MR, Barboriak DP. Prognostic Value of Contrast Enhancement and FLAIR for Survival in Newly Diagnosed Glioblastoma Treated With and Without Bevacizumab: Results from ACRIN 6686. *Neuro Oncol*. 2018 Sep;20(10):1400-10. PMID: 29590461.
52. Patel KM, Johnson J, Zacharioudakis IM, **Boxerman JL**, Flanigan TP, Reece RM. First Confirmed Case of Powassan Neuroinvasive Disease in Rhode Island. *IDCases*. 2018 Mar 23;12:84-87. PMID: 29942757.
53. Patel KM, Johnson J, **Boxerman JL**, Nau G. Two cases of group A streptococcus acute otitis media progressing to neuroinvasive disease in the elderly. *IDCases*. 2018 May 23;12:161-164. PMID: 29942780.
54. Adjepong K, **Boxerman JL**, Roth JL. Seeing Stars: Acute Repetitive Occipital Seizures in Hyperglycemia. Accepted to *Neurographics*, January 2018.
55. Semmineh NB, Bell LC, Stokes AM, Hu L, **Boxerman JL**, Quarles CC. Optimization of Acquisition and Analysis Methods for Clinical Dynamic Susceptibility Contrast (DSC) MRI Using a Population-based Digital Reference Object. *AJNR Am J Neuroradiol*. 2018 Nov;39(11):1981-1988. PMID: 30309842.
56. Barboriak DP, Zhang Z, Desai P, Snyder BS, Safriel Y, McKinstry RC, Bokstein F, Sorensen AG, Gilbert MR, **Boxerman JL**. Inter-reader Variability in Dynamic Contrast-Enhanced Imaging of Patients with Recurrent Glioblastoma Multiforme: Results from the Multi-Center ACRIN 6677 / RTOG 0625 Study. *Radiology*. 2019 Feb;290(2):467-476. PMID: 30480488.
57. Moldovan K, **Boxerman JL**, O'Muircheartaigh J, Dean D, Eyerly-Webb S, Cosgrove GR, Pucci F, Deoni S, Spader H. Myelin Water Fraction Changes in Febrile Seizures. *Clin Neurol Neurosurg*. 2018 Dec;175:61-67. PMID: 30384118.
58. Bell LC, Semmineh N, An H, Eldeniz C, Wahl R, Schmainda KM, Prah MA, Erickson BJ, Korfiatis P, Sorace AG, Yankeelov TE, Rutledge N, Chenevert TL, Malyarenko D, Liu Y, Brenner A, Huang S, Hu LS, Zhou Y, **Boxerman JL**, Yen YF, Kalpathy-Cramer J, Beers AL, Muzi M, Madhuranthakam AJ, Pinho M, Johnson B, Quarles CC. Evaluating Multi-Site CBV Consistency from DSC-MRI Protocols and Post-Processing Software Across the NCI Quantitative Imaging Network Sites Using a Digital Reference Object (DRO). *Tomography*. 2019 Mar;5(1):110-117. PMID: 30854448.

59. Schmainda KM, Prah MA, Semmineh N, Quarles CC, Hu L, Liu Y, Logan B, **Boxerman JL**. Moving Towards a Consensus DSC-MRI Protocol: A Low Flip Angle, Single-Dose Methodology as a Reference Standard for Brain Tumors. AJNR Am J Neuroradiol first published on 28 March 2019 doi:10.3174/ajnr.A6015.
60. Schmainda KM, Prah MA, Zhang Z, Snyder BS, Bedekar D, Rand S, Barboriak DP, **Boxerman JL**. Delta T1 Technology Outperforms Central Reader Analysis for the Determination of Contrast-agent Enhancing Brain Tumor ROIs: Retrospective Sub-Analysis of ACRIN 6677 / RTOG 0625 Multi-Center Data. Accepted to AJNR Am J Neuroradiol, May 2019.
61. Chang K, Beers AL, Bai HX, Brown J, Ly KI, Li X, Senders JT, Kavouridis VK, Boaro A, Su C, Bi WL, Rapalino O, Liao W, Shen Q, Zhou H, Xiao B, Wang Y, Zhang PJ, Pinho MC, Wen PY, Batchelor TT, **Boxerman JL**, Arnaout O, Rosen BR, Gerstner ER, Yang L, Huang RY, Kalpathy-Cramer J. Automatic Assessment of Glioma Burden: A Deep Learning Algorithm for Fully Automated Volumetric and Bi-dimensional Measurement. Accepted to Neuro-oncology, June 2019.
62. Lee M, Baird G, Bell L, Quarles CC, **Boxerman JL**. Utility of Percent Signal Recovery and Average Baseline Signal in DSC-MRI Optimized for rCBV Measurement for Differentiation of GBM, Metastasis, Lymphoma and Meningioma. Accepted to AJNR Am J Neuroradiol pending revisions, June 2019.

#### OTHER PEER REVIEWED PUBLICATIONS

1. **Boxerman JL**, Schmainda KM, Zhang Z, Barboriak DP. Dynamic susceptibility contrast MRI measures of relative cerebral blood volume continue to show promise as an early response marker in the setting of bevacizumab treatment. Neuro Oncol. 2015 Nov;17(11):1538-9. PMID: 26361983.

#### NON-PEER REVIEWED PUBLICATIONS

##### **GRADUATE THESES**

1. **Boxerman JL**. Variable Block-Sized Vector Quantization of Grayscale Images with Unconstrained Tiling. S. M. Dissertation. Massachusetts Institute of Technology, June 1989. Advisor: Bruce Musicus, Ph.D.

