Meny law 10/10/2018

## **CURRICULUM VITAE**

## A. PERSONAL INFORMATON

Name in Full Meng Law

Business address Professor with Tenure

Radiology, Neurology, Neurological

Surgery

USC Keck School of Medicine

Professor of Biomedical Engineering USC Viterbi School of Engineering

**Director of Neuroradiology** 

Director Neuroradiology Fellowship Program
Director of NIA USC Alzheimer Disease
Research Center, Neuroimaging Core
Medical Director MR Imaging Center for
Imaging Acquisition USC Stevens Institute of

Neuroimaging and Informatics USC Keck Medical Center 1520 San Pablo Street.

Healthcare Consultation Center Suite L1600

Los Angeles, CA 90033

Business Phone (917) 774-2639

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Email Address <u>meng.law@usc.edu</u>

meng.law@gmail.com

Websites: <u>www.keckmedicine.org/doctor/meng-law</u>

www.youtube.com/watch?v=bzZMJgSBfq0

scholar.google.com/citations Meng Law <a href="https://scholar.google.com/citations?user=lKi-">https://scholar.google.com/citations?user=lKi-</a>

<u>yTMAAAAJ</u>

http://bme.usc.edu/directory/faculty/

http://www.loni.usc.edu/about\_loni/people/indi

v detail.php?people id=542

# **B. EDUCATION**

High School Wesley College, Melbourne, Australia

HSC, 1985

University University of Melbourne, Melbourne, Australia,

MBBS (Hons), (Medicine and Surgery), 1991

University University of Melbourne, Melbourne, Australia,

Fellow Royal Australasian College of

Radiology (F.R.A.C.R.), Diagnostic Radiology,

1999

Internship Royal Melbourne Hospital, Orthopedics,

Cardiology, Internal Medicine, General Surgery, Accident and Emergency,

Anesthetics, Melbourne, Australia, January

1992 – January 1993

Residency Junior Resident Medical Officer, Royal

Melbourne Hospital, Urology, Neurology, ENT,

Cardiology, Cardiothoracic Surgery,

Orthopedics, Melbourne, Australia, January

1993 - January 1994

Senior Resident Medical Officer, Royal

Melbourne Hospital, Ophthalmology, Accident and Emergency, Melbourne, Australia, Jan,

1994 – Jan, 1995

Senior Resident Medical Officer, Royal

Children's Hospital, Accident and Emergency, Melbourne, Australia, Jan, 1994 – Jan, 1995

Radiology Registrar, St. Vincent's Hospital,

Melbourne, Australia, Jan, 1995 – Jan, 1999

Fellowship New York University Medical Center,

Neuroradiology, New York, New York, 1999-

2000

Honors and Awards OWCA (Old Wesley Collegian Association)

Prize for Leadership, Academia, Sports and the Arts Old Wesley Collegian Association,

Melbourne, Australia, 1983

Indonesian Oral and Written Competition Prize Wales Mathematics Competition Prize, Wales Banking Corp, Melbourne, Australia, 1983

Stewart Colors/Honors, Wesley College, Melbourne, Australia 1984

Dux of School (Science), Wesley College, Melbourne, Australia, 1985

The John Scott Christie Memorial Award for Excellence in Academia, Sports and the Arts, Wesley College, Melbourne, Australia 1985

Queen's College Musical Society Prize, Queens College, Melbourne, Australia, 1986

Honors in Anatomy, Physics A, Chemistry, Biology, University of Melbourne, Melbourne, Australia, 1986

Honors in Metabolism and Endocrinology, Behavioral Science, Biochemistry, Neuroscience, University of Melbourne, Melbourne, Australia, 1987

Honors in Music Performance, Social and Preventative Medicine, Pharmacology, Microbiology including Immunology, University of Melbourne, Melbourne, Australia, 1988

Honors in Obstetrics and Gynecology, Community Medicine, Psychiatry, Pediatrics, University of Melbourne, Melbourne, Australia, 1989

Honors in Medicine, Surgery, University of Melbourne, Melbourne, Australia, 1990

Musical Society of Victoria, Performance award Hephzibah Menuhin Award, Musical Society of Victoria, Melbourne, Australia, 1991 Melbourne College of Advance Education Jazz Prize, Melbourne College of Advanced Education, Melbourne, Australia, 1992

Award for Best instructor/lecture/faculty, Clinical MR Spectroscopy course. Brian Ross. Pasadena, California for lecture "Clinical MR Spectroscopy: Correlation with Perfusion MR. Website www.mrs-hmri.org/courses2000.htm 2000

Awarded RSNA Fellow Research prize for paper entitled Differentiation between Primary High Grade Gliomas and Solitary Metastasis Using cerebral blood volume maps and proton MR Spectroscopic Imaging, RSNA, Chicago, 2000

ASNR Outstanding Presentation Award in General Neuroradiology for Scientific Paper DSC MRI in LGG: Cerebral Blood Volume Predicts Patient Outcome Better than Histopathology, ASNR, Washington DC, 2003

ENRS Stephan Kieffer Best Presentation Award for paper entitled Threshold Values in Histogram Analysis of Perfusion MR Imaging in Patients with Cerebral Gliomas, ENRS, Boston, 2004

Award for Excellence in Clinical Science Society of Neuro Oncology, presented at the Annual Meeting, SNO Orlando. Florida, 2006

Norman Leeds Awards for Paper, Predicting Time to Progression- Survival in Gliomas with Cerebral Blood Volume Measurements using Dynamic Susceptibility Contrast. ENRS, Stowe, Vermont, 2007.

Best Teacher Award International Society of Magnetic Resonance in Medicine ISMRM Annual Meeting 2009

**Top Doctor Award** 

Pasadena Magazine 2011, 2012, 2013, 2014

The Leading Physicians of the World 2014

Distinguished Investigator Award:

The Academy of Radiology Research 2014

Medical Licensure Medical Board of California, C53620

3/25/2009 - current

Medical Board of New York Medical Board of Connecticut

Board Certification American Board of Radiology, 2004

Certificate of Added Qualification

Certificate of Added Qualifications CAQ

Neuroradiology

Other DEA number: FL1332650

X-Ray Supervisor and Operator, RHL 167833

MRS Certification, 1999

# C. PROFESSIONAL BACKGROUND

## **Academic and Administrative Appointments:**

Faculty Associate: Zilkha Neurogenetics Institute USC 2017 - Present

Professor of Neurological Surgery, Professor of Neurology USC Keck School of Medicine, Los Angeles, CA, May 2016 – Present

Professor of Neuroimaging, Laboratory of Neuroimaging, USC Stevens Institute of Neuroimaging and Informatics, Los Angeles, CA, Jan 1, 2015 – Present

Professor of Biomedical Engineering, Department of Biomedical Engineering, USC Viterbi School of Engineering, Los Angeles, CA, July 1, 2015 – Present

Professor of Radiology, Division of Neuroradiology, Department of Radiology, USC Keck School of Medicine, Los Angeles, CA, March 1, 2009 – Present

Director Division of Neuroradiology, Neuroradiology Fellowship Program Department of Radiology, USC Keck School of Medicine, Los Angeles, CA, March 1, 2009 – Present

Director of ADRC Neuroimaging Core USC Keck School of Medicine, Los Angeles, CA, March 1, 2012 – Present

Associate Professor of Neurosurgery & Radiology, Mount Sinai School of Medicine, New York, NY, 2007 – 2008

Associate Professor of Neurosurgery & Radiology, NYU School of Medicine, New York, NY, 2005 – 2006

Assistant Professor of Neurosurgery & Radiology, NYU School of Medicine, New York, NY, 2004 – 2005

Assistant Professor of Radiology, NYU School of Medicine, New York, NY, 2001 – 2004

Fellow and Clinical Instructor in Radiology, NYU School of Medicine, New York, NY, 2000 – 2001

Radiology Registrar, St. Vincent's Hospital, Melbourne, Australia, 1995 - 1999

Instructor in Anatomy, University of Melbourne, Richmond, Victoria, Australia, 1994 - 1995

#### **CLINICAL APPOINTMENTS**

- Assistant Radiologist Victorian Imaging Group (VIG), Australia 1999 -2000
- Box Hill Hospital, Beleura Hospital, Waverley Private Hospital 1999 -2000
- Cabrini Hospital, Linacre Hospital, Sandringham Hospital, 1999 -2000
- Mitcham Hospital, Lilydale, John Fawkner Hospital 1999 -2000
- Consultant Radiologist St. Vincent's Hospital, Melbourne, Australia, 1999
   -2000
- Assistant Radiologist with Radclin Imaging, Melbourne, Australia, 1999 -2000
- Senior Radiology Registrar St. Vincent's Hospital, Melbourne, Australia, 1998 -2000
- Radiology Registrar, St Vincent's Hospital, Melbourne, Australia, 1997-1998
- Radiology Registrar, Royal Children's Hospital, Victoria, Australia, 1997-1998
- Radiology Registrar, Mercy Hospital for Women, Victoria, Australia, 1997-1998
- Radiology Registrar, St. Vincent's Hospital, Melbourne, Australia, 1995 -1999

 Radiology Registrar, Goulburn Valley Hospital, Melbourne, Australia, 1995 - 1996

# **Specific Teaching Responsibilities:**

Mentoring Graduate Students, Residents, Neuroradiology Fellows, and Post-Doctoral PhD Fellows, 2009 - present

#### 2001 – Current:

- Didactic Teaching lectures for Medical Students, Residents and Fellows.
- 12 Didactic medical student case reviews/year.
- Morning fellow conferences.
- Neuroradiology Grand Rounds
- 12 Resident Lectures/year

#### 2000 – 2001:

 Neuroradiology Instructor for residents and medical students, NYU Student and Resident Radiology Course

#### 1995-1999:

 Radiology Instructor for Medical Students, St. Vincent's Hospital, St. Vincent's Student and Resident Radiology Course

#### 1994-1995:

 Anatomy Instructor, University of Melbourne Anatomy School, Student Anatomy Course

#### Lectures:

Monthly Medical Students Radiology Lectures, 2001-current
Monthly Radiology Resident Lectures and Conference, 2001-current
Weekly Neuroradiology Fellow Conference, 2001-current
National and International Lectures (please see below, over 600 lectures given)

# **Specific Administrative Responsibilities:**

Administrative Duties for the Neuroradiology Service at USC Medical Center and LA County Hospital, 2009-current

 Medical Director MRI and Center for Imaging Acquisition USC Stevens Institute for Neuroimaging and Informatics

- Monthly Neuroradiology Schedule for Faculty and Fellows
- Monthly Journal Club and Research Meetings
- Administration as Director of Neuroradiology ACGME Fellowship Program
- Weekly Neuroradiology School lectures for Fellows
- Weekly Neuroradiology Lectures for Residents
- Patients schedules at USC/LAC Medical Center

Administrative Duties for the Neuroradiology Service at Manhattan VA, New York Harbor Healthcare System, New York, NY, 2001-2003

# D. SOCIETY MEMBERSHIPS

## **Professional:**

- Society of Neuro-oncology, 2003-Current
- American Roentgen Ray Society, 2003-Current
- Radiology Society of North America, 1998-Current
- New York Roentgen Ray Society, 2006-Current
- IRSA (Interventional Radiology Society of Australia), 1998-Current
- American Society of Neuroradiology (ASNR)
- American Society of Functional Neuroradiology (ASFNR)
- American Society of Spine Radiology (ASSR)
- Western Society of Neuroradiology
- Eastern Society of Neuroradiology
- European College of Radiology
- Turkish Society of Neuroradiology (Honorary Member)
- International Society of Magnetic Resonance in Medicine
- North American Spine Society
- World Federation of Neuroradiology

## E. SERVICE

## **Professional Organizations:**

#### National/International:

- President American Society of Spine Radiology ASSR 2014
- President American Society of Functional Neuroradiology ASFNR 2014
- President-elect, American Society of Spine Radiology, ASSR 2012
- Vice-President, American Society of Spine Radiology, ASSR 2012
- Secretary, American Society of Functional Neuroradiology 2012.
- Member, American Society of Neuroradiology, Senior Member, 2000-

#### Current

- Member, American Society of Functional Neuroradiology Charter, 2007-Current
- Member, American Society of Spine Radiology Senior Member, 2006-Current
- Treasurer, Eastern Neuroradiological Society, 2005-2006
- Secretary, Eastern Neuroradiological Society, 2006-2007
- President, Eastern Neuroradiological Society, 2007-2008
- Member, Radiologic Society of North America, 1998-Current
- Member, International Society of Magnetic Resonance in Medicine, 2001-Current
- Member, American College of Radiology, 2003-Current
- Member, AMA (American Medical Association), 2002-Current
- Member, Royal Australian and New Zealand College of Radiologist, 1999-Current
- Member, World Federation of Neuroradiological Societies (WFNRS), 2002-Current
- Honorary Member, Turkish Society of Neuroradiology
- International Society of Magnetic Resonance in Medicine (Program Committee AMPC)

# **University/Other Committees:**

- Treasurer, Eastern Neuroradiology Society, 2005 2006
- Member, ASNR Scientific Program Committee, 2005 2006
- Member, ASNR Research Committee, 2005 current
- Program Chair, NYU Radiology Neuroradiology, Program Committee, MRI State of the Art, 2005 - 2006
- President Elect, ENRS Eastern Neuroradiology Society, 2006 2007
- President, ENRS Eastern Neuroradiology Society, 2007 2008
- Member, ASNR Technical Exhibits Committee, 2007 current
- Member, Corporate Support Committee, ASSR, American Society of Spine Radiology, 2007 – current
- Member, Program/Education Committee, ASFNR, American Society of Functional Neuroradiology, 2007 – 2008
- Treasurer American Society of Functional Neuroradiology ASFNR 2010 to ascend to President of the ASFNR
- Executive Committee Member American Society of Spine Radiology ASSR 2010-2011
- Vice President American Society of Functional Neuroradiology ASFNR to ascend to President of the ASFNR 2014
- Vice President American Society of Spine Radiology ASSR 2012

