

# CURRICULUM VITAE

**Kathleen M. Schmainda PhD**

**Professor  
Department of Biophysics**

## **OFFICE ADDRESS:**

Medical Education Building  
8701 Watertown Plank Rd  
Milwaukee, WI 53226

## **EDUCATION:**

09/1981 - 05/1986 BSE (Summa Cum Laude), Marquette University, Milwaukee, WI  
09/1986 - 05/1989 MSEE, Massachusetts Institute of Technology, Cambridge, MA  
05/1989 - 09/1993 PhD, Harvard University/Massachusetts Institute of Technology, Cambridge, MA  
1989 - 1993 PhDEE, Massachusetts Institute of Technology, Cambridge, MA

## **POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:**

09/1993 - 12/1995 Postdoctoral Fellow in MRI, Department of Radiology, Harvard / Massachusetts General Hospital NMR Center, Charlestown, MA

## **FACULTY APPOINTMENTS:**

1996 - 2002 Assistant Professor, Biophysics Research Institute, Medical College of Wisconsin, Milwaukee, WI  
1996 - Present Adjunct Professor, Department of Biomedical Engineering, Medical College of Wisconsin, Milwaukee, WI  
1998 - 2002 Assistant Professor, Department of Radiology, Medical College of Wisconsin, Milwaukee, WI  
2002 - 2008 Associate Professor, Departments of Radiology (primary) & Biophysics (secondary), Medical College of Wisconsin, Milwaukee, WI  
2008 - 2018 Professor, Departments of Radiology (primary) & Biophysics (secondary), Medical College of Wisconsin, Milwaukee, WI  
2016 - 2018 Robert C. Olson, MD, Professor in Radiology Endowment Professorship, Medical College of Wisconsin, Milwaukee, WI  
2018 - Present Professor, Departments of Biophysics (primary) & Radiology (secondary), Medical College of Wisconsin, Milwaukee, WI

## **ADMINISTRATIVE APPOINTMENTS:**

1998 - 2004 Co-Director, Functional Imaging Program, Marquette University & Medical College of Wisconsin, Milwaukee, WI  
2008 - 2012 Research Director, Translational Brain Tumor Research Program, Medical College of Wisconsin, Milwaukee, WI  
2010 - 2014 Director, Cancer Imaging Program, Cancer Center, Medical College of Wisconsin, Milwaukee, WI  
2010 - 2017 Vice-Chair, Radiology Research, Department of Radiology, Medical College of Wisconsin, Milwaukee, WI

## **RESEARCH ADMINISTRATIVE APPOINTMENTS:**

1984 OTHER RESEARCH EMPLOYMENT: Co-op Engineer, [Co-Op Engineer, Electronics Design Laboratory (1st term), Special Products Design Engineering Unit (2nd term)], General Electric Medical Systems, Waukesha, WI  
1985 - 1987 OTHER RESEARCH EMPLOYMENT: Computer Programmer, Veteran's Administration

Medical Center, Milwaukee, WI  
1998 - 2000 OTHER RESEARCH EMPLOYMENT: Consultant, IGC/Medical Advances, Milwaukee, WI  
2004 - Present Co-Founder, Prism Clinical Imaging, Inc., Elm Grove, WI  
2007 - Present Founder, Imaging Biometrics LLC, Elm Grove, WI

#### **AWARDS AND HONORS:**

1981 - 1986 Academic Scholarship, Marquette University, Milwaukee, WI  
1981 - 1986 Dean's List (all semesters), Marquette University, Milwaukee, WI  
1982 - 1983 Outstanding Sophomore in Engineering Award, Marquette University, Milwaukee, WI  
1985 - 1986 ALPHA ETA MU BETA, Biomedical Engineering Honor Society, Marquette University, Milwaukee, WI  
1985 - 1987 TAU BETA PI, All Engineering Honor Society, Marquette University, Milwaukee, WI  
1986 Engineering convocation speaker, Marquette University, Milwaukee, WI  
1986 Summa Cum Laude Graduate, Marquette University, Milwaukee, WI  
1986 High Scholastic Honors in Biomedical Engineering, Marquette University, Milwaukee, WI  
1986 High Scholastic Honors in Computer Medical Applications, Marquette University, Milwaukee, WI  
1987 - 1988 Outstanding Woman of America  
1989 - 1990 Sterling Winthrop Fellowship, Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA  
1993 - 1994 Gillette Fellowship, Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA  
1996 - 1998 Medical Engineering Fellowship, Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA  
1997 Finisher, Big Sur International Marathon  
1998 Milwaukee Business Journal's 40 under 40  
1998 Finisher, Milwaukee Lakefront Marathon, Qualifier for Boston Marathon  
04/1999 Magna Cum Laude Poster Award, American Society of Neuroradiology Annual Meeting  
1999 Finisher, Boston Marathon  
04/2001 Scientific Exhibit Gold Medal, 101st Annual Scientific Meeting at American Roentgen Ray Society, Seattle, WA  
05/2004 Young Investigator Award to Dr. Schmainda's graduate student, Kevin Bennett, 12th Annual Meeting of International Society of Magnetic Resonance in Medicine, Kyoto, Japan  
05/2004 First Place Poster Award, Cancer and Spectroscopy Category to Dr. Schmainda's graduate student, Christopher C. Quarles, 12th Annual Meeting of International Society of Magnetic Resonance in Medicine, Kyoto, Japan  
06/2004 Summa Cum Laude Poster Award, 42nd Annual Meeting of American Society of Neuroradiology Meeting  
2004 Summa Cum Laude, American Society of Neuroradiology Meeting  
2004 First Place Poster Award, Cancer Imaging and Spectroscopy, International Society of Magnetic Resonance in Medicine Meeting  
2004 Young Investigator Moore Award, International Society of Magnetic Resonance in Medicine Meeting  
2006 Bayer Best Paper Award, 45th Annual Meeting of American Society of Neuroradiology  
06/2007 Bayer Best Paper Award to Dr. Schmainda's graduate student, Eric Paulson, 45th Annual Meeting of American Society of Neuroradiology Meeting, Chicago  
05/2008 3rd Place Poster Award to Dr. Schmainda's graduate student, Douglas Prah, 16th Annual Meeting of International Society of Magnetic Resonance in Medicine, Toronto  
05/2009 1st Place Poster Award in Cancer Imaging to Dr. Schmainda's post-doctoral fellow, Dr. Ellingson, 17th Annual Meeting for International Society of Magnetic Resonance in Medicine, Honolulu, HI  
05/2010 Young Investigator Moore Award, International Society of Magnetic Resonance in Medicine Meeting  
05/2012 Merit Award, International Society of Magnetic Resonance in Medicine Meeting  
05/2013 One of five most-cited papers published in Journal of Magnetic Resonance in Imaging in 2010 (announced at 2013 ISMRM meeting), International Society of Magnetic Resonance in Medicine  
05/2013 Summa Cum Laude Merit Award, International Society of Magnetic Resonance in Medicine  
2013 ISMRM Summa Cum Laude Merit Award, International Society of Magnetic Resonance in Medicine Meeting  
04/2016 Elected to the American Institute for Medical and Biological Engineering (AIMBE) College of Fellows (induction ceremony on Monday April 4, 2016 at the National Academy of Sciences),

Washington, DC  
09/2016 - 2018 Robert C Olson MD Endowed Chair in Radiology, Medical College of Wisconsin,  
Milwaukee, WI (relinquished endowment in order to switch primary appointment to Biophysics)  
11/2016 Distinguished Investigator of the Academy of Radiology Research, Radiological Society of North  
America, Chicago, IL  
2016 College of Fellows, American Institute for Medical and Biological Engineering (AIMBE)  
08/28/2019 Nominated as 1 of 15 semifinal candidates nominated for "Scientific Paper of the Year" in the  
2019 edition of the Minnies, AuntMinne.com (a large comprehensive community website for medical  
imaging professionals worldwide)  
08/28/2019 Nominated as 1 of 16 semifinal candidates for "Most Influential Radiology Researcher" in the  
2019 edition of the Minnies, AuntMinne.com  
09/05/2019 Dean's Award for Clinical and Translational Research 2019, Medical College of Wisconsin  
11/20/2019 Outstanding Graduate School Educator 2018-2019, MCW Graduate School of Biomedical  
Sciences  
04/2020 Elected as a Fellow of the International Society of Magnetic Resonance in Medicine

**MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:**

1990 - Present International Society of Magnetic Resonance in Medicine  
1997 Society of Biomedical Engineering  
1998 - 2001 Peter Favre Forum for Catholic Professionals  
1999 - 2012 Wisconsin MIT Alumni Club  
2009 - Present Society of Neuro-Oncology  
2010 - Present Radiologic Society of North America  
2016 - Present University Faculty for Life (Board Member)  
2016 - Present American Institute for Medical and Biological Engineering (AIMBE) (Fellow)

**EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:**

Editorship  
1996 - Present Doody Book Publishers  
1996 - Present Medical Physics (Associate Editor)  
Editorial Board  
2017 - Present Tomography  
Journal Review  
1996 - Present Magnetic Resonance in Medicine  
1996 - Present Radiology  
1996 - Present Circulation  
1996 - Present Journal of Magnetic Resonance Imaging  
1996 - Present Journal of Physiology  
1996 - Present Radiographics  
1996 - Present NMR in Biomedicine

**NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:**

10/1998 Session Chair, Biomedical Engineering Society Annual Meeting, Cleveland, OH  
04/2000 Session moderator "Quantitative relaxation techniques", International Society of Magnetic  
Resonance in Medicine, 8th Annual Meeting, Denver, CO  
2000 - Present Abstract Referee, International Society of Magnetic Resonance in Medicine Annual Meetings  
07/2001 Invited Panelist, NCI SBIR review meeting: "Development of novel imaging technologies  
(R21/SBIR)", Washington, DC  
2001 - 2005 NIH Grant Referee, NIH/NCI Study Section, "Development of In Vivo Imaging and  
Bioengineering Research", Washington, DC  
2001 - 2002 Ad Hoc Grant Referee, Massachusetts Prostate Cancer Research Grants Program  
05/2002 Session Moderator, International Society of Magnetic Resonance in Medicine, 10th Annual Meeting,  
Honolulu, HI  
08/2003 NIH Invited Working Group Participant, NIH/NIBIB: "Biomedical entrepreneurial science working  
group", Washington, DC  
2004 NIH Grant Referee, NIH/MABS (Modeling and analysis of biological systems) Study Section,  
Washington, DC

2004 Advisory Committee Member, Head and Neck Subcommittee, ACRIN (American College of Radiology Imaging Network), Washington, DC (The committee's role is to develop and recommend imaging studies for multi-center clinical trials.)

08/2007 Technical Advisory Committee Member, ACRIN (American College of Radiology Imaging Network) Neuroimaging Core Lab, Washington, DC (The purpose of this committee is to serve as a repository of expertise in helping to define and implement the core lab functions that can help to further ACRIN multi-center clinical trials.)

2007 - 2008 Grant Referee, NIH/NCI Clinical Studies Special Emphasis Panel, NCI P01 Program, Washington, DC

2008 Member, Technical Advisory Committee, STIR (Stroke Imaging Repository Consortium), (The purpose of STIR is to create an international consortium of investigators and a repository of source MRI and CT images tow and clinical research methods of image-based stroke research.)

2008 NIH Grant Referee, NIH/MABS (Modeling and analysis of biological systems) Study Section, Washington, DC

02/2009 NIH Grant Referee, NIH/NCI, Tumor Biology Study Section, Washington, DC

03/2009 NIH Grant Referee, NIH/NCI, In Vivo Imaging and Bioengineering Research Review Panel, San Diego, CA

2009 - 2013 Charter Member, NIH Grant Referee, NIH/NCI Developmental Therapeutics Study Section (DT), Oncology 2 – Translational Clinical (OTC) IRG

2009 External Advisor, University of Michigan Program Project Grant External Advisory Committee, Ann Arbor, MI

2010 - 2018 NIH/NCI Grant Referee, NIH/NCI Quantitative Imaging Network (U01, U24, UG3/UH3)

01/2011 NIH Diffusion Imaging Workshop, Invited speaker and Chair for "Technical Breakout: Image Processing and Analysis Section", Washington, DC

07/30/2013 NIH/NCI Grant Referee, Division of Translational and Clinical Sciences (DTCS), Surgical Sciences, Biomedical Imaging and Bioengineering (SBIB) IRG, ZRG1 SBIB-Z (03) Study Section

2013 Member, Search Committee for Chair of Biomedical Engineering, Marquette University, Milwaukee, WI

02/20/2014 NIH/NCI Grant Referee, Division of Translational and Clinical Sciences (DTCS), Surgical Sciences, Biomedical Imaging and Bioengineering (SBIB) IRG, ZRG1 SBIB-Z (58), Image-Guided Drug Delivery in Cancer, Teleconference Review

11/13/2014 NIH/NCI Grant Referee, Division of Translational and Clinical Sciences (DTCS), Surgical Sciences, Biomedical Imaging and Bioengineering (SBIB) IRG, ZRG1 SBIB-Z (55), Bioengineering Research Partnerships (BRP) R01 review panel

03/12/2015 NIH/NCI Grant Referee, Surgical Sciences, Biomedical Imaging and Bioengineering IRG (SBIB), Division of Translational Clinical Sciences, Center for Scientific Review, Image-Guided Drug Delivery in Cancer, ZRG1 SBIB-Z (58) R Study Section

06/2015 Reviewer, NIH Fellowship Review Panel: F-Awards (F32 Ruth L. Kirstein National Research Service Awards (NRSA): F30, F31, F32, and F33 Fellowship applications review

07/08/2015 NIH Fellowship Grants Referee, Surgery, Anesthesiology and Trauma Study Section, Review of Pre-Doc (F30, F31) and post-doc (F32) applications, ZRG1 F15-P fellowship special emphasis panel

09/02/2015 Invited Participant, Marquette University College of Engineering "Thought Leaders Council"

2015 - 2018 Member, MRI Value Add Committee, International Society of Magnetic Resonance in Medicine

2015 - 2017 Member, Alliance Neuro-Oncology Imaging Subcommittee

2015 - 2016 Member, NIH/NCI Site Review Committee, NCI Cancer Center Site Review, January 2016, University of Arizona

2015 - Present Member, Jumpstarting Brain Tumor Coalition, DSC-MRI Standardization Committee

2015 - Present Member, RSNA, QIBA (Quantitative Imaging Biomarker Alliance)

2015 - Present MRI Biomarker Committee: DSC-MRI Subcommittee, QIBA (Quantitative Imaging Biomarker Alliance)

11/02/2016 - 02/17/2017 Invited Participant, Marquette University College of Engineering "Thought Leaders Council"

2016 - Present Board Member, University Faculty for Life

10/20/2017 NIH Grant Referee, Study Section Review Panel, SRO: Nadeem Khan

02/14/2018 NIH/NCI Grant Referee, Special Emphasis Panel, ZCA1 TCRB-V (M1), Quantitative Imaging

05/30/2018 NIH/NCI Grant Referee, Surgical Sciences, Biomedical Imaging and Bioengineering (SBIB) IRG, Early Phase Clinical Trials in Imaging and Biomarkers for Early Detection of Aggressive

Cancer” Study Section  
 02/21/2019 - 02/22/2019 NIH/NCI Grant Referee, Surgical Sciences, Biomedical Imaging and Bioengineering IRB, EITA, BMIT-B), San Diego, CA  
 06/24/2019 - 06/25/2019 NIH/NCI Grant Referee, Academic-Industrial Partnership (AIP) Review Panel, ZRG1 SBIB-Q57, Bethesda, MD  
 05/06/2020 - 05/08/2020 Reviewer, NIH/NCI Cancer Center Site Review site visit team (SRO: Caterina Bianco, MD, PhD)  
 06/10/2020 - 06/12/2020 Reviewer, NIBIB Biomedical Technology Resource Centers (BTRC) P41 Review Panel. (SRO: Dennis J. Hlasta, PhD)

**INTERNATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:**

04/2001 Invited Panelist, NCI: "High Field MR (1.5T and up) in Oncology: Strategic frontiers in cancer diagnosis", Glasgow, Scotland  
 05/2007 Session Moderator, International Society of Magnetic Resonance in Medicine, 15th Annual Meeting, Berlin, Germany  
 2015 - 2018 MRI Value Add Committee, International Society of Magnetic Resonance in Medicine

**RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:**

**Active**

**Peer Review**

Title: U01 CA176110: Quantitative (Perfusion & Diffusion) MRI Biomarkers Measure Glioma Response  
 Source: NIH/NCI  
 Role: Principal Investigator  
 Dates: 03/01/2014 - 08/31/2024  
 Direct Funds: \$584,300

Title: Assessment of Optune Therapy for Patients with Newly Diagnosed Glioblastoma using Advanced MRI  
 Source: Novocure  
 Role: Co-Principal Investigator  
 Dates: 04/01/2017 - 04/30/2021  
 Direct Funds: \$136,446