Describes the design and performance evaluation of an image compression scheme using unconstrained image segmentation into multi-sized, non-overlapping rectangular regions, each of which is vector quantized. This scheme performs better in a rate-distortion sense than traditional variable block-sized vector quantizers for certain applications, including efficient compression in single-encode, multiple-decode applications such as medical image databases and servers.

2. **Boxerman JL**. Non-Invasive Measurement of Physiology Using Dynamic Susceptibility Contrast NMR Imaging. Ph.D. Dissertation, Massachusetts Institute of Technology, February 1995. Advisor: Robert Weisskoff, Ph.D. Committee Chair: David Cory, Ph.D. Readers: Bruce Rosen, M.D., Ph.D.; Deborah Burstein, Ph.D.; Alan Grodzinsky, Ph.D.

Quantifies contrast due to magnetic susceptibility in functional magnetic resonance imaging. Computer models are applied to dynamic functional MRI studies aimed at quantifying cerebral blood volume and the hemodynamic changes associated with cortical neuronal activation using exogenous and endogenous contrast agents, respectively. This thesis provides both an improved understanding of the fundamental principles of susceptibility contrast, and a better ability to interpret physiologic images in this new generation of susceptibility-based functional MRI.

## BOOK CHAPTERS

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#### PAPERS SUBMITTED, AWAITING DECISION

1. Boyd C, Jayaraman MV, Baird GL, Einhorn WS, Stib MT, Atalay MK, **Boxerman JL**, Lourenco AP, Jindal G, Hidlay DT, Dibiasio EL, McTaggart RA. Impact of Experience and Grayscale Inversion on the Detection of Emergent Large Vessel Occlusion Stroke with CT Angiography. Submitted to *European Radiology*, February 2019.

#### PAPERS NEAR SUBMISSION OR IN PREPARATION

1. **Boxerman JL**, Zhang Z, Schmainda KM, Snyder BS, Prah M, Sorensen AG, Gilbert MR, Barboriak DP. Early Post-Bevacizumab Change in rCBV from DSC-MRI Predicts Overall Survival in Recurrent Glioblastoma Whereas Conventional 2D-T1 Response Status Does Not: Results from ACRIN 6677/RTOG 0625. To be submitted to *AJNR Am J Neuroradiol*.
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  68. Lee M, Baird G, Bell L, Quarles CC, **Boxerman JL**. Utility of Percent Signal Recovery and Average Baseline Signal in DSC-MRI Optimized for rCBV Measurement for Differentiation of GBM, Metastasis, Lymphoma and Meningioma. Platform presentation at ASNR American Society of Neuroradiology 56<sup>th</sup> Annual Meeting, Vancouver, BC, June 4, 2018, presentation O-35.
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77. Prah MA, Hu L, **Boxerman JL**, Quarles CC, Connelly JM, Schmainda KM. Evaluation of Fractional Tumor Burden (FTB) fidelity using a no-preload, low-flip angle dynamic susceptibility contrast MRI acquisition scheme. Accepted for presentation at the 27<sup>th</sup> Annual Meeting of the International Society for Magnetic Resonance in Medicine, Montreal, Quebec, May 2019, oral presentation.
78. Semmineh NB, Bell LC, Stokes AM, Mathew E, Lee MD, **Boxerman JL**, Quarles CC. Investigating the Influence of DSC-MRI Acquisition Methods on the Clinical Application of Percentage Signal Recovery in Brain Tumors. Accepted for presentation at the 27<sup>th</sup> Annual Meeting of the International Society for Magnetic Resonance in Medicine, Montreal, Quebec, May 2019, oral presentation.
79. Bell LC, Semmineh N, An H, Eldeniz C, Wahl R, Schmainda KM, Prah MA, Erickson BJ,

Korfiatis P, Wu C, Sorace AG, Rutledge N, Yankeelov TE, Chenevert TL, Malyarenko D, Liu Y, Brenner A, Hu LS, Zhou Y, **Boxerman JL**, Yen YF, Kalpathy-Cramer J, Beers AL, Muzi M, Madhuranthakam AJ, Pinho M, Johnson B, Quarles CC. Evaluating multi-site rCBV consistency from DSC-MRI imaging protocols and post- processing software across the NCI Quantitative Imaging Network sites using a Digital Reference Object. Accepted for presentation at the 27<sup>th</sup> Annual Meeting of the International Society for Magnetic Resonance in Medicine, Montreal, Quebec, May 2019, oral presentation.

80. Schmainda KM, Prah MA, Zhang Z, Snyder BS, Rand S, Jensen T, Barboriak DP, **Boxerman JL**. Quantitative deltaT1 (qDT1) as a Replacement for Adjudicated Central Reader Analysis: A Sub-Analysis of the RTOG 0625/ACRIN 6677 Multi-Center Brain Tumor Trial. Accepted for presentation at the 27<sup>th</sup> Annual Meeting of the International Society for Magnetic Resonance in Medicine, Montreal, Quebec, May 2019, oral presentation.

## INVITED PRESENTATIONS

### **REGIONAL**

1. *Overview of Cerebral CT Perfusion Imaging. Invited presentation*, Imaging Conference for Department of Diagnostic Imaging, Rhode Island Hospital, November 26, 2003.
2. *Overview of Cerebral MR Perfusion Imaging. Invited presentation*, Imaging Conference for Department of Diagnostic Imaging, Rhode Island Hospital, October 20, 2004.
3. *Cerebral MR Perfusion Imaging with Brain Tumor Applications. Invited presentation*, Neurosurgery Grand Rounds, Rhode Island Hospital, February 14, 2005.
4. *Overview of CT Perfusion Imaging of Acute Stroke. Invited presentation*, New England Roentgen Ray Society, Cambridge, MA, September 23, 2005.
5. *Overview of Radiology Case Conference Presentation. Invited presentation*, Imaging Conference for Department of Diagnostic Imaging, Rhode Island Hospital, December 14, 2005.
6. *Overview of Cerebral MR Perfusion Imaging with an Emphasis on Brain Tumor Applications. Invited presentation*, In-Service Training for MRI Technologists, Rhode Island Hospital, March 26, 2007.
7. *CT Perfusion Imaging of Acute Stroke at Rhode Island Hospital: a Primer. Invited presentation*, Imaging Conference for Department of Diagnostic Imaging, Rhode Island Hospital, December 4, 2007.



