

Center for Biomedical Imaging

Site Visit Report 11 December 2015

The Center for Biomedical Imaging provides the resources to enable basic and clinical scientists to collaborate to discover new insights into normal and disease processes and to apply this knowledge to clinically relevant research.



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Introduction & Background

Biomedical imaging is a frontier science that has great potential to positively impact virtually every aspect of health care. Over the past three decades, the clinical and research applications of biomedical imaging have seen unprecedented growth, and there continues to be high demand for academic institutions to train and mentor young investigators in the field. Responding to this growth and demand, and in order to help integrate the diverse imaging initiatives that exist at MUSC, the Board of Trustees in 2010 established the University Designated Center for Biomedical Imaging (CBI) with the intent to advance imaging research here at MUSC. This decision will enable MUSC to remain competitive with other academic institutions and to establish the infrastructure and environment to reach the next level in this crucial research area.

The CBI is a resource for basic and clinical scientists collaborating to discover new information about normal and disease processes and how to apply this knowledge to clinically relevant research. Central to the mission objectives of the CBI are 1) service to the MUSC imaging research community, 2) training and mentorship of graduate students and future leaders in biomedical imaging, 3) recruitment of outstanding senior and young investigators, 4) discovery of new clinical applications of imaging and their practice in the clinical arena and 5) promotion of basic research in medical imaging and related fields. The CBI's website can be found at: <http://academicdepartments.musc.edu/cbi/>

The CBI central offices are located on the 2nd floor of the Bioengineering Building (BEB) at 68 President Street. The CBI manages six research dedicated advanced imaging devices including a 3T human MRI system, a 7T animal MRI system, an animal PET/CT imaging system, a bioluminescence & fluorescence imaging system and a small animal *in vivo* fluorescence imaging system. CBI research space is divided into two locations: human imaging located at 30 Bee Street and small animal imaging located on the second floor of the BEB. The CBI is open to all investigators in SC, and hence provides a foundation for development of numerous applications that will benefit from the use of biomedical imaging. One highlight of fiscal year 2015 was the initiation of a Ph.D. program in Biomedical Imaging, under the direction of Dr. Truman Brown.

In fiscal year 2015, the CBI provided imaging support and resources for a total of 78 grants, 56 of which were federal grants to MUSC. The CBI also supports MUSC faculty by providing development time to be used for collaborations and the collection of pilot data. In fiscal year 2015, the CBI underwrote approximately \$310K of this development time for MUSC researchers and in fiscal year 2016 we are projected to underwrite approximately \$250K.

Mission Statement:

The mission of the CBI is to provide the leadership and infrastructure in the imaging sciences necessary for basic and clinical scientists to collaborate, discover new ways to study normal and disease processes, develop and apply this knowledge to clinically relevant research, and to translate these advances to the patient community while providing a quality graduate education environment.

Vision Statement:

The vision of the CBI is to be recognized as an integrated and multidisciplinary center for biomedical imaging research with mutually supportive and valued interactions among basic science and clinical departments, to recruit outstanding faculty and educate the future leaders of the field.

Administration

General:

The leadership of the CBI includes: Dr. Joseph A. Helpern, Director, Dr. Truman R. Brown, Scientific Director, Dr. Ann-Marie Broome, Director of Molecular Imaging and Dr. U. Joseph Schoepf, Director of Cardiovascular Imaging. Ms. Haley Godfrey serves as the Administrative Assistant (0.2 FTE) and Mr. Kevin Hildreth as the Fiscal Manager (0.2 FTE).

CBI Internal Advisory Committee:

The CBI's Internal Advisory Committee (IAC) comprises the CBI Directors as well as both early stage and senior researchers from across the University. Many of these individuals are experienced in participating in large research programs as well as in the management of shared facilities. The IAC advises the Director on the administrative operation of the CBI, coordinates resources, and ensures that the research conducted within the CBI is appropriately prioritized to reflect the overall goals of MUSC.

Members of the FY2013 Advisory Committee were:

Dr. Joseph Helpern (Chair)	Dr. Truman Brown	Dr. Ann-Marie Broome
Dr. Mark Eckert	Dr. Joseph Schoepf	Dr. Jane Joseph
Dr. Amanda LaRue	Dr. Colleen Hanlon	

In FY2014, the Advisory Committee was reformulated to include representatives from all Colleges. Committee members were:

Dr. Joseph Helpern (Chair)	College of Medicine
Dr. Truman Brown	College of Medicine
Dr. Ann-Marie Broome	College of Medicine
Dr. Joseph Schoepf	College of Medicine
Dr. Chris Gregory	College of Health Professions
Dr. Zhi Zhong	College of Pharmacy
Dr. Tom Naselaris	College of Graduate Studies
Dr. Berry Anderson	College of Nursing
Dr. Richard Duncan	College of Dental Medicine
Dr. Amanda LaRue	Hollings Cancer Center

In FY2015, the Advisory Committee was replaced by quarterly "town hall meetings" in which all users are able to express their views and opinions.

Scheduling:

Scheduling of time on imaging systems is performed through a web-based system called Calpendo (<https://musccalpendo.com/>), that allows researchers with approved IRB or IACUC protocols to examine and schedule CBI equipment and facilities.

Operations

Staff:

The following are full- and part-time staff employed by CBI.

R. Deardorff, M.S.	(0.50 FTE)	Lab Manager
M. Van Horn, Ph.D.	(0.76 FTE)	Image Analysis & IT
J. Doose, M. Eng.	(1.00 FTE)	Biomedical Engineer
K. Hildreth	(0.20 FTE)	Fiscal Manager
H. Godfrey	(0.20 FTE)	Admin. Assistant
J. Purl	(1.00 FTE)	MRI Technologist (Siemens 3T)
D. Montgomery	(0.10 FTE)	Program Coordinator I (IRB compliance)
A. Moore, M.S.	(0.85 FTE)	Research Specialist (Animal Imaging - other)
X. Nie, MD.	(1.00 FTE)	Research Specialist (Animal Imaging – 7T MRI)

Preclinical (Small Animal) Imaging:

Maestro 2 *In Vivo* Imaging: The Maestro 2 *in vivo* imaging system (Caliper Life Sciences) provides state-of-the-art fluorescence imaging of small animals, including the capability to generate anatomic organ maps and to anatomically target co-localization using DyCE, a Caliper-developed all-optical imaging platform.

Xenogen IVIS 200 Bioluminescence Preclinical Imaging System: The IVIS 200 can image up to 5 animals at a time and can provide limited 3D depth information.

Siemens Micro-CT/PET: The Siemens Micro-CT/PET is a dual-modality system to acquire both micro-CT and micro-PET images. Image data can be co-registered so that PET image data can be anatomically localized with the micro-CT imaging data.

Bruker 7T MRI: The BioSpec 70/30 MRI scanner is a multipurpose system for high-resolution MR spectroscopy and imaging operating at 7 Tesla. The 7T MRI is ideal for 2D and/or 3D high-resolution anatomical imaging as well as diffusion and diffusion tensor, flow, cardiac, dynamic contrast, functional MRI and chemical shift imaging.

Surgery Room: The Surgery Room is booked concurrently with the 7T MRI and is available for pre-imaging preparation.

Human imaging Resources:

Siemens 3T TIM Trio MRI Scanner: The Siemens 3T MRI is equipped with integrated fMRI paradigm presentation equipment and offers visual, auditory and olfactory stimulus delivery with tactile and verbal feedback. The scanner and fMRI set-up have been designed to integrate seamlessly with other research MR scanners in South Carolina to allow for multi-center studies. The scanner operates with a 100% mandate for research use and is covered by a master research agreement with Siemens Medical. This scanner is now 8 years old and will need to be replaced/upgraded in the near future.

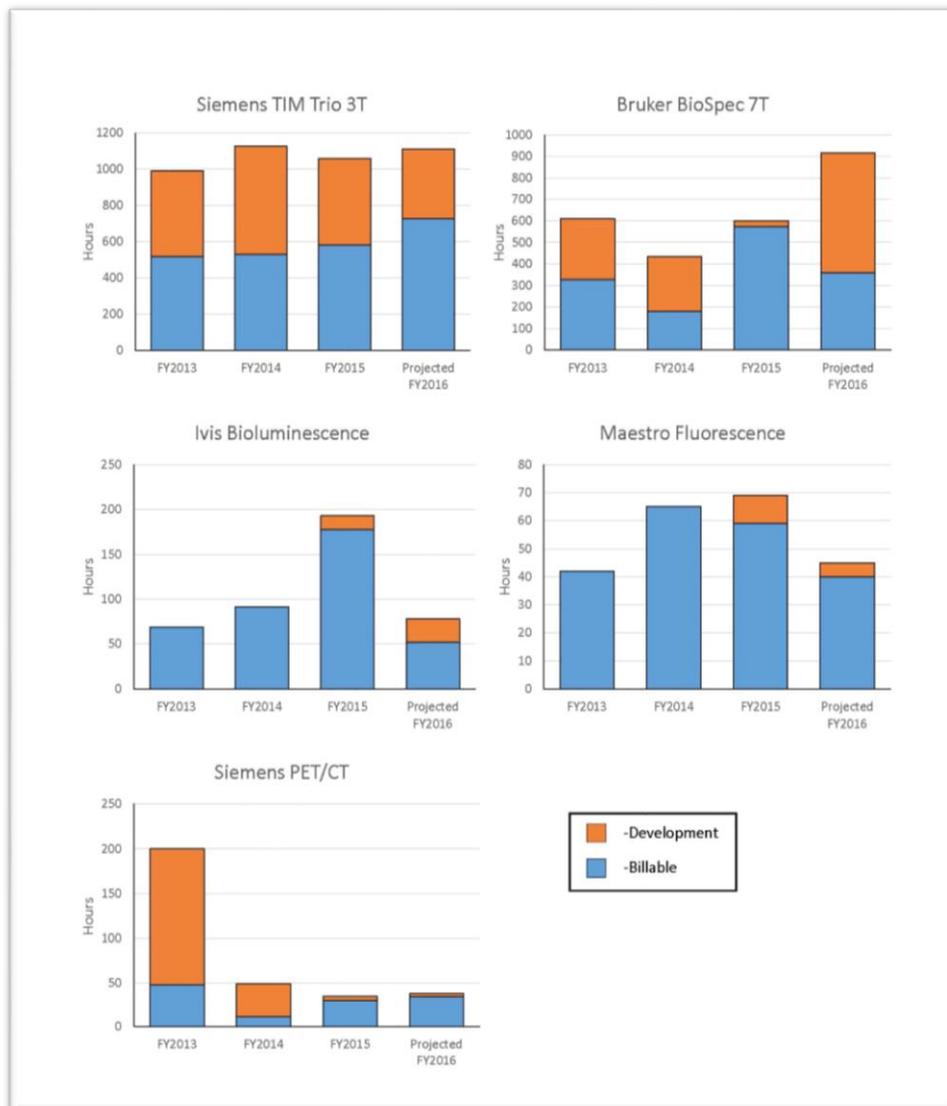
Mock Scanner: The Mock Scanner is a full-size replica of the 3T MRI made from plywood and other building materials to look and sound like the real MRI. The Mock Scanner is available to be used for 'trial runs' with patients who are wary of undergoing the full scanning procedure and can be also booked for use as a training or demonstration tool.