- to ascend to President of the ASSR 2014Faculty Research Council 2012 – current to review Faculty appointments at USC for tenure or tenure track
- Chair of USC CTSI Neuroscience Grant Review Committee, 2012, 2013, 2014
- President American Society of Functional Neuroradiology 2014
- President American Society of Spine Radiology ASSR 2014
- USC IRB 3 Committee 2015 to current
- Chair USC Search Committee for USC Institute of Neuroimaging and Informatics, Director of Center of Image Acquisition
- NIH NIA USC Alzheimers Disease Research Center Executive Committee
- USC Keck Safety Review Committee
- USC Risk Management Review Committee
- USC LAC Stroke Center Committee
- USC Faculty Research Council & Tenure Committee
- USC Search Committee for Neuroimaging Faculty

# **NIH Study Section:**

- Study Section Member, Program Projects PO1 Cluster Review, Bethesda, NIH, 2005-2006
- Study Section Member, Imaging and Image Guided Interventions, Bethesda, NIH, 2007-2008
- Study Section Member, SBMI Small Business Medical Imaging, Bethesda, NIH, 2007-2008

#### **Editorial Boards:**

- Member, American Journal of Neuroradiology, 2005-2008
- Editorial Board Member, World Neurosurgery
- Associate Editor in Chief World Radiology
- Associate Editor Neurographics
- Associate Editor Journal of Clinical Neuroscience
- Guest Editor, Topics in MRI: Issue on MR Imaging in White Matter Diseases.
- Guest Editor, Neuroimaging Clinics: Issue on State of the Art Brain Tumor Diagnostics, Imaging and Therapeutics
- Guest Editor, Neurosurgery Focus
- Special Edition Editor Journal of Neurosurgery Focus

#### **Journal Reviews:**

- NIH Reviewer for National Institute of General Medical Sciences
- Radiology
- American Journal of Neuroradiology
- Annals of Neurology
- NMR in Biomedicine
- American Journal of Roentgenology
- Journal of Neurological Science
- Journal of Computed Assisted Tomography
- Magnetic Resonance in Medicine
- Australasian Radiology
- Journal of Magnetic Resonance Imaging
- Neuroradiology
- Psychiatry Research: Neuroimaging
- European Journal of Cancer
- Neurology
- Neurotherapeutics
- Journal of Neuroimaging
- World Radiology
- World Neurosurgery
- Neurographics
- Investigative Radiology
- Neuroimage
- Journal of Clinical Neuroscience
- Neuroradiology
- Journal of Neurooncology

#### **Grant Reviews:**

- NIH/NCI Special Emphasis Panel Brain Tumors
- American Cancer Society
- Children's Brain Tumor Foundation
- Welcome Trust
- MRC (Medical Research Council)
- Department of Health NHS (UK)
- ASNR Research Committee
- Baxter Foundation
- USC CTSI Chair of Neuroscience Review Committee
- Whittier Foundation
- Radiological Society of North America (RSNA)
- Chair USC Neuroscience CTSI Review Committee
- USC CTSI Grant Reviewer

#### **Abstract Reviews:**

- American Society of Neuroradiology (ASNR)
- American Society of Functional Neuroradiology (ASFNR)
- International Society of Magnetic Resonance in Medicine (ISMRM)
- Radiologic Society of North America (RSNA)
- American Society of Spine Radiology (ASSR)
- North American Spine Society (NASS)

## F. RESEARCH

**Major Areas of Research Interest:** 

Aging Brain and Alzheimer Disease: Advanced Imaging BBB, Perfusion, Permeability Imaging, Structural Imaging
Perimenopause and Bioenergetic Crisis and Memory Loss
Clinical Trials of Novel Therapeutics: Allopreganolone
Director of the NIA USC ADRC Neuroimaging Core

BD2K, Brain Initiative, Big Data Science Contour imaging and Machine Learning

**Advanced Neuro MR Imaging techniques:** Functional imaging, diffusion tensor imaging (DTI), Perfusion MRI (DSC MRI), Permeability imaging (DCE MRI).

**Traumatic Brain Injury:** Neuroimaging and Informatics in Traumatic Brain Injury (TBI) in contact and non-contact sports

**Neuro-oncology:** Particularly its role in characterization of glioma biology. Correlation with Perfusion MRI. Monitoring therapy with advanced MR techniques. Predicting tumor biology, patient outcome and survival with advanced MRI.

Stroke and Brain Ischemia: Advanced Imaging in Stroke Triage

Multiple Sclerosis and Demyelinating Disease: Finding early surrogate markers

**Molecular Imaging:** Correlating advanced MRI with molecular markers of hypoxia and angiogenesis, gene expression in Glioma biology. IDH mutant vs wildtype

**Ultra High Field Imaging at 3T and 7T in vivo.** Characterization of tumoral microvasculature and microstructure. Sequence development and optimization, combination with Parallel Imaging.

**Spine Imaging.** Advanced imaging of the spinal cord with MRSI, DTI and Perfusion techniques. Applications in disease states, spondylosis, demyelination and tumoral disease.

## **Mentored Research Grants:**

- Assessing the Value of Perfusion and Permeability MR Imaging to Characterize Pseudoprogression, RSCH1006 RSNA R&E Research Scholar Grant 2010, \$150,000. PI Mark Shiroishi
- Assessing the Value of Perfusion and Permeability MR Imaging to Characterize Pseudoprogression and Pseudoresponse in Patients with High Grade Glioma, Zumberge Foundation Grant, \$30,000 PI Mark Shiroishi
- Standardization of multicenter perfusion and permeability imaging and storage of IT Clinical Translation Science Award (CTSA) \$30,000 PI Mark Shiroishi
- 4. Dynamic CT, US and Sestamibi Imaging of Parathyroid Adenomas, \$30,000 PI Alexander Lerner
- 5. Assessing the Value cerebrovascular reactivity imaging in aging and memory loss, RSNA R&E Research Scholar Grant 2015, \$150,000. PI Kevin King
- 6. Clinical trial of amniotic fluid stem cell injections vs steroid in patients with back pain, \$50,000. PI Wende Gibbs

# **Research Grants (Recent and Current):**

- NIH 1UL1RR031986-01 Standardization of a Short Imaging \$34,636
   Protocol for Neuroimaging, multi-center project UCI and USC
   CTSI LAB-CTSI grant
- 2. Dynamic Contrast Enhanced Steady State T1-weighted
  Perfusion MRI (DCE MRI): Characterization of Intracranial
  lesions comparing MR contrast agents with different T1
  relaxivity. (Bayer Healthcare ISS).
- 3. Grading of Cerebral Gliomas: MR Spectroscopy, DSC Perfusion MRI, Grant # 001, Research Grant, Royal

\$622,500

Australian College of Radiology, Principal Investigator, 2001 – 2002, Utilize advanced imaging tools MRS, Perfusion MRI to determine glioma grade in a comparison with pathology, (25% FTE)

Comments: In this grant I was able to retrieve preliminary data which has enabled the submission of an ROI application Quantification of Tumor Malignancy with MRI

4.	Diffusion Tensor Imaging and MRS in Cervical Spondylosis, Grant # 003 NYUSOM, Research Seed Grant, Principal Investigator, 2005 – 2006, Determine the diffusion tensor imaging findings of cervical spondylosis in comparison with conventional imaging to determine biomarkers which would predict outcome from neurosurgery decompression, (5% FTE)	\$10,000
5.	NIH RO1 NS39135-10, Quantitative MRI and 1H-MRS in Traumatic Brain Injury, , Co-Investigator, 2001 – 2005, Apply quantitative MRI techniques such as diffusion tensor imaging and MR spectroscopy in TBI to determine if there are biomarkers for outcome, (5% FTE)	\$3,886,472
6.	NIH RO1 CA093992, Quantitative Assessment of Angiogenesis by Perfusion MRI, Co-Investigator, 2003 – 2008, To optimize and validate perfusion and permeability imaging techniques as a biomarker of tumoral angiogenesis in human gliomas, (25% FTE)	\$1,880,125
7.	NIH RO1 NS33385-5, Quantitative MRI and Fast Ultra High Field MRI and MRS, Co-Investigator, 2002 – 2007, To optimize quantitative MRI techniques and MR spectroscopy at 3T and 7T in neurological disorders, (5% FTE)	\$3,691,603
8.	NIH RO1 NS39135-10, Radiation-Therapy Brain Injury with 1H-MRS, Co-Investigator, 2001 – 2004; 2005 – 2010, To determine the perfusion, diffusion tensor and MRS findings in radiation injury to the brain in patients treated for glioma, (5% FTE)	\$422,500
9.	NIH RO1 CA1111996, Quantitative MRI in Tumor Malignancy, Principal Investigator (Law), 2006 – 2010, To determine if perfusion, diffusion tensor and MRS metrics can be used as biomarkers to predict glioma biology and more important	\$1,502,169

patient outcome compared with pathology, (25% FTE)

10. NIH R01 NS051623-04, Quantitative MRI in PP-MS, Co-

Investigator, 2006 – 2010, To investigate diffusion, perfusion and MRS findings in PP-MS and determine if there are biomarkers which can predict early onset of disease and response to disease modifying therapies, (10% FTE)

- 11. GRANT 07-0398, ABC2, Standardization of Perfusion MR in a Multi-Center Setting, Principal Investigator, 2007 – 2011, To standardize the acquisition of perfusion and permeability imaging in a single and multi-center setting, (5% FTE)
- 12. NIH 1UL1RR031986-01 (Law) 4/1/2013/31/2012 SC-CTSI Lab Pilot Grant Program .36 Calendar Federated Imaging Database Feasibility Study. The major goals of this project are to standardized and create a federation of de-identified neuroimaging data between multiple institutions.
- 13. NIH UL1TR000130 (Law) 4/1/2013 3/31/2014 SC-CTSI Lab Pilot Grant Program .36 Calendar High Resolution MR Permeability and Perfusion Vasoreactivity in the Medial Temporal Lobe as an Early Preclinical Biomarker of Cognitive Impairment and Alzheimer's Disease.
- 14. DI 2010-10 (Law) 7/29/2011 8/01/2013
   1.08 CM Bayer Healthcare Pharmaceuticals, Inc. Dynamic Contrast Enhanced Steady State T1-weighted Perfusion MRI (DCE MRI): Characterization of Intracranial Lesions

The major goals of this investigator initiated project are compare the standard of care MRI using Magnevist® to an enhanced research MRI using Gadavist® to see if the enhanced MRI provides a better measurement of brain lesions.

15. NIH R21EB013456 NIH (PI: Law) 7/01/2012-7/01/2014 Novel ICA Based Multi-Fiber Streamline Tractography Approach

The goal is to achieve a technological break-through in Diffusion Tensor Imaging (DTI) by enabling accurate multiple-fiber per voxel tractography with clinically acquired data. The outcome would be similar to what is possible with generally much longer q-space based acquisitions.

# 16. NIH RO1 (Hajjar) 7/01/2012 – 6/30/2017 .36 Calendar NIH

Anti-hypertensives and vascular, endothelial, and cognitive function. The major goals of this project are to investigate the effects of hypertension on cognition with particular focus on biomarkers of brain cerebral perfusion and brain connectivity \$7,884(annual) \$39,421 over 5 years

# 17. NIH RO1 UF1 AG046148 (Brinton)

7/01/2014 – 6/30/2019 1.2 Calendar Allopregnanolone Regenerative Therapeutic for MCI/ AD: Dose Finding Phase 1. This is a Phase 1 clinical trial to investigate the safety in a dose escalation study for Allopregnanolone in cognitive impairment.

# 18. NIH/NCRR/NCATS KL2TR000131 (Shiroishi)

7/1/2014 - 6/31/2016

Multiparametric Functional MRI to Differentiate
Pseudoprogression from True Early Progression in Newly
Diagnosed Glioblastoma Treated with temozolomide
Chemoradiation as part of a mentorship team along with Drs.
Berislav Zlokovic, Arthur Toga and Russell Jacobs.The
program will consist of a multicenter imaging study using
multiparametric permeability and perfusion MRI to try to
differentiate pseudoprogression from true early progression in
glioblastoma patients treated with chemoradiation.

# 19.5151492147 Law (PI) 04/18/14 – ongoing Toshiba American Medical Time-SLIP and CSF in Chiari Malformations To determine if Time-Slip can aid in predicting the responsiveness of patients with Chiari malformation to decompression surgery.

# 20. NIH P01-AG12435-19 (PI: Chui)6/01/08 - 05/31/015 NIH/NIA

The Aging Brain: Vasculature, Ischemia, and Behavior. This multi-center program project seeks to elucidate the effects of atherosclerosis on brain structure and function, using carotid ultrasound, quantitative MRI, amyloid PET imaging, neurological, neuropsychological and neuropathological assessment.

\$8,390,456 (5 year direct costs) 21.NIH P50-AG05142-30 (PI: Chui) 04/01/10-03/31/15 0.6CM NIH/NIA Alzheimer Disease Research Center (ADRC) Director/PI, Neuroimaging Core: The Neuroimaging Core is responsible for the acquisition, archiving, processing and analysis of ADRC, ADNI and other imaging data for the ADRC.

\$1,299,271 (Year 30 total costs)

22. NIH P50-AG05142- 31(PI: Chui) 04/01/15-03/31/20 1.2CM NIH/NIA Alzheimer Disease Research Center (ADRC)

\$7,104,939 (total 5 year direct costs)

Director, Neuroimaging Core: The Neuroimaging Core is responsible for the acquisition, archiving, processing and analysis of ADRC, ADNI and other imaging data for the ADRC

- 23. NIH U01 EY025864 (PI: Tjan) 07/01/15-06/31/20 1.2CM \$4,389,892 NIH (total 5 year direct costs)
  Human Connectomes for Low Vision, Blindness, and Sight Restoration. The acquisition and application of data from the HCP towards a basic understanding of the effect of low vision, blindness and visual restoration by combining advanced retinal imaging with the brain-mapping techniques developed in the Human Connectome Project (HCP), using novel yet robust image analytical methods
- 24.LK Whittier Foundation (PI: Law) 09/01/15-08/31/16 \$100, 000 1.2CM (Total 5 year direct costs)
  Changes in Neuroimaging as Result of Robotic Rehabilitation in Patients with Hemispherectomy. Subjects with hemispherectomies will undergo neural plasticity during neuro-rehabilitation. We will determine what Neuroimaging changes occur as a result
- 25. ASNR (PI: Law) 07/01/16-06/31/18 1.2CM NIH(total 2 year direct costs) ASNR Foundation AD Grant: We aim to use multishell DTI fiber orientation density DSI, structural imaging and rsfMRI to determine if there are grey and white matter regenerative effects in a clinical trial with a novel endogenous steroid called Allopregnanalone.