8. *fMRI and Pre-operative Planning for Brain Tumors at RIH: An Update*. **Invited presentation**, Imaging Conference for Department of Diagnostic Imaging, Rhode Island Hospital, March 21, 2011.
9. *Panel of Unknown Cases, Neuroradiology*. **Invited faculty**, New England Roentgen Ray Society, Boston, MA, April 8, 2011.
10. *Some Practical Technical and Clinical Considerations about Quantitative DSC-MRI of Brain Tumors*. **Invited presentation** to the MGH Quantitative Tumor Imaging Group meeting, Massachusetts General Hospital, Charlestown, MA, July 12, 2013.
11. *Review of Imaging Results for ACRIN 6677 / RTOG 0625: Treatment of Recurrent GBM with Bevacizumab plus Irinotecan or Temozolomide*. **Invited presentation** to the Dana Farber/Brigham and Women's Hospital Neuro-Oncology Multidisciplinary Conference, Brigham and Women's Hospital, Boston, MA, March 6, 2015.
12. *Update on DSC Perfusion MRI in the Brain: Neuro-oncology Applications at Rhode Island Hospital*. **Invited presentation**, Imaging Conference for Department of Diagnostic Imaging, Rhode Island Hospital, October 7, 2015.

## NATIONAL

1. *Mechanisms of signal change in functional magnetic resonance imaging*. **Invited presentation**, Annual Scientific Meeting of the Biomedical Engineering Society, Tempe, AZ, September 1994.
2. *Brain Tumor Imaging: T2 MRI Perfusion*. **Invited faculty**, ACRIN 2004 Fall meeting, Arlington, VA, October 8, 2004.
3. *Trial Update on ACRIN 6677 / RTOG 0625*. Committee member and **Trial PI**, ACRIN 2011 Fall meeting, Arlington, VA, September 23, 2011.
4. *Trial Update on ACRIN 6686 / RTOG 0825*. Committee member and **Trial PI**, ACRIN 2011 Fall meeting, Arlington, VA, September 23, 2011.
5. *An Update on Pseudoprogression Found in Patients with High-grade Gliomas Treated with PPX plus Temozolomide in BrUOG 223*. **Invited presentation** to BrUOG 244 investigators at Society of Neurooncology Annual Meeting, Washington, DC, November 16, 2012.
6. *DSC Perfusion Physics: Practical Technical and Clinical Considerations for Concentration Measurements in Tissues*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 7<sup>th</sup> Annual Meeting, Charleston, SC, March 11, 2013.
7. *Recent Advances in DSC-MRI: Leakage Correction and Percent Signal Recovery Methods*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 7<sup>th</sup> Annual Meeting, Charleston, SC, March 11, 2013.

8. *Quantitative DSC-MRI of Brain Tumors: Practical Technical and Clinical Considerations* (Radiology Grand Rounds lecture) and *Neuroradiology Case Review* (Presentation of teaching cases to Radiology residents). **Visiting Professor**, Department of Radiology, Dartmouth-Hitchcock Medical Center, Lebanon, NH, August 20, 2013.
9. *Trial Update on ECOG-ACRIN E3613*. Committee member and **Trial PI** (Imaging), ECOG-ACRIN 2013 Fall meeting, Hollywood, FL, November 15, 2013.
10. *Trial Update on ACRIN 6677 / RTOG 0625*. Committee member and **Trial PI**, ECOG-ACRIN 2013 Fall meeting, Hollywood, FL, November 16, 2013.
11. *Trial Update on ACRIN 6686 / RTOG 0825*. Committee member and **Trial PI**, ECOG-ACRIN 2013 Fall meeting, Hollywood, FL, November 16, 2013.
12. *Quantitative DSC-MRI of Brain Tumors: Practical Technical and Clinical Considerations* (Radiology Grand Rounds lecture); *Susceptibility Contrast and Diffusion-Weighted MRI Techniques: Applications to Neuroimaging* (Resident Noon Conference lecture) and *Neuroradiology Case Review* (Presentation of teaching cases to Radiology residents). **Visiting Professor**, Department of Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, GA, January 14-15, 2014.
13. *DSC Perfusion Physics: Practical Technical and Clinical Considerations for Concentration Measurements in Tissues*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 8<sup>th</sup> Annual Meeting, Miami, FL, February 17, 2014.
14. *Pitfalls in DSC-MRI: Leakage Correction or Not?* **Invited faculty**, ASFNR American Society of Functional Neuroradiology 8<sup>th</sup> Annual Meeting, Miami, FL, February 17, 2014.
15. *MR Perfusion Clinical Practice Standards: DSC-MRI Acquisition and Post-Processing*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 8<sup>th</sup> Annual Meeting, Miami, FL, February 17, 2014.
16. *Does T2/FLAIR Improve on the Assessment of Response to Therapy? Results from ACRIN 6677/RTOG 0625*. **Invited presentation**, Meeting of the RANO study group at ASCO 2014, Chicago, IL, May 30, 2014.
17. *Trial Update on ACRIN 6677 / RTOG 0625*. Committee member and **Trial PI**, ECOG-ACRIN 2014 Fall meeting, Orlando, FL, November 15, 2014.
18. *Trial Update on ACRIN 6686 / RTOG 0825*. Committee member and **Trial PI**, ECOG-ACRIN 2014 Fall meeting, Orlando, FL, November 15, 2014.

