**Personal Data**

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**Education**

Undergraduate

 B.S. Electrical Engineering (1987) University of Maine, Orono

Graduate/Medical School

 M.S. Optical Sciences (1990) University of Arizona, Tucson

 Ph.D. Optical Sciences (1994) University of Arizona, Tucson

Postgraduate/Fellowship

1994 University of Arizona, Tucson – Radiology

1994-1996 University of Utah, Salt Lake City - Radiology

**Present Appointment/Position**

 07/12 – present: Professor, University of Wisconsin, Departments of Medical Physics and Psychiatry, Madison.

 01/01 – present: Director of MR Physics Research, Waisman Laboratory for Brain Imaging and Behavior, Madison.

 07/08 - present: Co-Director Brain Imaging Core, Waisman Center, Madison

2010 – present: Adjunct Associate Professor, Neurosciences Training Program, University of Wisconsin, Madison.

2001 – present: Adjunct Assistant Professor, University of Utah, Department of Radiology, Salt Lake City.

2011 – present: Co-founder and Scientific Advisor, Thervoyant, Inc. Madison, WI.

2016 – present: Co-founder and Scientific Advisor, Goal Line Imaging, LLC. Madison, WI

**Past Appointments/Positions**

10/96 - 07/97 Instructor, University of Utah, Department of Radiology, Medical Imaging Research Laboratory, Salt Lake City.

07/97 - 06/00 Research Assistant Professor, University of Utah, Department of Radiology, Medical Imaging Research Laboratory, Salt Lake City.

07/00 - 12/00 Assistant Professor, University of Utah, Department of Radiology, Medical Imaging Research Laboratory, Salt Lake City.

01/01 - 07/06 Assistant Professor, University of Wisconsin, Departments of Medical Physics and Psychiatry, Madison.

07/06 – 07/12: Associate Professor, University of Wisconsin, Departments of Medical Physics and Psychiatry, Madison.

**Professional Society Memberships**

 International Society for Magnetic Resonance in Medicine (ISMRM)

 American Association for the Advancement of Science (AAAS)

**Honors and Awards**

* + **Mark Hamilton Memorial Scholarship** 1982-1983
	+ **Eta Kappa Nu Electrical Engineering Honor Society** 1986
	+ **University of Maine Pulp & Paper Scholarship** 1985-1987
	+ **University of Arizona GANN Fellowship** 1991-1992
	+ Co-recipient (Zegarra, Field, Alexander, Hasan, Arfanakis, Badie – “Diffusion tensor imaging and tractography of cerebral white matter: Review of fiber tract anatomy and tumor imaging patterns.”) **Magna Cum Laude Award** for Best Educational Exhibit in Neuroradiology at 2002 **RSNA**. Poster also received award for Excellence in Design.
	+ **Finalist of ISMRM White Matter Study Group Best Paper Competition** (Mossahebi P, Alexander AL, Field AS, Samsonov AA. Analysis and Optimization of Quantitative Magnetization Transfer Imaging Considering the Effect of Non-Exchanging Component. ISMRM 2014, Abstract #207)
	+ **Second most-cited *Autism Research*** article over 5-year period 2016
	+ **Four papers in top 1% of most-cited in the field of Neuroscience & Behavior** 2017
	+ **UW-Madison Postoctoral Mentoring Award** 2018
	+ **Fellow**, International Society for Magnetic Resonance in Medicine (ISMRM) 2018

**Awards Received by Mentored Trainees:**

**ISMRM – Summa Cum Laude**

 Steven Kecskemeti, Ph.D. 2013

**ISMRM – Magna Cum Laude**

 Elizabeth Zakszewski 2012

 Pouria Mossahebi, Ph.D. 2014

 Jose Guerrero-Gonzalez 2016

**Wisconsin Distinguished Graduate Scholar:**

Samuel Hurley 2013

**Morse Society Scholar – UW-Madison (Post-graduate):**

Brittany Travers, Ph.D. 2013

Douglas Dean, Ph.D. 2014

**AAIC de Leon Prize in Neuroimaging (New Investigator):**

Douglas Dean, Ph.D. 2015

**Wisconsin Alumni Association Pohle Scholarship:**

Megan Lucas 2015

**Intellectual and Developmental Disabilities Research Undergraduate Student Award:**

Kristine McLaughlin 2016

**INSAR – Young Investigator Award**

 Brittany Travers, Ph.D. 2016

**Morse Society Scholar – UW-Madison (Graduate):**

Jose Guerrero Gonzalez 2017

**Grant Support**

***Current***

1. NIH/NIMH R21 NS091733 (Co-PI: Alexander, Andrew; Green, C. Shawn)
*“A Neuroimaging Framework for Detection of Neuroplasticity”*07/15/2015 – 06/30/2018 (No Cost Extension for Year 3)
This project will evaluate neuroimaging methods for detection of structural and microstructural brain changes with neuroplasticity induced by video game training.
Role: Co-Principal Investigator (10% Effort)
$275,000 total direct
2. NIH/NINDS RO1 NS092870 (Co-PI: Alexander; Ferrazzano)
*“MRI Markers of Functional Outcome after Severe Pediatric TBI “*04/01/2016-03/31/2020
This project will investigate the relationships of clinical and neurospsychological outcomes to both acute and chronic brain changes as measured with MRI in children with severe traumatic brain injury (TBI).
Role: Co-Principal Investigator (15% Effort)
$391,360 Direct (2016)
3. UW-Madison Department of Radiology R&D (PI: Alexander, Andrew)
“*Pilot program to obtain pre-injury data from NCAA team members participating in a TBI measurement protocol”*
05/01/2016-04/30/2018
This project is collecting baseline scans of UW-Madison men’s and women’s hockey players during the off-season to provide baselines to investigate brain changes after a sports-related concussion.
Role: PI (No funded effort)
Total Budget: $32,500
4. NIH UO1 AG051216 (Co-PI: Bendlin, Barbara; Li Shi-Jiang)
*“Alzheimer’s Disease Connectome Project”*
04/01/2016-03/31/2020
Project will collect Human Connectome imaging data in groups of people with Alzheimer’s disease, mild cognitive impairment, and unaffected aging.
Role: Co-Investigator (10% Effort)
$5,520,009 Total $4,615,696 Direct
5. NIH/NIA U01 AG15001 (Co-PI: Christian, Handen, Klunk Co-PIs)
*“Neurodegeneration in Aging Down Syndrome (NiAD): A Longitudinal Study of Cognition and Biomarkers of Alzheimer's Disease”*09/30/2015 – 04/30/2020
The main objective of this longitudinal study of Neurodegeneration in Aging DS (NiAD) is to: 1) identify critical factors that link Aβ deposition to neurodegeneration and, ultimately, dementia; 2) define biomarkers for these factors; and, most importantly, 3) set a foundation for an efficient transition from this biomarker study to a therapeutic trial to combat AD in DS augmented by biomarker outcomes
Role: Co-Investigator (5% Effort)
$3,556,865 Total $3,130,803 Direct
6. UW2020  WARF Discovery Initiative Award (PI: Currie, Cameron)
“*The Human Microbiome in Health and Disease”*
05/01/2017-04/30/2019
This project aims to develop infrastructure for microbiome research at UW-Madison
Role: Co-investigator (No funded effort)
Total Budget: $496,928
7. NIH/NIMH P50 NIMH100031 (PI: Davidson, Richard)
“*Early Neurodevelopmental Origins of Anxiety*”
06/01/2013 - 05/31/2018
Major goals: This project will investigate brain imaging and genetic markers of anxious temperament in infants who are at risk for developing anxiety disorders
Role: Co-investigator Project 2, Co-Leader of Brain Imaging Core (10% Effort)
$1M annual direct
8. NIH K99 (PI: Dean III, Douglas)
“*Myelin Imaging of Brain Development in Autism*.”
Role: Primary Mentor.
9. NIH/NIMH RO1 MH101504 (PI: Goldsmith, Hill)
“*Validating RDoC for Children and Adolescents: A Twin Study with Neuroimaging*.”
06/01/2014 – 05/31/2018.
This project will investigate the relationship between brain imaging measures (structural, microstructural and functional) and behavioral assessments associated with affect and emotion in children and adolescents.
Role: Co-investigator. (10% Effort)
$400,000 annual direct.
10. NIH/NIMH RO1 MH097464 (PI: Lainhart, Janet)
*“Biological Determinants of Brain Variation in Autism”*03/01/2013 - 02/28/2018
Major goals: This study will investigate the potential genetic relationships and vulnerabilities to imaging phenotypes in people with autism based upon structural, microstructural and functional imaging measures.
Role: Co-Investigator (8% effort)
$440,000 direct
11. NIH/NIMH RO1 MH080826 (PI: Lainhart, Janet)
“Atypical Late Neurodevelopment in Autism”
06/01/2016 - 06/30/2021
Major goals: The goal of this project is to map the longitudinal trajectories of brain development and maturation in autism.
Role: Co-Investigator (8% effort)
$500,000 direct
12. NIH/NICHD U54 HD090256 (PI: Messing, Albee)
“*Waisman Intellectual and Developmental Disabilities Research Center*”
09/22/2016 – 05/31/2021
This Center provides administrative, resource and technical support for multidisciplinary research projects that are focused on developmental disabilities.
Role: Co-Director of Brain Imaging Core. (5% Effort)
$720,000 annual direct.
13. UW2020 (Populin, Luis – PI)
“*Building a next generation, whole brain imaging platform using simultaneous PET, MRI, behavioral pharmacology and mathematical modeling of decision making in nonhuman primates*”08/01/2016-07/30/2018
This project will develop and apply a multimodal neuroimaging framework to investigate how brain networks are affected by pharmacologic interactions.
Co-Investigator
$460,998 Total
14. NIH/NIA P01 AG010166 (Ryff, Carol - PI)
*“Integrative Pathways to Health and Illness: The MIDUS Refresher”*07/15/2011 - 06/30/2021
Project 5: Brain Function and Affective Style in MIDUS II:
The primary goal of Project V of the MIDUS Refresher is to add to our sample size so we can examine the neural bases and psychophysiological expression of individual differences in emotional reactivity and regulation and determine how these processes vary with age, SES, gender, ethnicity and economic adversity.
Role: Co-Investigator (1% effort)
$73,812 (Proj. 5)
15. UW2020 (Salmons, Joseph – PI)
“*Imaging Cross-Linguistic Laryngeal Gestures*”08/01/2016-07/30/2018
The project aims to develop a dynamic MRI system for imaging speech to evaluate differences in laryngeal biomechanics across different language speakers.
Co-Investigator
$315,320 Total
16. DARPA TNT N66001-17-2-4010 (PI: Williams, Justin; Project PI: Populin)