Equipment Usage:

Shown in the figure below is the hourly usage by system for fiscal years 2013 through 2016 (projected). The Siemens 3T MRI remains the most highly utilized resource, followed by the Bruker 7T MRI. [Note: FY16 projected 7T usage is down compared to FY2015 mainly because the 7T MRI technologist was unable to work for approximately 4 months due to visa issues.] Other preclinical imaging equipment usage remains limited.

Billable time for the Siemens 3T MRI has been steadily increasing. To alleviate the pressure this has placed on available development time, consideration is being made to expand the CBI's hours of operation into nights and weekends.

CBI Faculty are currently provided two hours of development time per week to be used for the collection of pilot data and for collaboration with other researchers. The CBI also assists Junior Faculty members across all Colleges at MUSC in developing imaging methodology in their research. Junior Faculty are faculty at the Assistant Professor rank who are not currently, and have never been, the Principle Investigator (PI) of an NIH R01, R21, Program Project or Center (P41) grant proposal. To help defray the costs of scanning, the CBI offers matching development time to Junior Faculty members.



Faculty

Faculty of the CBI come from all Colleges at MUSC who are using and developing imaging in their research. There are currently 27 faculty members representing various Departments including Radiology and Radiological Sciences, Neurosciences, Health Professions, Otolaryngology, Psychiatry and Behavioral Sciences, Pathology and Laboratory Medicine and Microbiology and Immunology. Collaboration among faculty in the development of new and cross-disciplinary methodologies is strongly encouraged, and faculty members are expected to take part in Study Group meetings, contribute to teaching CBI courses and generally support the overall well-being of the CBI. Each faculty member must give a lecture to the CBI every other year on their research.

Andreana Benitez, Ph.D.	Assistant Professor	Radiology
Leonardo Bonilha, M.D., Ph.D.	Assistant Professor	Neurosciences
Ann-Marie Broome, Ph.D.	Associate Professor	Radiology
Truman R. Brown, Ph.D.	Professor	Radiology
Dean Connor, Jr., Ph.D.	Assistant Professor	Radiology
Mark Eckert, Ph.D.	Associate Professor	Otolaryngology
Maria Falangola, M.D., Ph.D.	Assistant Professor	Radiology
Mark George, M.D.	Distinguished University Professor	Psychiatry
Colleen Hanlon, Ph.D.	Assistant Professor	Psychiatry
Joseph A. Helpern, Ph.D.	Professor	Radiology
Jens Jensen, Ph.D.	Professor	Radiology
Jane Joseph, Ph.D.	Professor	Neurosciences
Deepak Kumar, Ph.D.	Assistant Professor	Health Professions
Amanda LaRue, Ph.D.	Associate Professor	Pathology
Thomas Naselaris, Ph.D.	Professor	Neurosciences
James Prisciandaro, Ph.D.	Assistant Professor	Psychiatry
Donna Roberts, M.D.	Assistant Professor	Radiology
U. Joseph Schoepf, M.D.	Professor	Radiology
Vittoria Spampinato, M.D.	Associate Professor	Radiology
Sameer Tipnis, Ph.D.	Assistant Professor	Radiology
Mark Van Horn, Ph.D.	Assistant Professor	Radiology
Xue-Zhong Yu, M.D., M.S.	Professor	Microbiology
DeAnna Adkins, Ph.D.	Assistant Professor	Neurosciences
Jeffrey Borckardt, Ph.D.	Associate Professor	Psychiatry
Brett Froeliger, Ph.D.	Assistant Professor	Neurosciences
Xingbao Li, M.D.	Assistant Professor	Psychiatry
Andy Shih, Ph.D.	Associate Professor	Neurosciences

Education

Biomedical Imaging Ph.D. Program

In 2014, the CBI received full approval for the Ph.D. in Biomedical Imaging curriculum and currently has 3 graduate students enrolled in their first year. The mission of the Biomedical Imaging Ph.D. program is to train students in a basic core of knowledge and skills that will prepare them to become leaders in the application of biomedical imaging technology to problems in basic and clinical research. The program provides a strong foundation in the fundamentals of image acquisition technologies and data analysis methods, while exposing students to the application of specific imaging modalities through a series of individual electives in their chosen area of interest.

The Biomedical Imaging PhD program is designed to provide students with the education and training needed to pursue careers applying cutting edge developments in biomedical imaging to solving scientific and healthcare problems within academia or industry.

MUSC through its Center for Biomedical Imaging offers a comprehensive and integrated graduate training program combining biomedical sciences through the College of Graduate Studies core curriculum, with a strong emphasis on imaging science and its biomedical applications leading to a Ph.D. in Biomedical Imaging. The core curriculum is designed to provide a strong foundation in the fundamentals of imaging acquisition technologies, data analysis methods, and research design, all within the context of applying these techniques in clinical and basic research projects in academic and industrial medical and research settings. Through this program, students are able to gain hands-on experience with advanced imaging systems dedicated to both preclinical (bioluminescence, fluorescence, Micro-CT/PET, 7T MRI) and human (3T MRI) research. The students have opportunities to rotate as research assistants in laboratories of faculty who actively conduct research within many departments throughout the University, such as Neurosciences, Psychiatry, Radiology, Rehabilitation, Cardiology, Pediatrics, Surgery, and Oncology. The students are required to demonstrate scientific proficiency in the area of biomedical sciences, with an emphasis on biomedical imaging through the completion of a qualifying examination and an individual doctoral dissertation.

Upon the completion of this degree, graduates will have the foundation on which they can build careers as independent investigators or key collaborators who possess a unique combination of skills: a fund of technical knowledge of imaging sciences and its most critical innovations as well as a distinct perspective that is focused on applying these advances in biomedical imaging to a breadth of preclinical and human research areas, from basic physiological processes to phenotypically complex diseases.

Our program begins with two years of didactic coursework during which students master the fundamental physical and biological principles behind biomedical imaging. Through laboratory rotations students identify a faculty mentor and a research topic for their thesis. The facilities at MUSC are quite extensive (bioluminescence, fluorescence, Micro-CT/PET, animal 7T MRI and human 3T MRI), and faculty research interests are broad (Neurosciences, Psychiatry, Radiology, Rehabilitation, Cardiology, Pediatrics, Surgery, and Oncology), allowing students to select a mentor and topic of research closely suited to their interests. More information on this program can be found at: <http://academicdepartments.musc.edu/biomi/>

Study Groups

The CBI has organized five monthly Study Groups led by MUSC faculty covering in depth discussions of ongoing research, analysis and current issues in the field of imaging. These Study Groups have led to collaborations between MUSC faculty resulting in several successful grant applications. The current study groups are:

Addiction - Leader: Joseph Schacht, Ph.D.

The Addiction Study Group is a forum for discussion of neuroimaging of addictive disorders. Topics include 1) discussion of the clinical presentation of disorders including alcohol, nicotine, cocaine, heroin, and prescription opioid abuse and dependence; 2) application of a broad spectrum of neuroimaging modalities, including functional and structural MRI, diffusion tensor and kurtosis imaging, and MRS, and methods, including network connectivity analysis; and 3) opportunities for collaboration among investigators for grant submissions. Meetings have varied formats, including journal club discussion, data presentation, grant ideas forums, and practice job or conference talks. Both clinical and basic science investigators currently involved with addiction neuroimaging projects or hoping to pursue such projects are encouraged to attend.

Brain - Anya Benitez, Ph.D.

The Brain Study Group is a forum for basic and clinical scientists to meet and discuss common interests in adolescent and adult brain imaging research. Recent areas of interest have included traumatic brain injury (TBI), pediatric and adolescent brain development, cerebral palsy, Alzheimer's Disease (AD), aging, stroke, epilepsy, Autism and attention-deficit hyperactivity disorder (ADHD). Other areas of research interest related to brain imaging are welcome. Topics for discussion have included informal tutorials of imaging technology, descriptions of the clinical challenges in pediatric, adolescent, and adult brain diseases that are due to either a lack of knowledge or the need for technical development and the identification of individuals with common research interests and strategies for possible grant development. Although this group has diverse interests in brain research, the forum has resulted in the identification of areas of overlap and common interests and has fostered collaboration among a growing number of brain imaging researchers.

Brain Connectivity - Jane E. Joseph, Ph.D.

The Brain Connectivity Study Group provides a forum to discuss network- and connectivity-based analyses of functional and anatomical MRI data as well as EEG / electrophysiological data. Topics may include analysis of functional connectivity using graph-theory, seed-based connectivity or principal / independent components analyses, effective connectivity using structural equation modeling, anatomical connectivity using tractography and graph-theory and pattern classification approaches. The goal is to discuss analysis methods and strategies for investigating complex functional and anatomical brain networks. Meetings consist of discussion of journal articles, presentation of data for feedback, discussion of algorithms or analysis strategies. Investigators who conduct such analyses, or wish to conduct such analyses, are welcome to attend.

Cancer - Amy-Lee Bredlau, M.D.

The Cancer Study Group consists of imaging scientists and clinicians interested in the potential application of advanced imaging techniques to improve the diagnosis and treatment of cancer. The focus is on advanced techniques in Magnetic Resonance Imaging (MRI), PET, and fluorescence imaging. Current research interests include the potential of Diffusional Kurtosis Imaging (DKI) and perfusion in MRI for predicting response of glioblastoma to anti-angiogenic therapy, the possible correlation of DKI with the genetic profile of glioblastoma and the sensitivity and specificity of DKI for the diagnosis of radiation injury in tissue versus tumor progression, as well as a variety of approaches to assess delivery and response of brain tumors to treatment

regimens. The Group meets monthly and is currently interested in expanding the type of cancers studied. The Group encourages attendance to its monthly meetings as well as presentation of ideas and concepts for possible future research.