19. *DSC Perfusion Physics and Leakage Correction: Practical Technical and Clinical Considerations for Concentration Measurements in Tissues*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 9<sup>th</sup> Annual Meeting, Tucson, AZ, March 18, 2015.
20. *DSC-MRI and the Identification of Tumor Recurrence in the Setting of Pseudoprogression and Pseudoresponse*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 9<sup>th</sup> Annual Meeting, Tucson, AZ, March 18, 2015.
21. *Assessing Treatment Response of Gliomas with DSC-MRI and the Need for Standardization in Clinical Trials*. **Invited faculty**, SNO Society of Neuro-Oncology 20<sup>th</sup> Annual Meeting, San Antonio, TX, November 22, 2015.
22. *DSC Perfusion Physics and Leakage Correction: Practical Technical and Clinical Considerations*. **Invited faculty**, ASFNR American Society of Functional Neuroradiology 10<sup>th</sup> Annual Meeting, Austin, TX, February 29, 2016.
23. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Concept EAF151*. Presented to the ECOG-ACRIN (Legacy ACRIN) Head/Neck/Neuro Committee (Committee member and **Trial PI**), ECOG-ACRIN 2016 Spring meeting, Boston, MA, May 13, 2016.
24. *Trial Update on Concept EAF151*. **Invited presentation** to the Brain Tumor Working Group, ECOG-ACRIN 2016 Spring meeting, Boston, MA, May 13, 2016.
25. *Assessing Treatment Response of Gliomas with DSC-MRI and the Need for Standardization in Clinical Trials*. **Invited presentation (SAM session)**, ASNR American Society of Neuroradiology 54<sup>th</sup> Annual Meeting, Washington, DC, May 24, 2016.
26. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Concept EAF151*. Presented to the ECOG-ACRIN (Legacy ACRIN) Head/Neck/Neuro Committee (Committee member and **Trial PI**), ECOG-ACRIN 2016 Fall meeting, Orlando, FL, November 11, 2016.
27. *Trial Update on Concept EAF151*. **Invited presentation** to the Brain Tumor Working Group, ECOG-ACRIN 2016 Fall meeting, Orlando, FL, November 12, 2016.
28. *Evidence-Based Best Practices for Clinical DSC-MRI*. **Invited presentation**, ASNR American Society of Neuroradiology 55<sup>th</sup> Annual Meeting, Long Beach, CA, April 25, 2017.
29. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Trial EAF151*. Presented to the ECOG-ACRIN (Legacy ACRIN) Head/Neck/Neuro Committee (Committee member and **Trial PI**), ECOG-ACRIN 2017 Spring meeting, Washington, DC, May 5, 2017.

30. *Trial Update on Concept EAF151. Invited presentation* to the Brain Tumor Working Group, ECOG-ACRIN 2017 Spring meeting, Washington, DC, May 5, 2017.
31. *Streamlining Clinical Trials to Accelerate Brain Tumor Drug Development. Invited participant* in a roundtable research discussion sponsored by the National Brain Tumor Society, Washington, DC, June 28, 2017.
32. *DSC Perfusion Physics and Leakage Correction: Practical Technical and Clinical Considerations. Invited faculty*, ASFNR American Society of Functional Neuroradiology 11<sup>th</sup> Annual Meeting, Portland, OR, October 9, 2017.
33. *Assessing Treatment Response of Gliomas with DSC-MRI. Invited faculty*, ASFNR American Society of Functional Neuroradiology 11<sup>th</sup> Annual Meeting, Portland, OR, October 9, 2017.
34. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Trial EAF151. Presented to the ECOG-ACRIN (Legacy ACRIN) Head/Neck/Neuro Committee (Committee member and Trial PI)*, ECOG-ACRIN 2017 Fall meeting, Orlando, FL, October 27, 2017.
35. *Trial Update on Concept EAF151. Invited presentation* to the Brain Tumor Working Group, ECOG-ACRIN 2017 Fall meeting, Orlando, FL, October 27, 2017.
36. *DSC-MRI: Efforts Towards Standardization and Use Cases for CBV and Other Markers in Neuro-oncology Clinical Trials. Invited presentation* to the National Cancer Institute Clinical Imaging Steering Committee, *Improving Brain Tumor Characterization with Advanced Neuroimaging Methods Workshop*, Shady Grove (Rockville), MD, April 18-19, 2018.
37. *Overview of EAF151: Change in Relative Cerebral Blood Volume as a Biomarker for Early Response to Bevacizumab in Patients with Recurrent Glioblastoma. Invited presentation* at the RA Education Symposium, ECOG-ACRIN 2018 Spring meeting, Chicago, IL, May 4, 2018.
38. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Trial EAF151. Presented to the ECOG-ACRIN (Legacy ACRIN) Brain/Neuro Committee (Committee member and Trial PI)*, ECOG-ACRIN 2018 Spring meeting, Chicago, IL, May 5, 2018.
39. *Trial Update on Concept EAF151. Invited presentation* to the Brain Tumor Working Group, ECOG-ACRIN 2018 Spring meeting, Chicago, IL, May 5, 2018.