 “*Adaptable non-invasive neuromodulation platform for targeted augmentation of multi-domain learning*”

03/10/2017-03/09/2021

The major goals of this project are to characterize the neural modulatory circuitry activated during the use of invasive and non-invasive peripheral nerve stimulation strategies. Our project is part of the program project and it is entitled “Mechanisms underlying effects of vagus nerve stimulation: studies in behaving non-human primates with simultaneous PET-fMRI and behavioral testing”

Role: Co-Investigator (5% Effort)

$1,756,037 Total

***Pending***

1. NIH K23 (PI: Sterling, Audra)
“*Neuroimaging of Language and Communication in Fragile X Syndrome*.”
Role: Primary Mentor.
Impact Score: 20
2. NIH R01 (Co-PI: Populin, McMillan, Birn, Jenison, Block, Alexander) 12/01/2017 - 11/30/2022

NIH/NICHD $2,491,707 Total Direct

“*MRI-guided, Pharmacologic modulation of Brain networks in non-human primates*”

This project will use MR-guided drug delivery techniques to modulate brain networks in awake NHP as measured by functional BOLD MRI

Role: Co-PI

***Planned***

1. NIH S10 (PI: Alexander)
MRI Scanner Upgrade for Advanced Neuroimaging Research
This grant will support the upgrade of gradient and RF hardware on existing MRI system.
Role: PI

***Major Past Awards***

1. American Heart Association, Utah Affiliate. (PI: Alexander, Andrew)
"*Magnetic Resonance Fluo­roscopy of the Human Heart*"
07/01/1997 to 06/30/1998.
$29,900 (DC)
2. Whitaker Foundation (PI: Alexander, Andrew)
"*Development of a Real-Time MR Angiog­raphy System*"
09/01/1998 to 12/31/2000
$209,871 (total).
3. NIH RO1 HL48223. (PI: Parker, Dennis; Univ. of Utah)
"*High-Resolution 3D MR Angiography*"
01/01/1996 to 12/31/2000
Role: Co-investigator
4. GEMS MRI Research Grant. (PI: Parker, Dennis; Univ. of Utah)
"*Development of MR Imaging Software*"
01/01/1995 to 12/31/2000.
Role: Co-investigator
5. NIH/NHLBI RO1. (Co-PIs: Parker, Dennis; Alexander, Andrew)
"*High-Resolution Cervical Carotid Imaging with MR*"
02/01/1998 to 12/31/2000
$886,455 (total)
6. Huntsman Cancer Institute Seed Grant. (PI: Alexander, Andrew)
"*Evaluation of Pre-Surgical Anisotropic Diffusion Map­ping of White Matter Tracts in Patients with Intracranial Tumors*"
05/01/1998- 04/30/2000.
$84,000 (direct)
7. The Myelin Project (PI: Duncan, Ian)
“*MR Imaging of Spinal Cord in Patients with MS*”
01/01/2003 – 12/31/2003
Role: Co-investigator
8. NIH/NIA P01 AG021079 (PI: Hauser, Robert)
“*Wisconsin Longitudinal Study: Tracking the Life Course*”
07/01/2002 – 06/30/2004
This is a collaborative, multidisciplinary program of projects on aging and the life course.Project 8: (PI: Davidson, Richard J.) “*The Emotional Brain: Through the Life Course*” This project will provide a comprehensive examination of the relations between the central circuitry of emotion in the aging brain and physical and mental health.
Role: Co-investigator
9. NIH/NIMH 1R01 MH67167 (PI: Oakes, Terrance)
“*Comparison of fMRI Analytic Tools*”
09/25/2002 – 07/31/2005
The goal of this project is to investigate the utility and effectiveness of 5 common fMRI analysis packages.
Role: co-investigator
$266,885.00 annual direct.
10. NIH/NIDA R21 DA15879 (PI: Alexander, Andrew)
“*Structural and Functional Measures of Brain Development*.”
09/27/2002 – 06/30/2006
The main goal of this project is to characterize anatomic diffusion tensor and functional MRI changes in pre-adolescent children.
$100,000.00 annual direct
11. The Dana Foundation (PI: Alexander, Andrew)
“*Anatomical and Functional Connectivity in Schizophrenia*”
2005-2006
$100,000 direct over 2 years.
12. NIH/NIMH R01-MH65723 (Johnson, Sterling)
“*FMRI of Neurobehavioral Recovery following TBI*”
10/01/2001-09/30/2006
Specific Aims: To longitudinally examine cerebral correlates of self-awareness and recovery of executive and memory functions after head trauma with fMRI.
Role: co-investigator;
$250,000 annual direct
13. NIH/NICHD U19 HD035476 (PI: McMahon, William M., University of Utah)
“*Utah Autism Project*.”
06/01/2005-05/31/2007
The goal of this subcontract is to provide advanced data analysis of diffusion tensor images of subjects with autism.
Role: Subcontract PI
$38,000 annual direct
14. NIH/NIBIB R01 EB002075 (PI: Block, Walter)
“*High Resolution, Dynamic Contrast-Enhanced MR Angiography*”
09/01/2002-08/31/2007
The goal of this study is to develop and evaluate rapid imaging methods with projection reconstruction for MR angiography applications.
Role: co-investigator;
$250,000.00 annual direct
15. NIH/NIBIB R01 EB002012 (PI: Alexander, Andrew)
“*Diffusion MRI of the Human Brain*.”
07/01/2000 – 06/30/2009
The main goal of this project is to improve the accuracy and understanding of white matter mapping techniques within the human brain.
$200,000.00 annual direct
16. NIH/NIMH P50-MH069315 (PI: Davidson, Richard J.)
“*Affective Style: Neural and Behavioral Substrates*.”
02/01/2004-01/31/2009
Center to study affective style from neural and psychobiological perspectives. Both animal and human studies will be conducted.
Role: Co-investigator on Projects 1 and 3;
 PI of Biological Measures Core (C)
$1,500,000 annual direct
17. NIH NINDS R01 NS050466 (PI: Field, Aaron)
“*Magnetic Resonance Imaging in Myelin Disease and Repair*”
09/01/2006 - 08/31/2009
Major goals: This study will examine the poorly understood relationships between microscopic changes in brain tissue in the white-matter diseases (e.g. MS) and changes observable on magnetic resonance imaging (MRI) scans.
Role: Co-Investigator
$200,000 annual direct
18. The Multiple Sclerosis Society. (PI: Ian Duncan)
“*Repair and Protection of Glia and Axons in MS*”
10/01/2005-09/30/2010.
Role: co-investigator;
$3,400,000 total (over 5 years)
19. NIH/NIA PO1 AG11915 (PI: Richard Weindruch),
“*Dietary Restriction and Aging in Rhesus Monkeys*”
12/01/2005 – 11/30/2010.
Project 4: “*Brain Structure and Function*” (PI: Sterling Johnson)
Role: Co-investigator.
20. NIH NIAMS RO1-AR050969 (PI: Dane Cook)
“*Functional Neuroimaging of Exercise-Induced Modulation of Pain in Fibromyalgia*”
10/01/2005 – 09/30/2010.
Specific aims are to determine the influence of anticipation and attention on the neural processing of pain in fibromyalgia.
Role: Co-investigator.
21. Kinetics Foundation (Emborg, Marina – PI)
*“Optimal Protocols for Convection-Enhanced Delivery of Therapeutic Agents to the Putamen”*
03/10/2008–12/31/2010.
The aim of this grant is to design a reliable CED infusion protocol for human intra-putamenal infusions of solutions carrying drugs.
Role: Co-Investigator
$353,725
22. NIH RC1 MH090912-01 (Meyerand, Elizabeth PI)
“*Validating Resting State fMRI Derived Brain Connectivity”*
09/30/2009–08/31/2011
The aim of this grant is to conduct a large scale study examining the effects on retest reliability and correlation significance of the most critical technical processing requirements for performing fMRI. $369,048
Role: Co-Investigator
23. DOD (Field, Aaron S - PI)
“*Detection of Pre-lesions in Multiple Sclerosis*”
09/01/2010 – 08/31/2011
The goal of this project is to use quantitative MRI methods to detect ‘pre-lesions’ in patients with multiple sclerosis.
Role: Co-Investigator
24. NIH/NIMH P50-MH84051 (PI: Davidson, Richard J.)