26.NIH P01 AG06572 (PI: Brinton, Project 3 PI: Law) 04/01/16-03/31/21 1.2CM

NIH (total year direct costs) \$292,469

Perimenopause in ApoE4 Brain: Clinical Outcomes and Global Impact the overarching goal is to provide evidence for the hypothesis that ApoE4 positive females experience a triple hit: 1) ApoE4 genotype; 2) Aging and 3) Perimenopause. The perimenopause transition leads to a bioenergetic crisis in humans which activates a cascade of adaptive responses associated with an Alzheimer's-like phenotype. This has important therapeutic and preventative implications for AD

## 27. DI 2016-18 (Lerner)

Bracco Diagnostics, QSM and quantitative DCE MRI comparing macrocylic Dotarem vs linear Multihance gadolinium agent.

The major goals of this investigator initiated project are compare degree of brain Gd deposition using Dotarem ® versus Multihance ® to see if there is a difference between macrocylic vs linear agents

28. P01AG052350 Toga, Zlokovic (MPI) 09/30/16-09/30/21 CMNIH(total year direct costs) \$1,793,519 Vascular Contributions to Dementia and Genetic Risk Factors for Alzheimers Disease

The goal is advance current knowledge on the vascular contributions to dementia and AD, and establish whether the neurovasculature plays major role in cognitive decline, and therefore is a key new therapeutic target to treat dementia and AD. This is a program project application with multiple projects, cores, institutions and investigators

29. 1R01AG048650-01A1 (Ellis & Sattler) 09/30/2015 - 05/31/2020 Calendar
NIH National Institute of Aging \$659,438
Phase II trial of tesamorelin for cognition in aging HIV-infected persons

The major goal of this project is to test determine whether highly promising FDA licensed medications (tesamorelin) in patients with abdominal obesity and cognitive impairment will improve brain function in obese HIV positive persons compared to placebo by targeting visceral adiposity and enhancing neurotrophic activity of IGF-1 in the central nervous system. How this treatment affects structural integrity and immune activation in the brain will

be assessed by special neuroimaging procedure.

30. GUERBET, LLC (PI: Law)

03/01/17-06/30/18 1.2CM

Guerbet, LLC

\$160,241

P03277 Dose Finding Study in Central Nervous System (CNS) Magnetic Resonance Imaging (MRI) Phase IIb Clinical Study. Study objective is to determine a safe and effective dose of P03277 based on the Contrast to Noise Ratio (CNR) when comparing with Gadobenate Dimeglumine (MultiHance®) at 0.1 mmol/kg body weight (BW).

# **31. UH2NS100614 (Wang/Kashani/Ringman)** 09/30/2016 - 07/31/2018 1.2CM

NIH \$723,750

Imaging Cerebral and Retinal Microvasculature in Cerebral Small Vessel Disease

Cerebral small vessel disease (SVD) is the most common vascular cause of dementia, a major contributor to mixed Alzheimer's disease and vascular dementia, and the cause of about one fifth of all strokes worldwide. This project will develop and evaluate a suite of noninvasive magnetic resonance imaging (MRI) and optical coherence tomography angiography (OCTA) techniques for in vivo imaging of cerebral and retinal small vessels. In conjunction with parallel efforts at the participating sites of the consortium, this project is expected to lead to biomarkers of SVD that can be applied for phase II and phase III clinical trials to prevent and treat vascular dementia.

# 32. NIH R41-EB024438 (Wang)

07/1/2017 - 06/30/2018

0.42CM

NIH \$45,454

(USC subaward)

A Novel System for Reducing Radiation Dose of CT Perfusion

USC will perform the evaluation of the dose reduction performance of k-space weighted image contrast (KWIC) image reconstruction by comparison with the industry standard of filtered back projection (FBP) reconstruction using retrospectively undersampled clinical CT perfusion data.

# 33. R21 EB022951 (PI: Haldar)

7/1/2016 - 4/30/2018

0.36CM

NIH/NIBIB \$138,000/yr

Faster MRI with Sparse Sampling and Low-Rank Modeling

This research aims to achieve substantial improvements in MRI speed by combining sparse sampling methods with a novel low-rank subspace modeling framework that we have recently developed (low-rank modeling of local k-space neighborhoods, or "LORAKS"). LORAKS will be implemented, optimized, and evaluated in the contexts of: (1) high-resolution anatomical imaging for brain morphometry applications and (2) fast imaging protocols that utilize

simultaneous multi-slice data acquisition and echo-planar imaging.

**34. NIH R33 CA22540-01 (PI: Nayak, Law)** 07/01/17-06/30/21 NIH \$262.513

#### **Precise DCE-MRI Assessment of Brain Tumors**

This project will **apply compressed sensing and constrained reconstruction for** quantitative dynamic contrast-enhanced (**DCE**) MRI biomarkers for the assessment of brain tumor response to therapy in clinical neuro-oncology trials. to evaluate and fine-tune tools in a large patient cohort that delivers analysis and reporting software for imaging and neuroradiology

**35. USC Keck Dean's Pilot/ADRC (PIs: M Law)** 01/01/18-01/01/19 0.12 CM \$37,500

Ultrahigh Field 7T MRI of Brain Perivascular Spaces, CSF Dysregulation, Vascular Cognitive Impairment Dementia and Alzheimer's Disease. Ultrahigh field 7T MRI allows visualization of fine perforating arteries (or arterioles on the order of a few hundred microns). The morphology of these lenticulostriate vessels (LSV) (e.g. branch number, radius, tortuosity) showed significant differences between subjects with subcortical vascular dementia (SVaD) and healthy controls as well as between hypertensive and normotensive subjects. These data demonstrate the potential for quantifying the morphology of LSV as imaging biomarkers of hypertensive SVD that primarily affects subcortical regions. 7T MRI provides higher spatial resolution and SNR to visualize more perivascular spaces using a T2 SPACE technique

**36. NIH R01 AIP (PI: Finch, Law Co-I)** 07/01/17-06/30/21 NIH \$262,513

#### Tsimane Project (Chapman subcontract to USC)

This project will determine the longitudinal assessment of cognitive impairment and dementia in the Tsimane, Bolivian population, perform neuroimaging related to cognitive impairment, AD and other dementias, investigate the epidemiology of cerebral atrophy, cognitive impairment, AD and other dementias. This is a time sensitive investigation of a pre-industrialized life-style before this cohort become modernized.

#### **PENDING**

# G. INVITED LECTURES (SELECTED TO 2012 - CURRENTLY MORE THAN 1000)

- 1. Little AF. CT Fluoroscopy. "How I do it?" Scientific Meeting. FRANZCR College Meeting, Melbourne, Australia, May 1999.
- Anatomy of the Hippocampus and Imaging in Mesial Temporal Sclerosis. Neuroradiology Conference. New York, NY November 1999.
- 3. Clinical MR Spectroscopy. Lecture. St. Vincent's Hospital. University of Melbourne. Melbourne, Australia, January, 2000.
- Litt A.Clinical MR Spectroscopy. Workshop presented with Andy Litt. Sponsored by Siemens Medical Systems. American Society of Neuroradiology (ASNR). meeting in Atlanta, Georgia, April 2000.
- 5. Clinical MR Spectroscopy. Lecture to NYU, Faculty/Neuroradiology Section Conference, May 2000.
- 6. Clinical MR Spectroscopy MRS Training Course, Course Instructor/Invited Lecture. Pasadena, California (Convener Brian Ross) Sponsored by Siemens Medical Systems, July 2000.
- 7. Proton MR Spectroscopy and Perfusion MR Workshop. St. Vincent's Hospital. University of Melbourne. Melbourne, Australia. October 2000.
- 8. Clinical MR Spectroscopy lecture. University of California San Diego, UCSD Medical Center, October 2000.
- 9. MR Spectroscopy Workshop. UCSD Medical Center. Sponsored by John Hesselink, Vice Chairman UCSD. October 2000.
- 10.MR Spectroscopy lecture. Thornton Hospital, San Diego. University of California. Rick Buxton, Oct 2000.

- 11. Knopp EA. CT/MRI Head to Toe Course. Grand Hyatt New York Clinical MR Spectroscopy Workshop, Neuro-MRI workshop, December 2000.
- 12.CT/MRI Head to Toe Course. Grand Hyatt New York, Neuroradiologic Case Review, December 2000.
- 13. Clinical MR Spectroscopy. Kingston Hospital. Queen's University. Kingston, Ontario, Canada, Sponsored by Nycomed Amersham, January 2001.
- 14. Cha S, Knopp EA et al. High Grade Gliomas and Solitary Metastases: Differentiation using Cerebral Blood Volume Maps and Proton MR Spectroscopic Imaging. Presented to NYU Faculty and Residents at Bellevue Hospital, February 2001.
- 15. Clinical MR Spectroscopy MRS Training Course, Course Instructor/Invited Lecture. Pasadena, California (Convener Brian Ross) Sponsored by Siemens Medical Systems, May 2001.
- 16. Clinical MR Spectroscopy NYU Neurology/Radiology Faculty Grand Rounds, August 2001.
- 17. Securing US Fellowships, USMLE, Visa Requirements. Junior Radiologists Forum. RANZCR Annual Scientific Meeting, Melbourne, Australia, October 2001.
- 18. Molecular MR Imaging. Hot Topics Session. RANZCR Annual Scientific Meeting, Melbourne., Australia, October 2001.
- 19. Non-Tumoral MR Spectroscopy. Clinical MR Spectroscopy Course., Sponsored by Cardinal Santos Medical Center/Manila Gamma Knife Center/Siemens, Shangri-La, Manilla, Philippines. October 2001.
- 20. Tumoral MR Spectroscopy. Clinical MR Spectroscopy Course. Sponsored by Cardinal Santos Medical Center/Manila Gamma Knife Center/Siemens. Shangri-La, Manilla. Philippines. October 2001.
- 21. Clinical Applications of Perfusion MRI. Clinical MR Spectroscopy Course. Sponsored by Cardinal Santos Medical Center/Manila, Gamma Knife Center/Siemens. Shangri-La, Manila. Philippines. October 2001.
- 22. Clinical Spectroscopic MRI and Perfusion MRI. Clinical MR Spectroscopy MRS Training Course, Course Instructor/Invited Lecture, Pasadena, California (Convener, Brian Ross) Sponsored by Siemens Medical Systems. December 2001.

- 23. Clinical MR Spectroscopy Workshop. Neuro-MRI workshop, CT/MRI Head to Toe Course. Grand Hyatt New, York, December 2001.
- 24. Advanced MR Imaging of Ring Enhancing Lesions, Diffusion/ Perfusion/ Spectroscopy, Bellevue Medical Center. New York, NY, December 2001.
- 25. Diffusion MRI, Beyond Acute Stroke. Current Topics in Diagnostic Imaging, Grand Bahama Island, Our Lucaya Resort, Bahamas, February, 2002.
- 26.MR Imaging Strategies in Seizure Patients. Current Topics in Diagnostic Imaging. Grand Bahama Island, Our Lucaya Resort, Bahamas, February, 2002.
- 27. Perfusion MRI in Intracranial Mass Lesions, Current Topics in Diagnostic Imaging Grand Bahama Island, Our Lucaya Resort, Bahamas, February, 2002.
- 28. Clinical Spectroscopic MRI and Perfusion MRI, Meeting of the Chinese Neuroradiological Society, Yantai, Wehai, Shandong Province, China, Invited Lecture Sponsored by Siemens Medical Systems, May 2002.
- 29. Molecular MR Imaging. Medical Imaging Australasia Annual Meeting, Adelaide May 2002.
- 30. Grading of Cerebral Gliomas: A New Gold Standard, Medical Imaging Australasia Annual Meeting, Adelaide May 2002.
- 31. How does Spectroscopic MRI change practice of Neuroradiology. Clinical MR Spectroscopy MRS Training Course, Course Instructor/Invited Lecture, Pasadena, California (Convener, Brian Ross) Sponsored by Siemens Medical Systems, June 2002.
- 32. Clinical Spectroscopic MRI and Perfusion MRI. Clinical MR Spectroscopy MRS Training Course, Course Instructor/Invited Lecture, Pasadena, California (Convener, Brian Ross) Sponsored by Siemens Medical Systems. June 2002.
- 33. Course Convener/Director. Advanced MR Imaging Symposium. Perfusion and Spectroscopic MRI. Sponsored by Siemens Medical Systems, October 2002.
- 34. Introduction to Clinical Spectroscopic MRI. MRI: Clinical State of the Art. Spectroscopic and Perfusion MRI Course. New York, NY, October 2002.
- 35. Tumoral Spectroscopic MRI. MRI: Clinical State of the Art. Spectroscopic and Perfusion MRI Course. New York, NY, October 2002.
- 36. Non Tumoral Spectroscopic MRI. MRI: Clinical State of the Art. Spectroscopic and Perfusion MRI Course. New York, NY, October 2002.

- 37. Adult Brain Tumor Advanced Neuro-Imaging. Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 38. Diffusion & Perfusion in CV Disease. Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 39. Clinical MR Spectroscopy. Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 40. Pediatric Developmental Anomalies Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 41.MR Imaging Strategies in Seizure patients Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002
- 42.MRA Carotids & Brain Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 43. Spine Tumors Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 44. Degenerative Spine Disease Malaysian Ministry of Health MRI Symposium, Subang Hyatt, Kuala Lumpur, October 2002.
- 45. Clinical MR Spectroscopy Lecture, CT/MRI Head to Toe Course, Hilton Hotel New York, NY, December 2002.
- 46. Clinical MR Spectroscopy Workshop. CT/MRI Head to Toe Course. Hilton Hotel New York. Dec 2002.
- 47. Clinical Spectroscopic MRI. MRI: Clinical State of the Art. New York. Dec, 2002.
- 48. Clinical MR Spectroscopy. Grand Rounds Harlem Hospital. Sponsored by Columbia University School of Medicine, New York. Dec, 2002.
- 49.MR Spectroscopy. Annual Spring Conference of the New York Roentgen Society, The Roosevelt Hotel, New York. April 2003.
- 50. Tumoral Spectroscopic MRI. MRI: Spectroscopic and Perfusion MRI Workshop. New York. May 2003.
- 51. Perfusion and Diffusion in Stroke. Magnetom World Conference. Bombay India, May 2003.
- 52. Tumoral Spectroscopy Magnetom World Conference. Bombay, India, May 2003.