40. *DSC-MRI: Application to Clinical Trials and the Need for Standardization*. **Invited faculty**, presented at ASFNR American Society of Functional Neuroradiology 12<sup>th</sup> Annual Meeting, San Diego, CA, October 15, 2018.
41. *Overview of EAF151: Change in Relative Cerebral Blood Volume as a Biomarker for Early Response to Bevacizumab in Patients with Recurrent Glioblastoma*. **Invited presentation** at the Clinical Research Associate Symposium, ECOG-ACRIN 2019 Fall meeting, Ft. Lauderdale, FL, October 26, 2018.
42. *Overview of EAF151: Change in Relative Cerebral Blood Volume as a Biomarker for Early Response to Bevacizumab in Patients with Recurrent Glioblastoma*. **Invited presentation** at the Oncology Nursing Committee Symposium, ECOG-ACRIN 2019 Fall meeting, Ft. Lauderdale, FL, October 26, 2018.
43. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Trial EAF151*. Presented to the ECOG-ACRIN (Legacy ACRIN) Brain/Neuro Committee (Committee member and **Trial PI**), ECOG-ACRIN 2018 Fall meeting, Ft. Lauderdale, FL, October 26, 2018.
44. *Clinical Trials and Translational Research Advisory Committee Ad hoc Working Group on Glioblastoma*. **Invited participant** in a subgroup exploring GBM Clinical Trials Driven by Molecular Pharmacodynamics and Imaging, sponsored by the NCI, Washington, DC, January 14, 2019.
45. *Trial Update on ACRIN 6677 / RTOG 0625, ACRIN 6686 / RTOG 0825, and Trial EAF151*. Presented to the ECOG-ACRIN (Legacy ACRIN) Brain/Neuro Committee (Committee member and **Trial PI**), ECOG-ACRIN 2019 Spring meeting, Boston, MA, May 3, 2019.
46. *An Update on Standardization of DSC-MRI Methodology for Use in Multi-center Clinical Trials*. **Invited presentation**, Meeting of the RANO study group at ASCO 2019, Chicago, IL, May 31, 2019.

## INTERNATIONAL

1. *DSC Concentration Measurements in Tissues with Practical Technical and Clinical Considerations*. **Invited faculty**, ISMRM Scientific Workshop on Perfusion MRI, Amsterdam, The Netherlands, October 12, 2012.
2. *DSC-MRI and Its Role in Distinguishing Tumor Recurrences from Pseudoprogression and Pseudoresponse*. **Invited presentation**, ASNR American Society of Neuroradiology 52<sup>nd</sup> Annual Meeting, Montreal, Quebec, Canada, May 20, 2014.

3. *DSC-MRI Fundamentals and Applications to Brain Tumors Including Assessment of Treatment Response and the Need for Standardization in Clinical Trials*. **Invited presentation (SAM session)**, ENRS Eastern Neuroradiological Society 28<sup>th</sup> Annual Meeting, Quebec City, Quebec, Canada, August 11, 2016.
4. *Evidence-Based Best Acquisition Protocols for Clinical DSC-MRI with an Emphasis on Neuro-oncology Trials*. **Invited presentation in the educational course Basic Perfusion**, ISMRM International Society of Magnetic Resonance in Medicine 27<sup>th</sup> Annual Meeting, Montreal, Quebec, Canada, May 12, 2019.

#### SESSION SUPERVISION AT NATIONAL CONFERENCES

1. *Adult Brain: Cerebrovascular Occlusive Disease I (Scientific Papers)*, **Co-moderator**. ASNR American Society of Neuroradiology 45<sup>th</sup> Annual Meeting, Chicago, IL, June 13, 2007.
2. *Interventional: Thrombolysis/Stroke (Scientific Papers)*, **Co-moderator**. ASNR American Society of Neuroradiology 49<sup>th</sup> Annual Meeting, Seattle, WA, June 7, 2011.
3. *Physics Basic I (Invited Presentations)*, **Moderator**. ASFNR American Society of Functional Neuroradiology 8<sup>th</sup> Annual Meeting, Miami, FL, February 17, 2014.
4. *Adult Brain*, **Co-chair, Program Committee**. ENRS Eastern Neuroradiological Society 29<sup>th</sup> Annual Meeting, Toronto, Ontario, Canada, August 24, 2017.
5. *ASFNR Programming: Perfusion Imaging for the Clinician (Invited Presentations)*, **Co-moderator**. ASNR American Society of Neuroradiology 57<sup>th</sup> Annual Meeting, Boston, MA, May 20, 2019.

#### GRANTS

1. *MRI Contrast Agent Methods to Assess Tumor Angiogenesis* (RO1 CA082500)  
NIH / National Cancer Institute  
Principal Investigator: Kathleen Schmainda, Ph.D.  
**Consultant**  
2003 –2007
2. *Diffusion-tensor and perfusion-weighted MRI for improved detection of early cerebrovascular white matter injury in patients with hypertension*  
Department of Diagnostic Imaging (RIH) Seed Grant (\$15,000)  
**Principal Investigator**  
2005
3. *Utilization of MR Perfusion Imaging as a Screening Tool to Assess the Risk of Stroke in Asymptomatic Patients with Sickle Cell Disease: A Feasibility Study*  
Department of Diagnostic Imaging (RIH) Seed Grant (\$15,000)

**Co-Principal Investigator**  
2006

4. *Quantification of Blood-Brain Barrier Permeability to Water with MRI: Validation of Intravascular Contrast Agent Technique in Transgenic Mouse Models of Altered Blood-Brain Barrier Permeability and Application to Human Neurodegenerative Disease*  
Department of Diagnostic Imaging (RIH) Seed Grant (\$15,000)

**Principal Investigator**  
2009

5. *Magnetic nanoparticle hyperthermia of glioblastoma with real-time MRI monitoring*  
Department of Diagnostic Imaging (RIH) Seed Grant (\$15,000)

**Co-Principal Investigator**  
2010

6. *Toward Multi-Center MR Brain Perfusion* (RO1 NS060918)  
NIH / National Institute of Neurological Disorders and Stroke  
Principal Investigator: Steven Stufflebeam, M.D., Ph.D.