Cardiovascular - U. Joseph Schoepf, M.D.

The Cardiovascular Study Group (CISG) is a forum for clinical and basic scientists to meet and discuss common interests in cardiovascular imaging research. One goal is to catalyze interdisciplinary collaboration between faculty members to strengthen and enhance the existing cardiovascular research at MUSC. Another goal is to discuss imaging modalities and their application, analysis methods and strategies for complex cardiac investigations. Meetings consist of presentation of data for feedback, specific aim (grant) discussions, discussion of algorithms or analysis strategies and discussion of journal articles. All Investigators who conduct cardiovascular research, or wish to start a new cardiovascular project potentially involving imaging, are welcome to attend.

User Group Meeting (Nuts & Bolts)

The CBI Nuts and Bolts User Group meets twice a month and provides a forum for in depth discussions by researchers about imaging, statistical methods, data analysis techniques and administrative issues. The first portion of the meeting is dedicated to discussion of CBI equipment and administrative issues, and the remainder of the meeting typically consists of a presentation of a discussion topic chosen by the group. Examples of topics are listed below presented by MUSC staff, students, and faculty during Fiscal Year 2105.

Date	Presenter	Title
12/16/2014	Rachael Deardorff, MS	FreeSurfer Segmentation
1/13/2015	Davy Vanderweyen, PhD Student	Multi-Voxel Pattern Analysis
1/27/2015	Kelly Harris, PhD	Automated Fiber Quantification
2/10/2015	PhD Students Mckinnon & Glenn	Tractography
2/24/2015	Thomas Naselaris, PhD	GLM Denoise
3/10/2015	Thomas Naselaris, PhD	Representational Similarity Analysis
3/24/2015	Kenny Vudent, Post Doctoral Fellow	Rep Similarity Analysis Contd
4/14/2015	Calvin Shaw, Post Doctoral Fellow	Denoise and DKI
4/28/2015	Zahraa Sabra, PhD Student	ECoG in the Hippocampus

Lectures

The CBI regularly hosts lectures given by both visiting speakers and CBI faculty. Past lectures have included the following:

Date	Presenter	Title	University Affiliation
3/24/11	Ron Meyer, PhD	BOLD mechanisms and application in skeletal muscle	Michigan State University
6/10/11	Ed Hui, PhD	Mapping Microstructural Alterations in Ischemic Tissues using Diffusional Kurtosis Imaging	Univ. of Texas Health Science Center
7/7/11	Ann Marie Broome, PhD	Molecular Imaging Gets Personal: Targeting the Cancer Signature	Case Western Reserve University
8/11/11	Lei Jiang, PhD	Development and Application of Advanced MRI and Connectivity Modeling Techniques	Georgia Tech & Emory University
9/16/11	Juri G. Gelovani, PhD	Advances in molecular-genetic, epigenetic, and cellular imaging in vivo	Anderson Cancer Center
10/28/11	Chris Richards, PhD	Optical and Spatial Isolation of Membrane Receptors for Single Event Imaging	California Institute of Technology
11/17/11	Els Fieremans, PhD	Assessment of white matter microstructural integrity with diffusional kurtosis imaging	NYU
1/30/12	Jeff Binder, MD	fMRI in Anterior Temporal Epilepsy Surgery: The FATES Study	Medical College of Wisconsin
3/12/12	Erik Shapiro, PhD	Molecular and Cellular MRI of Cancer: A theranostic vision	Yale University
10/12/12	Denise Benoit, PhD	Engineering nanoparticle-protein associations for protein crystal nucleation and nanoparticle arrangement	Rice University
10/22/12	Michael Schultz, PhD	Radiochemistry and Applications for PET Radionuclide Ga-68 - An Increasing Role for Molecular Imaging	Univ. of Iowa Hospitals and Clinics
12/3/12	Vitria Adisetiyo, PhD	Quantitative Characterization of Brain Microstructure and Iron Homeostasis in Attention-Deficit/Hyperactivity Disorder from Childhood through Adolescence	NYU

12/18/12	Yun Zhu, PhD	Dual inhibition on src and MAPK potentially sensitize chemoresistant ovarian cancer cells	Georgia State
6/7/13	Dominique Duncan, PhD	Network analysis of Intracranial EEG	Yale University
6/17/13	Ziying Yin, PhD	MR Imaging and Elastography: Applications to Cartilage Tissue Engineering and Regeneration	Univ. of Illinois
9/17/13	Joseph Schoepf, MD	Imaging the Heart	MUSC
10/15/13	Deqiang Qiu, PhD	Quantitative Susceptibility Mapping and Human Brain Imaging using Ultrasmall Superparamagnetic Iron Oxide (USPIO)	Emory Univ.
10/21/11	Rod Pettigrew, MD, PhD	Convergence Science and the Public' Health	NIBIB
10/22/11	Peter Van Zihl, PhD	MRI in the 21 st Century: Functional, Physiological and Molecular Imaging of the Human Brain	Kennedy Krieger Institute
10/22/11	Ed Wu, PhD	Preclinical MRI Research for Basic Life Sciences: Past, Present, and Future	University of Hong Kong
6/9/12	David Arrington, MD, PhD	Protective techniques in CT-guided Percutaneous Hepatic Ablations	MUSC
6/9/12	Nicole Horst, MD	Preliminary Evaluation of High Pitch, Dual Source Computed Tomography Enterography for Radiation Exposure Reduction	MUSC
6/9/12	Ed Hui, PhD	Assessment of white matter microstructural integrity with diffusional kurtosis imaging	MUSC
6/9/12	Dan Boulter, MD	Prevalance of Missed Infarcts and Other Inaccurate Findings at CT Perfusion for Acute Stroke Patients	MUSC
6/9/12	Gayatri Joshi, MD	Cancer Risks accosiated with Chest CT	MUSC
6/9/12	Lei Jiang, PhD	Real Time Motion Tracking and Correction Using Active Markers for Brain MRI	MUSC
6/9/12	Mark Ahlman, MD	The Utility of Dual-Point FDG PET for Imaging Neoplasms of the Brain	MUSC

6/9/12	Andreana Benitez, PhD	Cognitive processing speed and Diffusional Kurtosis Imaging in normal aging, Mild Cognitive Impairment and Alzheimer's Disease	MUSC
6/9/12	Jim Thrall, MD	Radiology in the Age of Precision Medicine	Massachusetts General
1/16/13	Mark George, MD	The Exciting History of Brain Imaging Research at MUSC: The Risque Untold Story	MUSC
1/16/13	Maurice Weaver	Applications of micro PET/CT Imaging in Medical Research	Siemens
1/16/13	Vivek Shinde Patil, PhD	In Vivo Imaging of Disease and Therapy	Perkin Elmer
9/17/13	Joseph Schoepf, MD	Imaging the Heart	MUSC
10/15/13	Deqiang Qiu, PhD	Quantitative Susceptibility Mapping and Human Brain Imaging using Ultrasmall Superparamagnetic Iron Oxide	Emory University
11/5/13	Amanda LaRue, PhD	A Role for Hematopoietic Stem Cells in Bone Repair	MUSC
11/19/13	Marty Pagel, PhD	Picturing the Future of Cancer Health Care with CEST MRI	University of Arizona
12/3/13	Satish Nadig, MD, PhD	Targeted Drug Delivery in Solid Organ Transplantation: An Emerging Concept	MUSC
12/17/13	Ron Kikinis, MD	Medical Image Computing in the Procedure Room	Harvard Medical School
1/7/14	Carol De Cecco, MD	Dual Energy CT: Cardiovascular and Oncologic Applications	MUSC
1/16/14	Fadel Zeidan, PhD	Brief Mindfulness-Based Mental Training Reduces Pain: Insight from the Brain	Wake Forest School of Medicine
1/21/14	Paul Sajda, PhD	Simultaneous EEG-fMRI: Why Bother?	Columbia University
1/31/14	Brent Munsell, PhD	Using Deep Learning to Predict Autism in Infants Prior to 24 Months of Age	College of Charleston
1/31/14	Joseph Helpert, PhD	From Zeugmatography to MRI to the Nobel Prize and Beyond	MUSC
2/4/14	Peisheng Xu, PhD	Stimuli-Responsive Polymer Based Nanomaterials for Targeted Drug Delivery	University of South Carolina
2/18/14	Jeffrey J. Borckardt, PhD	Pain, the Brain and Emotional Regulation	MUSC
3/4/14	Tong Ye, PhD	Optical Molecular Imaging: From Laser Spectroscopy to Microscopy	Clemson University
3/12/14	Lotta Granholm, PhD	Down Syndrome and Alzheimer's Disease: Towards a Better Understanding	MUSC
3/12/14	Ralph A. Nixon, PhD, MD	The Lysosomal Network: The Achilles' Heel of Neurons in Neurodegenerative Disease Pathogenesis	NYU Langone Medical Center