“*Neurobehavioral Bases of Emotion Regulation and Dysregulation in Adolescence*.”
Center to study emotion regulation from neural and psychobiological perspectives in adolescence.
09/01/2008-05/31/2013
Roles: PI of Project 5: Diffusion Tensor Imaging of Amygdalo-Frontal Pathways;
 PI of Biological Measures Core (C) (15% Effort)
$1,500,000 annual direct
25. NIH/NIMH RO1 MH080826 (PI: Lainhart, Janet E., University of Utah)
“*Atypical Late Neurodevelopment in Autism: A Longitudinal MRI and DTI Study*”
08/01/2007-07/31/2013
The goal of this subcontract is to provide advanced data analysis of diffusion tensor images of subjects with autism.
Role: subcontract PI (10% Effort)
$80,562 annual direct
26. Kinetics Foundation (PI: Alexander Andrew L)
“*Technical Developments for Image-Guided Convection-Enhanced Delivery*.”
03/01/2011 – 09/30/2012
The aim of this grant is to develop imaging methods for optimal guidance of CED for human intra-putamenal infusions of solutions carrying drugs.
Role: PI. (20% Effort)
$280,00 Direct
27. Kinetics Foundation (PI: Block, Walter & Alexander Andrew)
“*Optimization of Convection Enhanced Drug Delivery in the Brain*.”
05/01/2012 – 04/30/2013
The project aims to determine the optimal parameters for convection-enhanced delivery (CED) to maximize flow rates while minimizing backflow for guiding future clinical trials utilizing CED, particularly in Parkinson’s Disease.
Role: Co-PI. (5% Effort)
$280,00 Direct
28. NIH RO1-NS065034 (PI: Samsonov, Alexey)
“*Advanced Magnetization Transfer Imaging in Multiple Sclerosis Disease*”
06/1/2009 – 06/30/2014
Specific aims are to develop advanced acquisition, reconstruction and analysis tools for quantitative magnetization transfer imaging.
Role: Co-investigator. (10% Effort)
$204,000 annual direct.
29. Henry M Jackson Foundation (PI: Riedy, Gerard, US Naval Medical Center) DOD subcontract “*Combined DTI and fMRI analysis technique for TBI*.”
02/01/2011 – 08/31/2013.
The aim of this project is to perform image analysis of a DTI and fMRI study of soldiers with traumatic brain injuries.
Role: PI of subcontract. (5% Effort)
$140,000 total direct.
30. NIH R43 CA177205 (PI: Barker, Ed)
*“A Real-Time Neurosurgical Platform for MR-Guided Drug Delivery”*10/01/2013 – 09/30/2014.
This grant will support the Phase I development for inSERT, Inc. of a product platform for guiding drug infusion surgeries in the MRI scanner.
Role: Co-investigator. (5% Effort)
$231,000 total.
31. NIH R21 NS080656 (PI: Kallianpur, Kalpana, Hawaii, Subcontract PI: Alexander)
*“Intrinsic Functional Connnectivity Changes Associated with Insular Atrophy in HIV”*04/01/2013 - 03/30/2015
Major goals: This project will investigate abnormalities in brain functional MRI connectivity with anterior insula in patients with HIV.
Role: Co-Investigator (5% effort)
$275,000 Total Direct
32. NIH R01 AG043125 (PI: Johnson, Sterling)
*“The Effect of Dietary Restriction on Brain Aging”*10/1/2012 – 9/30/2015 (No Cost Extension)
Major goals: The goal of this project is to determine whether rhesus monkeys undergoing chronic diet restriction exhibit less pronounced age-related structural and functional changes in the brain than do age-matched controls. This hypothesis will be tested using high-resolution volumetric and microstructural brain imaging techniques and cognitive tests.
Role: Co-Investigator (0% Effort)
$360,000 direct Year
33. Hartwell Foundation (PI: Alexander, Andrew)
“*Hartwell Postdoctoral Training Fellowship*”
03/11/2013 - 9/30/2015
This grant from the Hartwell Foundation supports a postdoctoral research fellowship for Dr. Andrew Hahn. It will focus on using dynamic MRI to measure lung function and speech/swallowing function children.
Role: Mentor (0% Effort - Mentor)
$100,000 total direct
34. ADRC Pilot (PI: Alexander, Andrew)
*“Imaging Neuroplasticity in Mild Cognitive Impairment.”*08/01/2014 – 07/31/2015.
This project will investigate brain changes associated with learning and memory in individuals as a function of aging and early memory decline.
Role: Principal Investigator. (0% Effort)
$30,000 total direct.
35. WNPC Pilot (PI: Populin, Luis)
*“Self-recognition in nonhuman primates.”*01/01/2015 – 12/31/2015.
This project develop strategies for functional MRI in awake nonhuman primates and investigate the neural circuitry of self-recognition.
Role: Co-investigator. (0% Effort)
$50,000 total direct.
36. UW Fall Research Comp. (Co-PI: Populin, Luis, Alexander AL, Block WF, Jenison R, Converse AK)
*“Self-recognition in nonhuman primates.”*07/01/2015 – 06/30/2016.
This project develops strategies for simultaneous PET and functional MRI in awake nonhuman primates and investigates the effects of methylphenidate on brain networks and brain chemistry.
Role: Co-PI. (0% Effort)
$145,759 total direct.
37. NIH/NICHD P30 HD003352 (PI: Messing, Albee)
“*The Wisconsin Intellectual and Developmental Disabilities Research Center*”
This Center provides administrative, resource and technical support for multidisciplinary research projects that are focused on developmental disabilities.
Role: Co-Director of Brain Imaging Core. (5% Effort)
$1,000,000 annual direct.
38. NIH/NCI SBIR Phase II (PI: Barker, Ed)
*“A Real-Time Neurosurgical Platform for MR-Guided Drug Delivery”*09/01/2015 – 08/31/2016
Major goals: This grant will support the Phase II development for inSERT, Inc. of a product platform for guiding drug infusion surgeries in the MRI scanner.
Role: Co-Investigator (10% Effort)
$1,500,000 Direct
39. NIH/NIA R01 AG031110-05S1 (PI – Handen, subPI – Christian)
Supplement to "*Natural History of Amyloid Deposition in Adults with Down Syndrome*"
09/01/14 – 03/31/17
This supplement will expand upon a currently funded study that is assessing amyloid load in adults with Down’s Syndrome (DS) by adding: 18F]fluoro-2-deoxy-D-glucose (FDG-PET), a magnetic resonance imaging (MRI) measure of cerebrovascular reactivity (CVR), diffusion tensor imaging (DTI) and assessment of plasma Aβ-40 and 42.
Role: Co-Investigator (4% Effort)
$372,292 Direct
40. Bill and Melinda Gates Foundation Grand Challenge Phase I (PI: Alexander, Andrew)
*“The Influence of the Infant Microbiome on Brain Development”*05/01/2015 – 10/31/2016
Major Goals: To investigate the relationship between changes in brain development and changes in the gut microbiome during the first year of life in infants.
Role: Principal Investigator
$100,000 total direct
41. NIH/NIA RO1 AG037639 (PI: Bendlin, Barbara)
*“White Matter Degeneration: Biomarkers in Preclinical Alzheimer’s Disease”*
05/01/2012 - 04/30/2018 (No Cost Extension)
Imaging project to investigate the roles and sensitivity of white matter and inflammation the development of Alzheimer’s disease.
Role: Co-Investigator (5% Effort)
$205,000 Direct Costs (2016)
42. NIH/NICHD R21 HD078119 (PI: Alexander, Andrew)
*“Technologies for Improved Quantitative Relaxometry in Awake Children.”*09/22/2014 - 07/31/2017 (No Cost Extension for Year 3)
This project will develop imaging methods for improving the accuracy, precision and stability of multicomponent relaxometry measurements in the brain. It will also characterize cross-sectional changes in myelin water with development in young children.
Role: Principal Investigator (5% Effort)
$275,000 total direct