**Consultant**  
2012-2015

PARTICIPATION IN NIH/NCI-FUNDED TRIALS

1. 2011-Present **ACRIN Principal Investigator**, ACRIN 6677/RTOG 0625: *A Randomized Phase II Trial of Bevacizumab with Irinotecan or Bevacizumab with Temozolomide in Recurrent Glioblastoma*.  
Funded by NCI U01-CA080098 and U01-CA079778.
2. 2011-Present **ACRIN Principal Investigator**, ACRIN 6686/RTOG 0825: *Phase III Double Blind Placebo-Controlled trial of conventional concurrent chemoradiation and Adjuvant Temozolomide plus Bevacizumab Versus Conventional Concurrent Chemoradiation and Adjuvant Temozolomide in Patients with Newly Diagnosed Glioblastoma*.  
Funded by NCI U01-CA080098 and Biomarker, Imaging and Quality of Life Studies Funding Program (BIQSFP).
3. 2017-Present **Principal Investigator**, ECOG-ACRIN EAF151: *Change in Relative Cerebral Blood Volume as a Predictive Biomarker for Response to Bevacizumab in Patients with Recurrent Glioblastoma*.  
Funded by NCI U01-CA180820.
4. 2017-Present **Co-Principal Investigator** (with Schmainda KM [MCW], Hu L [Mayo Scottsdale], Quarles CC [Barrow Neurological Institute]): *Multi-site Validation and Application of a Consensus DSC-MRI Protocol*.  
Funded by NCI R01-CA221938-01.

## PARTICIPATION IN OTHER FUNDED TRIALS

1. 2008-2009 **Co-Investigator** (Jeffrey Rogg, PI), *A multicenter, randomized, double-blind, crossover, phase III study to determine the safety and efficacy of gadobutrol 1.0 molar (Gadovist®) in patients referred for contrast-enhanced MRI of the central nervous system*  
Funded by Bayer Pharmaceuticals, Inc.
2. 2011-2012 **Co-Investigator** (Jeffrey Rogg, PI), *GEMSAV: Multicenter, open-label study to evaluate the safety and efficacy (by blinded reading) of contrast-enhanced magnetic resonance angiography (MRA) after a single intravenous injection of 0.1 mmol/kg gadobutrol in subjects with known or suspected vascular disease of the supra-aortic vessels*  
Funded by Bayer Pharmaceuticals, Inc.
3. 2011-2014 **Central Neuroradiologist** (Howard Safran, PI), *PPX and Concurrent Radiation for Newly Diagnosed Glioblastoma Without MGMT Methylation: A Randomized Phase II Study: BrUOG 244*  
Funded by Cell Therapeutics, Inc.
4. 2013-present **Co-Investigator** (Ott BR, PI), *221AD103: A Randomized, Double-Blinded, Placebo-Controlled Multiple Dose Study to Assess the Safety, Tolerability, Pharmacokinetics and Pharmacodynamics of BIIB037 in Subjects with Prodromal or Mild Alzheimer's Disease.*  
Funded by Biogen.
5. 2016-2018 **Co-Investigator** (Rogg JM, PI), *GDX-44-004: Phase IIB P03277 Dose Finding Study in Central Nervous System (CNS) Magnetic Resonance Imaging (MRI).*  
Funded by Guerbet Pharmaceuticals.

## GRANTS SUBMITTED, APPROVED FOR FUNDING

1. February 2019 **Co-investigator** (Kathleen Schmainda, PI), *Quantitative (Perfusion and Diffusion) MRI Biomarkers to Measure Glioma Response.* Submitted to NIH grant mechanism: PAR-17-129 (UO1) Quantitative Imaging Tools and Methods for Cancer Response Assessment.  
5% effort x 3 years (7/2020–6/2023)
2. February 2019 **Co-investigator** (Lori Daiello, PI), *Blood-brain Barrier Disruption as a Biomarker for Perioperative Neurocognitive Disorders: Cognitive Recovery After Elective Surgery (CREATES) study.* Submitted to NIH grant mechanism: PAR-18-029 (RO1)



Clarifying the Relationship between Delirium and Alzheimer's Disease and Related Dementias.  
10% effort years 1–3, 5% effort years 4–5

#### GRANTS SUBMITTED, AWAITING DECISION

1. February 2019 **Co-investigator** (Steve Toms, PI), *The Role of Epigenetic Regulation in Human Glioma: Non-Coding RNA and RNA Methylation*. Re-submitted to Warren Alpert Foundation Prize. 5% effort x 5 years
2. March 2019 **Co-investigator** (Karen Furie, PI), *Chagas Cog: Cognitive Outcomes in Chagas Disease*. R01 re-submission. 2-3% effort x 5 years
3. June 2019 **Co-investigator** (Jayashree Kalpathy-Cramer, PI), *Clinical and Translational Applications of Quantitative Imaging Tools in Brain Tumors*. Submitted to NIH grant mechanism: PAR-18-919 (R01) Quantitative Imaging Tools and Methods for Cancer Response Assessment. 10% effort x 5 years

#### UNIVERSITY TEACHING, ADVISING AND MENTORING ROLES

##### **TEACHING ASSIGNMENTS**

RAD 6290: Clerkship in Diagnostic Radiology  
The Warren Alpert Medical School of Brown University  
2002-Present

Review of neuroradiology teaching cases with medical students in order to familiarize them with the breadth of neurologic imaging techniques and applications.