3/18/14	DeAnna L. Adkins, PhD	Diffusion MRI Biomarker of Stroke Related Brain Plasticity	MUSC
3/28/14	Fadel Zeidan, PhD	Behavioral and Neural mechanisms Supporting Mindfulness Meditation-Related Pain Relief: Implications for Clinical Pain	Wake Forest School of Medicine
4/1/14	Jennifer Wu, PhD	Innate Immunity: The Essential Flavor of Tumor Immunity	MUSC
4/15/14	Frank Alexis, PhD	Biodegradable and Biocompatible Imaging Agents	Clemson University
4/22/14	Aikaterini Kotrotsou	Ex-vivo MR volumetry in age-related neurodegenerative pathologies	Illinois Institute of Technology
5/6/14	Anna-Liisa Nieminen, PhD	Dissecting the Death Pathways during Oxidative Damage with Confocal /Multiphoton Microscopy	MUSC
8/5/14	Andy Shih, PhD	Small strokes, big consequences: In vivo two-photon imaging of small vessel pathology in the mouse brain	MUSC
8/19/14	Carlo DeCecco, MD	MR Imaging in Rectal Tumors: Actual Strategies and New Imaging Techniques	MUSC
9/2/14	Gilberto Prudencio	Preclinical Image Guided Micro Irradiation	Xstrahl Sales Rep
9/16/14	Xingbao Li, PhD	Interleaved TMS/Pharmacological fMRI: A New Neuroscience Tool	MUSC
12/16/14	Ashish Raj, PhD	Graph Models of Brain Structure, Function and Disease	Cornell
1/15/15	Joseph Piven, MD	The Infant Brain Imaging Study (IBIS): Insights into the Early Development of Autism	University of North Carolina
2/26/15	Susanne Van Veluw, PhD	Cerebral Microinfarcts: The Invisible Lesions	Univ. Medical Center Utrecht
5/19/15	Deanna Adkins, PhD	Changes in Diffusion MRI following Experimental Stroke and Rehabilitation Training	MUSC
6/16/15	William Hill, PhD	Bad to the Bone: Age-Related Changes in Mesenchymal Stem Cell miRNAs and Their effect on the CXCL12 (SDF-1) Axis and Osteogenesis	Georgia Regents University
9/15/15	Thomas Naselaris, PhD	Using Mental Imagery to Probe Feedback in the Human Visual System	MUSC
11/2/15	Dale Mugler, PhD	Digital Hermite Functions for Medical Signal and Image Analysis	University of Akron (Ret)
11/17/15	Brian Wandell, PhD	New Methods for measuring activity, connections, and tissue properties in the living human brain	Stanford University
12/01/15	Jeff Barnes, MS	MassArray Technology from Agena Bioscience: A Versatile and Scalable Targeted Genomics Platform	Agena

Appendix I

Budgets

FY15 Actual

Budget Category	Admin	3T	7T	PET-CT	IVIS	Maestro	Totals	% of Category Total
	44750	49751	49752	49753	49754	49755		
Revenue								
Scan Revenue	\$0	\$316,650	\$86,500	\$1,550	\$16,550	\$5,250	\$426,500	50.19%
Provost Funding	\$16,103	\$115,840	\$30,910	\$8,923	\$7,170	\$7,170	\$185,000	21.77%
Dean's Office Funding	\$20,738	\$149,179	\$39,806	\$11,491	\$9,234	\$9,234	\$238,244	28.04%
Revenue Total	\$36,841	\$581,669	\$157,216	\$21,964	\$32,954	\$21,654	\$849,744	100.00%
Expenses								
Payroll								
Broome								
Brown								
Helpern								
Roberts								
Van Horn								
Doose								
Purl								
Nelson								
Hildreth								
Godfrey								
Moore								
Nie								
Total Payroll (salary + fringe)	\$56,956	\$276,259	\$95,626	\$14,512	\$31,720	\$31,721	\$506,792	100.00%
Direct Costs								
Service Contracts		\$160,471	\$36,400	\$24,500			\$221,371	84.06%
Study Participant Fees		\$780					\$780	0.30%
Shipping		\$368					\$368	0.14%
Xerox Service and Maintenance Agreement	\$569	\$3,922	\$1,075	\$316	\$253	\$253	\$6,325	2.40%
Calpendo Licenses	\$491	\$3,381	\$927	\$273	\$218	\$218	\$5,454	2.07%
Med/Sci/Lab Supplies	\$6,494	\$11,512	\$3,157	\$928	\$743	\$743	\$18,568	7.05%
Animal Per Diem			\$1,074				\$1,074	0.41%
PowerEdge M620 Blade Server		\$7,846					\$7,846	2.98%
Travel	\$399		\$1,156				\$1,555	0.59%
Total Direct Costs	\$7,953	\$188,280	\$43,789	\$26,017	\$1,214	\$1,214	\$263,341	100.00%
Indirect Costs								
30 Bee Street Lease		\$29,354					\$29,354	36.87%
Utilities		\$11,260					\$11,260	14.14%
Commercial Insurance		\$272					\$272	0.34%
General Repairs		\$3,391	\$1,636				\$5,027	6.31%
Environmental Sanitation (Steritech)		\$681					\$681	0.86%
Telephone (Centrex)	\$9,057	\$3,600	\$925	\$455			\$14,038	17.63%
Building Maintenance (CBI/CAIR)		\$12,992					\$12,992	16.32%
Hazard & Flood Insurance		\$5,986					\$5,986	7.52%
Total Indirect Costs	\$9,057	\$67,537	\$2,561	\$455	\$0	\$0	\$79,611	100.00%
Total Expenses	\$73,966	\$532,076	\$141,976	\$40,984	\$32,933	\$32,934	\$849,744	
% of Total Expenses	9%	63%	17%	5%	4%	4%	100%	
Total Revenue less Total Expenses	(\$37,125)	\$49,593	\$15,240	(\$19,021)	\$20	(\$11,280)	\$0	

FY16 Budgeted

Budget Category	Admin	3T	7T	PET-CT	IVIS	Maestro	Totals	% of Category Total
	44750	49751	49752	49753	49754	49755		
Revenue								
Scan Revenue	\$0	\$341,982	\$93,420	\$1,674	\$17,874	\$5,670	\$460,620	54.65%
Provost Funding	\$14,109	\$116,829	\$33,318	\$8,285	\$5,970	\$5,970	\$185,000	21.95%
Dean's Office Funding	\$15,043	\$124,563	\$35,524	\$8,833	\$6,365	\$6,365	\$197,246	23.40%
Revenue Total	\$29,151	\$583,374	\$162,262	\$18,792	\$30,209	\$18,005	\$842,866	100.00%
Expenses								
Payroll								
Broome								
Brown								
Helpern								
Roberts								
Van Horn								
Doose								
Purl								
Montgomery								
Hildreth								
Godfrey								
Moore								
Nie								
Total Payroll (salary + fringe)	\$60,529	\$274,329	\$103,423	\$25,797	\$25,797	\$25,797	\$515,671	100.00%
Direct Costs								
Service Contracts		\$160,471	\$36,400	\$10,000			\$206,871	85.23%
Study Participant Fees		\$842					\$842	0.35%
Shipping		\$397					\$397	0.16%
Xerox Service and Maintenance Agreement	\$498	\$4,426	\$1,175	\$292	\$210	\$210	\$6,813	2.81%
Calpendo Licenses	\$429	\$3,817	\$1,013	\$252	\$181	\$181	\$5,874	2.42%
Med/Sci/Lab Supplies	\$932	\$8,287	\$2,200	\$547	\$394	\$394	\$12,754	5.25%
Animal Per Diem			\$1,160				\$1,160	0.48%
Office Supplies	\$462	\$4,108	\$1,090	\$271	\$195	\$195	\$6,339	2.61%
Travel	\$431		\$1,248				\$1,679	0.69%
Total Direct Costs	\$2,753	\$182,348	\$44,286	\$11,363	\$981	\$981	\$242,729	100.00%
Indirect Costs								
30 Bee Street Lease		\$29,354					\$31,703	37.53%
Utilities		\$12,161					\$12,161	14.40%
Commercial Insurance		\$293					\$293	0.35%
General Repairs		\$3,692	\$1,737				\$5,429	6.43%
Environmental Sanitation (Steritech)		\$736					\$736	0.87%
Telephone (Centrex)	\$997	\$8,867	\$2,353	\$586	\$421	\$421	\$13,646	
Building Maintenance (CBI/CAIR)		\$14,032					\$14,032	16.61%
Hazard & Flood Insurance		\$6,465					\$6,465	7.65%
Total Indirect Costs	\$997	\$75,600	\$4,090	\$586	\$421	\$421	\$84,465	83.84%
Total Expenses	\$64,279	\$532,277	\$151,800	\$37,745	\$27,199	\$27,199	\$842,866	
% of Total Expenses	8%	63%	18%	4%	3%	3%	100%	
Total Revenue less Total Expenses	(\$35,128)	\$51,097	\$10,463	(\$18,954)	\$3,010	(\$9,194)	\$0	

Appendix II

Grants Supported by CBI for FY2015

Grants Supported by CBI Between July 1st, 2014 and June 30th, 2015

PRINCIPAL INVESTIGATOR	DEPARTMENT	GRANT TITLE	FUNDING SOURCE
1 Ablonczy, Zsolt	Ophthalmology	The Mechanism of the Outer Blood-Retina Barrier Breakdown	NIH/NEI
2 Ablonczy, Zsolt	Ophthalmology	Bisretinol Levels in Human and Animal Tissue	Allergan, Inc.
3 Anton, Raymond	Psychiatry	Genetic and Brain Mechanisms of Naltrexone's Treatment Efficacy for Alcoholism	NIH/NIAAA
4 Anton, Raymond	Psychiatry	RC4 Impulsivity and Drinking/Craving: Effects of a Dopamine Stabilizer Medication	NIH/NIAAA
5 Anton, Raymond	Psychiatry	Gabapentin for Relapse Prevention: ALC, Withdrawal-Brain Gaba/Glutamate Effects	NIH/NIAAA
6 Anton, Raymond	Psychiatry	Career Development and Mentoring in Clinical/Translational Alcohol Research	NIH/NIAAA
7 Aston-Jones, Gary	Neurosciences	Role of Locus Coeruleus in Response Inhibition	SC Research Center
8 Benitez, Andreana	Radiology	Brain white matter compromise in cognitive aging	NIH/NCATS SCTR
9 Benitez, Andreana	Radiology	White Matter Tract Integrity Biomarkers of Neurodegeneration in Aging and MCI	NIH/NIA
10 Bowden, Mark	Health Sciences	COBRE	NIH/NIGMS
11 Brady, Kathleen	Psychiatry	CTSA Grant - KL2	NIH/NCATS
12 Brady, Kathleen	Psychiatry	Specialized Centers of Research (SCOR) on Sex Differences	NIH/NIDA
13 Brady, Kathleen	Psychiatry	SCOR- Oxytocin in Cocaine Dependence	NIH/NIDA
14 Bonilha, Leonardo	Neurology	Presurgical Applications of fMRI in Epilepsy	Medical College of Wisconsin
15 Brown, Truman	Radiology	NeuroImaging Core	NIH/NIGMS
16 Broome, Ann-Marie	Radiology	Dual-Receptor Targeted Nanoparticles for Photodynamic therapy of Brain Cancer	NIH/NIBIB
17 Broome, Ann-Marie	Radiology	Liposomal Therapy for Diffuse Intrinsic Pontine Glioma	NIH/CTSA
18 Broome, Ann-Marie	Radiology	Targeting Cancer Protein Profiles with Split-Enzyme Reporter Fragments to Achieve Chemical Resolution for Molecular Imaging	Department of Defense (DOD)
19 Broome, Ann-Marie	Radiology	Sensitizer Delivery for Focused Hyperthermia Cancer Treatment	NIH/NCI
20 Broome, Ann-Marie	Radiology	MUSC Cancer Center Support Grant	NIH/NCI
21 Broome, Ann-Marie	Radiology	Bioengineering Center of Regeneration and Formation of Tissues (SC BioCRAFT)	NIH/NIGMS
22 Broome, Ann-Marie	Radiology	Regulatory Role of HDAC in Post-MI Ventricular Remodeling	US Department of Veterans Affairs
23 Broome, Ann-Marie	Radiology	Microenvironment Modifying Drug Delivery nanocarriers for the Therapy of Emphysema	NIH/NCATS
24 Broome, Ann-Marie	Radiology	Combinatorial Therapies for Neurofibroma and MPNST Treatment	Department of Defense (DOD)
25 Brown, Truman	Radiology	EEG/fMRI Controlled TMS Real-Time Neural Feedback in Anti-Depressive Treatment	NIH/NIMH
26 Cheung, Hiu	Pathology	Functional Genomic Approaches to identify ovarian cancer genes	Ovarian Cancer Research Fund
27 Chou, James	College of Pharmacy	Novel Lysine Deacetylase 6 Hsp Domain Inhibitors Against AML	NCI/NIH
28 Coker-Bolt, Patricia	Health Sciences	Specific Test of Early Infant Motor Performance Related with MR Imaging in Premature Newborns	MUSC Discovery Grant, SCTR
29 Coker-Bolt, Patricia	Health Sciences	MR Imaging in Preterm Infants with Gender Differences in Related Motor Skills	MUSC Specialized Center of Research (SCOR)
30 Cortese, Bernadette	Psychiatry	Trauma-Related Olfactory Cues in Post Traumatic Stress Disorder	NIH/NIMH
31 Eckerl, Mark	Otolaryngology	NeuroImaging of Age-Related Changes in Speech Recognition	NIH/NIDCD