Title: R01 CA2211938: Multisite Validation and Application of a Consensus DSC-MRI Protocol  
 Source: NIH/NCI  
 Role: Co-Principal Investigator  
 Dates: 01/18/2018 - 01/17/2021  
 Direct Funds: \$174,939

Title: Molecular Determinants of Drug Sensitivity and Resistance to Gallium-Based Therapy in Pediatric Brain Tumors  
 Source: NIH/NINDS  
 Role: Principal Investigator  
 PI: Kathleen Schmainda  
 Dates: 07/01/2018 - 12/31/2022  
 Direct Funds: \$190,085

Title: UG3/UH3: Structural and Functional Imaging for Therapy Response

Source:	Assessment in Brain Cancer NIH/NCI
Role:	Co-Investigator
Dates:	07/01/2018 - 06/30/2023
Direct Funds:	\$26,110 (subcontract)
Title:	Preclinical Evaluation of Novel Iron-Targeted Therapy for Treatment-Resistant Pediatric Glioblastoma
Source:	CHW Children's Research Institute
Role:	Principal Investigator
Dates:	11/01/2018 - 04/30/2020
Direct Funds:	\$70,966
Title:	Obtaining Preclinical Evidence for a Novel Iron-Targeted Therapy for Glioblastoma
Source:	Froedtert Hospital Foundation
Role:	Principal Investigator
Dates:	12/01/2018 - 12/31/2019
Direct Funds:	\$54,658
Title:	MCW NCTN Lead Academic Participating Site
Source:	NIH/NCI
Role:	Co-Investigator
Dates:	03/01/2019 - 02/28/2025
Direct Funds:	\$75,000
Title:	ECOG ACRIN Operations Center
Source:	American College of Radiology / NCI
Role:	Co-Investigator
PI:	O'Dwyer & Schnall
Dates:	03/01/2019 - 02/28/2024
Direct Funds:	\$11,997
Title:	Directors Award for Brain Tumor Treatment Monitoring with the Identification of the Functional Brain Tumor Extent using Multi-Parameter MRI
Source:	MCW Cancer Center
Role:	Principal Investigator
Dates:	05/01/2019 - 04/30/2020
Direct Funds:	\$50,000
Title:	R25: Student-centered Pipeline to Advanced Research in Cancer Centers (SPARCC) for Underrepresented Minority Students
Source:	NIH/NCI
Role:	Co-Investigator
PI:	Janet Rader
Dates:	07/01/2019 - 08/31/2023
Direct Funds:	\$188,568
Title:	R01CA255123: New treatment

monitoring biomarkers for brain tumors  
 using multiparametric MRI with  
 machine learning  
 Source: NIH/NCI  
 Role: Principal Investigator  
 Dates: 04/15/2021 - 03/31/2026  
 Direct Funds: \$1,776,711 (All years)

Title: R01 CA264992: Establishing the clinical  
 utility of a consensus DSC-MRI protocol  
 Source: NIH/NCI  
 Role: Co-Principal Investigator  
 PI: Boxerman J/ Hu L/Quarles C/Schmainda  
 K  
 Dates: 03/01/2022 - 02/28/2027

**Prior**

**Peer Review**

Title: Development of Magnetic Resonance  
 Imaging Methods to Measure Tumor  
 Vascular Parameters  
 Source: MCW Cancer Center  
 Role: Principal Investigator  
 Dates: 1996 - 1997  
 Direct Funds: \$10,000

Title: Measurement of Capillary Perfusion  
 Parameters in Humans  
 Source: MCW Research Affairs Committee  
 Role: Principal Investigator  
 Dates: 1996 - 1997  
 Direct Funds: \$15,000

Title: Modeling of Biophysical Relationships  
 Underlying the Contrast-Enhanced MRI  
 Measurement of Tumor Vascular  
 Parameters  
 Source: Whitaker Foundation  
 Role: Principal Investigator  
 Dates: 09/30/1997 - 08/31/2000  
 Direct Funds: \$210,000

Title: Role of MRI rCBV Mapping in Gliomas  
 Source: MCW Cancer Center  
 Role: Principal Investigator  
 Dates: 07/01/1998 - 06/30/2000  
 Direct Funds: \$25,000

Title: P01: Functional Magnetic Resonance  
 Imaging of the Brain  
 Source: NIH/NIMH  
 Role: Co-Investigator (Project 1)  
 Dates: 04/01/1999 - 03/30/2004  
 Direct Funds: \$1,271,762 (Project 1 total for all years)

Title: Modeling of Biophysical Relationships

Underlying the Contrast-Enhanced MRI  
Measurement of Tumor Vascular  
Parameters  
Source: MCW Research Affairs Committee  
Role: Principal Investigator  
Dates: 01/01/2000 - 12/31/2000  
Direct Funds: \$15,000

Title: R01: MRI Contrast Agent Methods to  
Assess Tumor Angiogenesis  
Source: NIH/NCI  
Role: Principal Investigator  
Dates: 03/01/2000 - 03/30/2003  
Direct Funds: \$817,759 (total for all years)

Title: R01: MRI Contrast Agent Methods to  
Assess Tumor Angiogenesis  
Source: NIH/NCI  
Role: Principal Investigator  
Dates: 03/31/2000 - 02/30/2018  
Direct Funds: \$181,636 (Fourth consecutive funding  
period awarded for this NIH R01  
project)

Title: Development of Diffusion MRI Methods  
to Evaluate Glioma Invasion  
Source: MCW Cancer Center  
Role: Principal Investigator  
Dates: 01/01/2002 - 12/31/2002  
Direct Funds: \$25,000

Title: Shared Instrumentation Grant for Bruker  
Biospec 9.4T/30cm bore MRI System  
Source: NIH/NCRR  
Role: Co-Investigator  
Dates: 04/01/2002 - 03/31/2003  
Direct Funds: \$500,000

Title: 3T Whole Body MRI Scanner for  
Functional Imaging  
Source: NIH High-End Instrumentation Program  
Role: Co-Investigator  
Dates: 07/01/2002 - 06/30/2003  
Direct Funds: \$2,000,000

Title: R01: MRI Contrast Agent Methods to  
Assess Tumor Angiogenesis  
Source: NIH/NCI  
Role: Principal Investigator  
Dates: 04/01/2003 - 03/30/2007  
Direct Funds: \$1,128,000 (total for all years)

Title: R01: Long-term effects of acute renal  
failure  
Source: NIH/NIDDK  
Role: Co-Investigator  
Dates: 06/01/2003 - 04/03/2007



Direct Funds: \$1,045,256 (support ended in 2005 when PI moved to another institution)

Title: Treatment planning MRI technology for brain tumors

Source: MCW Bioengineering and Biotechnology Center

Role: Principal Investigator

Dates: 07/01/2004 - 06/30/2005

Direct Funds: \$52,432

Title: Facilitating Discovery with Multi-Parameter Physiologic Imaging of Brain Tumors

Source: Advancing a Healthier Wisconsin

Role: Principal Investigator

Dates: 10/01/2004 - 09/30/2006

Direct Funds: \$250,000

Title: Analysis of Brain Tumor rCBV Data to Determine the Most Clinically Relevant MRI Perfusion Parameter(s)

Source: Berlex Laboratories

Role: Principal Investigator

Dates: 07/01/2005 - 12/31/2006

Direct Funds: \$52,000

Title: Dynamic susceptibility contrast MRI techniques to evaluate tumor angiogenesis and response to treatment in intracerebral malignant human gliomas xenografts

Source: MCW Cancer Center

Role: Co-Investigator

Dates: 07/01/2005 - 06/30/2007

Direct Funds: \$25,000

Title: Mito-Q Attenuates DOX-Induced Cardiotoxicity and Potentiates Anti-tumor Effects: MR imaging and echocardiography studies

Source: Wisconsin Breast Cancer Showhouse

Role: Co-Investigator

Dates: 03/01/2006 - 02/28/2008

Direct Funds: \$150,000

Title: R41: Merit of Perfusion Targets for Radiotherapy Planning

Source: NIH/NCI

Role: Principal Investigator

Dates: 06/01/2006 - 05/31/2007

Direct Funds: \$107,000

Title: R01 CA082500: MRI Contrast Agent Methods to Assess Tumor Angiogenesis

Role: Principal Investigator

Dates: 03/31/2007 - 03/30/2012

Title: Effects of Chemotherapy on Cognition and Brain Function in Breast Cancer Patients  
Source: Wisconsin State Tax Write-Off Program  
Role: Co-Investigator  
Dates: 07/01/2007 - 06/30/2008  
Direct Funds: \$70,000