RAD 6330: Cross Sectional Imaging in Clinical Medicine  
The Warren Alpert Medical School of Brown University  
2002-Present

Review of neuroradiology cases performed at Rhode Island Hospital while reading out with the radiology residents.

RAD 6360: Neuroradiology  
The Warren Alpert Medical School of Brown University  
2011-Present

**Co-director** (with Jeffrey Rogg, M.D.) of a one-month neuroradiology elective. The goal of this elective is to expose the medical student to non-invasive and invasive forms of neuroradiology and reinforce the student's knowledge of neuroanatomy and neuropathology.

PH 2620 Selected Topics in Molecular Biophysics, **lecturer** (*Susceptibility Contrast in MRI Applications*)  
Brown University Graduate School of Physics

Course Director: Jay Tang, Ph.D.  
Lecture date: 5/1/2012.

BIOL 1200 Protein Biophysics and Structural Biology, **lecturer** (*Susceptibility Contrast in MRI Applications*)  
Brown University Graduate School of Biology  
Course Director: Wolfgang Peti, Ph.D.  
Lecture dates: 4/30/2013 and 4/29/2014.

BIOL 3652 Integrated Medical Science II: Brain Sciences, **Group leader** for “Small Groups” teaching sessions for 1<sup>st</sup> year Brown medical students taking the required Brain Sciences section. The Warren Alpert Medical School of Brown University (Basic Science)  
2011-present  
Recent session dates: 2/8/2017, 3/1/2017, 2/2/2018, 2/12/2018.

BIOL 3652 Integrated Medical Science II: Brain Sciences, **lecturer** (*Advanced MRI Techniques in Neuroradiology*)  
The Warren Alpert Medical School of Brown University (Basic Science)  
Lecture date: February 2012.

BIOL 6674 Introduction to Diagnostic Imaging, **lecturer** (*Advanced Neuro MRI Applications and Neuroradiology Principles, Common Imaging Applications, and Case Review*)  
The Warren Alpert Medical School of Brown University  
Course Director: Don Yoo, M.D.  
2016-present  
Lecture dates: 5/10/2016, 11/8/2016.

CNS-5325 Clerkship in Neurology, **Director** of the neuroradiology component and **lecturer** (*Introduction to Neuroradiology: Basic Principles, Common Imaging Indications, and Case Review*) to all 3rd-year medical students taking this required elective.  
The Warren Alpert Medical School of Brown University  
2015-present  
Lecture dates: 8/12/2015, 11/11/2015, 2/10/2016, 6/1/2016, 8/3/2016, 11/2/2016, 2/1/2017, 5/31/2017, 8/2/2017, 11/1/2017, 1/31/2018, 5/30/2018, 8/1/2018, 10/31/2018, 1/30/2019, 6/5/2019.

Radiology Lecture Series for Primary Care-Population Medicine Program Longitudinal Integrated Clerkship (LIC), **lecturer** (*Introduction to Neuroradiology: Basic Principles, Common Imaging Indications, and Case Review*).  
The Warren Alpert Medical School of Brown University  
Course Director: Don Yoo, M.D.  
2016-present

## ADVISING ROLES

### UNDERGRADUATE THESIS COMMITTEES

2017-2018                      Ashley Aldridge (Bachelor of Arts with Honors)

Program in Liberal Medical Education, concentration in Health and Human Biology, Brown University

**Second Reader** (Wael Asaad, thesis advisor)

Thesis: Factors Contributing to Brain Shift in Deep Brain Stimulation Surgery

## GRADUATE THESIS COMMITTEES

2017-present                      Menghan Hu (Ph.D. candidate)  
Department of Biostatistics, Brown University School of Public Health  
**Member of Thesis Committee** (Ani Eloyan, thesis advisor)  
Thesis: Statistical Methods for Longitudinal Magnetic Resonance Imaging for Multiple Sclerosis

## RESEARCH SUPERVISION AND MENTORING ROLES

**Matthew Lee**, Medical student, Warren Alpert Medical School.

Dates of mentorship: 2017-Present.

Role: Research advisor and career mentor during medical school; faculty advisor during a one-month independent study period.

Published abstracts:

Lee et al. Utility of Percent Signal Recovery and Average Baseline Signal in DSC-MRI Optimized for rCBV Measurement for Differentiation of GBM, Metastasis, Lymphoma and Meningioma. Platform presentation at ASNR American Society of Neuroradiology 56<sup>th</sup> Annual Meeting, Vancouver, BC, June 4, 2018, presentation O-35.

Submitted papers:

Lee et al. Utility of Percent Signal Recovery and Average Baseline Signal in DSC-MRI Optimized for rCBV Measurement for Differentiation of GBM, Metastasis, Lymphoma and Meningioma. Submitted to AJNR Am J Neuroradiol, March 2019.

## HOSPITAL TEACHING, ADVISING AND MENTORING ROLES

### TEACHING ASSIGNMENTS

Weekly neuro-oncology tumor board, Rhode Island Hospital, **primary covering neuroradiologist** (Review all imaging studies at each conference)

Weekly neurosurgery grand rounds, Rhode Island Hospital, **shared coverage** (Review all imaging studies at each conference)

Weekly neurology conference (neuroradiology case review), Rhode Island Hospital, **shared coverage** (Review all imaging studies at each conference)

Twice/month pediatric neuro-oncology tumor board, Rhode Island Hospital, **shared coverage** (Review all imaging studies at each conference)

Twice/month head & neck tumor board, Rhode Island Hospital, **shared coverage** (Review all imaging studies at each conference)

Monthly comprehensive epilepsy case conference, Rhode Island Hospital, **shared coverage** (Review all imaging studies at each conference)

Radiology Residents: Neuroradiology Case Conference, Rhode Island Hospital (**Attend and participate**, 1/month)

Radiology Residents: Imaging Conference, Rhode Island Hospital (**Attend and participate**, 2/month)

Radiology Residents: approx. 10 **didactic teaching and case review** sessions per year

Radiology Residents—MRI physics (2 lectures/year)

Developed the MR physics curriculum for the Department of Diagnostic Imaging residents dealing with pulse sequences, image characteristics, image artifacts, and special acquisition methods.