- 53. Introduction to MR Spectroscopy. Spectroscopy Workshop. Magnetom World, Bombay, India, May 2003.
- 54. Interpreting MR Spectroscopy. Spectroscopy Workshop. Magnetom World, Bombay, India, May 2003.
- 55. Tumoral MR Spectroscopy Spectroscopy Workshop. Magnetom World, Bombay, India 2003.
- 56. Optimizing Neurodiagnosis with MR Spectroscopy and Perfusion MRI. MR and CT User's Meeting, Siemens, New Orleans, June 2003-07-24.
- 57. Clinical Spectroscopic MRI and Perfusion MRI in Brain Tumors. Eastern Neuroradiologic Society Meeting, Colonial Williamsburg, August 22, 2003.
- 58. Perfusion MR Imaging in Brain Tumors. Neuroradiology Grand Rounds. University of Pennsylvania. Hospital of the University of Pennsylvania, September 2003.
- 59. Clinical Neuroimaging at 3.0 Tesla. Rigshospitalet. Copenhagen. Sept, 2003. Hosted by Else Danielsen and Professor Carsten Thomsen.
- 60. Clinical Perfusion MR imaging. Rigshospitalet. Copenhagen. Sept, 2003. Hosted by Else Danielsen and Professor Carsten Thomsen.
- 61. Clinical Spectroscopic MRI: Beyond the Basics. MRI: Clinical State of the Art. New York, NY, October 2003.
- 62. Clinical MR Spectroscopy Lecture. CT/MRI Head to Toe Course. Grand Hyatt New York, NY, December 2003.
- 63. Clinical MR Spectroscopy Workshop. CT/MRI Head to Toe Course. Grand Hyatt, New York, NY, December 2003.
- 64. Clinical MR Spectroscopy Lecture. Long Island County Hospital. Grand Rounds, New York, NY, January 2004.
- 65. Imaging in Glioma, Jaslok Hospital Neuroscience CME, Taj Lands End, Bombay, India Feb, 2004.
- 66. Imaging in Temporal Lobe Epilepsy, Jaslok Hospital Neuroscience CME, Taj Lands End, Bombay, India, February 2004.
- 67. Case Discussion in Glioma, Jaslok Hospital Neuroscience CME, Taj Lands End, Bombay, India, February 2004.

- 68. Case Discussion in Temporal Lobe Epilepsy, Jaslok Hospital Neuroscience CME, Taj Lands End, Bombay, India, February 2004.
- 69. Adult Brain Tumor Advanced Neuro-Imaging and Perfusion MRI. Neuroradiology and Head & Neck Imaging. St. Thomas US Virgin Islands, Feb 2004
- 70. Diffusion & Perfusion in CV Disease. Neuroradiology and Head & Neck Imaging. St. Thomas, US Virgin Islands, February 2004.
- 71. Clinical MR Spectroscopy. Neuroradiology and Head & Neck Imaging. St. Thomas, US Virgin Islands, February 2004.
- 72. Pediatric Developmental Anomalies. Neuroradiology and Head & Neck Imaging. St. Thomas, US Virgin Islands, February 2004.
- 73. Non degenerative Spine Disorders Neuroradiology and Head & Neck Imaging. St. Thomas, US Virgin Islands, February 2004.
- 74. Tumoral Spectroscopic MRI. MRI: Spectroscopic and Perfusion, MRI Symposium. New York, NY, March 2004.
- 75. Clinical Spectroscopic MRI. MRI: Spectroscopic and Perfusion MRI Symposium, New York, NY, March 2004.
- 76. Clinical MR Spectroscopy and Perfusion Imaging Lecture. Siemens Medical Systems, Erlangen, Germany, June 2004.
- 77. Neuroimaging with TIM and Parallel Imaging Technology. Magnetom World Meeting, Munich, Germany, June 2004.
- 78. Perfusion MRI imaging in brain tumors and stroke. Magnetom World Meeting, Hands On Workshop, Munich, Germany, June 2004.
- 79.MR Spectroscopy in Glioma: Useful Nightmare or Unfulfilled Daydream. ENRS Annual Meeting, Boston, August 2004.
- 80.MR Spectroscopy in Glioma: Useful Nightmare or Unfulfilled Daydream. WISER Neuroscience Imaging Symposium, Kuala Lumpur, Malaysia, August 2004.
- 81. Diagnostic Imaging in Stroke. WISER Neuroscience Imaging Symposium, Kuala Lumpur, Malaysia, August 2004.
- 82.MR Imaging in Epilepsy. WISER Neuroscience Imaging Symposium, Kuala Lumpur, Malaysia, August 2004.

- 83. Workshop in MR Spectroscopy. Kuala Lumpur General Hospital, Kuala Lumpur, Malaysia, August 2004.
- 84.MR Spectroscopy in Glioma: Useful Nightmare or Unfulfilled Daydream. National University Hospital, Singapore. August 2004.
- 85. Parallel, RF Imaging, iPAT and High Field Imaging. Singapore General Hospital, Singapore. August 2004.
- 86. Radiological Advances in Brain Tumor Diagnosis. New York Medical College, Symposium in Brain Tumors, Westchester Marriott, Tarrytown, NY, October 2004.
- 87.MR Imaging in Epilepsy. MRI State of the Art, NYU Medical Center, New York, NY, November 2004.
- 88.MR Spectroscopy in Brain Tumor Diagnosis. MRI State of the Art, NYU Medical Center, NY, November 2004
- 89.MR Imaging in Epilepsy. MRI State of the Art, NYU Medical Center, New York, NY, November 2004.
- 90.MR Imaging in Epilepsy. Emirates Neuroscience Society International Congress, Dubai, December 2004.
- 91. Diagnostic Imaging in Stroke. Emirates Neuroscience Society International Congress, Dubai, December 2004.
- 92. Imaging in MS and White Matter Diseases. Emirates Neuroscience Society International Congress, Dubai, December 2004.
- 93. Diagnostic Imaging in Stroke. CT/MRI Head to Toe, Grand Hyatt Hotel, New York, NY, December 2004.
- 94.MR Spectroscopy. CT/MRI Head to Toe, Grand Hyatt Hotel, New York, NY, December 2004.
- 95. Clinical MR Spectroscopy. Neuroradiology and Head & Neck Imaging, Nevis, West Indies, January 2005.
- 96. Pediatric Developmental Anomalies. Neuroradiology and Head & Neck Imaging, Nevis, West Indies, January 2005.
- 97. Non degenerative Spine Disorders Neuroradiology and Head & Neck Imaging Nevis, West Indies, January 2005.

- 98.MR Imaging in Epilepsy Neuroradiology and Head & Neck Imaging, Nevis, West Indies, January 2005.
- 99. Advanced Imaging Techniques in Brain Tumor Diagnosis. New York Medical College, Department of Neurosurgery Grand Rounds. Valhalla, New York, NY, February 2005.
- 100. Diagnostic Imaging in Stroke. Cutting Edge Imaging Techniques. Deer Valley, Utah, March 2005.
- 101. Non Tumoral MR Spectroscopy. Cutting Edge Imaging Techniques, Deer Valley, Utah, March 2005.
- 102. Non Tumoral MR Spectroscopy. Cutting Edge Imaging Techniques. Deer Valley, Utah, March 2005.
- 103. Tumoral MR Spectroscopy: To Spect or Not to Spect. Cutting Edge Imaging Techniques, Deer Valley, Utah, March 2005.
- 104. Pediatric Developmental Anomalies. Cutting Edge Imaging Techniques. Deer Valley, Utah, March 2005.
- 105. Multi- Channel/Phase Array/Ultra High Field Neuro-Imaging. Cutting Edge Imaging Techniques. Deer Valley, Utah, March 2005.
- 106. Neurological Molecular Imaging: Normal Findings, Common Variants, Interpretive Pitfalls in Clinical Neuroimaging. Academy of Molecular Imaging, Orlando, Florida, March 2005.
- 107. Tumor Neurological Molecular Imaging: Brain Tumors. Academy of Molecular Imaging, Orlando, Florida, March 2005.
- 108. Tumor High Resolution, Matrix Spectroscopy. European Congress of Radiology, Vienna, Austria, March 2005.
- 109. Tumor Advanced MR Imaging in Glioma 5th Annual MR Advances in Neuroradiology and Sports Medicine Imaging Stanford University Bellagio Hotel, Las Vegas, Nevada, March 2005.
- 110. Tumor MR Imaging in White Matter Diseases 5th Annual MR Advances in Neuroradiology and Sports Medicine Imaging Stanford University Bellagio Hotel, Las Vegas, Nevada, March 2005.
- 111. Tumor Imaging in Non Degenerative Spine Disease 5th Annual MR Advances in Neuroradiology and Sports Medicine Imaging Stanford University Bellagio Hotel, Las Vegas, Nevada, March 2005.

- 112. Tumor Clinical Experience on the TIM Trio 3Tesla. Siemens Medical Solutions. TIM Trio Launch, W Hotel, New York, NY, May 2005.
- 113. Tumor Clinical MR Spectroscopy: To Spect or Not to Spect. Advances in High Field MRI, Luxor Hotel and Casino, June 2005.
- 114. Tumor Parallel Imaging & Ultra High Field Neuro Imaging. Advances in High Field MRI, Luxor Hotel and Casino, June 2005.
- 115. Ultra High Field and Parallel Neuroimaging. TIM Trio Asia Pacific Launch Hong Kong Sanitarium and Hospital, Hong Kong, August 2005.
- 116. Tumoral MR Spectroscopy: To Spect or Not to Spect. Eastern Neuroradiology Society, Annual Meeting, Ottawa, Canada, August 2005.
- 117. Ultra High Field and Parallel Neuroimaging. Stonybrook Hospital, Grand Rounds, September 2005.
- 118. Tumoral MR Spectroscopy: To Spect or Not to Spect. Long Island Radiological Society Meeting, Long Island, NY, September 2005.
- Differentiating Surgical from Non-Surgical Lesions with MRP and MRS International Symposium on CT and MR Brain Perfusion, Chicago, IL, September 2005.
- 120. Low grade versus High Grade Glioma: Predicting Histology with MR Perfusion International Symposium on CT and MR Brain Perfusion, Chicago, September 2005.
- 121. Physiologic and Metabolic MR Imaging of Gliomas and Molecular Events: A New Reference Standard in the Diagnosis and Predicting Outcome. University of Pennsylvania. Department of Radiology and Radiation Oncology Grand Rounds, Host Sydney Evans, Cameron Koch, Stephan Hahn.
- 122. Diffusion Tensor Imaging: Basics and Clinical Application. MRI State of the Art, NYU Medical Center, New York, NY, November 2005.
- 123. Role of Imaging in Stroke. CT/MRI Head to Toe, Grand Hyatt Hotel, New York, NY, December 2005.
- 124. Clinical MR Spectroscopy. CT/MRI Head to Toe. Grand Hyatt Hotel, New York, NY, December 2005.
- 125. Diffusion Tensor Imaging: Basics and Clinical Application. Neurology Grand Rounds, NYU Medical Center, New York, NY, November 2005.

- 126. Differentiating Surgical from Non-Surgical Lesions. Barrow Neurological Institute. Host: Robert Speztler. Neurosurgery Rounds. January 2006
- 127. Advanced MR Imaging of Brain Tumors with Diffusion Tensor, Perfusion and MR Spectroscopy. Barrow Neurological Institute. Host: Alan Pitt, Neuroscience Grand Rounds, January 2006.
- 128. State of the Art Imaging of Pediatric Epilepsy. Barrow Neurological Institute. Host: Yutze Ng. Pediatric Neurology Grand Rounds, January 2006.
- 129. MR Imaging in White Matter Diseases Imaging Essentials: From Head to Toe, Westin Resort, St. John, US Virgin Islands, February 2006.
- 130. Imaging of Stroke and TIA. Imaging Essentials: From Head to Toe, Westin Resort, St. John, US Virgin Islands, February 2006.
- 131. Neuroanatomy: Normal Variants and Pitfalls. Imaging Essentials: From Head to Toe, Westin Resort, St. John, US Virgin Islands, February 2006.
- 132. High Field and Parallel Neuroimaging. Imaging Essentials: From Head to Toe, Westin Resort, St. John, US Virgin Islands, February 2006.
- 133. Optimizing MR Imaging at 3T vs. 1.5 T. American Society of Spine Radiology Annual Meeting, Las Vegas, Nevada, February 2006.
- 134. MRS, Diffusion and Perfusion Imaging of the Human Cord. American Society of Spine Radiology Annual Meeting, Las Vegas, Nevada, February 2006.
- 135. In Vivo Diffusion Tensor Imaging of the Human Cord. American Society of Spine Radiology Annual Meeting, Las Vegas, Nevada, February 2006.
- 136. Imaging Biomarkers of Human Glioma Biology, ANSIR Seminar Series, Wake Forest University Medical Center. Hosts: Dixon Moody, Joseph Maldjian, Winston-Salem, North Carolina, March 2006.
- 137. State of the Art Imaging of Pediatric Epilepsy. Southern Pediatric Neurology Society 31<sup>st</sup> Annual Meeting, Paul R. Dyken Scholarship Lecture, New Orleans, March 2006.
- 138. Diffusion Tensor Imaging: What is it? How do I do it? American Roentgen Ray Society Annual Meeting, Vancouver, Canada, May 2006.
- 139. State of the Art Brain Tumor Imaging, ASNR Annual Meeting, San Diego, CA, May 2006.