32	Feng, Wayne	Neurology	Optimizing Transcranial Direct Current Stimulation Current and Electrode Montage	NIH/NIGMS
33	Froeliger, Brett	Neurosciences	NeuroImaging of Nicotine Dependence, Depression and Emotion Regulation	NIH/NIDA
34	George, Mark	Psychiatry	Trans Cranial Direct Current Stimulation	University of South Carolina
35	Gregory, Chris	Health Sciences	Treating Depression and Enhancing Locomotor Recovery Post-Stroke	NIH/NIGMS
36	Gregory, Chris	Health Sciences	Skeletal Muscle Plasticity as an Indicator of Functional Performance Post-Stroke	VA Merit Award - VA Rehab R&D
37	Hanlon, Colleen	Psychiatry	Cortical Inhibition and Corpus Callosum Integrity in Cocaine Users	NIH/NIDA
38	Hanlon, Colleen	Psychiatry	Investigating the Neurobiologic Basis for Loss of Cortical Laterality in Chronic	NIH/NIGMS
39	Hanlon, Colleen	Psychiatry	An fMRI for Veterans	MAPS Public Benefit Corp
40	Hanlon, Colleen	Psychiatry	Fronto-Striatal Connectivity in Tourette Syndrom Patients	Tourette Syndrom Association
41	Hanlon, Colleen	Psychiatry	Longitudinal Study of Functional Connectivity Among Cocaine Users in Treatment	NIH/NIDA
42	Helpern, Joseph	Radiology	Quantitative MRI of Iron Homeostatis, Atropy and Tissue Structure in AD and ADHD Brain	Litwin Foundation
43	Hinson, Vanessa	Neurology	Parkinson's Disease Neuroprotection Clinical Trial Center	NIH/NINDs
44	Hinson, Vanessa	Neurology	Atomoxetine Treatment for Cognitive Impairment in parkinson's Disease	The Michael J. Fox Foundation
45	Jensen, Jens	Radiology	Prediction of Motor Outcome after Acute Stroke Using Diffusional Kurtosis Imaging	NIH/NINDs
46	Jenkins, Dorothea	Pediatrics	Effects of NAC and VitD on GSH in Basal Ganglia Auantified by MRS Following Hypoxic Ischemic Injury in Neonates	MUSC Neuroscience Pilot Innovation Grant
47	Jenkins, Dorothea	Pediatrics	Safety of N-Acetylcysteine in Maternal Chorioamnionitis	NIH/NINDS
48	Joseph, Jane	Neurosciences	Improving Cognitive Function in Neurodevelopmental Disorders	MUSC Neuroscience Pilot Innovation Grant
49	Katikaneni, Lakshmi	Pediatrics	MRI/MRS Findings in Healthy Term Infants with Placental-Proven Chrioamnionitis	March of Dimes
50	Larue, Amanda	Pathology	Hematopoietic Stem Cell-Derived Carcinoma Associated Fibroblasts in Tumor	NIH/NCI
51	Larue, Amanda	Pathology	Fibroblasts in Tumor	American Cancer Society
52	Larue, Amanda	Pathology	Enhancement of Fracture Repair by Hematopoietic Stem Cells	VA OIF/OEF BLR&D
53	Larue, Amanda	Pathology	Targeting HSC-Derived Circulating Fibroblast Precursors in Pulmonary Fibrosis	VA GWVI BLR&D
54	Li, Xingbao	Psychiatry	SC Research center for recovery from stroke Pilot 4	NIH/NIGMS
55	Li, Xingbao	Psychiatry	Developing RTMS as a Potential Treatment for Nicotine Addiction	NIH/NIDA
56	Li, Zihai	Microbiology	GP96, TLR, & Immunologic Tolerance	NIH/NIAID
57	Li, Zihai	Microbiology	Chaperone Mechanisms in Innate Immunity	NIH/NIAID
58	Marriott, Bernadette	Gastroenterology	Omega 3 Fatty Acids Supp among military vets	US Army - USAMRAA
59	Mctague, Lisa	Psychiatry	Remediating Emotion Deficits in PTSD	NIH/NIMH
60	Mintzer, Jacobo	Neurosciences	Mayflower Road	Roper
61	Mintzer, Jacobo	Neurosciences	Elan	Roper
62	Moran, Megan	Psychiatry	Neural Substrates of Emotion: Impact of Childhood Trauma and Cocaine Dependence	NIH/NIDA
63	Moran, Megan	Psychiatry	Exploring Sex Differences in the Neural Correlates of PTSD: Impact of Oxytocin	NIH/NIMH
64	Schacht, Joseph	Psychiatry	Neural Connectivity and the Transition to Alcohol Dependence	NIH/NIAAA
65	Staveley-O'Carroll, Kevin	Surgery	An Orthotopic Murine Model of HCC: Immunotolerance and Prevention	NIH/NCI
66	Ogretmen, Besim	Biochemistry	C18-Ceramide in Head & Neck Cancer Growth and Therapy	NIH/NIDCR
67	Prisciandaro, James	Psychiatry	NeuroImaging Mechanisms of Overlap Between Alcoholism and Bipolar Disorder	NIH/NIAAA

68	Prisciandaro, James	Psychiatry	An Investigation of Disturbances in Glutamatergic Neurotransmission in Frequent Heavy Episodic Drinkers	ABMRF/Foundation for Alcohol Research
69	Revuelta, Gonzalo	Neurology	Identification of Gait and Imaging Markers for Freezing of Gait in Parkinson's Disease	NIH/NINDs
70	Revuelta, Gonzalo	Neurology	Pedunculopontine Nucleus Connectivity in Parkinson's Disease Patients with Freezing of Gait	Baramore Fund
71	Roberts, Donna	Radiology	fMRI BOLD Signal as a Biomarker for Optimal Dosing of Repetitive TMS of Rehabilitation in Chronic Stroke Patients	NIH COBRE
72	Spyropoulos, Demetri	Pathology	Potential Adverse Effects of Petroleum/Dispersant Exposure	Gulf of Mexico Alliance, Inc.
73	Squeglia, Lindsay	Psychiatry	Mentored Clinical Scientists Development Program in Drug Abuse and Addiction	NIH/NIDA
74	Tew, Kenneth	Pharmacology	South Carolina COBRE in Oxidants, Redox Balance and Stress Signaling	NIH/NIGMS
75	Turan, Tanya	Neurosciences	Characterization of Intracranial Atherosclerotic Stenosis Using HR MRI	NIH/NINDS
76	Westwater, Caroline	Dental Medicine	Pilot and Feasibility Project Program	NIH/NIGMS
77	Woodbury, Michelle	Health Sciences	Motor Stroke Rehabilitation Clinical Trial	Halo Neurosciences
78	Zollars, Eric	Rheumatology	MRI in active lupus arthritis	MUSC Discovery Grant, SCTR