Medicine Residents—Introduction to Neuroradiology and Neuroradiology Services at RIH (1 lecture/year)

## **RESEARCH SUPERVISION AND MENTORING ROLES**

**Marc Goldman**, Resident, Department of Neurosurgery, Warren Alpert Medical School.

Dates of mentorship: 2004-2008.

Role: Research advisor during residency.

Published abstracts:

Goldman et al. The utility of apparent diffusion coefficient for predicting response of non-small cell lung cancer brain metastases to stereotactic radiosurgery. American Society of Neuroradiology 44th Annual Meeting. San Diego, CA, 2006.

Goldman et al. The utility of apparent diffusion coefficient for predicting response of brain metastases to gamma knife radiosurgery. 13th International Meeting of the Leksell Gamma Knife Society, Seoul, Korea, May 21-25, 2006.

Goldman et al. Initial tumor volume decrease is not predictive of therapeutic response to gamma knife radiosurgery for intracranial breast and non-small cell lung metastases. 13th International Meeting of the Leksell Gamma Knife Society, Seoul, Korea, May 21-25, 2006

Published papers:

Goldman M et al. The Utility of Apparent Diffusion Coefficient in Predicting the Outcome of Gamma Knife Treated Brain Metastases Prior to Changes in Tumor Volume: a Preliminary Study. J Neurosurg 2006 Dec; 105(Suppl):175-182.

**William Mehan**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2010-2012.

Role: Research advisor during residency.

Published abstracts:

Mehan et al. What Is the Added Value of CTP above CTA in Decision Making for Intra-Arterial Stroke Therapy? RSNA 96<sup>th</sup> Scientific Assembly, 2010, Presentation SSC12-05.

Published papers:

Boxerman et al. Clinical Stroke Penumbra: Use of NIH Stroke Scale as a Surrogate for CT Perfusion in Patient Triage for Intra-arterial MCA Stroke Therapy. AJNR Am J Neuroradiol 2012 33(10):1893-900.

**Marissa Blitstein**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2010-2012.

Role: Research advisor during residency.

Published abstracts:

Blitstein et al. The Role of Longitudinal Perfusion-Weighted MRI Measures in Distinguishing Tumor Recurrence from Pseudoprogession in a Cohort of Patients with High-Grade Gliomas Receiving Radiation Therapy (IMRT), Temozolomide (TMZ) and Paclitaxel Poliglumex (PPX). American Society of Neuroradiology 49<sup>th</sup> Annual Meeting, Seattle, June 2011, Presentation 539.

Blitstein et al. Clinical correlation and significance of MRI findings in Chiari I malformation. American Society of Neuroradiology 49<sup>th</sup> Annual Meeting, Seattle, June 2011, Presentation 485.

**Deepak Raghavan**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2010-2012.

Role: Research advisor during residency.

Published papers:

Raghavan et al. Glioblastoma Multiforme: Utilization of Advanced MRI Techniques for Preoperative Planning. Med Health RI 2012 Feb;95(2):42-3.

Raghavan et al. Radiation Necrosis of a High-Grade Glioma. Med Health RI 2012 May;95(5):159-60.

**Joseph Farnam**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2013.

Role: Research advisor during residency.

Published abstracts:

Farnam et al. Extreme Pseudoprogession on MRI of High-grade Gliomas Treated

with Paclitaxel Poliglumex: Comparison with Conventional Pseudoprogression and True Tumor Progression. American Society of Neuroradiology 51<sup>st</sup> Annual Meeting, San Diego, May 2013, presentation as an education exhibit (EdE-16).

**Elizabeth Dibble**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2014-2016.

Role: Research advisor during residency.

Published abstracts:

Dibble et al. Toxoplasmosis versus Lymphoma: Cerebral Lesion Characterization Using Dynamic Susceptibility Contrast MRI and Relative Cerebral Blood Volume Estimates. American Society of Neuroradiology 53<sup>rd</sup> Annual Meeting, Chicago, April 2015, oral presentation O-173.

Published papers:

Dibble et al. Toxoplasmosis versus Lymphoma: Cerebral Lesion Characterization Using DSC-MRI Revisited. Clin Neurol Neurosurg. 2017 Jan;152:84-89.

**Amanda Baker**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2016-Present.

Role: Research advisor during residency.

Published abstracts:

Baker et al. Radiographically Occult Tethered Cord in Pediatric and Adult Patients. Platform presentation at ASNR American Society of Neuroradiology 56<sup>th</sup> Annual Meeting, Vancouver, BC, June 5, 2018, presentation O-208.

**Matthew Stib**, Resident, Department of Diagnostic Imaging, Warren Alpert Medical School.

Dates of mentorship: 2018-Present.

Role: Research mentor during residency.

Published abstracts:

Stib et al. Localizing Large Vessel Occlusions on CT Angiography Using a 3-D Deep Learning Model. Poster presentation at International Stroke Conference 2019, Honolulu, HI.

Stib et al. Deep Learning in Emergent Large Vessel Occlusion Detection using Maximum Intensity Projections via CT Angiography. Poster presentation at SIIM Machine Learning Conference, San Francisco, September 2018.