**Publications**

**Complete List of Published Work in MyBibliography:** [**http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/41162316/?sort=date&direction=descending**](http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/41162316/?sort=date&direction=descending)

**h-index:** 62 (49 since 2013)

**i10-index:** 161 (133 since 2013)

**Citations since 2013:** 9214

***Refereed Articles (\* indicates mentored trainee)***

1. Gmitro AF, Alexander AL: Use of a projection imaging method to decrease motion sensitivity in diffusion-weighted MRI. *Magn. Reson. in Med.* 30:835-38 (1993).
2. Alexander AL, Davenport CM, Gmitro AF: Comparison of illumination wavelengths for detection of atherosclerosis by optical fluorescence spectroscopy. *Opt Eng* 33(1):167-74 (1994).
3. Inoue MB Oram P, Inoue M, Fernando Q, Alexander AL, Unger EC: A new nonionic macrocyclic gadolinium (III) chelate as a potential magnetic resonance imaging contrast agent. *MRI* 12(3):429-32 (1994).
4. Yue G, Alexander AL, Laidlaw DH, Gmitro AF, Under EC, Enoka RM: Sensitivity of muscle proton spin-spin relaxation time as an index of muscle activation. *J Appl Phys*, 77(1): 84-92 (1994).
5. Unger E, Alexander AL, Fritz T, Rosenberg N, Dreisbach J: Physical basis for the genesis of hypointensity of basal ganglia on T2-weighted MR images in Toluene abusers. *Radiology*, 193:473-6 (1994).
6. Parker DL, Buswell HR, Goodrich KC, Alexander AL, Keck N, Tsuruda JS. The application of magnetization transfer to MR angiography with reduced total power. *Magn. Reson. in Med*. 34: 283-6 (1995).
7. Alexander AL, Gmitro AF, Unger EC. Gas-filled microbubbles as novel pressure-sensitive contrast agents for magnetic resonance imaging. *Academic Radiology* Vol. 3: S370-2 (1996).
8. Alexander AL, Barrette TR, Unger EC: Magnetic resonance guidance of percutaneous ethanol injection in liver. *Academic Radiology* 3: 18-25 (1996).
9. Alexander AL, McCreery TT, Barrette TR, Gmitro AF, Unger EC: Microbubbles as novel pressure-sensitive MR contrast agents. *Magn. Reson. Med*. 35: 801-6 (1996).
10. Chapman BE, Sanderson AR, Goodrich KC, Alexander AL, Blatter DD and Parker DL: Signal detection methodologies for evaluating blood vessel visibility in MR angiograms using accurate geometric registration to high resolution x-ray angiograms. *Magn. Reson. Med* 37:519-29 (1997).
11. Woodward PJ, Sohaey R, Harris DP, Jackson GM, Klatt EC, Alexander AL: Postmortem fetal MRI: a comparison with autopsy findings. *AJR* 168:41-6 (1997).
12. Alexander AL, Tsuruda JS, Parker DL, Elimination of eddy current artifacts in diffusion-weighted echo-planar images: the use of bipolar gradients. *Magn. Reson. Med.* 38:1016-21 (1997).
13. Alexander AL, Buswell HR, Sun Y, Chapman BE, Tsuruda JS, Parker DL, Intra-cranial black-blood MR angiography with high-resolution 3D fast spin echo. *Magn. Reson. Med.* 40:298-310 (1998).
14. Parker DL, Goodrich KC, Alexander AL, Buswell HR, Blatter DD, Tsuruda JS, Optimized visualization of vessels in contrast enhanced intracranial MR angiography. *Magn. Reson. Med.* 40(6):873-82 (1998).
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179. Nielsen JA, Ferguson MA, Alexander AL, Lange N, Lainhart JL, Anderson JS (6/22/2013). *Multisite Functional Connectivity Classification of Autism.* Poster session presented at Organization for Human Brain Mapping, Seattle.
180. Nielsen JA, Anderson JS, Ferguson MA, Froehlich AL, Cooperrider JR, Cariello AN, Fletcher PT, Zielinski BA, Bigler ED, Alexander AL, Lainhart JE (5/3/2013). *Functional Connectivity MRI Lateralization in Autism.* Poster session presented at International Society for Autism Research, San Sebastian, Spain
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184. Travers, B. G., Bigler, E. D., Tromp, D. P. M., Adluru, N., Froehlich, A. L., Alexander, A.L., Lainhart, J. E. (2014, May). Manual motor performance related to autistic traits, daily living skills, and white matter microstructure in Autism Spectrum Disorder. Poster presented at the International Meeting for Autism Research, Atlanta, Georgia
185. Alexander AL, Kecskemeti SR. Improved Dual White Matter and CSF Suppression using MP-nRAGE In: *Proceedings of the 22nd ISMRM Scientific Meeting*, Milan abstract 415; 2014.
186. Alexander AL, Kecskemeti SR. Neuroimaging with INSIDIR: Integrated Single Inversion and Double Inversion Recovery. In: *Proceedings of the 22nd ISMRM Scientific Meeting*, Milan abstract, 2014.
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193. Travers, B. G., Bigler, E. D., Duffield, T. C., Prigge, M. D. B., Froehlich, A. L., Lange, N., Alexander, A.L., Lainhart, J.E. (2015, May). Longitudinal development of manual motor ability in autism from childhood to mid-adulthood and corresponding adaptive daily living skills. Talk presented at the International Meeting for Autism Research, Salt Lake City, Utah
194. Kecskemeti SR, Alexander AL, Field AS. An 8 Month Study of T1 Measures in MS Patients Using 3D MPnRAGE. In: *Proceedings of the 23rd ISMRM Scientific Meeting*, Toronto. abstract 1407; 2015.
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199. Kodiweera C, Alexander AL, Wu YC. NODDI Measures Appear to be Sensitive to Both Age and Gender. In: *Proceedings of the 23rd ISMRM Scientific Meeting*, Toronto. abstract 1316; 2015.
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201. Liu F, Alexander AL, Samsonov. Analyzing Myelin Water Fraction Using McRISE. In: *Proceedings of the 24th ISMRM Scientific Meeting*, Signapore. abstract 1275; 2016
202. Dean DC, Lange N, Travers B, Adluru N, Tromp DPM, Destiche D, Freeman A, Samsin D, Zielinski B, Prigge M, Fletcher PT, Anderson J, Bigler ED, Lainhart J, Alexander AL. Application of the Mahalanobis Distance for Depicting the Neuroanatomical Variability Within Autism Spectrum Disorders In: *Proceedings of the 24th ISMRM Scientific Meeting*, Signapore. abstract 4142; 2016
203. Guerrero J, Adluru N, Kecskemeti S, Davidson R, Alexander AL. Investigating the Effects of Intrinsic Diffusivity on Neurite Orientation Dispersion and Density Imaging (NODDI) In: *Proceedings of the 24th ISMRM Scientific Meeting*, Signapore. abstract 1046; 2016
204. Lange N, Dean III DC, Travers BG, Zielinski B, Alexander AL, Lainhart JE. Finding Individual Developmental Brain Circuitry and Brain-Behavior Associations in Autism by a New Multivariate Crossmatch Method. In: *Proceedings of the 2016 IMFAR (International Meeting for Autism Research) Scientific Meeting*, Baltimore (May, 2016).
205. Lainhart, J. E., Kane, K. L., Prigge, M. D., Samsin, D. P., Travers, B. G., Freeman, A., … Alexander, A.L. (2016, May). Longitudinal age-related impairments in processing speed, anxiety, and adaptive functioning from childhood to adulthood in individuals with autism. Poster presented at the International Meeting for Autism Research, Baltimore, Maryland.
206. Dean III DC, Travers BG, Freeman A, Zielinski BA, Prigge MB, Fletcher PT, Anderson JS, Bigler ED, Lange N, Alexander AL, Lainhart JE. Longitudinal Development of White Matter in Autism Spectrum Disorder. In: *Proceedings of the 2016 IMFAR (International Meeting for Autism Research) Scientific Meeting*, Baltimore (May, 2016).
207. Dean III DC, Freeman A, Samsin D, Kecskemeti SR, Matsunami N, Leppert MF, Lange N, Lainhart JE, Alexander AL. Multicomponent Relaxometry in Autism Spectrum Disorder: Preliminary Insights. In: *Proceedings of the 2016 IMFAR (International Meeting for Autism Research) Scientific Meeting*, Baltimore (May, 2016).
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209. Kellet KA, Fletcher PT, Prigge MD, Lange N, Bigler ED, Alexander AL, Lainhart JE. Reduced age-related trajectories of fractional anisotropy and volume for the left arcuate fasciculus in autism. In: *Proceedings of the 2016 IMFAR (International Meeting for Autism Research) Scientific Meeting*, Baltimore (May, 2016).
210. Travers BG, Dean III DC, Prigge MB, Froehlich A, Bigler ED, Lange N, Alexander AL, Lainhart JE. Longitudinal Development of White Matter in Autism Spectrum Disorder. In: *Proceedings of the 2016 IMFAR (International Meeting for Autism Research) Scientific Meeting*, Baltimore (May, 2016).
211. Brady M, et al. Controlling Brain Infusion Distributions: Moving from Surgical Planning to Real-Time MR Guidance. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 5539; 2017
212. Olsen M, Vermilyea S, Lu J, Brodsky E, Guthrie S, Tao Y, Fekete E, Riedel M, Brunner K, Boettcher C, Bondarenko V, Alexander A, Zhang SC, Emborg M, Block W. Targeted Delivery of Stem Cells to the Brain Using Real Time Interventional MRI. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 738; 2017
213. Adluru N, Kim HJ, Davidson RJ, Alexander AL, Johnson SC, Singh V. Manifold valued statistical models for longitudinal analysis of MRI data. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 4055; 2017
214. Kecskemeti SR, Alexander AL. Motion Corrected T1 Mapping of the Pediatric Human Brain. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 3717; 2017
215. Aroor K, Kecskemeti SR, Alexander AL. Total Generalized Variation as a Temporal Regularizer in Compressed Sensing MRI. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 3867; 2017
216. Chung MK, Hanson JL, Adluru N, Alexander AL, Davidson RJ, Pollack SD. Exponential Decay Law for Structural Brain Network of Maltreated Children. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 3493; 2017
217. Dean III DC, Planalp EM, Wooten W, Adluru N, Goldsmith HH, Davidson RJ, Alexander AL. Patterns of Microstructural Correlations in the White Matter of the Neonatal Brain. In: *Proceedings of the 25th ISMRM Scientific Meeting*, Honolulu. abstract 4097; 2017
218. Dean DC, Travers BG, Villaruz J, Freeman AA, Adluru N, Zielinski BA, Prigge MD, Fletcher PT, Anderson JS, Bigler ED, Lange N, Lainhart JE, Alexander AL. Developing White Matter Microstructure Networks in Autism Spectrum Disorders. In: *Proceedings of the 2017 IMFAR (International Meeting for Autism Research) Scientific Meeting*, San Francisco (May, 2017).
219. Villaruz J, Dean DC, Travers BG, Freeman AA, Adluru N, Zielinski BA, Prigge MD, Fletcher PT, Anderson JS, Bigler ED, Lange N, Schrodi SJ, Leppert M, Matsunami N, Alexander AL, Lainhart JE. White Matter Microstructure as Candidate Brain Phenotypes of Autism. In: *Proceedings of the 2017 IMFAR (International Meeting for Autism Research) Scientific Meeting*, San Francisco (May, 2017).
220. J. Villaruz1, D. C. Dean1, B. G. Travers1, A. Freeman1, M. B. Prigge2, B. A. Zielinski2, P. T. Fletcher2, J. S. Anderson2, E. Bigler3, N MODELING DEVELOPMENTAL TRAJECTORIES OF WHITE MATTER MICROSTRUCTURE IN THE AUTISTIC AND TYPICAL BRAIN. Submitted to *2018 IMFAR (International Meeting for Autism Research) Scientific Meeting*.
221. D. C. Dean1, J. Villaruz1, A. Freeman1, N. Adluru1, K. Kellett1, K. Kane1, J. B. King2, M. B. Prigge2, B. A. Zielinski2, J. S. Anderson2, J. Taylor2, S. Schrodi3, N. Matsunami2, E. Bigler4, M. Leppert2, N. Lange5, J. E. Lainhart1 and A. L. Alexander. NEURITE ORIENTATION DISPERSION AND DENSITY IMAGING IN AUTISM SPECTRUM DISORDERS. Submitted to *2018 IMFAR (International Meeting for Autism Research) Scientific Meeting*.
222. A. K. Converse1, D. C. Dean1, B. G. Travers1, M. B. Prigge2, E. Bigler3, N. Lange4, A. L. Alexander1 and J. E. Lainhart1. ADHD SYMPTOMATOLOGY AND WHITE MATTER DEVELOPMENT IN AUTISM SPECTRUM DISORDER, Submitted to *2018 IMFAR (International Meeting for Autism Research) Scientific Meeting*.

**Invited Research Presentations**

***Local***

1. Diffusion Tensor MRI. *Department of Medical Informatics Seminar.* University of Utah. March 2000.
2. Diffusion Tensor MRI of the Human Brain. *Keck Laboratory for Functional Brain Imaging,* University of Wisconsin. July 2000.
3. Diffusion Tensor MRI: Towards White Matter Tractography. *Department of Medical Physics Seminar.* University of Wisconsin. November 2000.
4. Diffusion Tensor MRI in Cancer Research. *Department of Radiation Oncology Seminar.* University of Wisconsin. May 2001.
5. Diffusion Tensor MRI. *Department of Radiology Grand Rounds.* University of Wisconsin*.* September 2001.
6. Mapping white matter properties with MRI. *Biomedical Engineering Seminar, University of Wisconsin.* October 17, 2005.
7. Diffusion Tensor Imaging of the Brain in Autism. *Waisman Center Board of Visitors Meeting, Waisman Center, University of Wisconsin.* October 15, 2008.
8. Diffusion Tensor Imaging of the Brain in Autism: Macrostructure, Microstructure and Connectivity. *John D. Wiley Seminar Series, Waisman Center, University of Wisconsin.* December 5, 2008.
9. Investigations of Structural and Functional Brain Connectivity in Autism using MRI. *Waisman Autism Day with the Experts*. January 28, 2012.

***Regional***

1. Imaging of Atherosclerosis with Magnetic Resonance Imaging. *Department of Radiology*, *University of Utah*, 1994.
2. Diffusion Tensor MRI of the Human Brain. *Southwest MR Imaging Conference*, Scottsdale, AZ, February 2000.
3. Structural and Functional Imaging with MRI. *Project Kaleidoscope National Academic Assembly Workshop.* Madison, Wisconsin*.* October 2001.
4. Structural and Functional Imaging with MRI. *Promega Biomedical Imaging Workshop.* Madison, Wisconsin*.* May 2001.
5. Diffusion Tensor MRI: Towards White Matter Tractography. *Department of Biophysics Seminar.* Medical College of Wisconsin, Milwaukee*.* October 2001.
6. Diffusion Tensor MRI *Brain Research Imaging Center*. University of Chicago. January, 2002.
7. Diffusion Tensor Imaging. *Biomedical Engineering Seminar, Medical College of Wisconsin*, March 7, 2007.
8. Diffusion MRI of the Human Brain. *Department of Radiology Grand Rounds, University of Iowa*, Iowa City, April 10, 2008.