- 140. Perfusion and Permeability Imaging in Brain Tumors, ASNR Annual Meeting, San Diego, CA, May 2006
- 141. Imaging Biomarkers of Tumor Biology, ASNR Annual Meeting, San Diego, May 2006.
- 142. How to Improve the Efficiency and Quality of Clinical CNS imaging at 1.5 and 3T with Parallel Imaging Techniques, ISMRM Annual Meeting, Seattle, WA, May 2006.
- 143. Applications of Susceptibility Weighted Imaging, Magnetom World Meeting, Siemens Medical Solutions Annual Meeting, San Diego, CA June 2006.
- 144. Fundamentals of Tumoral and Non Tumoral Clinical MR Spectroscopy, Essentials of 3T MR Imaging, Las Vegas, NV, June 2006.
- 145. Cased Based Review of Clinical MR Spectroscopy. Essentials of 3T MR Imaging, Las Vegas, NV, June 2006.
- 146. Future of Proton and Multi-Nuclear MR Spectroscopy. Essentials of 3T MR Imaging, Las Vegas, NV, June 2006.
- 147. Non degenerative Spine Disorders. Imaging Update in Iceland CME. Reykjavik, Iceland, July 2006.
- 148. Imaging the Seizure Patient in the Clinic. Imaging Update in Iceland CME, Reykjavik, Iceland, July 2006.
- 149. Clinical MR Spectroscopy: Case Based Approach. Imaging Update in Iceland, Reykjavik, Iceland, July 2006.
- 150. Anatomy and Inflammatory Diseases of the Paranasal Sinuses. Imaging Update in Iceland CME. Reykjavik, Iceland, July 2006.
- 151. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Eastern Neuroradiology Society, Annual Meeting, Chesapeake Bay, Maryland, August 2006.
- 152. Tissue Characterization with Perfusion and Permeability Imaging. European Society of Neuroradiology, Annual Meeting, Geneva, Switzerland, September 2006.
- 153. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Lee H Moffitt Cancer Center, Grand Rounds, Hosts Steve Brem and Reed Murtagh, Tampa, Florida, October 2006.

- 154. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Emory University Hospitals Center Conference, Hosts Carolyn Meltzer and Patricia Hudgkins, October 2006.
- 155. Et al Perfusion MRI and relative CBV measurements predicts time to progression and Outcome compared with Histopathology. Society of Neurooncology Annual Meeting, Orlando, Florida, November 2006.
- 156. Advanced Tumor Imaging with Perfusion, Diffusion and MR Spectroscopy. Refresher Course, RSNA Annual Meeting, November 2006.
- 157. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Annual Head to Toe, NYU Meeting, Grand Hyatt, New York, NY, December 2006.
- 158. 3 Tesla and Parallel Neuroimaging, Lecture, Annual Head to Toe, NYU Meeting, Grand Hyatt, New York, NY, December 2006.
- 159. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. NYU Kaplan Cancer Center, Department of Radiation Oncology Rounds, December 2006.
- 160. Advanced Neuroimaging at 3T: Perfusion, Diffusion Tensor and MR Spectroscopy. Clinical 3T MRI. The Wynn Hotel, Las Vegas, Nevada, January 2007.
- 161. Spine Imaging 1.5T versus 3T. Clinical 3T MRI. The Wynn Hotel, Las Vegas, NV, January 2007.
- 162. Advanced MR Imaging in the Spine with MR Spectroscopy, Perfusion and DTI, Annual Symposium of the American Society of Spine Radiology, Marco Island, Florida, February 22-25, 2006.
- 163. Spine Imaging 1.5T versus 3T. Annual Symposium of the American Society of Spine Radiology, Marco Island, Florida, February 22 25, 2006.
- 164. Advanced Neuroimaging at 3T: Perfusion, Diffusion Tensor and MR Spectroscopy Clinical 3T MRI. Salt Lake City, Utah, March 2007.
- 165. Spine Imaging 1.5T versus 3T. Clinical 3T MRI. Salt Lake City, Utah, March 2007.
- 166. Advanced MR Imaging in the Spine with MR Spectroscopy, Perfusion and DTI. Salt Lake City, Utah, March 2007.

- 167. Advanced Neuroimaging at 3T: Perfusion, Diffusion Tensor and MR Spectroscopy. 3T MRI: Why and What You Need to Know, The Ritz-Carlton, Orlando, Grande Lakes, Orlando, Florida, March 15-17, 2007.
- 168. High Field and Parallel Neuroimaging. 3T MRI: Why and What You Need to Know. The Ritz-Carlton Orlando, Grande Lakes, Orlando, Florida. March 15-17, 2007.
- 169. Advanced MR Imaging in the Spine with MR Spectroscopy, Perfusion and DTI, 3T MRI: Why and What You Need to Know, The Ritz-Carlton Orlando, Grande Lakes, Orlando, Florida, March 15-17, 2007.
- Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy, Grand Rounds The Brigham and Women's Hospital. Harvard Medical School, Boston, MA, March 2007.
- 171. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy, Grand Rounds The Massachusetts General Hospital. Harvard Medical School, Boston, MA, March 2007.
- 172. Imaging of TIA and Stroke. The Paul and Rose Geyser Lecture. Rambam Healthcare, Haifa, Israel. March 2007.
- 173. Advanced MR Imaging in the Spine with MR Spectroscopy, Perfusion and DTI, The Paul and Rose Geyser Lecture. Rambam Healthcare, Haifa, Israel, March 2007.
- 174. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy, Grand Rounds St Jude's Children's Research Hospital, Memphis, TN, April 2007.
- 175. Perfusion MR Imaging in Brain Tumors: A New Reference Standard in Predicting Tumor Biology Grand Rounds St Jude's Children's Research Hospital, Memphis, TN, April 2007.
- 176. Integrating Perfusion MR into Brain Tumor Imaging. American Society of Functional Neuroradiology, Orlando, Florida, April 2007.
- 177. Bridging Funding in Academic Radiology. Association of University Radiologists Annual Meeting, Denver, Colorado, April 2007.
- 178. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. New York Roentgen Ray Society, New York, NY April 2007.
- 179. Practical Issue: Solitary Brain Mass: Primary versus Metastases. American Roentgen Ray Society, Orlando, Florida, May 2007.

- 180. The presumed demyelinating lesion: Clues to its etiology from Advanced MR Imaging Techniques. American Roentgen Ray Society, Orlando, Florida. May 2007.
- 181. 3T Imaging of the Spine. Austrian 3T Meeting, Vienna, Austria, May 2007.
- 182. Advanced MR at 3T. Austrian 3T Meeting, Vienna, Austria, May 2007.
- 183. Diffusion Tensor Imaging of the Spine. ASNR. Chicago, IL, June 2007.
- 184. 3T Imaging of the Spine. 3T MRI Workshop, Salt Lake City, Utah. June 2007.
- 185. High Field and Parallel Neuroimaging, how to do T1 weighted imaging at 3T. 3T MRI Workshop, Salt Lake City, Utah. June 2007.
- 186. Advanced MRI at 3T. 3T MRI Workshop, Salt Lake City, Utah. June 2007.
- 187. New MRI Techniques: Time Resolved MRA and SWI. 3T MRI Workshop, Salt Lake City, Utah, June 2007.
- 188. Advanced MR Imaging in the Spine with MR Spectroscopy, Perfusion and DTI ENRS, Stowe Vermont August 2007.
- 189. Differential Diagnosis of Intracranial Mass Lesions. Clinical Functional MRI and Spectroscopy Annual Course, Massachusetts General Hospital Course, Harvard Medical School CME, Boston, MA, September 2007.
- 190. Diffusion Tensor Imaging: A Practical Approach. Clinical Functional MRI and Spectroscopy Annual Course. Massachusetts General Hospital Course, Harvard Medical School CME, Boston, MA, September 2007.
- 191. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, 5<sup>th</sup> Aegean Postgraduate Radiology Course. Course Director Nicholas Gourtsoyiannis. Crete, Greece. Sept 2007.
- 192. Integrated Perfusion Imaging in Brain Tumors, a new Standard Reference in predicting tumor biology. 5<sup>th</sup> Aegean Postgraduate Radiology Course. Course Director Nicholas Gourtsoyiannis, Crete, Greece, September 2007.
- 193. Imaging of the Spine at 1.5 versus 3T. 5<sup>th</sup> Aegean Postgraduate Radiology Course. Course Director Nicholas Gourtsoyiannis, Crete, Greece. September 2007.

- 194. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, Perfusion and DTI. University of Washington in St Louis, Mallinkrodt Institute, Hosted David Guttman, October 2007.
- 195. Integrated Perfusion Imaging in Brain Tumors, a new Standard Reference in predicting tumor biology. University of Washington in St Louis, Mallinkrodt institute, Hosted David Guttman, October 2007.
- 196. Imaging of TIA and Stroke. Brigham and Women's Hospital Annual MR/CT Update. Harvard Medical School CME, Boston, MA, October 2007.
- 197. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, Perfusion and DTI. Brigham and Women's Hospital Annual MR/CT Update, Harvard Medical School CME, Boston, MA, October 2007.
- 198. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, Perfusion and DTI. Thomas Jefferson University Medical Center Grand Rounds, Hosted Vijay Rao, David Friedman, October 2007.
- 199. Imaging of TIA and Stroke. Mayo Clinic Jacksonville, Florida, November 2007.
- 200. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, Perfusion and DTI. Mayo Clinic, Jacksonville, Florida, November 2007.
- 201. Imaging of TIA and Stroke. Mayo Clinic Jacksonville, Florida, November 2007.
- 202. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, Perfusion and DTI. Mayo Clinic Jacksonville, Florida, November 2007.
- 203. Refresher Course Advanced MR Imaging Techniques: MR Spectroscopy and Perfusion. RSNA, Chicago, IL, November 2007.
- 204. Wer braucht MR Spectroscopy? Who needs MRS? University of Vienna Medical Center, Austrian Radiology Society, Christian Herold, Vienna Austria, January 2008.
- 205. Improving Diagnostic Specificity with Advanced MR Imaging Techniques: MR Spectroscopy, Perfusion and DTI. University of Maryland Medical Center Grand Rounds, Reuben Mezrich/Gregg Zoarski, Baltimore, MD, January 2008.
- 206. 3T Imaging of the Spine. ASSR Siemens How to Session, Palm Spring CA Feb 2008.
- 207. MR Spectroscopy of the Spine. ASSR, Palm Spring, CA, Feb 2008.

- 208. Integrating Perfusion Imaging in Brain Tumors. ASFNR Orlando, FL, Feb 2008.
- 209. Imaging the Ischemic Penumbra: Clinical Impact. ECR Vienna, Austria, Mar 2008.
- 210. Stroke Imaging State of the Art Mount Sinai/Ryals Neuro ENT Course. Naples, FL, Mar 2008.
- 211. Imaging Vascular Lesions Mount Sinai/Ryals Neuro ENT Course. Naples, FL, Mar 2008.
- 212. Advanced Neuroimaging in Surgical Planning Mount Sinai/Ryals Neuro ENT Course. Naples, FL, Mar 2008.
- 213. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Columbia University, New York, NY, Grand Rounds Mar 2008.
- 214. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Hackensack University Neuro-oncology Annual Seminar Mar 2008.
- 215. Increasing Diagnostic Specificity with Perfusion, Diffusion and MR Spectroscopy. Saint Barnabas Hospital, New Jersey Grand Rounds Mar 2008.
- 216. Practical Applications of Advanced MRI Techniques. American Roentgen Ray Society Annual Meeting. Washington, DC, April 2008.
- 217. Susceptibility Weighted Imaging. National MRI Symposium. Director William Bradley. Venetian, Las Vegas, NV, April 2008
- 218. Parallel and Ultra-High Field Neuroimaging. National MRI Symposium. Director, William Bradley. Venetian, Las Vegas, NV, April 2008
- 219. Advanced Imaging of the Spine, MRS, DTI, PWI. National MRI Symposium. Director William Bradley. Venetian, Las Vegas, NV, April 2008.
- 220. Perfusion MR Imaging: Basics and its Clinical Applications. Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.
- 221. Diffusion Tensor Imaging: Basics and its Clinical Applications. Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.

- 222. Advanced Imaging of the Spine, MRS, DTI, PWI. Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.
- 223. Hot Topics: Susceptibility Weighted Imaging: What is it and it's Clinical Applications? Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.
- 224. Non-Tumoral MR Spectroscopy. Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.
- 225. New MRI Techniques and 3T Neuroimaging: How to Improve Your Neuroradiology Practice. Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.
- 226. How to Increase Your Diagnostic Specificity in Neuroradiology with New MRI Techniques: Case Based Approach to Using MRS, PWI and DWI. Radiological and Diagnostic Imaging Society of Sao Paulo JPR 2008. Sao Paulo, Brazil, May 2008.
- 227. ISMRM Categorical Course: Imaging Brain Tumors: From Physiology to Therapy Tumor Biology with MR Spectroscopic and Perfusion Imaging ISMRM Toronto, May 2008.
- 228. Optimizing 3T imaging of the Spine. ASNR New Orleans June 2008
- 229. Emergency Neuroradiology: Advanced MR Imaging, Time Resolved MRA, SWI, Sodium Imaging at High Field. ASNR New Orleans, LA, June 2008.
- 230. Gene and Molecular Expression in Brain Tumors: Significance & MR Imaging Correlates. ASNR New Orleans, LA, June 2008.
- 231. Gene and Molecular Expression in Brain Tumors: Significance & MR Imaging Correlates. ENRS Nemacolin August 2008.
- 232. Imaging TIA and Stroke: Update on Techniques and Clinical Imaging Trials. Baylor Sears Seminar, Baylor University Medical Center, October 2008.
- 233. New MRI Techniques and 3T Neuroimaging: How to Improve Your Neuroradiology Practice. Baylor Sears Seminar, Baylor University Medical Center October 2008.
- 234. How Make a More Specific Diagnosis in Brain Mass Lesions with MR Spectroscopy, Perfusion and Diffusion Imaging Radiology in Biarritz, France, October 2008.

- 235. Imaging TIA and Stroke: Update on Techniques and Clinical Imaging Trials. Radiology in Biarritz, France, October 2008.
- 236. New MRI Techniques and 3T Neuroimaging: How to Improve Your Neuroradiology Practice. Radiology in Biarritz, France, October 2008.
- 237. How Make a More Specific Diagnosis in Brain Mass Lesions with MR Spectroscopy, Perfusion and Diffusion Imaging Radiology in Biarritz, France, October 2008.
- 238. Diffusion Tensor Imaging: How to do it and Clinical Applications. Radiology in Biarritz, France, October 2008.
- 239. Advanced MR Imaging of the Spine Radiology in Biarritz, France, October 2008.
- 240. Cased Based Imaging of Spine Lesions Mount Sinai Annual Course, Marriott Hotel New York, NY, November 2008.
- 241. Imaging TIA and Stroke: Update on Techniques and Clinical Imaging Trials. AIM Symposium, Cleveland Clinic, Hilton Hotel, New York, NY, November 2008.
- 242. 3T Imaging of the Spine. AIM Symposium, Cleveland Clinic, Hilton Hotel, New York, NY, November 2008.
- 243. Perfusion Imaging in Brain Tumors. Indian Society of Neuroradiology/ISMRM Outreach Meeting Lucknow, India, November 2008.
- 244. Perfusion Imaging in Brain Infections. Indian Society of Neuroradiology/ISMRM Outreach Meeting Lucknow, India, November 2008.
- 245. Film Reading Case Based Session. Indian Society of Neuroradiology/ISMRM Outreach Meeting Lucknow, India, November 2008.
- 246. Perfusion and MR Spectroscopy in Brain Tumors. RSNA Refresher Course Chicago, IL, November/December 2008.
- 247. New MRI Techniques and 3T Neuroimaging: How to Improve Your Neuroradiology Practice New York, NY, Grand Rounds Jan 2009.
- 248. Cased Based Imaging of Spine Lesions: Tumors Los Angeles Radiological Society Annual Winter Meeting, Sheraton Universal Studios Los Angeles, CA, Jan 2009.
- 249. The NEW WHO Classification of Brain Tumors: Tumors Los Angeles Radiological Society Annual Winter Meeting, Sheraton Universal Studios, Los Angeles, CA, Jan 2009.