Title: R21: Diffusion MRI to Detect Glioma Invasion  
Source: NIH/NCI  
Role: Principal Investigator  
Dates: 09/01/2007 - 08/31/2010  
Direct Funds: \$333,000 (total for all years)

Title: Departmental "Translational Neuro-Oncology Research Program"  
Source: MCW Advancing a Healthier Wisconsin  
Role: Co-Investigator / Research Director  
Dates: 06/01/2008 - 05/31/2013  
Direct Funds: \$2,000,000 (total for all years)

Title: R01 CA125122: Role of iNOS, Nitric Oxide & Arginase in Statin-Mediated Toxicity in Cancer Cells  
Source: NIH/NCI  
Role: Co-Investigator  
Dates: 07/01/2008 - 05/31/2013  
Direct Funds: \$207,500

Title: R41: Development of the Standard for Clinical Breast Perfusion Imaging (Small Business Grant)  
Source: NIH/NCI  
Role: Co-Investigator  
Dates: 08/01/2008 - 07/30/2009  
Direct Funds: \$107,000

Title: R41: Product Development of a Brain Tumor Perfusion Imaging Technology (Small Business Grant)  
Source: NIH/NCI  
Role: Co-Investigator  
Dates: 08/01/2008 - 07/30/2009  
Direct Funds: \$107,000

Title: R44 CA1340431: Product Development of a Brain Tumor Perfusion Imaging Technology (Imaging Biometrics LLC / Medical College of Wisconsin)  
Source: NIH/NCI  
Role: Co-Investigator  
Dates: 09/01/2008 - 08/31/2012  
Direct Funds: \$750,000 (total for all years)

Title: R01 CA082500-10S1: MRI Contrast

Source:	Agent Methods to Assess Tumor Angiogenesis, Challenge Grant Administrative Supplement NIH/NCI
Role:	Co-Investigator
Dates:	08/01/2009 - 11/30/2011
Direct Funds:	\$181,492
Title:	Effects of Breast Cancer Chemotherapy Agents on Brain Activity in Rats: Functional Imaging Studies
Source:	DOD-CDMRP-Concept Award
Role:	Co-Investigator
Dates:	09/30/2009 - 09/29/2010
Direct Funds:	\$75,000
Title:	R01 NS06091: Toward Multi-Center MR Brain Perfusion (Harvard University / Massachusetts General Hospital with Medical College of Wisconsin)
Source:	NIH/NINDS
Role:	Co-Principal Investigator
PI:	Kathleen Schmainda / Steven Stufflebeam
Dates:	03/15/2010 - 10/30/2013
Direct Funds:	\$1,250,000
Title:	Effectiveness of Advanced MR Imaging Techniques for Grading Pediatric Brain Tumors: A Comparative Outcomes Stud
Source:	MCW and American Cancer Society
PI:	Co-Investigator
Dates:	04/01/2011 - 03/13/2013
Direct Funds:	\$50,000
Title:	Effectiveness of Advanced MR Imaging Techniques for Grading Pediatric Brain Tumors
Source:	MCW Cancer Center
Role:	Co-Investigator
PI:	Kelly
Dates:	04/01/2011 - 06/31/2014
Direct Funds:	\$20,000
Title:	Cancer Imaging Program
Source:	MCW Advancing a Healthier Wisconsin
Role:	Co-Leader
PI:	Ming You
Dates:	07/01/2012 - 06/30/2017
Title:	R41 NS076149: Automating MRI Delta T1 Methods for the Routine Assessment of Brain Tumor Burden
Source:	NIH/NINDS
Role:	Principal Investigator
Dates:	11/01/2012 - 03/31/2014
Direct Funds:	\$100,000

Title: Brain Tumor Treatment with  
Metallo drugs: Studies with Cancer Stem  
Cells  
Source: MCW Cancer Center  
Role: Co-Investigator  
Dates: 01/01/2014 - 04/30/2018  
Direct Funds: \$40,000

Title: Brain tumor treatment with  
metallo drugs: studies with cancer stem  
cells  
Source: Rosenberg Award  
Role: Co-Investigator  
PI: Chitambar  
Dates: 07/01/2014 - 06/30/2016  
Direct Funds: \$40,000

Title: Susceptibility-based measurements of  
iron concentrations in brain tumors  
Source: AHW Research and Education Program  
Role: Principal Investigator  
Dates: 03/01/2015 - 02/28/2016  
Direct Funds: \$50,000

Title: Women's Health Research Program  
Source: Development of Advanced MRI  
Methods to Assess placental structure  
and function  
Role: Co-Principal Investigator  
Dates: 07/01/2015 - 06/30/2016  
Direct Funds: \$50,000

Title: CLIN\_TRAN Development of an Iron  
Protein Biomarker Panel for  
Glioblastoma  
Source: MCW Cancer Center  
Role: Co-Principal Investigator  
Dates: 06/01/2018 - 05/31/2019  
Direct Funds: \$75,000

#### **INVITED LECTURES/WORKSHOPS/PRESENTATIONS:**

##### **Local**

Speaker, MRI in Cardiac Perfusion Imaging, Graduate Seminar Series, Biophysics Research Institute, MCW, Milwaukee, WI, 02/1996

Speaker, Functional MRI: How it Works, Scientific Fundraising Presentation, MCW Council Meeting, University Club, Milwaukee, WI, 1997

Speaker, Diagnostic Functional MRI, M-2 Medical Engineering Interest Group, MCW, Milwaukee, WI, 1999

Speaker, Functional MRI evaluation of tumor angiogenesis, Seminar Series, Department of Pharmacology, MCW, Milwaukee, WI, 1999

Speaker, Functional MRI: How it works, Young Presidents Organization (Hosted by MCW), Milwaukee, WI, 1999

Speaker, Evaluation of brain tumor angiogenesis using MRI, Functional Imaging Research Center, MCW, Milwaukee, WI, 05/2000

Speaker, The role of MRI in targeted gene therapy, Focus meeting to explore the future imaging possibilities in the area of molecular and genetic imaging with GE Medical Systems, MCW, Milwaukee, WI,

06/2000  
 Speaker, Using Functional MRI for the evaluation of therapies in mice, Pediatric Hematology & Oncology Research Meeting, MCW, Milwaukee, WI, 2000  
 Speaker, Diffusion MRI: Fundamentals and Applications, Functional Imaging Research Center, MCW, Milwaukee, WI, 05/2001  
 Speaker, Using MRI for the evaluation of brain tumor angiogenesis, Grand Rounds, Department of Neurosurgery, MCW, Milwaukee, WI, 08/2001  
 Speaker, Functional MRI of Brain Tumor Angiogenesis, Board Meeting, MCW, Milwaukee, WI, 06/2002  
 Speaker, Using MRI for the evaluation of brain tumor angiogenesis, Biophysics Research Institute, MCW, Milwaukee, WI, 10/2002  
 Speaker, Using MRI for the evaluation of brain tumor angiogenesis, Grand Rounds, Department of Neurology, MCW, Milwaukee, WI, 10/2002  
 Speaker, Tumor and Molecular Imaging, External Advisory Meeting, MCW Cancer Center, MCW, Milwaukee, WI, 02/2003  
 Speaker, Imaging of tumor angiogenesis, Seminar Series, Multidisciplinary Breast Cancer Research Group, MCW, Milwaukee, WI, 04/2003  
 Speaker, Innovative Imaging Tracks Brain Tumors, Cancer Media Day Program at MCW, Milwaukee, WI, 11/04/2003  
 Speaker for 7th grade girls, What does a scientist do?, American Association of University Women (AAUW) - Menomonee Falls Branch, WI, 12/2003  
 Speaker, New Directions for MR Imaging of Brain Cancer, Graduate Seminar Series, Department of Biophysics, MCW, Milwaukee, WI, 01/2004  
 Speaker, Image-guided therapy: an emerging technology, Invited Speaker for Visiting Russian Scientists at MCW, Milwaukee, WI, 08/2005  
 Speaker, Making MRI 'Real' in the Clinic, Seminar Series, Department of Biophysics, MCW, Milwaukee, WI, 02/2006  
 Speaker, Brain MRI Perfusion Imaging: Current Status and Future Goals, Grand Rounds, Department of Neurosurgery, MCW, Milwaukee, WI, 12/14/2007  
 Speaker, The Latest and Greatest in MRI Perfusion Imaging of Brain Tumors, Department of Radiology, MCW, Milwaukee, WI, 07/25/2008  
 Speaker, DSC-MRI Perfusion Imaging in Brain Tumors: Current Status & Future Trends at MCW and Nationally, Department of Radiology Research Seminar Series, MCW, Milwaukee, WI, 10/15/2015  
 Speaker, MRI Guided Treatment and Surveillance of Brain Tumors, requested presentation to Dr. Berger, Larson Grand Rounds, Visiting Professor, Department of Neurosurgery, MCW, Milwaukee, WI, 10/30/2015  
 Speaker, MRI of Placenta, Maternal Fetal Medicine Research Meeting, 01/20/2016  
 Speaker, "Diagnosis and Treatment Monitoring of Brain Tumors Using Perfusion and Diffusion MRI: Past, Present and Future Efforts at MCW and Nationally", Department of Neurosurgery Grand Rounds, MCW, Milwaukee, WI, 03/09/2018  
 Teacher, SPARCC (Student Centered Pipeline to Advance Research in Cancer Careers) to improve diversity and culturally responsive care in the field of cancer research, MCW, Milwaukee, WI, 2019 - 2021  
 Seminar Speaker, Children's Wisconsin, Milwaukee, WI, 02/2020