***National/International***

1. Optimum Illumination Wavelength for Fluorescence Detection of Atherosclerosis. *Department of Electrical Engineering*. *University of Texas*, 1994.
2. Imaging of Atherosclerosis with Magnetic Resonance Imaging. *Department of Medical Physics, University of Toronto*, 1994.
3. Imaging of Atherosclerosis with Magnetic Resonance Imaging. *Center for Magnetic Resonance Microimaging, Duke University*, 1994.
4. Dynamic Imaging of Focused Ultrasound Hyperthermia Treatment. *Department of Radiology, UCSF*, 1994.
5. Microbubbles as Novel Pressure-Sensitive MR Contrast Agents. *Contrast Media Research Conference,* Turku, Finland 1995.
6. High Resolution Black Blood MRA with FSE Techniques. *IX International Workshop on Magnetic Resonance Angiography; MRA Club*, Valencia, Spain, 1997.
7. High-Resolution Imaging of Carotid Atherosclerotic Plaques. *X International Workshop on Magnetic Resonance Angiography; MRA Club*, Park City, UT 1998.
8. Diffusion Tensor MRI at 3 Tesla. *American Society of Neuroradiology*. Vancouver, B.C., May 2002.
9. Diffusion Tensor MRI *American Society of Neuroradiology*. Washington, D.C., May 2003.
10. Diffusion-Tensor Imaging in Autism. *Psychiatric Research Society*. Park City, UT. February 11, 2004.
11. Magnetic Resonance Imaging in Autism. *Utah Center for Advanced Imaging Research Seminar.* University of Utah. February 12, 2004.
12. DT-MRI Acquisition and Analysis. *SIAM Conference on Image Science.* Salt Lake City, UT. May 3, 2004.
13. What are the errors and constraints in tractography algorithms? *ISMRM Diffusion workshop ‘ Methods for Quantitative Diffusion MRI of the Human Brain’.* Lake Louise, Alberta, Canada, March 16, 2005.
14. Diffusion MRI: Tensors, Tractography and Beyond. *Advanced Imaging Research Center MR Symposium, Oregon Health Sciences University*. Portland, Oregon. February 6, 2006.
15. Diffusion Tensor Imaging and Functional MRI in Autism. *American Society for Pediatric Neuroradiology (ASPNR)*. San Diego. May 1, 2006.
16. Advanced methods for diffusion MRI: DSI/Q-ball/GDTI and Tractography. *Diffusion and Perfusion MRI Weekend Educational Course at the International Society of Magnetic Resonance in Medicine (ISMRM) Fourteenth Scientific Meeting,* Seattle, May 6, 2006.
17. Hybrid Diffusion Imaging (HYDI). *IEEE Eng Med Biol Soc. New York City,* June 2006.
18. Does DTI have a chance of being specific to white matter pathology? Definitely Unlikely. Debate as part of the *White Matter Study Group Meeting at the International Society of Magnetic Resonance in Medicine (ISMRM) Fifteenth Scientific Meeting,* Berlin, May 21, 2007.
19. Advances in Diffusion Imaging. *Biomedical Imaging Seminar, University of California at San Francisco*, September 16, 2008.
20. Developments in Diffusion MRI – Improvements to Voxel-Based Analysis and Hybrid Diffusion Imaging. *Scientific Computing and Imaging (SCI) Institute Imaging Seminar, University of Utah*, Salt Lake City, Feb 2, 2009.
21. Strategies for Data Analysis. *Diffusion Tensor MRI for the Clinician and the Neuroscientist. Weekend Educational Course at the International Society of Magnetic Resonance in Medicine (ISMRM) Seventeenth Scientific Meeting*, Honolulu, April 19, 2009.
22. Quantitative Assessment of White Matter. *Quantitative Neuro-Anatomic and Functional Image Assessment. Sunrise Educational Course at the International Society of Magnetic Resonance in Medicine (ISMRM) Seventeenth Scientific Meeting*, Honolulu, April 21, 2009.
23. Diffusion Tensor Imaging of the Brain and White Matter Tractography. *Seminar at Toronto Western; University of Toronto.* March 30, 2010.
24. Strategies for DWI Analysis: Pros and Cons. *Diffusion MRI of Traumatic Brain Injury Roadmap Workshop.* Chicago, IL. June 2, 2010.
25. Diffusion MRI Tractography. *Workshop on Novel Reconstruction Strategies in NMR and MRI.* Gottingen, Germany. September 10, 2010.
26. Exploring Fiber Tract Anatomy with Diffusion Tensor MRI. Ottawa Hospital Diagnostic Imaging Rounds. October 3, 2011.
27. Diffusion Tensor Imaging in Autism and Brain Development. Children’s Hospital of Eastern Ontario. October 4, 2011.
28. Analysis Methods for Diffusion Tensor Imaging Data. Workshop for University of Ottawa Medical Physics group. October 3, 2011.
29. Diffusion Tensor Imaging, Tractography and Beyond. Neuroscience Research Institute, Gachon Medical University, Incheon, Korea. November 29, 2011.
30. Diffusion Tensor Imaging, Tractography and Beyond. Seoul National University, Seoul, Korea. December 3, 2011.
31. White Matter Structure – Function Relationships. (invited). *Resting State Functional Brain Connectivity Meeting.* Magdeburg, Germany. September 7, 2012.
32. Overview of Diffusion Tensor Imaging. (invited). Neuroscience Seminar – University of Hawaii. Honolulu, HI January 24, 2013.
33. Diffusion MRI of the Brain: Methods and Applications. (invited). Advanced Imaging Research Center Seminar – University of Texas Southwestern. Dallas, TX July 2013.
34. Quantitative Imaging with Radial MRI. (invited). Department of Computer Science Seminar – University of College London, United Kingdom. January 19, 2015.
35. Quantitative Imaging with Radial MRI. (invited). Department of Psychology Seminar – University of Reading, United Kingdom. January 21, 2015.
36. Introduction to MRI with Radial Imaging. (invited). CUBRIC Student Lecture – Cardiff University, Wales. January 26, 2015.
37. Quantitative Imaging with Radial MRI. (invited). Cardiff University Brain Research Imaging Centre (CUBRIC) Seminar – Cardiff University, Wales. January 26, 2015.
38. Diffusion MRI of Autsim Spectrum Disorder (invited). American Society of Functional Neuroradiology (ASFNR). Austin, TX February 29, 2016.
39. Radial MRI Strategies for Pediatric Neuroimaging (invited). Brain Development: Imaging Techniques and Applications – Workshop at Singapore Institute for Clinical Sciences, Singapore National University. May 6, 2016.
40. Multivariate Image Analysis Strategies (invited). Department of Psychology Seminar – University of Reading, United Kingdom. Oct 21, 2016.
41. Efficient Multicontrast Structural Imaging with MPnRAGE (invited). UNC Biomedical Research Imaging Center Seminar Series, University of North Carolina – Chapel Hill. February 22, 2017.
42. Diffusion MRI of Autism: From Longitudinal to Multivariate Analyses (invited). UNC Center for Intellectual Disabilities and Disorders, University of North Carolina – Chapel Hill. February 23, 2017.

**Patents**

1. US Patent 6,674,894 METHOD AND APPARATUS FOR ENHANCING AN IMAGE USING DATA OPTIMIZATION AND SEGMENTATION [Inventors: Dennis L. Parker, Andrew L. Alexander, John A. Roberts, Brian Chapman]
2. US Patent 7,358,730 DIFFUSION TENSOR IMAGING USING HIGHLY CONSTRAINED IMAGE RECONSTRUCTION METHOD [Inventors: Charles A. Mistretta, Andrew L. Alexander]
3. US Patent 9,366,740 B2. SYSTEM AND METHOD FOR VASTLY UNDERSAMPLED ISOTROPIC PROJECTION RECONSTRUCTION WITH INVERSION RECOVERY [Inventors: Steven Kecskemeti, Andrew L. Alexander] June 14, 2016
4. Pending Patent Application P130278US01. SYSTEM AND METHOD FOR ACQUIRING MULTIPLE DIFFERENT IMAGES USING A SINGLE MAGNETIC RESONANCE IMAGING SCAN WITH MULTIPLE MAGNETIZATION PREPARATION RADIOFREQUENCY PULSES [Inventors: Steven Kecskemeti, Andrew L. Alexander] May 24, 2013.
5. Pending Patent Application P160358US01. SYSTEM FOR CHARACTERIZING BRAIN CONDITION [Inventors: Douglas Dean III, Andrew L Alexander, Gregory R Kirk, Brittany Travers] Submitted Nov 3, 2016
6. Pending Patent Application P170246. ALGORITHM FOR IDENTIFYING, QUANTIFYING, AND TARGETING PLASMA POCKETS IN HEMORRHAGIC STROKE CLOTS, [Walter Block, Andrew Alexander, Azam Ahmed, Miles Olsen] Submitted March 8, 2017

**Invention Disclosures**

1. WARF P130113. Interventional MRI Camera [Inventors: Karl Sillay, Walter Block, Andrew Alexander, Edward Barker, Ethan Brodsky] November 7, 2012.
2. WARF. Phantom for Diffusion MRI. [Inventors: Jose Guerrero Gonzalez, Andrew L. Alexander] submitted December 26, 2016

**Educational Activities & Presentations**

***Classroom Teaching***

 Fall 2001 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2002 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2003 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2004 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2005 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2006 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2007 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2008 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 2 credits.

 Fall 2009 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 3 credits.

 With Oliver Wieben (12 lectures)

 Fall 2010 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 3 credits.

 With Oliver Wieben (12 lectures)

 Fall 2011 MP 710 “ Advances in Magnetic Resonance Imaging”, Graduate course. 3 credits.

 With Oliver Wieben (5 lectures)

 Fall 2012 MP 475 / Neurosci 675 “ Methods for Neuroimaging Research”, Graduate course. 3 credits. With Rasmus Birn (7 lectures / 5 labs)

 Fall 2013 MP 475 / Neurosci 675 “ Methods for Neuroimaging Research”, Graduate course. 3 credits. With Rasmus Birn

 Fall 2014 MP 475 / Neurosci 675 “ Methods for Neuroimaging Research”, Graduate course. 3 credits. With Rasmus Birn

 Fall 2014 MP 575 / Neurosci 675 “ Methods for Neuroimaging Research”, Graduate course. 3 credits. With Rasmus Birn

 Fall 2015 MP 575 / Neurosci 675 “ Methods for Neuroimaging Research”, Graduate course. 3 credits. With Rasmus Birn

 Fall 2016 MP 575 / Neurosci 675 “ Methods for Neuroimaging Research”, Graduate course. 3 credits. With Rasmus Birn

***CME Presentations***

***National/International***

1. Diffusion Tensor MRI at 3 Tesla. *American Society of Neuroradiology*. Vancouver, B.C., May 2002.
2. Diffusion Tensor MRI. *American Society of Neuroradiology*. Washington, D.C., May 2003.
3. Diffusion Tensor Imaging and Functional MRI in Autism. *American Society for Pediatric Neuroradiology (ASPNR)*. San Diego. May 1, 2006.
4. Advanced methods for diffusion MRI: DSI/Q-ball/GDTI and Tractography. *Diffusion and Perfusion MRI Weekend Educational Course at the International Society of Magnetic Resonance in Medicine (ISMRM) Fourteenth Scientific Meeting,* Seattle, May 6, 2006.
5. Strategies for Data Analysis. *Diffusion Tensor MRI for the Clinician and the Neuroscientist. Weekend Educational Course at the International Society of Magnetic Resonance in Medicine (ISMRM) Seventeenth Scientific Meeting*, Honolulu, April 19, 2009.
6. Quantitative Assessment of White Matter. *Quantitative Neuro-Anatomic and Functional Image Assessment. Sunrise Educational Course at the International Society of Magnetic Resonance in Medicine (ISMRM) Seventeenth Scientific Meeting*, Honolulu, April 21, 2009.