- 250. Imaging Post Therapeutic Changes in Brain Tumors Los Angeles Radiological Society Annual Winter Meeting, Sheraton Universal Studios, Los Angeles, CA, Jan 2009.
- 251. Advanced Imaging of the Spine Los Angeles Radiological Society Annual Winter Meeting, Sheraton Universal Studios, Los Angeles, CA Jan 2009.
- 252. Diffusion Imaging of the Spine American Society of Spine Radiology Annual Meeting, Disneyworld, Orlando, FL, Feb 2009.
- 253. MOC/SAM Cased Based Spine Cases American Society of Spine Radiology Annual Meeting, Disneyworld, Orlando, FL, Feb 2009.
- 254. Perfusion and Permeability Imaging American Society of Functional Neuroradiology Annual Meeting, San Antonio, Texas, Feb 2009.
- 255. 3T Imaging of the Spine. European Congress of Radiology, European Society of Radiology, Annual Meeting, Vienna, Austria, March 2009.
- 256. Advanced Imaging in Brain Tumors. University of Rio De Janiero. Sponsors Emerson Gasparetto/Romeo Domingues, Rio De Janiero, Brazil, Mar 2009.
- 257. Imaging in Multiple Sclerosis. University of Rio De Janiero Sponsors Departamento de Radiologia – UFRJ CDPI - Multi-Imagem, Rio de Janeiro, RJ, Brazil, Mar 2009.
- 258. Imaging in Stroke and TIA. University of Rio De Janiero. Sponsors

  Departamento de Radiologia UFRJ CDPI Multi-Imagem Rio de Janeiro, RJ,
  Brazil, Mar 2009.
- 259. Imaging in Seizures. University of Rio De Janiero. Sponsors Departamento de Radiologia UFRJ CDPI Multi-Imagem Rio de Janeiro, RJ, Brazil, Mar 2009.
- 260. Imaging in Stroke and TIA. Mount Sinai Neuro/ENT update Naples Grande Beach Resort, Naples Florida, Mar 2009.
- 261. Advanced Imaging in Brain Tumors. Mount Sinai Neuro/ENT update Naples Grande Beach Resort, Naples, Florida, Mar 2009.
- 262. Advanced Imaging in the Spine. Mount Sinai Neuro/ENT update Naples Grande Beach Resort, Naples, Florida, Mar 2009.
- 263. Integrated Functional Imaging Techniques for Brain Tumors and AVMs MR Perfusion, Permeability and MR Spectroscopy ASNR Annual Meeting Vancouver, May 2009.

- 264. High Field Imaging and New MRI Neuroimaging Techniques Grand Rounds, University of Ottawa June 2009.
- 265. 3T Imaging of the Spine Grand Rounds University of Ottawa, Canada June 2009.
- 266. Susceptibility Weighted Imaging: What is it and its Clinical Applications Grand Rounds University of Ottawa June 2009.
- 267. Perfusion Weighted Imaging for Dummies. Erasmus MRI Course, University of Antwerp, Belgium August 2009
- 268. 3T Imaging of the Spine. Erasmus MRI Course, University of Antwerp, Belgium August 2009
- 269. Advanced MR Imaging Lecture and Workshop. Erasmus MRI Course, University of Antwerp, Belgium August 2009
- 270. State of the Art Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. Neurosurgery Grand Rounds USC Medical Center Los Angeles September 2009
- 271. State of the Art Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. MRI at the Sea, Helsinki, Finland September 2009
- 272. Perfusion and Diffusion Imaging. MRI at the Sea, Helsinki, Finland September 2009
- 273. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. International Cancer Imaging Society, Salzburg, Austria Sept-Oct 2009
- 274. Neurooncology Complications and Emergencies. International Cancer Imaging Society, Salzburg, Austria Sept-Oct 2009
- 275. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. Chinese Radiological Society Annual Meeting Shanghai Oct 2009
- 276. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. University Hospital Chengdu, China Oct 2009
- 277. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. Indian Society of Neuroradiology ISNR Chennai, India. Annual Meeting Nov 2009

- 278. Cased Based Brain Tumor Imaging. Indian Society of Neuroradiology ISNR Annual Meeting Chennai, India, Nov 2009
- 279. Advanced Imaging of the Spine. Indian Society of Neuroradiology ISNR Annual Meeting Chennai, India Nov 2009
- 280. Imaging TIA and Stroke: Update on Techniques and Clinical Imaging Trials. AIM Symposium, Cleveland Clinic, Hilton Hotel, New York, NY, November 2009
- 281. Utility of Calcium Scoring in predicting acute ischemic stroke. AIM Symposium, Cleveland Clinic, Hilton Hotel, New York, NY, November 2008.
- 282. Neuroradiology Jeopardy RSNA Annual Meeting Chicago Nov 2009
- 283. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. UCSD Grand Rounds, Host William Bradley San Diego, Jan 2010
- 284. Board Review Radiology Boards UCSD Residents Host William Bradley/John Hesselink San Diego, Jan 2010
- 285. Imaging the Post Therapeutic Brain, San Diego Radiological Society Meeting Host William Bradley San Diego, Jan 2010
- 286. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. Los Angeles Radiological Society (LARS) Mid-Winter Meeting, Jan 2010
- 287. Cased Based Spine MOC Session, American Society of Spine Radiology ASSR Annual Meeting, Las Vegas, Feb 2010
- 288. Diffusion Imaging of the Spine, American Society of Spine Radiology ASSR Annual Meeting, Las Vegas, Feb 2010
- 289. CT Perfusion Radiation Dosimetry and the Stroke Protocol American Society of Functional Neuroradiology ASFNR Annual Meeting, Las Vegas, Feb 2010
- 290. Diffusion Imaging of the Spine, European Congress of Radiology ECR, Annual Meeting of the European Society of Radiology ESR, Vienna Austria Mar 2010
- 291. 3T Imaging of the Spine, European Congress of Radiology ECR, Annual Meeting of the European Society of Radiology ESR, Vienna Austria Mar 2010
- 292. Advanced MR Imaging, Research and Development Meeting at Siemens Headquarters, Erlangen, Germany Mar 2010

- 293. Imaging Dementia, USC Neurology Grand Rounds, USC Medical Center, Los Angeles April 2010
- 294. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. Weekend Advanced Neuroimaging Course, ISMRM, Stockholm, Sweden April 2010
- 295. Bench to Bedside, Translating Animal Advanced MRI studies to the Beside Course, ISMRM, Stockholm, Sweden April 2010
- 296. Perfusion, Diffusion and MR Spectroscopy. SMRT Course, ISMRM, Stockholm, Sweden April 2010
- 297. State of the Art Advanced Brain Tumor Imaging Perfusion, Diffusion and MR Spectroscopy. American Society of Neuroradiology ASNR Annual Meeting, NERF Symposium Boston May 2010
- 298. Perfusion, Diffusion. American Society of Neuroradiology ASNR Annual Meeting, ASFNR Programming Boston May 2010
- 299. 3T MRI and New Neuroimaging Techniques, RADAIM Annual Meeting, Gold Coast Australia July 2010
- 300. Advanced Spine MR Imaging, RADAIM Annual Meeting, Gold Coast Australia July 2010
- 301. Cased Based MOC Type Spine Lecture, RADAIM Annual Meeting, Gold Coast Australia July 2010
- 302. Cased Based Brain Tumor Advanced MRI, RADAIM Annual Meeting, Gold Coast Australia July 2010
- 303. CT Perfusion, Stroke Imaging and Radiation Dosimetry, RADAIM Annual Meeting, Gold Coast Australia July 2010
- 304. Advanced Spine MR Imaging, Jilin Province University Medical Center, China August 2010
- 305. CT Perfusion, Stroke Imaging and Radiation Dosimetry, Jilin Province University Medical Center, China August 2010
- 306. Brain Tumor Imaging Advanced MRI, Jilin Province University Medical Center, China August 2010

- 307. Brain Tumor Imaging Advanced MRI, Annual Meeting of the Pediatric Brain Tumor Consortium PBTC, Host Larry Kun, Denver Co, October 2010
- 308. Brain Tumor Imaging Advanced MRI, Severiano Ballesteros Foundation Symposium, Madrid Spain, October 2010
- 309. Update on Neurovascular Imaging, Academy of Neurological Surgeons Annual Meeting, The Inn at Spanish Bay, Monterey November 2010
- 310. Stroke Imaging Pearls: Sequences to help in difficult cases: AIM Symposium, Cleveland Clinic, Hilton Hotel, New York, NY, November 2010.
- 311. Brain Tumor Imaging Advanced MRI, Perfusion and Permeability Imaging Society of Neurooncology, Montreal Canada, November 2010
- 312. Quantitative Perfusion and Permeability Imaging Brain Tumor Imaging Annual Meeting RSNA, November 2010
- 313. High Field 3T Spine MRI, Annual Meeting of the American Society of Spine Radiology, ASSR Waikiki, Hawaii. Feb 2011
- 314. Unknown Case Based Lecture, Annual Meeting of the American Society of Spine Radiology, ASSR Waikiki, Hawaii. Feb 2011
- 315. Quantitative Perfusion and Permeability Imaging Brain Tumor Imaging Annual Meeting ECR, Vienna, Austria March 2011
- 316. Imaging of Stroke: Annual Van den Muelen Symposium, USC Neurology, Los Angeles, March 2011
- 317. Brain Tumor Imaging Advanced MRI, Spectroscopy, Diffusion, Perfusion and Permeability Imaging Grand Rounds OHSU, Portland, Oregon, April 2011
- 318. Brain Tumor Imaging Advanced MRI, Spectroscopy. Turkish Society of Neuroradiology, Antalya, Turkey, April 2011
- 319. Advances in MRI Turkish Society of Neuroradiology, Antalya, Turkey, April 2011
- 320. Diffusion and Diffusion Tensor Imaging Turkish Society of Neuroradiology, Antalya, Turkey, April 2011
- 321. Perfusion and Permeability Imaging Turkish Society of Neuroradiology, Antalya, Turkey, April 2011
- 322. Brain Tumor Imaging Advanced MRI, Spectroscopy, Diffusion, Perfusion and Permeability Imaging Grand Rounds UC Irvine, Irvine, April 2011

- 323. Advances in MR Imaging Quo Vadis? Orange County Radiology Society, Irvine, April 2011
- 324. Advances in MR Imaging Quo Vadis? Lecture for Dornsife Institute, USC UPC. Antonio Damasio April 2011
- 325. Perfusion and Permeability Imaging: What are we measuring? Cancer Imaging and Radiation Therapy Symposium ASTRO-RSNA Meeting, Atlanta, April 2011
- 326. Perfusion and Diffusion Imaging in the pre and post therapeutic imaging of brain tumors. Cancer Imaging and Radiation Therapy Symposium ASTRO-RSNA Meeting, Atlanta, April 2011
- 327. Perfusion and Permeability Imaging: What are we measuring? American Roentgen Ray Society Annual Meeting, Chicago, April 2011
- 328. Perfusion and Permeability Imaging in Brain Tumors. Annual meeting ISMRM, Montreal, Canada, May 2011
- 329. Pseudoprogression and Pseudoresponse. Annual meeting ISMRM, Montreal, Canada, May 2011
- 330. Diffusion Imaging and Diffusion Tensor Imaging. Annual meeting ISMRM, Montreal, Canada, May 2011
- 331. High field MRI: My initial experience with Toshiba 3T MRI. Annual meeting ISMRM, Montreal, Canada, May 2011
- 332. Intradural Spinal Tumors. Annual meeting ASNR, Seattle, June 2011
- 333. Standardization of Perfusion and Permeability MRI. Consensus Medical Advisory Board Meeting. Bayer Healthcare. Annual meeting ASNR, Seattle, June 2011
- 334. Extradural Spinal Tumors. Combined meeting of the ASSR-ESNR, Barcelona, Spain 2011
- 335. Unknown Cases Lecture. Combined meeting of the ASSR-ESNR, Barcelona, Spain July 2011
- 336. Diffusion Tensor Imaging: Applications. Grand Rounds Boston Children's Hospital, Harvard Medical School 2011
- 337. Perfusion and Permeability Imaging in Brain Tumors. Grand Rounds Boston Children's Hospital, Harvard Medical School 2011

- 338. Characterization of Brain Tumors with Advanced MRI Techniques. Grand Rounds Boston Children's Hospital, Harvard Medical School 2011
- 339. Imaging in AD Grand Rounds University of Texas Medical Branch, Galveston, Texas 2011
- 340. Resident Lecture Grand Rounds University of Texas Medical Branch, Galveston, Texas 2011
- 341. Advanced MRI in the Spine. iiCME meeting Ritz Carlton Half Moon Bay, September 2011
- 342. Imaging of Stroke and TIA. iiCME meeting Ritz Carlton Half Moon Bay, September 2011
- 343. Imaging the Post Therapeutic Brain. iiCME meeting Ritz Carlton Half Moon Bay, September 2011
- 344. Imaging Vascular Diseases of the Brain. iiCME meeting Ritz Carlton Half Moon Bay, September 2011
- 345. Imaging in Alzheimer's disease. Queens Medical Center Grand Rounds. Honolulu Hawaii 2011
- 346. Imaging in Brain Tumor Characterization Queens Medical Center Grand Rounds. Honolulu Hawaii 2011
- 347. Acute Stroke Imaging Protocol Made Easy and My Own Pearls AIM Symposium, Cleveland Clinic, Hilton Hotel, New York, NY, November 2011
- 348. Image Interpretation Session. Panelist Neuroradiology, Moderated William Bradley RSNA Annual Meeting Chicago November 2011
- 349. Contrast Agents. Bayer Symposium RSNA Annual Meeting Chicago November 2011
- 350. The Power of 3T MRI, Toshiba Symposium. Modern Art Museum RSNA Annual Meeting Chicago November 2011
- 351. The Power of 3T MRI, Toshiba Symposium. Balboa Club, Newport Beach, CA 2011
- 352. Advanced MRI in the Spine, Annual Meeting of the American Society of Spine Radiology, ASSR Miami Beach, Florida. Feb 2012