### **Regional**

Speaker, FMRI in Muscle Perfusion, Research Meeting, General Electric Medical Systems, Waukesha, WI, 1996  
 Speaker, Characterization of FMRI contrast mechanisms, Department of Biomedical Engineering, Marquette University, Milwaukee, WI, 1997  
 Speaker, Functional MRI: How it Works, Meeting of Entrepreneurs, Milwaukee Exchange Club, Milwaukee, WI, 1998  
 Interview, Applications of Echo Planar Imaging to Disease Evaluation, Tip-TV Educational Video Series, General Electric Medical Systems, Waukesha, WI, 1999  
 Speaker, Utility of simultaneously-acquired gradient-echo and spin-echo cerebral blood volume and morphology maps for the evaluation of brain tumors, Department of Medical Physics, University of Wisconsin, Madison, WI, 1999  
 Speaker, What Does an Assistant Professor Do?, Undergraduate Seminar Series, Department of Biomedical Engineering, Marquette University, Milwaukee, WI, 02/2001

Speaker, New directions for MR imaging of brain cancer, Seminar, General Electric Medical Systems, Waukesha, WI, 08/2003  
Lecturer, Understanding functional magnetic resonance imaging (fMRI), Tip-TV Educational Video Series, General Electric Medical Systems, Waukesha, WI, 08/2004  
Live Interview, Breast Cancer Research at MCW, WITI-Channel 6 Wake-Up News, Milwaukee, WI, 03/2006  
Speaker, Introduction to MRI, Graduate Seminar Series, Department of Physics, University of Wisconsin, Milwaukee, WI, 02/2007  
Speaker, Leaders, Women Entrepreneur's Dinner, Conference for Women, University Club, Milwaukee, WI, 03/2009  
Speaker, Wisconsin Women in Science Luncheon Series, Wisconsin Club, Milwaukee, WI, 06/2011  
Speaker, Challenges of a Pro-Life Scientist, Legatus, Catholic Business Professionals, Milwaukee, WI, 08/2012  
Speaker, Strategies in translational imaging research: working at the interface of tumors and technology, Biomedical Engineering Seminar, Joint Biomedical Engineering Seminar Series (Marquette University, MCW, University of Wisconsin-Milwaukee), Milwaukee, WI, 02/20/2015  
Visiting Professor, Towards a Consensus DSC-MRI Approach for the Evaluation of Brain Tumors, Radiology Grand Rounds, University of Wisconsin, Madison, WI, 10/11/2018

### **National**

Course Lecturer, Functional Regional Perfusion using MRI, SPIE Imaging Meeting, San Diego, CA, 1998  
Panelist, NIH/NCI Conference of the Joint Working Group on Quantitative In Vivo Functional Imaging in Oncology, Washington D.C., 1999  
Speaker, Role of Functional MRI in the Evaluation of Disease, Howard Hughes Institute, University of Iowa, Iowa City, IA, 03/2000  
Speaker, Utility of Simultaneous GE/SE MRI for the Evaluation of Brain Tumor Angiogenesis, Seminar, Beth Israel - Deaconess Hospital, Harvard University, Boston, MA, 06/2000  
Speaker, The role of MRI perfusion imaging for the evaluation of brain cancer, 12th Annual Rachidian Society Meeting, Kona, Hawaii, 02/2004  
Speaker, Contrast-agent perfusion imaging, Gordon Conference, Lewiston, ME, 07/2004  
Speaker, rCBV Imaging, Seminar, Johns Hopkins University, Baltimore, MD, 07/2005  
Lecturer, Steady-state and first-pass contrast agent methods to evaluate cerebral blood volume (CBV) vascular morphology and permeability, Morning Categorical Course, International Society of Magnetic Resonance in Medicine, Seattle, WA, 04/2006  
Course Lecturer, DSC MRI Quantification of CBV in Presence of BBB Leakage, Advanced in Neuroimaging Course, Massachusetts General Hospital / Harvard Medical School, Boston, MA, 09/25/2007  
Speaker, Measurement of rCBV in normal brain and brain tumor depends on the choice of DSC acquisition and analysis method, ACRIN (American College of Radiology Imaging Network) Annual Meeting, Washington D.C., 09/28/2007  
Speaker, New Directions for MR Imaging of Brain Cancer, Arizona State University, Phoenix, AZ, 03/13/2008  
Speaker, Current Status and Future Directions for MRI Perfusion Imaging in Primary Brain Tumors, Barrows Neurological Institute, Phoenix, AZ, 03/14/2008  
Speaker, Diffusion Image Processing and Analysis, NIH Diffusion Imaging Workshop, Washington D.C., 02/2011  
Speaker, MR DSC Perfusion Imaging in Brain Tumors, University of Alabama, Birmingham, AL, 07/2011  
Speaker, Development of Perfusion and Diffusion MRI Biomarkers for the Evaluation of Brain Tumors, Northwestern University, Chicago, IL, 08/2011  
Lecturer, "Perfusion MRI in Glioma" for Sunrise Educational Session, Society of Neuro-Oncology Annual Meeting, San Jose, CA, 11/2011  
Debate Panelist, Multimodality/Multiparametric MR of Cancer, ISMRM MR in Cancer Study Group, Salt Lake City, UT, 05/2013  
Speaker, Role of Advanced Physiologic MRI for the Evaluation of Brain Tumor Response to Therapies: Part I, St. Louis NMR Discussion Group, Washington University, St. Louis, MO, 10/2013  
Speaker, Perfusion & Diffusion MRI for Brain tumors: current Status Promise & Challenges: Part II, St. Louis NMR Discussion Group, Washington University, St. Louis, MO, 12/2013  
Speaker, Utero-placental perfusion, Workshop, Human Placenta Project: Placental Structure and Function in Real Time, National Institute of Child Health and Development, Washington D.C., 05/27/2014

Speaker, Dynamic susceptibility contrast, Workshop on standards for quantitative MRI, National Institute of Standards (NIST), Boulder, CO, 07/14/2014  
Visitor/Speaker, Barrow Neurological Institute, Phoenix, AZ, 10/12/2014  
Speaker, Frye-Halloran (Brain Tumor) Symposium, Hosted by Neurosurgical Oncology, Massachusetts General Hospital, Boston, MA, 04/09/2015  
Visiting Professor, Mayo Clinic, Phoenix, AZ, 09/14/2015  
Speaker, Update on Advanced MRI (DSC-MRI) Standardization Efforts, Alliance NeuroOncology, Chicago, IL, 11/06/2015  
Speaker, DSC-MRI in measuring relative cerebral blood volume for early response to bevacizumab in patients with recurrent glioblastoma, Alliance for Clinical Trials in Oncology, Chicago, IL, 05/13/2017  
Speaker, DSC-MRI in measuring relative cerebral blood volume for early response to bevacizumab in patients with recurrent glioblastoma, Alliance for Clinical Trials in Oncology, Chicago, IL, 05/13/2017  
Speaker, Assessment of Treatment Response in Brain Tumors: Perfusion and Diffusion MRI, Rebecca D. Considine Research Institute & Akron Children's Hospital, Akron University Department of Biomedical Engineering, Akron, OH, 02/22/2018  
Visiting Professor, "Assessment of Treatment Response in Brain Tumors: Perfusion and Diffusion MRI", Akron Children's Hospital & University of Akron, Cleveland, OH, 02/22/2018  
Presented the EAF151 trial via web-ex to all QIN executive members and their teams, National Cancer Institute Quantitative Imaging Network, 09/17/2018  
Fellow, AIMBE Fellows Advocacy Day AIMBE (American Institute of Medical and Biologic Engineers), Fellows participated in meetings with US congressmen to advocate for an increase in NIH funding for biomedical research, Washington, DC, 02/2019