**MENTORING**

Trainees with Awards (NIH and Other)

NIH F31 (Graduate):

Brendon Nacewicz (2008)

NSF Graduate Fellowship:

Jose Guerrero Gonzalez (2016-2019)

Wisconsin Distinguished Graduate Scholar:

Samuel Hurley (2013)

Wisconsin Alumni Association Pohle Scholarship:

Megan Lucas (2015)

Intellectual and Developmental Disabilities Research Undergraduate Student Award:

Kristine McLaughlin (2016)

NIH T32 (Post-graduate):

Nagesh Adluru, Ph.D. (CIBM – 2008, 2009)

Brittany Travers, Ph.D. (Waisman – 2011, 2012)

Douglas Dean, Ph.D. (Waisman – 2014, 2015)

Ameer Pasha Hosseinbor, Ph.D. (CIBM – 2013)

Hartwell (Post-graduate):

Brittany Travers, Ph.D. (2013)

Andrew Hahn, Ph.D. (2014)

Morse Society (Graduate):

Jose Guerrero Gonzalez (2017)

Morse Society (Post-graduate):

Brittany Travers, Ph.D. (2013)

Douglas Dean, Ph.D. (2014)

KL2 (Faculty):

Elisa Torres, Ph.D. (2015-present)

K08 (Faculty):

Peter Ferrazzano, M.D. (2013-present)

K23 (Faculty):

Audra Sterling, Ph.D. (2018-present)

K99 (Post-graduate):

Douglas Dean, Ph.D. (2017-present)

*STUDENT THESIS COMMITTEES:*

COMPLETED (\* indicates mentored student):

 Jessica Olsen, M.S. Mechanical Engineering (Univ. of Utah), June 1999. Calibration and Correction of MRI Temperature Measurements.

 Khader Hasan\* – Ph.D., Physics (University of Utah) May 2000. Analysis, Optimization and Evaluation of Water Spin Self-Diffusion Tensor Imaging Encoding and Acquisition Schemes.

 Konstantinos Arfanakis, Ph.D., Medical Physics (Univ. of Wisconsin), April 2002. Strategies for Diffusion Tensor MRI.

 Yijing Wu\*, Ph.D., Physics (University of Utah) August 2002. Temporal Frequency Analysis of Dynamic Imaging

 Eugene Kholmovski\* – Ph.D. Physics (University of Utah) August 2002. Topics in Magnetic Resonance Imaging.

 Mariana Lazar\* – Ph.D., Physics (University of Utah) May 2003. White Matter Tractography: An Error Analysis and Human Brain Fiber Tract Reconstruction Study.

 Tianliang Gu, Ph.D., Medical Physics (Univ. of Wisconsin), January 29, 2004. Phase Contrast Imaging with 3D VIPR.

 Baxter Rogers, Ph.D., Medical Physics (Univ. of Wisconsin), May 2004. Functional MRI Measurements of Effective Connectivity During Motor Tasks.

 Hackjin Kim, Ph.D., Psychology (University of Wisconsin), November 2004. Human Amygdala Function in Situations of Uncertain Probability: Functional MRI and Computational Modeling Studies.

 Xianhong Xie, Ph.D., Statistics (University of Wisconsin), August 2005. Smoothing in Magnetic Resonance Image Analysis and a Hybrid Loss for Support Vector Machine.

 Chen Guan Koay\*, Ph.D. Physics (University of Wisconsin) August 2005. Advances in Data Analysis of Diffusion Tensor Imaging.

 Katie McMillan, Ph.D. Medical Physics (University of Wisconsin). November, 2005. Multi-parametric MRI of Gliomas.

 Yuefeng Lu, Ph.D., Statitistics (University of Wisconsin), March 2006. Nonparametric Analysis Methods for Functional Brain Imaging.

 Yu-Chien Wu\*, Ph.D., Medical Physics (University of Wisconsin), April 2006. Diffusion MRI: Tensors and Beyond.

 Jee Eun Lee\*, Ph.D. Medical Physics (University of Wisconsin). August 2006. Anisotropic Encoding & Analysis Strategies for Diffusion Tensor MRI.

 John Carew, Ph.D. Biostatistics (University of Wisconsin). December 2006. Statistical Analyses of Neuroimaging Data.

 Jim Holmes, Ph.D. Medical Physics (University of Wisconsin). November 2006. Non-invasive Fustion Imaging for Regional Evaluation of Obstructive Lung Disease using MRI and PET.

 Jing Liu, Ph.D. Biomedical Engineering (University of Wisconsin) June 2007. Reconstruction Methods for 3D Radial Dyamic Steady State MRI.

 Youngkyoo Jung\*, Ph.D. Electrical Engineering (University of Wisconsin). September 2007. Methods for 3D Steady State Imaging.

 Yan Wu, Ph.D. Medical Physics (University of Wisconsin) December 2007. HYPR Phase Contrast MRA.

 Shubing Wang, Ph.D. Statistics (University of Wisconsin). May 2008. Weighted Fourier Image Analysis and Modeling.

 Suzanne Witt, Ph.D. Medical Physics (University of Wisconsin). October 2008. A comparison of computational methods to calculate effective connectivity from fMRI time-series data.

 Dan Kelley, Ph.D. Neuroscience Training Program (University of Wisconsin). May 2008. Functional Connectivity of Affective Face Processing Networks in Autism.

 Brendon Nacewicz, Ph.D. Neuroscience Training Program (University of Wisconsin). May 2009.

 Madhura Ingalhalikar\*, Ph.D. Biomedical Engineering (University of Iowa). June 2009. A Comparative Study of Diffusion Tensor Field Transformations.

 Elizabeth Hutchinson, Ph.D. Neuroscience Training Program (University of Wisconsin). August 2009.

 Jessica Klaers, Ph.D. Medical Physics (University of Wisconsin). March 2010. High Resolution MRI of Cartilage in the Knee.

 Mike Murphy, Ph.D. Neuroscience Training Program (University of Wisconsin). May 2010. Brain Connectivity and Brain Slow Waves.

 Donald McLaren, Ph.D. Neuroscience Training Program (University of Wisconsin). July 2010. Neurophysiological and Neuroantomical Methods for Understanding Aging, Memory, and Apolipoprotein E.

 Nathan Artz, Ph.D. Medical Physics (University of Wisconsin). December 2010. Assessing Renal Perfusion in Native and Transplanted Kidneys using Arterial Spin Labeling MRI.

 Venkata Chebrolu, Ph.D. Biomedical Engineering (University of Wisconsin). July 2011. Quantitative Magnetic Resonance Imaging for Staging and Adaptive Treatment Planning.

 Kristin Javaras, Ph.D. Psychology (University of Wisconsin). July 2012. Adolescent and Young Adult Adiposity to Control- and Reward- Related Temperament and Brain Structure.

 Huimin Wu, Ph.D. Medical Physics (University of Wisconsin). November 2012. Intracranial MR Angiography using Pseudo Continuous ASL (PCASL) and Accelerated 3D Radial Acquisition.

 Gary Pack\*, Ph.D. Computer Science (University of Wisconsin). December 2012. Semiparametric Geometric Methods for Extracting and Modeling White Matter Volumetric Structures of the Brain.

 Ameer Pasha Hosseinbor\*, Ph.D. Medical Physics (University of Wisconsin). June 2013. Diffusion MRI Modeling: Theory and Applications.

 Elizabeth Zakszewski\*, Ph.D. Medical Physics (University of Wisconsin). July 2013. Diffusion Tensor Imaging and Tractography in the Rhesus Macaque Brain.

 Dan Grupe, Ph.D. Psychology (University of Wisconsin). August 2013. Multimodal Neuroimaging of Medial Prefrontal-Amygdala Circuitry in Combat-Related Posttraumatic Stress Disorder.

Habib Al saleh, Ph.D. Medical Physics (University of Wisconsin). November 2013. MRI of Degenerative Joint Disease in Knee and Connective Tissues.

Pouria Mossahebi, Ph.D. Biomedical Engineering (University of Wisconsin). October 2013. Quantitative Magnetization Transfer Imaging: Theory and Applications.

Samuel Hurley\*, Ph.D. Medical Physics (University of Wisconsin). August 2014. Rapid and Accurate Single and Multicomponent Relaxometry Using Steady-State Acquisitions.

Andrew Hoy\*, Ph.D. Medical Physics (University of Wisconsin). March 2015. Diffusion Tensor Imaging with Free Water Elimination.

Laura Bell, Ph.D. Medical Physics (University of Wisconsin). March 2015. Assessment of Pulmonary Perfusion Using T1-Weighted Dynamic Contrast Enhanced MRI.

Eric Schrauben, Ph.D. Medical Physics (University of Wisconsin). April 2015. 4D Flow MRI Post-Processing Strategies for Neuropathologies.

Fang Liu, Ph.D. Medical Physics (University of Wisconsin). August 2015. Rapid Multi-Component Relaxation Mapping of Human Knee Joint.

Stephanie van Riper, M.S., Kinesiology (University of Wisconsin). August 2105. Investigation of Cerebral White Matter Integrity and Physical Activity Behaviors in Gulf War Veterans with Chronic Musculoskeletal Pain.

Svyat Vergun, Ph.D. Medical Physics (University of Wisconsin). April 2016. Resting State fMRI and Machine Learning Applications in Normal and Patient Population.

Larry Hernandez, Ph.D. Medical Physics (University of Wisconsin). July 2016. Moving Beyond First Generation Radial Imaging: 3D Rosette-like Acquisition for Improved Articular Cartilage Assessment

 Camille Garcia Ramos, Ph.D. Medical Physics (University of Wisconsin) September 2016. Development of Covariance Networks of Cortical/Subcortical Volumes on Children with New-onset Epilepsy.

 Karthik Aroor, Ph.D. Electrical Engineering (University of Wisconsin) April 2017. Accelerated Acquisition of Quantitative MRI Using Parametric Redundancy.

 Brian Allen, Ph.D. Psychology (University of Wisconsin) June 2017. Insights into the Plasticity of Human Visual System White Matter from Diffusion Magnetic Resonance Imaging.