Appendix III

Publications and Abstract Presentations of the CBI

MANUSCRIPTS

2015

- 1) Adisetiyo V, Helpern JA. Brain iron: a promising non-invasive biomarker of attention-deficit/hyperactivity disorder that warrants further investigation. *Biomark Med.* 2015; 9(5):403-6; PMID:25985171; DOI:10.2217/bmm.15.9.
- 2) Bentzley J, Coker-Bolt P, Moreau N, Hope K, Ramakrishnan V, Brown T, Mulvihill D, Jenkins D. (2015). Kinematic measurement of 12-week head control correlates with 12-month neurodevelopment in preterm infants. *Early Human Development. Early Human Development*, 91, 159-174. doi.org/10.1016/j.earlhumdev.2015.01.001
- 3) Bonilha L, Lee C-Y, Jensen JH, Tabesh A, Spampinato M, Edwards J, Breedlove J, Helpern JA. Altered microstructure in temporal lobe epilepsy: a diffusional kurtosis imaging study. *AJNR Am J Neuroradiol* 2015; 36:719-724.
- 4) Bredlau, A-L.; Dixit, S.; Chen, C.; & Broome, A-M. (2015) Nanotechnology applications for diffuse intrinsic pontine glioma. *Current Neuropharmacology*. (accepted). Impact factor: 3.05
- 5) Broome, A-M.*; Ramamurthy, G.; Lavik, K.; Liggett, A.; Kistlinger, I.; & Babilion. J.P.* (2015) Optical imaging of targeted beta-galactosidase in brain tumors to detect EGFR levels. *Bioconjugate Chemistry*. 26(4): 660-8. [PMCID: PMC4437618] (*corresponding author) Impact factor: 4.821
- 6) Cortese BM, McConnell PA, Froeliger B, Leslie K, Uhde TW. Burning odor-elicited anxiety in OEF/OIF combat veterans: Inverse relationship to gray matter volume in olfactory cortex. *J Psychiatr Res.* 2015; 70:58-66. doi: 10.1016/j.jpsychires.2015.08.015. Epub 2015 Aug 29.
- 7) Cortese BM, Uhde TW, Brady KT, McClernon FJ, Yang QX, Collins HR, LeMatty T, Hartwell KJ. The fMRI BOLD response to unisensory and multisensory smoking cues in nicotine-dependent adults. *Psychiatry Res.* 2015 Oct 9. pii: S0925-4927(15)30122-0. doi: 10.1016/j.psychresns.2015.10.008.
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- 9) Dixit, S.; Novak, T.; Miller, K.; Zhu, Y.; Kenney, M.E.; Broome, A-M. (2015) Transferrin receptor-targeted theranostic gold nanoparticles for photosensitizer delivery in brain tumors. *Nanoscale*. 7(5): 1782-90. [PMID: 25519743] Impact factor: 7.39
- 10) Dixit, S.; McKinnon, E.; Miller, Zhu, Y.; K.; Novak, T.; Kenney, M.; & Broome, A-M. (2015) Dual receptor-targeted theranostic nanoparticles for localized delivery and activation of PDT drug in glioblastomas. *Molecular Pharmaceutics*. 12(9): 3250-60. [PMID: 26198693] Impact factor: 8.54
- 11) Durst, R.; Peal, D. et al. (2015) Mutations in the DCHS1 gene cause mitral valve prolapse in humans. *Nature*. 525(7567): 109-13. [PMID: 26258302] Impact factor: 29.65
- 12) Feng W, Wang J, Chhatbar PY, Doughty C, Landsittel D, Lioutas V-A, Kautz SA, Schlaug G. Corticospinal Tract Lesion Load – An Imaging Biomarker for Stroke Motor Outcomes. *Annals of Neurology* 2015. doi: 10.1002/ana.24510. PMID: 26289123.
- 13) Froeliger, B., McConnell, P.A., Stankeviciute, N., McClure, E.A., Kalivas, P.W., Gray, K.M. (2015). The effects of N-Acetylcysteine on frontostriatal resting-state functional connectivity, withdrawal symptoms and smoking abstinence: A double-blind, placebo-controlled fMRI pilot study. *Drug and Alcohol Dependence*.
- 14) Gerlach, C., Zhu, X., & Joseph, J. E. (2015). Structural similarity exerts opposing effects on visual object individuation and categorization: a fMRI study. *Journal of Cognitive Neuroscience*, 27, 974-87. (PMID: 25390196). doi: 10.1162/jocn_a_00748.

- 15) Geyer LL, Glenn GR, De Cecco CN, Van Horn M, Canstein C, Silverman JR, Krazinski AW, Kemper JM, Bucher A, Ebersberger U, Costello P, Bamberg F, Schoepf UJ. CT evaluation of small-diameter coronary artery stents: effect of an integrated circuit detector with iterative reconstruction. *Radiology*. 2015;276:706-14.
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- 17) Glenn GR, Helpert JA, Tabesh A, Jensen JH. Quantitative assessment of diffusional kurtosis anisotropy. *NMR Biomed* 2015; 28:448-459
- 18) Glenn GR, Kuo LW, Chao YP, Lee CY, Helpert JA, Jensen JH. Comparison of diffusion orientation distribution functions obtained with diffusion spectrum imaging, diffusional kurtosis imaging, and diffusion tensor imaging for in vivo estimation of white matter fiber bundle orientations. *AJNR Am J Neuroradiol*. [Under Review].
- 19) Glenn GR, Tabesh A, Jensen JH. A simple noise correction scheme for diffusional kurtosis imaging. *Magn Reson Imaging* 2015;33:124-133.
- 20) Hamlett E, Boger HA, Ledreux A, Kelley CM, Mufson EJ, Falangola MF, Guilfoyle DN, Nixon RA, Patterson D, Duval N, Granholm AE. Cognitive Impairment, Neuroimaging, and Alzheimer Neuropathology in Mouse Models of Down Syndrome. *Curr Alzheimer Res*. 2015 Sep 20 (Epub ahead of print)
- 21) Hanlon CA, Devries W, Li X, Dowdle L, West J, Siekman B, George MS. A comprehensive study of sensorimotor cortex excitability in chronic cocaine users: integrating TMS and functional MRI data. *Drug and Alcohol Dependence* (Accepted June 2015) in press
- 22) Hanlon CA, Dowdle LT, Austelle CW, DeVries W, Mithoefer O, Badran BW, George MS. What goes up, can come down: Novel brain stimulation paradigms may attenuate craving and craving-related neural circuitry in substance dependent individuals. *Brain Res*. 2015 Mar 11. pii: S0006-8993(15)00188-2. doi: 10.1016/j.brainres.2015.02.053. [Epub ahead of print] PubMed PMID: 25770818
- 23) Hartwell KJ, Hanlon CA, Canterberry M, Li X, Owens M, LeMatty T, Prisciandaro JJ, Borckardt J, Brady KT, George MS. Realtime fMRI neurofeedback to attenuate craving to smoke in nicotine-dependent smokers. *Journal of Psychiatry and Neuroscience*. (accepted June 2015) in press
- 24) Hui ES, Glenn GR, Helpert JA, Jensen JH. Kurtosis analysis of neural diffusion organization. *Neuroimage* 2015;106:391-403.
- 25) Jenkins DD, Wiest DB, Mulvihill DM, Hlavacek AM, Majstoravich SJ, Brown TR, Taylor JJ, Buckley JR, Turner RP, Rollins LG, Bentzley JP, Hope KE, Barbour AB, Lowe DW, Martin RH, Chang EY, Fetal and Neonatal Effects of N-Acetylcysteine When Used for Neuroprotection in Maternal Chorioamnionitis, *J Pediatr*. 2015 Nov 3. pii: S0022-3476(15)01150-6. doi: 10.1016/j.jpeds.2015.09.076. PMID: 26545726
- 26) Jensen JH, Russell Glenn G and Helpert JA. Fiber Ball Imaging Neuroimage. 2015 Oct 1;124(Pt A):824-833. doi: 10.1016/j.neuroimage.2015.09.049. [Epub ahead of print] PMID: 26432187.
- 27) Jensen JH & Helpert JA. Resolving Power for the Diffusion Orientation Distribution Function. *Magn Reson Med*. 2015 Oct 7. doi: 10.1002/mrm.25900. [Epub ahead of print] PMID: 26444579.
- 28) Johnson C, Jenkins D, Bentzley J, et al. (2015) Proton magnetic resonance spectroscopy and outcome in term neonates with chorioamnionitis. *Journal of Perinatology*. In press.
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- 39) Naselaris T., Kay K.N. (2015). Resolving ambiguities of MVPA using explicit models of representation. *Trends in Cognitive Neurosciences* 19(10): 551-554.
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- 41) Nie X, Hamlett ED, Granholm AC, Hui ES, Helpern JA, Jensen JH, Boger HA, Collins HR, Falangola MR. Evidence of altered age-related brain cytoarchitecture in mouse models of down syndrome: a diffusional kurtosis imaging study. *Magn Reson Imaging*. 2015 May; 33(4): 437-47. Doi: 10.1016/j.mri.2014.12.008. Epub 2014 Dec 16
- 42) Patel, K.J.; Atkinson, C.; Broome, A-M.; McGillicuddy, J.W.; Chavin, K.D.; & Nadig, S.N. (2015) Utilization of machine perfusion and nanotechnology for liver transplantation. *Current Transplantation Reports*. 2(4): 303-11.
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- 4) Adisetiyo V, Jensen JH, Tabesh A, Deardorff RL, Gray KM, Helpert JA. Psychostimulant treatment duration correlates with increased brain iron levels in attention-deficit/hyperactivity disorder. SfN Annual Meeting 2014, Washington DC; ASNR Annual Meeting 2015, Chicago; ISMRM Scientific Meeting 2015, Toronto (Magna Cum Laude Merit Award Recipient).