### **International**

Panelist, Higher Field MR (1.5T and up) in Oncology, National Cancer Institute Workshop, Glasgow, Scotland, 04/2001  
Panelist, National Cancer Institute Workshop on "Higher Field MR (1.5T and up) in Oncology, Glasgow, Scotland, 04/2001  
Lecturer, Weekend Educational Course, International Society of Magnetic Resonance in Medicine, Berlin, Germany, 05/2007  
Lecturer, Current status of DSC-MRI quantification with BBB leakage, International Society of Magnetic Resonance in Medicine Perfusion/Diffusion Workshop, Salvador, Brazil, 07/2007  
Lecturer, Advanced MRI Perfusion Methods, Weekend Educational Course, International Society of Magnetic Resonance in Medicine, Stockholm, Sweden, 05/2010  
Speaker, Perfusion and Diffusion Biomarkers for the Evaluation of Brain Cancer Diagnosis & Treatment, ISMRM Scientific Workshop: Magnetic Resonance of Cancer Gone Multimodal (19-22 February 2013), Valencia, Spain, 02/2013  
Course Speaker, Quantitative Imaging and Modeling Course at the 2014 ISMRM Annual Meeting, Milan, Italy, 05/2014  
Course Speaker, Other Methods: DSC-MRI, BOLD, ASL, MRS" given in ISMRM Annual Meeting weekend course on "Imaging for Cancer, International Society of Magnetic Resonance in Medicine 25th Annual Meeting & Exhibition, Honolulu, HI, 04/22/2017  
Course Speaker, Diffusion and Perfusion Imaging Protocols for Glioma, ISMRM Annual Meeting weekend course on "Brain Cancer from Diagnosis to Treatment", Honolulu, HI, 04/2017  
Course Speaker, Other Methods: DSC-ASL MRI, BOLD MRS, ISMRM Annual Meeting weekend course on "Imaging for Cancer", Honolulu, HI, 04/2017  
Speaker, Theoretical Principles of DSC-MRI Perfusion Imaging, AMRINO (Advanced MRI in Neuro-Oncology) Annual Meeting, London, England, 07/20/2018  
Speaker, "Theoretical Principles of DSC-MRI Perfusion Imaging", AMRINO (Advanced MRI for NeuroOncology) Conference, London, England, 07/2018  
Keynote Speaker, European Union, COST Initiative, Malta, 12/2019  
Speaker, "Dynamic Susceptibility Contrast MRI: Update on Clinical Applications in Brain Tumors", International Society of Magnetic Resonance in Medicine, Perfusion Study Group, Virtual Meeting with an audience of over 300 international attendees, 03/05/2020

### **COMMITTEE SERVICE:**

### **Medical College of Wisconsin**

1996 - 1998 Supervisor, 3T MRI Technologist  
1996 Poster Judge, Graduate Student Day  
1996 Member, Technical Standards Committee  
1997 - 1999 Chair, Faculty Library Committee  
1997 - 2007 Chair, MR Research Safety Committee  
05/14/1998 Designated MCW Representative, Speaker and Tour Guide Roger Fitzsimonds, Chairman, CEO & Director of Firststar Bank  
11/10/1998 Designated MCW Representative, Speaker and Tour Guide for Dr. Nancy Zimpher, UWM Chancellor  
11/1999 Presenter, MCW Research Foundation Board of Directors Meeting  
12/1999 Designated MCW Representative, Speaker and Tour Guide for Beijing visitors (International Journal of Medical Devices, Chinese Publishing House)  
1999 - 2004 Chair, Keck Research MRI Pilot Studies Committee  
01/21/2000 Designated MCW Representative, Speaker and Tour Guide for Emil Soika, President and CEO, Criticare Systems, Waukesha, WI  
2000 - Present Designated Representative, Speaker, and Tour Guide for Various Potential Philanthropists for MCW  
2000 - 2004 Member, Graduate Studies Council  
02/2002 Designated MCW Representative, Speaker and Tour Guide for U.S. President George W. Bush, (The tour was cancelled at the last minute due to national security concerns regarding a liquid nitrogen tank near tour area.)  
09/2002 Designated MCW Representative, Speaker and Tour Guide for Wisconsin State Senator Green Bay, WI  
10/30/2003 Designated MCW Representative, Speaker and Tour Guide for Joseph Hogan, President & CEO, General Electric Medical Systems  
11/04/2003 Designated MCW Representative, Speaker and Tour Guide for invited speaker for Cancer Media Day Program at MCW  
2003 Member, Ad Hoc Advisory Committee – Imaging Center  
2003 - Present Member, Cancer Center Grants Review Committee  
2004 - 2006 Member, Biomedical and Biotechnology Center Grant Awards Committee  
08/2005 Designated MCW Representative, Speaker and Tour Guide for invited speaker for Visiting Russian Scientists, (Special American Business Internship Training Program and the U.S. Department of Commerce) held at MCW  
2005 - 2007 Member, Advancing a Healthier Wisconsin Research Grants Review Committee  
2007 - 2008 Member, Search Committee, FIRC (Functional Imaging Research Center) Director  
2007 - 2009 Member, Institutional Animal Care and Use Committee  
2008 - 2012 Member, Search Committee, vanDeuren Breast Cancer Chair  
2011 - 2014 Program Co-Leader, Cancer Imaging Program, Cancer Center  
2012 - Present Faculty Mentor, Medical Students for Life Club  
2013 - 2016 Member, Women's Faculty Council  
2014 - 2015 Member, Search Committee, Chair, Department of Neurology  
2014 - Present Reviewer, MCW Cancer Center Grant Reviews (July 2014, January 2018, February 2018, April 2018)  
2014 - 2015 Member, MCW Working Group to Develop Inter Institutional Biomedical Engineering Program with other engineering programs in Southeast Wisconsin  
2015 Member, Marquette – MCW Biomedical Engineering Faculty Recruitment Subcommittee  
2015 Member, Marquette – MCW Biomedical Engineering Advisory Committee  
2016 - 2018 Member, Marquette-MCW Biomedical Engineering, Founding Chair Search Committee  
2017 - 2018 Member, Marquette-MCW Biomedical Engineering, Research Committee  
2019 - Present Group Facilitator, Clinical and Translational Research Pathway for Medical Students

### **MEDICAL COLLEGE TEACHING ACTIVITIES:**

#### **Medical Student Education**

1998 - Present Lecturer presenting "MR Fundamentals" and "MR Imaging" for the Basic Science in Radiology course offered each summer.



02/10/2014 - Present Lecturer, "Perfusion MRI" for "Introduction to Medical Imaging" course offered to M4 medical students.

#### **Resident and Fellow Education**

1998 - Present Lecturer presenting "MR Physics" for the Radiology Resident course offered each summer.  
02/04/2014 - Present Speaker to Radiology Residents, "Today's Research is Tomorrow's Clinical Practice," Department of Radiology.

#### **Continuing Medical Education**

1997 - 2008 Lecturer for "Fundamentals of FMRI" which is part of the MCW Functional Magnetic Resonance Imaging Course which is an ongoing course, given each Fall and Spring, to train neuroscientists from around the world to understand and perform FMRI research.  
1998 - Present Radiology Clinical Service, Implemented and educated radiologists and MR technologists about diffusion and perfusion MRI, analyzed clinical image data on a per-call basis.

#### **Graduate Student Education**

1997 - 2012 Course Director, Biophysics 239: "FMRI Contrast Mechanisms and Applications"; Developed an advanced level graduate course for students undertaking MRI research.  
1999 - 2007 Lecturer, "Advanced Neurosystems" Department of Cell Biology and Anatomy, present a lecture discussing the basis of FMRI each time the course is offered.  
2012 - Present Guest Lecturer, Biophysics 239: "FMRI Contrast Mechanisms" graduate course.