- 353. Unknown Case Based Lecture, Annual Meeting of the American Society of Spine Radiology, ASSR Miami Beach, Florida. Feb 2012
- 354. Advanced Spine MRI, Annual Meeting of the American Society of Functional Radiology, ASFNR Orlando, Florida. Feb 2012
- 355. Diffusion Tensor Imaging: Basics and Applications. Vail 2012 Hot Topics In Diagnostic Radiology Vail CO 2012
- 356. Imaging in TIA and Stroke iiCME Vail 2012 Hot Topics In Diagnostic Radiology Vail CO 2012
- 357. Imaging in Neurovascular Diseases with SWI. Vail 2012 Hot Topics In Diagnostic Radiology Vail CO 2012
- 358. Advanced Imaging in Brain Tumors Vail 2012 Hot Topics In Diagnostic Radiology Vail CO 2012
- 359. Brain Tumor Imaging Advanced MRI, Spectroscopy. Australasian and New Zealand Society of Neuroradiology Annual Meeting Auckland New Zealand March 2012
- 360. Neuroimaging in Alzheimer Disease: Clues of Causation and Cure. Australasian and New Zealand Society of Neuroradiology Annual Meeting Auckland New Zealand March 2012
- 361. Brain Tumor Imaging Advanced MRI, Cased Based Lecture. Australasian and New Zealand Society of Neuroradiology Annual Meeting Auckland New Zealand March 2012
- 362. Pseudoprogression and Pseudoresponse. Australasian and New Zealand Society of Neuroradiology Annual Meeting Auckland New Zealand March 2012
- 363. Clinical Applications of DTI and Limitations. Neurosurgery Grand Rounds USC Keck Medical School, April 2012
- 364. Neuroimaging in Alzheimer Disease: Clues of Causation and Cure. Grand Rounds, Monash Medical Center Melbourne Australia, May 2012
- 365. Imaging the Post Therapeutic Brain Grand Rounds, Monash Medical Center Melbourne Australia, May 2012
- 366. Plenary Lecture. Accelerated Ultrafast Neuroimaging 5 min Money Shots Annual meeting ISMRM, Melbourne Australia, May 2012

- 367. Advanced Spine Imaging. Annual meeting ISMRM, Melbourne Australia, May 2012
- 368. Tissue subtyping with MRI meeting ISMRM, Melbourne Australia, May 2012
- 369. Advanced Imaging in Brain Tumors, Mets, Gliomas. Annual meeting ISMRM, Melbourne Australia, May 2012
- 370. Zoomed Diffusion and Diffusion Tensor Imaging in the Spine. Annual meeting ASNR, New York, June 2012
- 371. Imaging Pseudoprogression and Pseudoresponse Annual meeting ASNR, New York, June 2012
- 372. The Power of 3T, Toshiba How to Symposium Annual meeting ASNR, New York, June 2012
- 373. Imaging DCE MRI and Brain Tumors, Bayer Medical Advisory Board meeting ASNR, New York, June 2012
- 374. Imaging Neurovascular Diseases. Star Symposium, Mexico City Mexico Hans Ringertz June 2012
- 375. Imaging Paranasal Sinues. Star Symposium, Mexico City Mexico Hans Ringertz June 2012
- 376. Imaging in TIA and Stroke. Star Symposium, Mexico City Mexico Hans Ringertz June 2012
- 377. Imaging Brain Tumors Case Based Workshop Star Symposium, Mexico City Mexico Hans Ringertz June 2012
- 378. State of the Art Neuroimaging at 3T. Santa Monica MRI June 2012
- 379. CSF Flow New Techniques in Neuroimaging. Toshiba CSF Flow Symposium, Newport CA July 2012
- 380. Advanced MRI Clinical Applications in Brain Tumors. Annual Meeting of the Colombian Congress of Radiology August 2012
- 381. Neuroimaging in Alzheimer's disease: Clues of Causation and Cure. Annual Meeting of the Colombian Congress of Radiology August 2012
- 382. Neuroanatomy Important Tips and Pitfalls iiCME Neuro-ENT Santa Fe New Mexico August 2012

- 383. Imaging in TIA and Stroke iiCME Neuro-ENT Santa Fe New Mexico August 2012
- 384. Imaging in White Matter Diseases Art iiCME Neuro-ENT Santa Fe New Mexico August 2012
- 385. Imaging in Neurovascular Diseases. iiCME Neuro-ENT Santa Fe New Mexico August 2012
- 386. Cased Based Review of Brain Tumors iiCME Neuro-ENT Santa Fe New Mexico August 2012
- 387. Tissue Subtyping and the New WHO Classification of Brain Tumors iiCME Neuro-ENT Santa Fe New Mexico August 2012
- 388. Neuroanatomy Important Tips and Pitfalls Annual Meeting of the Colombian Congress of Radiology August 2012
- 389. Imaging in Epilepsy State of The Art Annual Meeting of the Colombian Congress of Radiology August 2012
- 390. Imaging in White Matter Diseases Art Annual Meeting of the Colombian Congress of Radiology August 2012
- 391. USC Neuroradiology: Current and Future Projects. Neuroscience Research Institute, Seoul South Korea, August 2012
- 392. Neuroimaging in Alzheimer's disease: Clues of Causation and Cure. Neuroscience Research Institute, Seoul South Korea, August 2012

#### Named Lectures:

- 1. State of the Art Imaging of Pediatric Epilepsy. Southern Pediatric Neurology Society 31<sup>st</sup> Annual Meeting, Paul R. Dike Scholarship Lecture. New Orleans. March 2006
- 2. Insights into Tumor Biology with MR Spectroscopy, Perfusion MRI and DTI. The Paul and Rose Geyser Lecture. Ramban Healthcare, Haifa, Israel. March 2007
- 3. State of the Art Imaging of Pediatric Epilepsy. Plenary Lecture Colombian Congress of Radiology, August 2012
- 4. Accelerated Neuroimaging. Compressed Sensing and Multi-Contrast MR Imaging . Plenary Lecture ISMRM, Melbourne, Australia May 2012

## H. BIBLIOGRAPHY

# Citation Indices (Meng Law Google Scholar April 2017)

All Citations 7946 h-index 43 i10 index 88

#### Peer Reviewed:

- 1. **Law M**, Toledo M, Stuckey SL: Right iliac fossa pain. Radiological-Pathological correlation for Mesenteric Carcinoid syndrome. *Academic Radiology* 4(8): 608-61, 1997.
- 2. Law KY, **Law M**: Pituitary adenoma presenting with visual complications. *Clinical and Experimental Optometry* 81(6): 267-271, 1998.
- 3. **Law M**, Smith PJ, Fitt GJ, Hennessy OF: Spontaneous Spinal Extradural Haematomas: MR findings. *Australasian Radiology* 43: 192-196, 1999.
- 4. **Law M,** Lourensz M.: Intra-abdominal Court Jester on MRI. *Radiographics* 19:1652, 1999
- 5. Cawson JM, **Law M**, Kavanagh AM. Invasive lobular carcinoma: Sonographic features of cancers detected in Breastscreen Program. *Australasian Radiology* 45: 25-30, 2001.
- 6. **Law M**, Little AF, Salanitri JC: Non-vascular intervention with real-time CT fluoroscopy. *Australasian Radiology* 45: 109-112, 2001.
- 7. **Law M**, Cha S, Knopp EA, Johnson G, Arnett J, Litt A: "High Grade Gliomas and Solitary Metastasis: Differentiation by using Perfusion and Proton Spectroscopic MR Imaging". *Radiology* 222(3):715-721, 2002.
- 8. Wetzel SG, Cha S, Johnson G, Lee P, **Law M,** Kasow D, Pierce S, Xue X: Relative cerebral blood volume measurements of intracranial mass lesions: An inter-observer and intra-observer Reproducibility study. *Radiology* 224 (3): 797-803, 2002.
- Yang S, Wetzel S, Law M, Zag Zag D, Cha S: Dynamic Contrast-Enhanced T2\*-Weighted MR Imaging of Gliomatosis Cerebri. AJNR 23(3):350-355, 2002. (See Erratum 26: A14)

- 10. Wetzel SG, Cha S, **Law M,** Johnson G, Golfinos J, Lee P, Nelson, PK: Preoperative Assessment of Intracranial tumors with perfusion MR and Volume Interpolated Examination:. A comparative study with DSA. *AJNR* 23(10): 1767-1774, 2002.
- 11. **Law M**, Metzler D, Cha S: Proton Spectroscopic MRI of Tumefactive Demyelination. *Neuroradiology*, 44(12): 986-989, 2002
- 12. Saindane AM, Cha S, **Law M**, Knopp EA, Zagzag D: Proton MR Spectroscopy MRI in Tumefactive Demyelinating Lesions. *AJNR* 23(8): 1378-1386, 2002.
- 13. Wetzel S, **Law M,** Lee VS, Cha S, Johnson G, Nelson PK: Imaging of the intracranial venous system with a contrast-enhanced volumetric interpolated examination. *European Radiology* 13(5): 1010-1018, 2003.
- 14. Kothary N, Law M, Cha S, Zagzag D: Conventional and Perfusion MRI findings in a Parafalcine Chondrosarcoma. *AJNR* 24(2): 245-248, 2003.
- 15. Yang S, **Law M**, Knopp EA, Cha S, Zagzag D Johnson, G: Utility of Permeability measurements in differentiation between atypical and typical meningiomas using perfusion-weighted MRI. *AJNR* Sep;24(8):1554-1559, 2003.
- 16. **Law M,** Yang S, Wang H, Babb J, Johnson G, Cha S, Knopp E, Zagzag D: Glioma Grading: Sensitivity, Specificity and Predictive Value of Perfusion MRI and Proton Spectroscopic Imaging compared with Conventional MR Imaging". *AJNR* 24(10): 1989-1998, 2003.
- 17. **Law M,** Teicher N, Zagzag D, Knopp EA: Dynamic Contrast Enhanced Perfusion MRI in Mycosis Fungoides. *Journal of Magnetic Resonance Imaging* 18(3):364-367, 2003.
- 18. Lu S, Ahn D, Johnson G, **Law M**, Zagzag D, Grossman R.I.: Diffusion Tensor Imaging of Intracranial Neoplasia and Its Peritumoral Edema: Introduction of the Tumor Malignancy Index. *Radiology* 232(1): 221-228, 2004.
- 19. **Law M**, Saindane A, Ge Y, Babb J, Mannon L, Johnson G, Herbert J, Grossman RI: Microvascular Abnormality in Relapsing Remitting Multiple Sclerosis: Perfusion MRI in the Normal Appearing White Matter. *Radiology* 231(3): 645-652, 2004.
- 20. **Law M,** Meltzer D, Wetzel S, Yang S, Knopp E, Johnson G: Conventional MR Imaging with Wimultaneous Measurements of Cerebral Blood Volume and Vascular Permeability In Gangliogliomas. *MRI* 22(5): 599-606, 2004.
- 21. **Law M,** Yang S, Babb, J, Knopp E, Zagzag D, Johnson G.: Comparison of Cerebral Blood Volume and Vascular Permeability Measurements obtained from

- Dynamic Susceptibility Contrast Enhanced Perfusion MRI with Glioma Grade. *AJNR* 25(5): 746-755, 2004.
- 22. **Law M,** Kazmi K, Wetzel S, Wang E, Iacob C, Zagzag D, Golfinos J, Johnson G.: Primitive Neuroectodermal Tumors: Dynamic Susceptibility Contrast Enhanced Perfusion MRI and Conventional MRI findings. *AJNR* 25(6): 997-1005, 2004.
- 23. Ge Y, **Law M,** Johnson G, Herbert J, Babb J, Mannon L, Grossman RI: Preferential Occult Injury of Corpus Callosum in Multiple Sclerosis Measured by Diffusion Tensor Imaging. *JMRI* 20(1):1-7, 2004.
- 24. **Law M,** Hamburger M, Johnson G, Inglese M, Londono A, Golfinos J, Zagzag D, Knopp EA: Differentiating Surgical from Non-Surgical Lesions using Perfusion MR Imaging and Proton MR spectroscopic Imaging. *Technol Cancer Res Treat* 3(6): 557-66, Dec 2004.
- 25. Ge Y, **Law M,** Johnson G, Herbert J, Babb J, Mannon L, Grossman RI: Dynamic Susceptibility Contrast Perfusion MR Imaging of Multiple Sclerosis Lesions: Characterizing Hemodynamic Impairment and Inflammatory Activity. *AJNR* 26(6): 1539-1547, 2005
- 26. Ge Y, **Law M,** Grossman RI: Prominent Perivascular Spaces in Multiple Sclerosis as a sign of Perivascular Inflammation in Primary Demyelination. *AJNR* 26(9): 2316–2319, 2005.
- 27. Lu H, **Law M,** Johnson G, Ge Y, van Zijl PCM, Helpern J: Novel Approach to the Measurement of Absolute Cerebral Blood Volume using Vascular-Space-Occupancy (VASO) MRI. *MRM* 54(6): 1403-1411, 2005.
- 28. Fischer I, Gagner JP, **Law M,** Newcomb E, Zagzag D: Angiogenesis in Gliomas: Biology and Molecular Pathophysiology. *Brain Pathology* 15(4): 297-310, 2005.
- 29. Gagner JP, **Law M,** Fischer I, Newcomb E, Zagzag D: Angiogenesis in Gliomas: Imaging and Experimental Therapeutics. *Brain Pathology* 15(4): 342-363, 2005.
- 30. Ge Y, **Law M**, Grossman RI: Applications of Diffusion Tensor Imaging in MS. *Annals of the New York Academy of Sciences* 1064(12): 202-219, 2005.
- 31. **Law M,** Oh S, Babb J, Wang E, Inglese M, Zagzag D, Knopp EA, Johnson G: Low-Grade Gliomas: Dynamic Susceptibility-weighted Contrast-enhanced Perfusion MR Imaging--Prediction of Patient Clinical Response. *Radiology* 238(2): 658-667, 2006.