PH.D. EXTERNAL EXAMINER:

 Shannon Kolind, Ph.D. Physics (University of British Columbia). October 2008. Myelin Water Fraction Mapping in the Human Brain.

 Catherine Lebel, Ph.D. (University of Alberta). June 2010. Diffusion Tensor Imaging of Healthy Brain Development.

 Jaana Hiltunen, Ph.D. (Aalto University School of Science). April 2013. Novel diffusion tensor imaging (DTI) approaches at 3 T.

PENDING (not principal advisor):

 Patrick Lao, Medical Physics, UW-Madison

 Andrew Merluzzi, Neuroscience, UW-Madison

 Stephanie van Riper, Kinesiology, UW-Madison

 Kristina Kellet, Psychology, UW-Madison

*CURRENT STUDENTS/TRAINEES:*

POSTGRADUATE:

 Douglas Dean, Ph.D.

 Olga Dadalko, Ph.D. (with Travers)

 GRADUATE:

 Jose Guerrero-Gonzalez – Medical Physics

 Austin Patrick – Medical Physics

 Jason Moody – Medical Physics

 UNDERGRADUATE:

 Alysha Rameshk – Neurobiology

 Yilin Liu – Computer Science

*CURRENT/FORMER STAFF:*

CURRENT:

 Nagesh Adluru, Ph.D. (2012 - current) Associate Scientist.

 Greg Kirk, M.S. (2010 – current) Assistant Researcher.

 Steve Kecskemeti, Ph.D. (2012-current) Assistant Scientist.

 Abigail Freeman, B.S. (2015-current) Lab Coordinator/Manager

 Thomas Gorman, B.S. (2015-current) Lab Coordinator

 Ben Yeske, B.S. (2016-currrent) Lab Coordinator

FORMER:

 Khader Hasan, Ph.D. (2001 - 2002) Assistant Scientist. Currently Associate Professor, University of Texas – Houston, Department of Radiology.

 Jin-Suh Kim, M.D. (2004 - 2005) Associate Researcher. Currently Assistant Professor of Radiology at the University of Iowa.

 Mariana Lazar, Ph.D. (2004 - 2006) Assistant Scientist. Currently Assistant Professor, New York University.

 Alexey Samsonov, Ph.D. (2005 – 2008) Assistant Scientist. Currently Associate Scientist, University of Wisconsin

 Yu-Chien Wu, Ph.D. (2007 - 2009) Assistant Scientist. Currently Staff Scientist, Dartmouth University.

 Jee Eun Lee, Ph.D. (2007 - 2009) Assistant Scientist. Attended medical school – Gachon University of Medicine, Korea.

 John Ollinger, Ph.D. (2004 - 2011) Associate Scientist. Currently Staff Imaging Physicist – NICoE National Intrepid Center of Excellence, Bethesda, MD.

 Frances Haeberli (2004 - 2012) Laboratory Manager. Currently Staff Researcher at University of Minnesota.

 Do Tromp, M.S. (2009 - 2012) Assistant Scientist. Currently graduate student in NTP at UW-Madison.

 Zhan Xu, M.S. (2011 – 2012) Research Intern. Currently graduate student, Biophysics Department at Medical College of Wisconsin.

 Chad Ennis, B.S. (2011-2012) Research Intern. Attended Medical School at UW-Madison.

 Dan Destiche, B.S. (2012-2014) Research Intern. Currently medical student at Medical College of Wisconsin

 Danica Samsin, B.S. (2014-2015) Research Intern.

 Kristina McLaughlin, B.S. (2016-2017) Research Intern.

FORMER STUDENTS/TRAINEES (AS PRINCIPAL MENTOR OR CO-ADVISOR):

 POSTGRADUATE:

 Khader Hasan, Ph.D. 2000-2002. Currently Associate Professor, University of Texas – Houston, Department of Radiology.

 Mariana Lazar, Ph.D. 2003-2004. Currently Associate Professor – New York University

 Yu-Chien Wu, Ph.D. 2006-2007. Currently Assistant Professor, Indiana University Purdue University (IUPU).

 Jee Eun Lee, Ph.D., M.D. 2006-2007. Currently Radiologist – Incheon, Korea.

 Nagesh Adluru, Ph.D. 2009-2011. Currently Assistant Scientist in Waisman Laboratory for Brain Imaging and Behavior, University of Wisconsin – Madison.

 Brittany Travers, Ph.D. 2011-2014. Currently Assistant Professor, Department of Kinesiology, University of Wisconsin – Madison.

 GRADUATE:

 Khader Hasan, Ph.D. Physics 2000 (Also Research Associate (2001-2002)).
Currently Associate Professor, University of Texas – Houston, Department of Radiology.

 Yijing Wu, Ph.D. Physics 2002. Currently Associate Scientist – University of Wisconsin, Department of Medical Physics.

 Eugene Kholmovski, Ph.D. Physics 2002. Currently Assistant Professor – University of Utah, Department of Radiology.

 Mariana Lazar, Ph.D. Physics 2003 (also Research Associate (2002-2004)). Currently Associate Professor – New York University.

 Jong Hoon Lee, M.S. Biomedical Engineering 2003 (University of Wisconsin). Currently Engineer for L.G. Philips LCD.

 Paul Thottakara – Biomedical Engineering M.S. 2005 (University of Wisconsin). Graduated from Medical School at University of Michigan (2009).

 Chen Guan Koay, Ph.D. Physics 2005. (Co-mentored with Beth Meyerand, Ph.D.) Currently Senior Image Data Analyst, National Intrepid Center of Excellence, Walter Reed National Military Medical Center.

 Yu-Chien Wu, Ph.D. – Medical Physics 2006 (University of Wisconsin). Currently Assistant Professor, Indiana University Purdue University (IUPU).

 Jee Eun Lee, Ph.D. – Medical Physics 2006 (University of Wisconsin). Graduated with M.D. from Gachon University of Medicine, Korea.

 Pradeep Venkat, M.S. – Electrical Engineering 2007 (University of Wisconsin). Currently Project Manager for Microsoft.

 Youngkyoo Jung, Ph.D. Electrical Engineering (University of Wisconsin). September 2007. Currently Assistant Professor at Wake Forest University.

 Deok Han, M.S. – Electrical Engineering 2010 (University of Wisconsin). January 2010. Attended graduate school at Mississippi State University.

 Zhan Xu, M.S. – Biomedical Engineering August 2011 (University of Wisconsin). Currently graduate student at Medical College of Wisconsin.

 Gary Pack, Ph.D. Computer Science December 2012 (University of Wisconsin). Currently CIBM Fellow at UW-Madison.

 Ameer Pasha Hosseinbor, Ph.D. Medical Physics (University of Wisconsin). June 2013. Currently Software Engineer at IMBIO (Minneapolis).

 Elizabeth Zakszewski, Ph.D. Medical Physics (University of Wisconsin). July 2013. Currently postdoc at Medical College of Wisconsin.

Pouria Mossahebi, Ph.D. Biomedical Engineering (University of Wisconsin). October 2013. Currently attending Medical School at UW-Madison.

Samuel Hurley, Ph.D. Medical Physics (University of Wisconsin). August 2014. Currently Research Scientist at Oxford University.

Andrew Hoy, Ph.D. Medical Physics (University of Wisconsin). June 2015. Currently Director of Translational Imaging for the Center for Neuroscience and Regenerative Medicine (CNRM) at Uniformed Services University of the Health Sciences, Bethesda, MD.

 Karthik Aroor, Ph.D. Electrical Engineering (University of Wisconsin). April 2017.

UNDERGRADUATES (UW - Madison):

 Paul Thottakara, B.S. Biomedical Engineering 2002. Worked at Medtronic for 1 year, returned to UW for M.S. BME. Went to Medical School – University of Michigan.

 Elizabeth Thottakara, B.S. Biomedical Engineering 2003.

 Chad Ennis, B.S. Neuroscience 2010. Research Intern in lab (2011). Attending Medical School at UW – Madison

 Annie Bartosic, B.S. Neuroscience 2011. GE Medical Imaging Sales Training Program.

 In Park, B.S. BME & Psychology 2011. Medical School – Seoul National University, Korea.

 Dan Destiche, B.S. Neurobiology 2012. Medical School – Medical College of Wisconsin.

 Samuel Doran, B.S. Neurobiology 2013. PET Imaging Research Technologist at Waisman Center.

 Sharon Lu, B.S. Neurobiology 2014. Graduate School – Stanford University

 Gaurav Suryawanshi, B.S. Biomedical Engineering 2014. Employee at EPIC software.

 Michael Stoneman, 2015. Carleton College.

 Janna Swearingen Neurobiology 2017. Applying to Physician Assistant Schools.

 Megan Lucas, B.S. Neurobiology 2017. Applying to Medical Schools.

VISITING STUDENTS:

 Tetsuo Sato - Computer Science / Medical Informatics (Ph.D.) 2000. Visiting student from Nara Technical Institute (Japan). Investigation of White Matter Connectivity Algorithms Using DT-MRI.

 Stefanie Schwenk – Physics (M.S.) 1999. Visiting student from University of Tuebingam (Germany). Multicompartment models of diffusion MRI.

 Nicos Savva – Physics/Engineering/Mathematics (B.S.) 2002. Research Intern. Investigated noise filtering methods for diffusion-tensor MRI.

 FACULTY MENTORING (Training Grant Mentor / Mentoring Committees):

 Brad Christian (Medical Physics)

 Elisa Torres (Nursing)

 Peter Ferrazzano (Pediatrics)

 Audra Sterling (Communication Disorders)

**Service Activities**

***Departmental***

 Committee Organizer for UW Medical Physics Imaging Track (2003-2004).

 Mentoring Committee – Brad Christian, Medical Physics and Psychiatry, UW Madison (2006-2009)

 UW Medical Physics Library Committee (2007)

 Medical Physics Qualifier Exam Proctor (2013, 2014, 2015)

 Medical Physics Oral Qualifier Exam Committee (2017, 2018)

 Psychiatry Post-Tenure Review Committee (2018)

***UWSMPH/Waisman Center/University***

 Co-Director of Brain Imaging Core – Waisman Center (2009-present)

 Director of MR Physics Research – Waisman Laboratory for Brain Imaging and Behavior (2001-present).

 NASA-Sharps Plus Summer Student Mentor Program – Christina Chan (2001).

 UW Biostatistics Faculty Recruiting Committee (2007)

 UW GRECC Faculty Recruiting Committee (2009)

 Proposal Reviewer for UW ICTR Pilot grants (2009; 2010; 2011; 2012; 2013; 2014; 2015)

 Proposal Reviewer for UW ADRC Pilot grants (2016)

 UW-Madison Faculty Senate Alternate (Medical Physics) (2016-2017)

***Research Advisory***

 External Advisory Board – University of Iowa MRI Research Facilities (2011; 2013; 2015).