#### **EXTRAMURAL TEACHING:**

##### **Continuing Medical Education**

2001 - 2004 GE Medical Systems, Waukesha, WI, two-part series on the "Introduction to FMRI" as part of a continuing education course for GE employees, which was part of a teaching collaboration with Marquette University

##### **Graduate Student Education**

1986 Fall, Department of Electrical Engineering and Computer Science, MIT, Teaching assistant for "Introduction to Electronics"; conducted labs, graded problem sets, had office hours, gave quiz reviews  
1989 Fall, Department of Electrical Engineering and Computer Science, MIT, Head teaching assistant for Dr. Bose for "Acoustics"; supervised six other teaching assistants, lectured 4 hours per week, conducted demonstrations, graded problem sets, wrote exams, held office hours  
1990 Spring, Department of Electrical Engineering and Computer Science, MIT, Teaching Assistant for "Circuits and Electronics"; taught group tutorials (four 1 hour lectures per week), wrote and graded problem sets and supervised laboratory sessions  
1992 Spring, Harvard-MIT, Division of Health Science and Technology; Teaching assistant for "Magnetic Resonance"; assisted at lectures, graded problem sets

#### **MCW STUDENTS, FACULTY, RESIDENTS AND CLINICAL/RESEARCH FELLOWS MENTORED:**

##### **Medical Students**

Fred Dawson, Medical College of Wisconsin, 06/2004 - 08/2004  
Matthew Fishman, Medical College of Wisconsin, 06/2006 - 08/2006  
Jessica Stratton, Medical College of Wisconsin, 06/2008 - 08/2008  
Brandon Bodager, Medical College of Wisconsin, 06/2009 - 08/2009  
Jose Palomares, Medical College of Wisconsin, 2016 - 2019  
Ran Pan, Medical College of Wisconsin, 09/2017 - 11/2017  
Thomas Reith, Medical College of Wisconsin, 2018 - 2020  
Michael Guo, Medical College of Wisconsin, 2018 - 2020  
Many more rotating residents and fellows, Medical College of Wisconsin

##### **Postdoctoral Students**

Kimberly Pechman, Ph.D., Medical College of Wisconsin, 2007 - 2009 (under Drs. Schmainda and Kurpad), Current Position: Research Scientist, Vanderbilt University, Nashville, TN

## **Faculty**

Sarah White, M.D., Staff Radiologist, Medical College of Wisconsin, 2013 Scientific Advisor to RSNA Research Scholar

Theresa Kelly, M.D., Assistant Professor, Medical College of Wisconsin, 2013 Mentor to Clinical Research Scholar (CTSI) Clinical Scholars Award

Bill Hall, M.D., Assistant Professor, Medical College of Wisconsin, 2018 Mentor to RSNA Research Scholar

## **EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:**

### **Undergraduate Students**

Rebecca Hanson, Department of Biomedical Engineering, Marquette University, 06/2000 - 08/2001

Allen Joseph, Department of Biomedical Engineering, Marquette University, 06/2001 - 12/2001

Michael Piche, Department of Biomedical Engineering, University of Wisconsin, Madison, 06/2002 - 08/2002

Kevin Kvasnica, Department of Nuclear Engineering, University of Wisconsin-Madison, 06/2006 - 09/2006

Many more summer undergraduate students

### **Medical Students**

Sarah Kohn, MCWW Medical School, 2020

Many more rotating residents and fellows

### **Graduate Students**

#### **Students Advised**

Aaron Olson, MSE, Department of Biomedical Engineering, Marquette University, 2000, Current (known) Position: Graduate of MCW Medical School

#### **PhD Students Advised**

Young Ro Kim, Biophysics Research Institute, Medical College of Wisconsin, 05/2001, Current Position: Assistant Professor of Radiology, Center for Molecular Imaging, Harvard Medical School; Assistant in NeuroImaging, Massachusetts General Hospital, Charlestown, MA

Arvind Pathak, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin, 12/2001, Current Position: Associate Professor of Radiology & Radiological Science, Johns Hopkins University, Baltimore, MD

Kevin Bennett, Department of Biophysics, Medical College of Wisconsin, 2003, Current Position: Associate Professor of Radiology, Washington University School of Medicine, Biomedical Magnetic Resonance Laboratory, St. Louis, MO

Christopher C. Quarles, Department of Biophysics, Medical College of Wisconsin, 2004, Current Position: Professor and Chair, Division of Neuroimaging Research; Director, Barrow Neuroimaging Innovation Center, Phoenix, AZ

Todd Jensen, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin, 2006, Current Position: Founder, Jensen Informatics, LLC

Moses Darpolor, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin, 2006, Current Position: Associate Professor, Department of Natural Sciences, Stillman College, Tuscaloosa, AL

Eric Paulson, Department of Biophysics, Medical College of Wisconsin, 07/2008, Current Position: Associate Professor, Department of Radiation Oncology, MCW Milwaukee, WI

Douglas Prah, Department of Biophysics, Medical College of Wisconsin, 08/2008, Current Position: Assistant Professor, Department of Radiation Oncology, MCW Milwaukee, WI

Peter LaViolette, Department of Biophysics, Medical College of Wisconsin, 08/2011, Current Position: Assistant Professor, MCW, Department of Radiology

Alex Cohen, Department of Biophysics, Medical College of Wisconsin, 05/2014 MRI and Diffusion Imaging in Liver Cirrhosis, Current Position Research Scientist, MCW Department of Radiology

#### **PhD Committees**

Kelly Karau, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin,

2001

Michael Ellingson, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin, 2004

Rachael Kirchoff, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin, 2006

Joan Forder, Department of Physiology, Medical College of Wisconsin, 2006

Ritobratna Datta, Department of Biophysics, Medical College of Wisconsin, 2006

Christopher Pawela, Department of Biophysics, Medical College of Wisconsin, 2008

Ben Ellingson, Marquette University, 2008

Andrew Nencka, Department of Biophysics, Medical College of Wisconsin, 2009

Andrew Hahn, Department of Biophysics, Medical College of Wisconsin, 2010

Jain Mangalathu, MCW/Marquette University Functional Imaging Program, Medical College of Wisconsin, 06/2012 - 08/2012

Ben Stangel, Department of Biophysics, Medical College of Wisconsin, 2012

#### MS Students Advised

Casey Anderson, Department of Biophysics, Medical College of Wisconsin, 05/2016, Current Position: Los Alamos National Laboratory, Los Alamos, NM

#### Postdoctoral Students

Benjamin Ellingson, Ph.D., MCW/Marquette Functional Imaging Program, Medical College of Wisconsin, 2009, Current Position: Assistant Professor, UCLA, Los Angeles, CA

#### Residents

Brandon Laine M.D., Department of Neurosurgery, MCW, 2019 - Present, Current Position: Resident, Medical College of Wisconsin Department of Neurosurgery

#### Faculty

Alex Guimaraes, M.D., Ph.D., Staff Radiologist, Harvard Medical School, Massachusetts General Hospital, 2008 - 2009 Scientific Advisor to RSNA Research Scholar for research entitled: "Evaluation of Magnetic Nanoparticle Enhanced Magnetic Resonance Imaging in Clinical Autoimmune Diabetes"

#### **COMMUNITY SERVICE ACTIVITIES:**

06/2011 Guest Speaker "A Scientist, Entrepreneur and Mother," Women in Science Luncheon, Milwaukee, WI

01/24/2015 Guest Speaker, "The Joy of Insight," Petawa Professional Women Speaker Series, Petawa Residence and Cultural Center, Milwaukee, WI

07/31/2015 Guest Speaker "Careers in Science," Summit Educational Association, Milwaukee, WI

10/19/2015 Participant, "Leadership for Social Inclusion and Equity" workshop

02/04/2016 Guest Speaker, "Faith & Science," Petawa Residence and Cultural Center, Milwaukee, WI

08/12/2017 Invited Workshop Participant, "The Dialogue Initiative" workshop to improve our communication with youth, Shellbourne Conference Center, Valparaiso, IN

### **BIBLIOGRAPHY**

#### **Refereed Journal Publications/Original Papers**

1. Sarna SK, Soergel KH, Harig JM, Loo FD, Wood CM, Donahue KM, Ryan RP, Arndorfer RC. Spatial and temporal patterns of human jejunal contractions. *Am J Physiol.* 1989 Sep;257(3 Pt 1):G423-32.
2. Rosowski JJ, Davis PJ, Merchant SN, Donahue KM, Coltrera MD. Cadaver middle ears as models for living ears: comparisons of middle ear input immittance. *Ann Otol Rhinol Laryngol.* 1990 May;99(5 Pt 1):403-12.
3. Kwong KK, Chesler DA, Weisskoff RM, Donahue KM, Davis TL, Ostergaard L, Campbell TA, Rosen BR. MR perfusion studies with T1-weighted echo planar imaging. *Magn Reson Med.* 1995 Dec;34(6):878-87.
4. Kwong KK, Wanke I, Donahue KM, Davis TL, Rosen BR. EPI imaging of global increase of brain MR signal with breath-hold preceded by breathing O2. *Magn Reson Med.* 1995 Mar;33(3):448-52.