- 5) Austelle, C. W., Dowdle, L. T., DeVries, W., Mithoefer, O. J., Badran, B. W., George, M. S., Hanlon, C. A. (2015). To Crave or Not to Crave: Individual Variability in Alcohol Craving is Associated with the Efficacy of TMS as a Treatment Tool for Alcoholism. Poster at Society of Biological Psychiatry. Toronto, Canada
- 6) Benitez A, Chan CH, Collins HR, Sorrell A, Spampinato MV, Falangola MF, Jensen JH, Helpers JA. Diffusional Kurtosis Imaging-Based White Matter Modeling of the Aging Brain. Poster presented at the Alzheimer's Association International Conference, Washington DC, July 18-23, 2015.
- 7) Broome, A-M.; Dixit, S.; Levey, N.; Dennis, W.; Atkinson, A; & Nadig, S.N.; (2015) Targeted nanotherapy dampens antigen presentation and inflammation by human endothelial cells. American Society of Transplant Surgeons.
- 8) Broome, A-M.; Zhu, P.; Stephenson, S.; Sarson, M.; Dixit, S.; Nadig, S.N.; & Atkinson, A. (2015) Targeted ex-vivo nanotherapy provides protective against alloimmune destruction in tracheal transplantation. American Society of Transplant Surgeons.
- 9) Brown J, Coker-Bolt P, Poon J, Barbour A, Jenkins D (2015) Does Postpartum Depression Affect Infant Development? MUSC Student Research Day
- 10) Chan C, Collins H, O'Neil PM, Brown J, Helpers JA and Benitez A. The effect of weight loss on brain microstructure in obese middle-aged women. Proc. Intl. Soc. Mag. Reson. Med., Toronto, Canada, 2015, E-poster.
- 11) Chueh J, Turan TN, Brown TR, LeMatty T, Mao H, Brooks OW, Gounis MJ. Preparation of Hydrogel Phantom of Human Atherosclerotic Plaque for Medical Simulation and Imaging. (Abstract presented at 2015 Summer Biomechanics, Bioengineering, and Biotransport Conference).
- 12) Coker-Bolt, P., Moreau, N., Perkel, J., & Jenkins, D. (2015). Early Identification of Preterm Infants At-Risk for Neurodevelopmental Delay: Correlation of Kinematic Measures of Head Control with Neuroimaging and Developmental Assessment. American Academy for Cerebral Palsy and Developmental Medicine 69th Annual Meeting, Austin, Tx.
- 13) Deardorff RL, Mckinnon E, Sokolowski T, Jensen JH, Hori M, Govind V, Helpers JA. Kurtosis Imaging Network: a collaborative, open-source imaging database. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-third scientific meeting. 2921, 2015.
- 14) Dowdle, L. T., George, M. S., Brown, T. R., Hanlon, C. A., (2015). Back to Basics: Determining the TMS-associated Hemodynamic Response with Fast TMS/BOLD. Poster at MUSC Frontiers in Neuroscience. Charleston, SC
- 15) Dowdle, L. T., George, M. S., Brown, T. R., Hanlon, C. A., (2015). Back to Basics: Determining the TMS-associated Hemodynamic Response with Fast TMS/BOLD. Poster at Society of Biological Psychiatry. Toronto, Canada
- 16) Dowdle, L. T., Naselaris, T., Froeliger, B., Hanlon C. A. (2015). More than meets the eye: What visual cortex reactivity to cues may tell us about neural processing in addiction, Poster at The College on Problems of Drug Dependence. Phoenix, Arizona
- 17) Glenn GR, Helpers JA, Tabesh A and Jensen JH. Optimization of White Matter Fiber Tractography with Diffusional Kurtosis Imaging. Proc. Intl. Soc. Mag. Reson. Med., Toronto, Canada, 2015, E-poster.
- 18) Glenn GR, Helpers JA, Tabesh A, Jensen JH. Quantitative Assessment of Diffusional Kurtosis Anisotropy. (2015) International Society for Magnetic Resonance in Medicine, Toronto, CA
- 19) Glenn GR, Jensen JH, Chao YP, Lee C, Helpers JA, Kuo L. Comparison of Diffusional Kurtosis Imaging (DKI) and Diffusion Spectrum Imaging (DSI) for White Matter Fiber Tractography. (2015) International Society for Magnetic Resonance in Medicine, Toronto, CA

- 20) Hanlon CA, Hartwell KJ, Borckardt J, Prisciandaro JJ, Canterbury M, Li, LeMatty T, Owens M, Moran-Santa Maria M, Saladin M, George MS, Brady KT. (2013, December). Real-time functional MRI feedback, compared to sham, reduces cue-induced nicotine craving in non-treatment seeking smokers: results from the first clinical trial. Poster presentation at the 52nd Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL.
- 21) Hanlon C. A., Dowdle, L. T., Devries, W. (2015). Beyond pharmacotherapy: Emerging data that non-invasive brain stimulation may be an efficacious strategy for decreasing drug craving in substance-dependent individuals. Poster at The College on Problems of Drug Dependence. Phoenix, Arizona
- 22) Hartwell KJ, Canterbury M, Li X, Moran-Santa Maria MM, Hanlon CA, George MS and Brady KT (2015, June). The brain mind connection: Effect of trait mindfulness on responses to real-time fMRI feedback in nicotine-dependent smokers. Poster presentation at the annual meeting of the College on Problems of Drug Dependence, Phoenix, AZ.
- 23) Helpern JA, Glenn G, Kwo L, Chao Y and Jensen J. A Comparative Study of White Matter Fiber Tractography Using DTI, DKI and DSI. American Society for Neuroradiology, Chicago, IL, April 25-30, 2015, Oral presentation.
- 24) Helpern JA, Glenn GR, Kuo L, Lee C, Chao YP, Jensen JH. A Comparative Study of White Matter Fiber Tractography Using DTI, DKI, and DSI. (2015) American Society for Neuro Radiology, Chicago, IL
- 25) Hewett, Lee J; Mulvihill, Denise; Hope Kathryn; Barbour, Andrew; Brown, Truman; Jenkins, Dorothea; Katikaneni, Lakshmi. Developmental Outcomes Following White Matter Injury To Optic Radiations in Neonates Exposed to Chorioamnionitis. Pediatric Academic Societies Research meeting, San Diego, CA April 2015, poster presentation
- 26) Hui E, Glenn GR, Helpern JA, Jensen JH. Modeling of Brain Microstructure by Kurtosis Analysis of Neural Diffusion Organization (KANDO). (2015) International Society for Magnetic Resonance in Medicine, Toronto, CA
- 27) Hui ES, Jensen JH. Double-pulsed diffusional kurtosis imaging for the in vivo assessment of human brain microstructure. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-third scientific meeting. 2920, 2015.
- 28) Lee CY, Nie X, Jensen JH, Adisetiyo V, Liu Q and Helpern JA. Differentiating microscopic field inhomogeneity induced relaxation from R2 and R2* relaxations with magnetic field correlation imaging. Proc. Intl. Soc. Mag. Reson. Med., Toronto, Canada, 2015, E-poster.
- 29) Li X, Hartwell KJ, Hanlon CA, Badran B, Henderson S, George MS. One session high frequency repetitive TMS of left dorsal lateral prefrontal cortex modulates the neurocircuitry of nicotine dependence: a preliminary report. Society of Biological Psychiatry 70th Annual Scientific Meeting (2015).
- 30) Li X, Hartwell KJ, Hanlon CA, Borckardt J, Prisciandaro JJ, Canterbury M, LeMatty T, Saladin ME, George MS, Brady KT. (2015, February). Real-time fMRI neurofeedback training of prefrontal cortex inhibits the activity of the hippocampus in nicotine-dependent smokers. Poster presented at the 2nd International Real-time Functional Imaging and Neurofeedback Conference. Gainesville, FL.
- 31) McKinnon ET, Glenn GR, Benitez A, Jensen JH, Falangola MF, Chan CH, Helpern JA. Quantifying the Number of Crossing Fibers in the Aging Brain Using DKI Tractography. (2015) Alzheimer's Association International Conference, Washington DC
- 32) McLaren T, Deardorff R, Fieremans E, Milla S, Brown T, Helpern JA Jensen JH and Roberts DR. Diffusion Kurtosis Imaging in the Setting of Non-Accidental Trauma. American Society for Neuroradiology, Chicago, IL, April 25-30, 2015, Oral presentation.

- 33) Mithoefer O. J., Dowdle L. T., DeVries W. H., George M. S., Mithoefer M. C., Higgins E, Hanlon C. A. (2015). The effects of MDMA on brain reactivity to personalized trauma scripts in patients with PTSD: a pilot study. Poster at Society of Biological Psychiatry. Toronto, Canada
- 34) Moran-Santa Maria, M.M., Hartwell, K.J. and K.T. Brady. Childhood trauma alters corticolimbic connectivity in cocaine-dependent subjects. Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, 2 Ralph H. Johnson VAMC. Presented at the Annual Meeting of the International Society of Traumatic Stress Studies, November 2015.
- 35) Nie X, Rosenberger D, Ledreux A, Granhol AC, Boger H, Falantola MF; Preliminary evidence of midazolam effect in brain microstructure using diffusional kurtosis imaging. 2015 International Society for Magnetic Resonance in Medicine, Toronto, CA.
- 36) Prisciandaro JJ, Schacht JP, Prescott A, Renshaw PF, Brown T, Anton RF. Associations between alcohol consumption and anterior cingulate neurometabolites measured via mr spectroscopy in alcohol dependent individuals. ALCOHOLISM-CLINICAL AND EXPERIMENTAL RESEARCH 39, 106A-106A 2015
- 37) Roberts D, Arjal R, Kellogg R, McLaren T, Collins H, Stalcup S, Turner R. The Correlation of MR Venograms, Catheter Venograms, and Catheter Based Venous Pressure Measurements. ASNR 53rd Annual Meeting & Symposium, Chicago, April 25-30, 2015. (Abstract #1863, Oral Presentation: O-402)
- 38) Rossmann C, Swenson C, Reed R, Haemmerich D, "Tumor ablation combined with thermo-sensitive liposomal doxorubicin: effect of treatment time and administration schedule", World Conference on Interventional Oncology, New York City (NY), May 2015.
- 39) Schacht JP, Prisciandaro JJ, Voronin KE, Anton RF. Multimodal Magnetic Resonance Imaging of Neural Connectivity in Early-State Alcohol Dependence: Associations with Impulsivity. Alcoholism-Clinical and Experimental Research 39, 288A-288A 2015
- 40) Shehee L, Barbour A, Coker-Bolt P, Moss H, Brown T, Jenkins D (2015) Predicting Motor Outcomes with 3 Month Prone Hip Angles in Premature Infants. MUSC Student Research Day
- 41) Teubner-Rhodes, S, Vaden, KI, Ahlstrom, JB, Dubno, JR, Eckert, MA (2015). The Role of Cognitive Abilities in Understanding Speech in Noise by Older Adults. Association for Research in Otolaryngology Mid-Winter Meeting. Baltimore, MD.
- 42) Tillman J, Humphries E, Ward E, Coker-Bolt P, Barbour A, Moss H, Brown T, Jenkins D (2015) Correlating Early Motor Skills to White Matter Abnormalities in Preterm Infants Using Diffusion Tensor Imaging. MUSC Student Research Day
- 43) Vaden, KI, Teubner-Rhodes, SE, Ahlstrom, JB, Dubno, JR, Eckert, MA (2015). Cingulo-opercular interactions with auditory cortex activity during speech recognition in noise. Neurobiology of Language Conference, Chicago, IL.
- 44) Weber RA, Nie X, Jensen JH, Falangola MF, Helpert JA, Adkins DL. (2015). Changes in Diffusion MRI Following Experimental Stroke and Rehabilitative Training. International Stroke Conference, Nashville, TN, February, 2015.
- 45) Wu Y, Yao H, Ogawa M, LaRue A, and Mehrotra M. Transplanted Hematopoietic Stem Cells Form Functional Osteoblasts that Deposit Collagen and Repair Bone in a Mouse Model of Osteogenesis Imperfecta. Presented at the Annual Meeting of American Society of Bone and Mineral Research, Seattle, WA, 2015.