 Human Connectome Project - Lifespan External Advisory Board (2016).

***National/International***

 *Handling Editor* – Neuroimage (2013-present)

 *Editorial Board* – *Neuroimage* (2006-2009); *Autism Research* (2007-2012); Brain Connectivity (2010-2014); Frontiers in Neuroscience (2013-2016)

 *Manuscript Reviewer* (235 total Papers;

 (By Year: 2012: 16; 2011: 26; 2010: 21; 2009: 26; 2008: 36; 2007: 52; <2007: 89)

 Neuroimage (121 total: 2012: 4; 2011: 13; 2010: 7; 2009: 17; 2008: 21; 2007: 18; <2007: 43 Papers)

 Magn Reson Med (34 total: 2012: 6; 2011: 5; 2010: 6; 2009: 3; 2008: 2; 2007: 5; <2007: 6 Papers)

 IEEE Trans Med Imag (22 total; 2011: 2; 2010: 3; 2009: 2; 2008: 2; 2007: 7; <2007: 6 Papers)

 J Magn Reson Imaging (21 total; 2012: 1; 2010: 1; 2009: 2; 2008: 1; 2007: 3; <2007: 13 Papers)

 Magnetic Resonance Imaging (13 total; 2012: 1; 2010: 2; 2009: 2; 2008: 1; 2007: 4; <2007: 3 Papers)

 Medical Physics (9 total; 2008: 3; 2007: 5; <2007: 1)

 Annals of Biomedical Engineering (7 total; 2008: 1; 2007: 5 Papers);

 Journal of Magnetic Resonance (5 total; 2007: 2; <2007: 3 Papers);

 Brain Connectivity (3 total; 2011: 3)

 Journal of Neuroscience Methods (3 total: 2011: 3)

 Human Brain Mapping (3 total; 2012: 1; 2008: 1; 2007: 1)

 Cerebral Cortex (3 total: 2012: 2; <2007: 1)

 Autism Research (2 total; 2011; 2008)

 Biological Psychiatry (2 total: 2011; 2010)

 Developmental Neuropsychology (2 total; 2010; 2007)

 Investigative Radiology (2 total: 2007: 1; <2007: 1)

 Journal of Neuroscience (2 total; 2007: 1; <2007: 1)

 Journal of Neuroscience Methods (2 total; 2011; 2010)

 Archives of General Psychiatry (2 total: 2012: 1; 2007: 1)

 NMR in Biomedicine (2 total: 2007: 1; <2007:1)

 Physics in Medicine and Biology (2 Papers)

 Psychiatry Research: Neuroimaging (2 total: 2010; 2008)

 One paper each for:

 Journal of Neuroimaging (2008)

 Neuroscience Letters (2008)

 Progress in Neuro-Psychopharmacology & Biological Psychiatry (2007)

 BMC Psychiatry (2007)

 Journal of Biomechanical Engineering

 CNS Spectrums

 Royal Society Philosophical Transactions in Biology

 American Journal of Psychiatry

 Epilepsia

 *Book Chapter Reviewer*

 Mori S. Diffusion Tensor Imaging. Chapters 9 and 10. (March & April 2006).

*Abstract Reviewer*

 International Society for Magnetic Resonance in Medicine (2005, 2006, 2008, 2009, 2011, 2012, 2013, 2014, 2015, 2017, 2018)

 Organization for Human Brain Mapping (2005, 2006)

 Medical Image Computing and Computer Aided Intervention (2010; 2011)

 *Scientific Program Committee*:

 MR Angiography Club Meeting (1998; Park City, UT)

 MICCAI Computational Diffusion MRI Workshop (2008; 2009; 2010; 2011; 2012)

 AMPC - International Society for Magnetic Resonance in Medicine (2013-2015)

 Educational Course Organizer/Moderator: Diffusion Goes Mad – 2014 ISMRM (Milan).

 Educational Course Organizer/Moderator: Advanced Diffusion Acquisition – 2014 ISMRM (Milan).

 Educational Course Organizer/Moderator: Neuroimaging of Autism – 2014 ISMRM (Milan).

 *Governing Committee* (Secretary-Elect) – Diffusion/Perfusion MR Study Group – International Society for Magnetic Resonance in Medicine (2005-2007).

*Member - Scientific Reviewer for NIH Study Sections*

 NIH Developmental Brain Disorders (DBD) Oct 2008 – June 20012

 Meets 3x Per Year (8-11 proposals per round)

 NIH Study Sections Reviewer;

 NIH Diagnostic Imaging Study Section (DMG-04) Washington, D.C., June 10 ­ 11, 1999.

 NIH P41 Reverse Site Visit Study Section - Washington, D.C., February 21-22 2001.

 NIH Image Guided Interventions (ZRG1 SRB 53R) Washington, D.C., July 22-23, 2003.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) - February 27, 2002.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – July 10, 2002.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – July 18, 2002.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – November 2002.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – March 2003.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – July 18, 2003.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – November 2003.

 NIH ISTART Proposal For NIDA – November 2003.

 NIH Human Brain Project – Washington, D.C., May 26, 2004.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – June 23, 2004.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) Washington, D.C., Nov. 18-19, 2004.

 NIH Developmental Brain Disorders (DBD) – Washington, D.C., March 3-4, 2005.

 NIH Clinical Neurosciences and Disorders (CND) – Washington, D.C., June 6-7, 2005.

 NIH Mental Retardation and Developmental Biology - June 20, 2005.

 NIH Biomedical Imaging and Bioinformatics Special Emphasis (ZRG1) – July 18, 2005.

 NIH Special Emphasis (ZDA1) – Washington, D.C., July 26, 2005.

 NIH Biomedical Imaging and Technology (BMIT) – Washington, D.C., Oct. 6-7, 2005.

 NIH Clinical Neurosciences and Disorders (CND) – October 17, 2005.

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – Nov 14, 2005.

 NIH P41 (SBIB-K 40) Site Visit Study Section – Baltimore, MD, February 22-24 2006.

 NIH Research Partnerships for Improving Functional Outcomes (ZRG1-BDCN-L(50)R) – February 28, 2006. (web video conference pilot)

 NIH Biomedical Imaging and Technology (BMIT) – March 2006 (mail reviewer)

 NIH Clinical Neurosciences and Disorders (CND) – Washington, D.C., March 6-7, 2006.

 NIH Brain Disorders and Clinical Neurosciences (BDCN) Washington, D.C. March 5-6, 2007

 NIH Brain Disorders and Clinical Neurosciences (BDCN-2) – July 25, 2007

 NIH Brain Disorders and Clinical Neurosciences (BDCN-N02) – October 5, 2007

 NIH Developmental Brain Disorders (DBD) – Washington, D.C., February 15-16, 2008

 NIH Developmental Brain Disorders (DBD) – Washington, D.C., June 21-22, 2007

 NIH Developmental Brain Disorders (DBD) – Washington, D.C., September 27-28, 2007

 NIH Developmental Brain Disorders (DBD) – Washington, D.C., Jan 31 – Feb 1, 2008

 NIH Developmental Brain Disorders (DBD) – Los Angeles, CA, June 12-13, 2008

 NIH RC1 ZRG1 BDCN-T(58) Challenge Grants July 20, 21, 2009

 NIH RC1 ZRG1 BDA-A(S2) Challenge Grants September 24,25 2009

 NIH NIMH Research Education (ERB-S04) – March 2, 2010.

 NIH Lung Physiology (CVRS-G03) March 9, 2010.

 NIH Member Conflict CDIN and CNN Members (BDCN-T03) March 15, 2010.

 NIH BST National Centers for Biomedical Computing June 14-15, 2010.

 NIH Member Conflict LIRR & RIBT Members (ZRG1 CVRS G03) November 2-3, 2010.

 NIH Member Conflict (ZRG1 ETTN-A02) July 12, 2011.

 NIH Biostatistics Methods and Research Design (BMRD)September 2012 (Mail Review).

 NIH/NIDA Cutting-Edge Basic Research Awards (CEBRA) November 29, 2012.

 NIH Medical Imaging Study Section (MEDI) San Francisco, CA, February 7-8, 2013

 NIH Medical Imaging (MEDI) – Seattle, WA, June 2013

 NIH Surgical Sciences, Biomedical Imaging and Bioengineering, June 26, 2014.

 NIH NIBIB K-Awards, March 4, 2015

 NIH NSD-B (IGNITE & Create), June 25-26, 2015

 NIH NICHD Training (NST-2) – Washington, D.C., October 26-27, 2015

 NIH NIBIB K-Awards, Dec 8, 2015

 NIH NIMH Lifespan Baby Connectome, March 16, 2016

 NIH ZNS1 SRB-N (R24/P30) April 5, 2016

 NIH ETTN-E Special Emphasis June 20, 2016

 NIH BRP (Bioengineering and Research Partnerships) November 10, 2016

 NIH NIBIB K-Awards, March 9, 2017

 NIH ACE P50 Study Section – Washington, D.C., March 29-30, 2017

 NIH SEP ZRG1 BDCN –B 55 (R01) Study Section, June 28, 2017

 NIH ZRG1 BBBP-J (R01) Study Section, July 14, 2017

*Scientific Reviewer for*

 The Wellcome Trust (United Kingdom) December 2001

 Vanderbilt University Internal Grant Application – January 2003

 Austrian Science Foundation – November 2003

 Cancer Research UK (United Kingdom) – March 2004

 Canterbury Medical Research Foundation (New Zealand) – September 2004

 German-Israeli Foundation for Scientific Research and Development – February 2007

 UW Dana Foundation Internal Competition – September 2007

 Cancer Research UK (United Kingdom) – November 2007

 Engineering and Physical Sciences Research Council (United Kingdom) – August 2008

 Science Foundation for Ireland – November 2008

 Israel Science Foundation – August 2009

 Health Research Board of Ireland – June 2009

 The Wellcome Trust (United Kingdom) - January 2010

 The Netherlands Organisation for Scientific Research – April 2011

 University of Arizona BIO5 Institute – November 2011

 Medical Research Council, United Kingdom – Feb 2012

 Israel Science Foundation – April 2012

 Natural Sciences and Engineering Research Council of Canada – January 2013

 The Wellcome Trust (United Kingdom) - November 2013

 The Wellcome Trust (United Kingdom) - March 2014

 Natural Sciences and Engineering Research Council of Canada – January 2014

 German Research Foundation (DFG) – December 2015

 Natural Sciences and Engineering Research Council of Canada – January 2016

 American University of Beruit – March 2017

 Natural Sciences and Engineering Research Council of Canada – January 2018

***Community***

 Shorewood Hills Youth Soccer Coach (2009-2013)

 Village of Shorewood Hills Recreation Committee (2013-present)