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- 33. Orbach D, Wu C, **Law M,** Babb J, Padua A, Lee R, Knopp EA: Comparing real-world advantages for the clinical neuroradiologist between a high field (3 T), a phased array (1.5 T) vs. a single-channel 1.5-T MR system. *Journal of Magnetic Resonance Imaging* 24(1): 16-24, 2006.
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## **Invited Papers:**

1. Law M: MR Spectroscopy in Brain Tumors. *Topics in MRI* 15(5): 291-313, 2005.

- 2. Kim MJ, Provenzale JM, **Law M**. Magnetic resonance and diffusion tensor imaging in pediatric white matter diseases. *Topics in Magnetic Resonance Imaging* 17(4): 265-274, 2006.
- 3. Delman BN, Fatterpekar GM, **Law M**, Naidich TP: Neuroimaging for the pediatric endocrinologist. *Pediatric Endocrinology Reviews* 2:708-719, 2008.

# **Chapters/Textbooks:**

- Law M: Conditions of the CNS. In: <u>Radiology Core Review</u> (First Edition; Editors: Pitman, Major, Tello. Saunders/Elsevier, New York, NY, pp 178 -228, 2003.
- Law M: MR Spectroscopy in Brain Tumors. In: <u>Topics in MRI</u> (First Edition; Editors Scott Atlas, Lippincott Williams & Wilkins, Hagerstown, MD, pp 291 -313, 2004.
- 3. Wang E, **Law M**: Leukodystrophies: Advanced MR Imaging Techniques and MR Spectroscopy. In: <u>Bioimaging in Neurodegeneration</u> (First Edition; Broderick, Rahni, Kolodny) Humana Press Inc., Totowa, NY, pp 239 260, 2005.
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- 5. **Law M**: MR Perfusion of Brain Tumors and Related Conditions. In: <u>Functional Neuroradiology</u> (First Edition; Editors:. Holodny A Taylor & Francis Group, New York, NY, pp 273 - 308, 2008
- Lui Y, Law M: Diffusion Tensor Imaging of the Brainstem. In: <u>Naidich T, Delman B Duvernoy's Textbook.on the Brainstem</u> (2<sup>nd</sup> edition; editors <u>Naidich T, Delman B</u>). City, State, pp 675 722 Elsevier 2009.
- Law M: Perfusion Imaging in Brain Tumors. <u>Clinical MR Neuroimaging</u> (2<sup>nd</sup> Edition; Gillard, Waldman and Barker) Cambridge University Press, Cambridge, UK, pp TBD, 2009
- 8. **Law M**: State of the Art Diagnostics, Imaging and Therapeutics. Neuroimaging Clinics of North America August 2010
- 9. **Law M,** Naidich T, Som P: Advanced MRI for Problem Solving in Neuroradiology . In: Textbook, <u>Problem Solving in Neuroradiology</u> (First Edition; Editors **Law M,** Naidich T, Som P) Elsevier New York, NY, pp TBD

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- 11. Lacerda S, Shiroishi **M, Law M**: Applications of Perfusion and Permeability Imaging. In: <u>Functional Neuroradiology: Principles and Clinical Applications</u> (2<sup>nd</sup> Edition; Drs. Scott Faro and Feroze Mohamed) Springer, Warrington, PA, pp 117-141, 2011.
- 12. **Law M**, Roberts T: Permeability Imaging: Physical Principles and Clinical Applications. In: <u>Functional Neuroradiology: Principles and Clinical Applications</u> (2<sup>nd</sup> Edition; Drs. Scott Faro and Feroze Mohamed) Springer, Warrington, PA, pp 53-61, 2011.
- 13. Lacerda S **Law M**: DCE MRI and DSC MRI of the Brain: Methods and Applications. Functional MRI J Pillai, 2011.
- 14. Law M, Thurhner M, Schwartz E, Flanders A: Functional MRI of the spinal cord: Diffusion Weighted, Diffusion Tensor Imaging and Fiber Tractography. In: <u>Functional Neuroradiology: Principles and Clinical Applications</u> (2<sup>nd</sup> Edition; Drs. Scott Faro and Feroze Mohamed) Springer, Warrington, PA, pp 931-949, 2011.
- 15. Law M. Brain Tumor Imaging. Scott Atlas Textbook of Neuroradiology 2016

#### Miscellany:

## **Review Articles:**

- 1. **Law M,** Gonen, O: 1.5T and 3.0T MR Spectroscopy of the Brain. In: <u>Diagnostic Imaging</u> San Francisco, CA, 2002.
- Kim MJ, Provenzale JM, Law M.: Magnetic resonance and diffusion tensor imaging in pediatric white matter diseases. Top Magn Reson Imaging. 17(4):265-74, August 2006.
- Hesseltine S, Ge Y, Law M: Applications of DTI and Fiber Tractography. <u>Applied Radiology</u> Volume 36, Scott Plains, New Jersey, pp 68-75, April 2007.
- 4. Ge Y, **Law M,** Inglese M,Grossman RI: MRI and Trials of Neurodegeneration in MS Topics. In: <u>Neuroscience</u>, Massimo Fillipi, 2008.

- 5. **Law M,** Thurnher M: Diffusion tensor imaging in Spine. Clinics in Magn Reson Imaging, 2009.
- 6. Raoult H, Ferré J-C, Morandi X, Carsin-Nicol B, Carsin M, Law M: Gauvrit JY. Optimal reading grid for evaluation studies of cerebral time-resolved three-dimensional contrast- enhanced magnetic resonance angiography sequences. *European Radiology*, 2009.
- 7. Law M, Lacerda S: Advanced Neuroimaging in Brain Tumors. Radiological Clinics of North America. 2009.
- 8. Lacerda S, Shiroishi **M, Law M**: Applications of Perfusion and Permeability Imaging. TCRT 2010

#### LIST OF FORMER STUDENTS AND TRAINEES

# <u>USC Viterbi School of Engineering or USC Neuroscience PhD Committees for the following students:</u>

Darryl Hwang (USC BME Completed 2012)

Sinchai Tsao (USC BME Completed 2013)

Bryce Wilkins (USC BME Completed 2014)

Niharika Gajawelli (USC BME Completed 2018)

Yi Guo (USC Electrical Engineering 2016)

Terrance Tao (USC Electrical Engineering 2017)

Samantha Ma (USC BME Completion 2021)

Xingfeng Shao (USC BME Completion 2021)

Clio Gonzaleszaccarias (USC Neuroscience NGP Completion 2021)

# Significant Mentoring and Guidance for following Engineering Post Docs at USC

Yinghua Zhu (USC Electrical Engineering)
Marc Lebel (USC Electrical Engineering)
Sajan Lingala (USC Electrical Engineering)
Giuseppe Barisano (USC Neuroscience MD PhD)

# **Keck Medical Students/ Dean Research Scholars**

John Arnett Alexandra Kammen (Current USC) Daniel Treister Sara Kingston

## **Other Non USC Trainees**

Stanley Yang Daniel Meltzer Amit Saindane (Emory) Nishita Kothary Stanley Lu Khuram Kazmi (Drexler) **Edwin Wang** Darren Orbach (Brigham) Robert Young (MSKCC) Yvonne Lui (NYU) Stephen Hesseltine Gabriel Piwaver Erica Pollack Peter Suneshine Ke Lin Otto Rapalino (MGH)

# **USC Trainees/Fellows**

2008 Atul Agarwal John Grimm Ashwin Prabhu Mark Shiroishi Robert Simon

2009
Sara Banerjee
Caroline Fong
Peter Frech
Christine Park
Brian Tzung

2010 Charlton Byun Sean Chang Don Kim Henry Sebata Anandh Rajamohan

2011 Amanda Aguilera Saman Hazany Michael J. Kim

# Monica Martinez Kamron Izadi

2012
Fernando Torres
Alex Usmanov
Keith Kwok
Angela Sam (Canada)
Christian Sell

2013 Omid Jafari Jennnie Lammering Dharmesh Patel Daniel Klein Max Pollock

2014 Nhi Huyuh Stephen Metting Louis Muscarella Justin Myers Susan Wang

2015
Jay Acharya
Neelmini Emmanuel
Adriana Faulkner
Pareen Mehta
Alireza Nammini

2016 Kristina Hoque Minesh Patel Matthew Sondag Max Cho Sid Dissanayake Lillian Lai

2017
Lee Bundrick
Darren Lu
Manfred Tejerina
Bernadette Diegnan
Jeremiah Pack
Richard Koff

## 2018

## **Meng Law Administrative Duties:**

I can summarize my administrative experience by dividing them into institutional, national and international duties/accomplishments and within these areas into clinical/operational, research/academia, education as well as finance/fund raising/development experience/roles. As my department is divided into a service, research and education lines/enterprise, a substantial proportion of the resource income and allocation will stem from the service line. These funds are then used to grow the research enterprise.

## **Institutional (Clinical/Operations):**

In my current role at the University of Southern California (USC), I am the Director of Neuroradiology. I am responsible for academic appointments, clinical operations and workflow in Neuroradiology. I create the monthly clinical schedule for the neuroradiology service at USC. There are 10 full-time neuroradiologists, 3 part-time and 6 full-time fellows. In addition to scheduling the clinical duties, I am also responsible for the efficient workflow of the clinical service by ensuring the informatics and computing for our PACS is functional. I also oversee the safety of the patients being seen in neuroradiology, which includes oversight of MRI safety. We perform a monthly Mortality and Morbidity meeting for Quality Assurance. The above faculty, fellows and QA officer report to me. I am also the Medical Director of MR Imaging Center for Imaging Acquisition at USC Stevens Institute for Neuroimaging and Informatics. In this capacity, I am responsible for the day-to-day running of the clinical and research MRI scanners at USC. Among many responsibilities, this role requires the following: operational administration, QA, accreditation with the ACR resource and capital allocation for new equipment and upgrades.

## Institutional (Academic/Education):

I am also the Director of the USC Neuroradiology Fellowship Program at USC. This is a one-year training program for Neuroradiology fellows accredited by the ACGME. As Director, I evaluate each of the fellows on a monthly basis in terms of their clinical, academic and educational progress and document their progress electronically. I also evaluate our 8 junior faculty (Assistant Professors) and the entire fellowship program, which is done quarterly. I have also chaired a number of search committees, the most recent of which was a search for the Director of the Center of Image Acquisition for our Institute of Neuroimaging and Informatics. I also organize quarterly journal clubs and the monthly Neuroradiology Club for the Southern California region. We are responsible for medical student, resident and fellow education. We also provide education for doctoral and post-doctoral PhD students at the USC Viterbi School of Engineering and LONI Neuroimaging and Informatics postgraduate program.

# Institutional (Research):

I am the Director of the National Institute of Aging NIA USC Alzheimers Disease Research Center (ADRC) Neuroimaging Core. This is a continuously NIH funded 37year research program, where I have been responsible for a number of successful competitive renewals with the NIH. I am responsible for administering the research and operational budget for this project, which includes funding for research assistants, postdoctoral students, junior faculty, research coordinators and research administrators. In this role, I also mentor junior researchers and have been responsible in the past 6 years for a number of grants from my students and junior faculty (i.e. Zumberge Award. CTSI Award, RSNA Research Scholar, Whittier Foundation, Baxter Foundation, ADRC Pilot Grant Award). I also serve on the institutional IRB 3 committee and the USC Institutional Faculty Research Council (FRC). The FRC is responsible for reviewing all candidates who are considered for appointment on the tenure track or for tenure at our institution. I am also the principal investigator on a number of current grants including an R21 (NIH), a Whittier Foundation, the American Society of Neuroradiology ASNR Foundation Alzheimer's Disease Grant and Industry sponsored investigator initiated studies (see CV). I am currently the PI on Project 3 of an NIH funded program project. NIH AG06572 (PI: Brinton, Project 3 PI: Law) 04/01/16-03/31/21. administered a number of previous NIH, foundation and industry-sponsored grants. I have also chaired the USC Neuroscience Review Committee for the Institutional CTSI. My first NIH RO1 Quantitative MRI in Tumor Malignancy, RO1 CA1111996. investigated advanced MR imaging in brain tumors.

## **Fundraising/Development:**

The USC capital campaign to raise \$6 billion has ramped up fundraising and development efforts. I have been working with the Senior Director of Development in the University Advancement Office to meet our goals and fulfill our mission. This involves creating proposals for research programs, budgets with the development team and meeting with potential donors, industry and supporters. I am currently the highest fundraiser in my department.

#### National:

I have served on the Executive Committee as the Secretary, Treasurer, President and Past President of a number of national societies including the American Society of Neuroradiology, the American Society of Spine Radiology (ASSR), the American Society of Functional Neuroradiology (ASFNR) and the Eastern Society of Neuroradiology (ESNR). I have served on numerous committees for all of these societies including the American Society of Neuroradiology, where I have also served on the Research, Education, Healthcare Policy, Technical Exhibits, International Collaborations, Program Directors and Corporate Support Committees. I have been on the editorial board of a number of peer review journals, and I have also reviewed for

over 20 journals. My research has been recognized nationally by the Academy of Radiology Research with the Distinguished Investigator Award.

#### International:

I am involved with a number of international societies, such as the International Society of Magnetic Resonance Medicine (ISMRM) where I have been on a number of committees including the Annual Program Committee for the past 3 years. I have also been involved with the World Federation of Neuroradiological Society, European College of Radiology, the Royal Australian and New Zealand College of Radiology, and I am an honorary member of the Turkish Radiological Society. I have also been recognized as one of the Leading Physicians of the World in 2014. I am on the current Program Committee of the World Symposium Neuroradiologicum meeting held every four years (2018 Spine Program Chair). I have been Program Director and lecturer in numerous International Conferences and Meetings around the world (see CV). In terms of research abroad, I have served on the study panel for the Welcome Trust, the Medical Research Council, and the Department of Health in the United Kingdom as well as the National Institute of Health (NIH).