5. Donahue KM, Weisskoff RM, Parmelee DJ, Callahan RJ, Wilkinson RA, Mandeville JB, Rosen BR. Dynamic Gd-DTPA enhanced MRI measurement of tissue cell volume fraction. *Magn Reson Med*. 1995 Sep;34(3):423-32.
6. Donahue KM, Van Kylen J, Guven S, El-Bershawi A, Luh WM, Bandettini PA, Cox RW, Hyde JS, Kissebah AH. Simultaneous gradient-echo/spin-echo EPI of graded ischemia in human skeletal muscle. *J Magn Reson Imaging*. 1998;8(5):1106-13.
7. Donahue KM, Burstein D, Manning WJ, Gray ML. Studies of Gd-DTPA relaxivity and proton exchange rates in tissue. *Magn Reson Med*. 1994 Jul;32(1):66-76.
8. Donahue KM, Weisskoff RM, Chesler DA, Kwong KK, Bogdanov AA Jr, Mandeville JB, Rosen BR. Improving MR quantification of regional blood volume with intravascular T1 contrast agents: accuracy, precision, and water exchange. *Magn Reson Med*. 1996 Dec;36(6):858-67.
9. Donahue KM, Weisskoff RM, Burstein D. Water diffusion and exchange as they influence contrast enhancement. *J Magn Reson Imaging*. 1997;7(1):102-10.
10. Donahue KM, Krouwer HG, Rand SD, Pathak AP, Marszalkowski CS, Censky SC, Prost RW. Utility of simultaneously acquired gradient-echo and spin-echo cerebral blood volume and morphology maps in brain tumor patients. *Magn Reson Med*. 2000 Jun;43(6):845-53.
11. Allamand V, Donahue KM, Straub V, Davisson RL, Davidson BL, Campbell KP. Early adenovirus-mediated gene transfer effectively prevents muscular dystrophy in alpha-sarcoglycan-deficient mice. *Gene Ther*. 2000 Aug;7(16):1385-91.
12. Butzen J, Prost R, Chetty V, Donahue K, Nepl R, Bowen W, Li SJ, Haughton V, Mark L, Kim T, Mueller W, Meyer G, Krouwer H, Rand S. Discrimination between neoplastic and nonneoplastic brain lesions by use of proton MR spectroscopy: the limits of accuracy with a logistic regression model. *AJNR Am J Neuroradiol*. 2000 Aug;21(7):1213-9. PMID: PMC8174924
13. Kerschner JE, Cruz MJ, Beste DJ, Donahue KM, Kehl KS. Computed tomography vs. magnetic resonance imaging of acute bacterial sinusitis: a rabbit model. *Am J Otolaryngol*. 2000;21(5):298-305.
14. Straub V, Donahue KM, Allamand V, Davisson RL, Kim YR, Campbell KP. Contrast agent-enhanced magnetic resonance imaging of skeletal muscle damage in animal models of muscular dystrophy. *Magn Reson Med*. 2000 Oct;44(4):655-9.
15. Pathak AP, **Schmainda KM**, Ward BD, Linderman JR, Rebro KJ, Greene AS. MR-derived cerebral blood volume maps: issues regarding histological validation and assessment of tumor angiogenesis. *Magn Reson Med*. 2001 Oct;46(4):735-47.
16. Garcia GH, Donahue KM, Ulmer JL, Harris GJ. Qualitative perfusion imaging of the human optic nerve. *Ophthalmic Plast Reconstr Surg*. 2002 Mar;18(2):107-13.
17. Kim YR, Rebro KJ, **Schmainda KM**. Water exchange and inflow affect the accuracy of T1-GRE blood volume measurements: implications for the evaluation of tumor angiogenesis. *Magn Reson Med*. 2002 Jun;47(6):1110-20.
18. Durbeek M, Sawatzki SM, Barresi R, **Schmainda KM**, Allamand V, Michele DE, Campbell KP. Gene transfer establishes primacy of striated vs. smooth muscle sarcoglycan complex in limb-girdle muscular dystrophy. *Proc Natl Acad Sci U S A*. 2003 Jul 22;100(15):8910-5. PMID: PMC166412
19. Abu-Hajir M, Rand SD, Krouwer HG, **Schmainda KM**. Noninvasive assessment of neoplastic angiogenesis: the role of magnetic resonance imaging. *Semin Thromb Hemost*. 2003 Jun;29(3):309-15.
20. Pathak AP, Rand SD, **Schmainda KM**. The effect of brain tumor angiogenesis on the in vivo relationship between the gradient-echo relaxation rate change ( $\Delta R2^*$ ) and contrast agent (MION) dose. *J Magn Reson Imaging*. 2003 Oct;18(4):397-403.
21. Bennett KM, **Schmainda KM**, Bennett RT, Rowe DB, Lu H, Hyde JS. Characterization of continuously distributed cortical water diffusion rates with a stretched-exponential model. *Magn Reson Med*. 2003 Oct;50(4):727-34.
22. Badruddoja MA, Krouwer HG, Rand SD, Rebro KJ, Pathak AP, **Schmainda KM**. Antiangiogenic effects of dexamethasone in 9L gliosarcoma assessed by MRI cerebral blood volume maps. *Neuro Oncol*. 2003 Oct;5(4):235-43. PMID: PMC1920679
23. Ulmer JL, Hacin-Bey L, Mathews VP, Mueller WM, DeYoe EA, Prost RW, Meyer GA, Krouwer HG, **Schmainda KM**. Lesion-induced pseudo-dominance at functional magnetic resonance imaging: implications for preoperative assessments. *Neurosurgery*. 2004 Sep;55(3):569-79; discussion 580-1.
24. **Schmainda KM**, Rand SD, Joseph AM, Lund R, Ward BD, Pathak AP, Ulmer JL, Badruddoja MA, Krouwer HG. Characterization of a first-pass gradient-echo spin-echo method to predict brain tumor grade and angiogenesis. *AJNR Am J Neuroradiol*. 2004 Oct;25(9):1524-32. PMID: PMC7976425
25. Bennett KM, Hyde JS, Rand SD, Bennett R, Krouwer HG, Rebro KJ, **Schmainda KM**. Intravoxel

- distribution of DWI decay rates reveals C6 glioma invasion in rat brain. *Magn Reson Med.* 2004 Nov;52(5):994-1004.
26. **Schmainda KM**, Rand SD, Joseph AM, Lund R, Ward BD, Pathak AP, Ulmer JL, Badruddoja MA, Krouwer HGJ. Erratum: Characterization of a first-pass gradient-echo spin-echo method to predict brain tumor grade and angiogenesis (*American Journal of Neuroradiology* (October 2004) 25 (1524-1532)) *American Journal of Neuroradiology.* 2005;26(3):686.
  27. Quarles CC, Krouwer HG, Rand SD, **Schmainda KM**. Dexamethasone normalizes brain tumor hemodynamics as indicated by dynamic susceptibility contrast MRI perfusion parameters. *Technol Cancer Res Treat.* 2005 Jun;4(3):245-9.
  28. Quarles CC, Ward BD, **Schmainda KM**. Improving the reliability of obtaining tumor hemodynamic parameters in the presence of contrast agent extravasation. *Magn Reson Med.* 2005 Jun;53(6):1307-16.
  29. Ahunbay E, **Schmainda K**, Lund R, Prost R, Ulmer J, Alaly J, Deasy J, Schultz C, li X. SU?FF?J?105: Tools for Voxel?By?Voxel Correlation of Radiotherapy Dose and MR Signals From Multiple Physiological/functional MRI Modalities *Medical Physics.* June 2005;32(6):1944.
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### **Patents**

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2. US Patent No. US-2009-7,567,832-B2 (issued July 28, 2009), "MRI method for measuring tumor hemodynamic parameters in the presence of contrast agent extravasation" Inventors: Kathleen M. Schmainda, Christopher Quarles, B. Douglas Ward
3. US Patent No. US-2009-0214437-A1 (issued August 27, 2009), "In Vivo Mitochondrial Labeling Using Positively-Charged Nitroxide Enhanced and Gadolinium Chelate Magnetic Resonance Imaging" Inventors: Balaraman Kalyanaraman, Kathleen M. Schmainda, Joy Joseph, Marcos Lopez, Douglas E. Prah, Micael Hardy
4. US Patent No. US Utility Patent, 12/601,241 (issued October 2, 2013), "Multiparameter Perfusion Imaging with Leakage Correction" Inventors: Kathleen M. Schmainda, Eric S. Paulson, Douglas E. Prah