2014

- 1) Adisetiyo V, Hanlon CA, Jensen JH, Tabesh A, Gray KM, Helpert JA. Preliminary magnetic field correlation measures of brain iron in cocaine-dependent individuals. MUSC Drug Abuse Research Training (DART) Annual Research Day 2014, Charleston.
- 2) Benitez A, Chan C, Jensen JH and Helpert JA. Decreased Myelin Integrity in Normal Controls With Hippocampal Atrophy. Translational Science Conference, Washington DC, April 2014.
- 3) Benitez A, Chan C, Tabesh A, Jensen JH, Helpert JA. Diffusional Kurtosis Imaging of White Matter in the Aging Brain. Proc. Intl. Soc. Mag. Reson. Med., Milan, Italy 2014, electronic poster.
- 4) Broome, A-M.; Dixit, S.; Levey, N.; Atkinson, C.; & Nadig, S.N. (2014) Targeted drug delivery in transplantation: Use of immunosuppressant nanoparticle therapy. Nanotech, Microtech, Biotech, Cleantech Joint 2014 Conferences TechConnect World Meeting.
- 5) Broome, A-M.; Dixit, S.; Miller, K.; Moore, A.; & Bredlau, A-L. (2014) Treating brain tumors with targeted-micelles containing rapamycin. American Association for Cancer Research, 104th Annual Meeting.
- 6) Broome, A-M.; Dixit, S.; Miller, K.; Moore, A.; & Bredlau, A-L. (2014) Treating brain tumors with targeted-micelles containing immunotherapeutics. Nanotech, Microtech, Biotech, Cleantech Joint 2014 Conferences TechConnect World Meeting.
- 7) Broome, A-M.; Dixit, S.; Levey, N.; Atkinson, A.; & Nadig, S.N. (2014) Towards targeted drug delivery in transplantation: Use of immunosuppressant nanoparticle therapy. American Society of Transplant Surgeons.
- 8) Coker-Bolt P, Hope K, Ramakrishnan V, Brown T, Mulvihill D, Jenkins D (2014) Short, novel motor test at 12-weeks correlated with 12-month Bayley motor scores. Pediatrics Academic Societies Meeting
- 9) Coker-Bolt, N Moreau, J Bentzley, K Hope, D Jenkins. Identification of preterm infants at-risk for delay: correlation of kinematic measures of head control to early neuroimaging and 12-month developmental assessment. American Association of Cerebral Palsy and Developmental Medicine, 68th annual meeting, San Diego, September 2014.
- 10) Cortese B.M., Leslie K., Grubaugh A., Yang Q.X., Uhde T.W. Olfactory function and odor cue-reactivity in combat veterans with and without PTSD. Presented at the 53rd Annual Meeting of the American College of Neuropsychopharmacology (ACNP), Phoenix, Arizona, December 8, 2014.
- 11) Cortese B.M., Uhde T.W., LeMatty, T., Yang, Q.X., McClernon F.J., Brady K.T., and Hartwell K.J. Olfactory Cue-elicited Craving in Nicotine-dependent Smokers: an fMRI Preliminary Investigation. Presented at the Association for Chemoreception Sciences 36th Annual Meeting, Bonita Springs, FL, April 10, 2014.
- 12) DiBartolo, M., Zhu, X., Schacht, J., Froeliger, B., Anton, R., & Joseph, J. E. (2014). Different monetary incentive delay neural profiles in high and low risk social drinkers Program No. 656.09. 2014 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience 2014. Online.
- 13) Dixit, S.; Zhu, Y.; Moore, A.; Kenney, M.; & Broome, A-M. (2014) Double-targeted theranostic gold nanoparticles for treatment of brain tumors. American Association for Cancer Research, 104th Annual Meeting.
- 14) Dixit, S.; Zhu, Y.; Moore, A.; & Kenney, M.; & Broome, A-M. (2014) Treating brain tumors with targeted-micelles containing immunotherapeutics. Nanotech, Microtech, Biotech, Cleantech Joint 2014 Conferences TechConnect World Meeting.

- 15) Dowdle, L. T., Austelle, C. W., DeVries, W., Badran, B. W., George, M. S., Hanlon, C. A., (2014). Tweaking the Circuit – Reducing Fronto-striatal Hyperactivity in Cocaine-dependent Individuals Using Continuous Theta Burst Brain Stimulation. Poster at MUSC Student Research Day. Charleston, SC
- 16) Dowdle, L. T., Williams, N. R., DeVries, W., Lehman, R. K., George, M. S., Hanlon, C. A., (2014). TMS/BOLD Imaging of Dysfunctional Frontal-Striatal Connectivity in Tourette Syndrome. Poster at MUSC Frontiers in Neuroscience. Charleston, SC.
- 17) Dowdle, L. T., Williams, N. R., DeVries, W., Lehman, R. K., George, M. S., Hanlon, C. A., (2014). Lack of Functional Segregation in Motor and Limbic Circuits in Tourette Syndrome: A TMS/MRI Connectivity Study. Poster at Society for Biological Psychiatry. New York, NY.
- 18) Furman R, Engel J, Barbour A, Coker-Bolt P, Jenkins J (2014) How Well Does Head Ultra Sound Predict Later Motor Delays in Premature Infants? MUSC Student Research Day
- 19) Haemmerich D, Rossmann C, "Combination of tumor ablation combined with temperature-sensitive liposomes", European Society of Hyperthermic Oncology (ESHO) Annual Meeting, Turin (Italy), June 2014.
- 20) Hamlett ED, Nie X, Granholm AC, Boger HA, Falangola MF; Diffusion MRI signature of Down Syndrome brain abnormal trajectories. Society for Neuroscience (SFN) MUSC, Washington, DC, Nov 15-19, 2014.
- 21) Hanlon, C. A., Williams, N. R., Dowdle, L. T., Lehman, R. K., George, M. S., (2014). Cortical-subcortical Connectivity in Tourette Syndrome: Integrating Brain Stimulation, Brain Imaging, and Electrophysiology. Poster at Society for Biological Psychiatry. New York, NY.
- 22) Hatch N, Tabesh A, Pravata E, Jensen JH, Helpern JA and Spampinato M. Disability Status in Multiple Sclerosis: A Joint Diffusion and Structural MRI Study. Annual Meeting of the American Roentgen Ray Society, May 4-9, 2014, San Diego, CA, Oral Presentation #1276.
- 23) Helpern JA, Benitez A, Fieremans E, Jensen JH, Tabesh A and Chan C. DKI-Based White Matter Modeling Identifies Decreased Myelin Integrity in Normal Controls with Hippocampal Atrophy. American Society for Neuroradiology, Montreal, Canada, May 17-22, 2014, oral presentation.
- 24) Hewett L, Mulvihill D, Hope K, Barbour A, Brown B, Katikaneni L, Jenkins D (2014) Developmental Outcomes Following White Matter Injury To Optic Radiations in Neonates Exposed to Chorioamnionitis. MUSC Student Research Day
- 25) Hewett LD, Spampinato MV, Benitez A, Tabesh A, Chan C, Deardorff R, Collins H, Falangola MF; Diffusional kurtosis imaging assessment of brain plasticity in cognitively intact older adults. Society for Neuroscience (SFN) MUSC, Washington, DC, Nov 15-19, 2014.
- 26) Hui ES and Shih AY (2014). A novel mouse model of vascular cognitive impairment: A diffusional kurtosis imaging study. International Society for Magnetic Resonance in Medicine Abs.
- 27) Joseph, J. E., Kellermann, T., & Zhu, X. (2014). Frontal and limbic emotion fMRI response are associated with different neurobehavioral incentive profiles. Program No. 757.30. 2014 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience 2014. Online.
- 28) Kellermann, T., Nesland, T., Bonilha, L., Clark, J., Glaser, P., Tabesh, A., Zhu, X., Davies, F., Bhatt, R., & Joseph, J. (June, 2014). Relation between anatomical network connectivity and face specialization in Autism Spectrum Disorder. Poster to be presented at the 20th Annual Meeting of the Organization for Human Brain Mapping, Hamburg, Germany.

- 29) Lal, C., Zhu, X., DiBartolo, M., & Joseph, J. E. (October, 2014). Cognitive impairment and obstructive sleep apnea syndrome in early postmenopausal women. Poster presentation for the Chest 2014 Annual Meeting. Austin, TX.
- 30) Ledreux A, Wang X, Schultzberg M, Rosenberger D, Falangola MF, Granholm AC; Western diet effects on the rat brain: evidence for cognitive impairment linked with changes in brain structure and elevated AT-8 expression. Society for Neuroscience (SFN) MUSC, Washington, DC, Nov 15-19, 2014.
- 31) Lee CY, Kalra A, Spampinato MV, Tabesh A, Jensen JH, Helpert JA, Falangola MF, Van Horn MH and Giglio P. Assessment of Recurrent Glioblastoma Multiforme Response to Treatment with Bevacizumab: A Diffusional Kurtosis Imaging Study. American Society for Neuroradiology, Montreal, Canada, May 17-22, 2014, oral presentation.
- 32) Miller, K.; Dixit, S; Bredlau, A-L.; & Broome, A-M. (2014) Targeted delivery of temozolomide to pediatric brain tumors using micelle-based theranostic nanocarriers. American Association for Cancer Research, 104th Annual Meeting
- 33) Mulvihill D, Hope K, Moss H, Brown T, van Horn M, Jenkins D (2014) MR Spectroscopy analyses: comparable at long but not short echo time. Pediatrics Academic Societies Meeting
- 34) Nadig, S.N.; Dixit, S.; Zhu, P.; Atkinson, A; & Broome, A-M.; (2015) Focused nanotherapeutics result in biologic uptake in a relevant model for heart & lung transplantation. American Society of Transplant Surgeons.
- 35) Prisciandaro JJ, Schacht JP, Prescott A, Renshaw PF, Brown T, Anton RF. Associations between behavioral disinhibition and anterior cingulate gaba measured by magnetic resonance spectroscopy in alcohol dependent individuals Alcoholism-Clinical and Experimental Research 38, 233A-233A 2014
- 36) Rossmann C, Haemmerich D, Increasing ablation times boosts local drug deposition during combination therapy with thermo-sensitive liposomal doxorubicin, Society for Thermal Medicine Annual Meeting, Minneapolis (MN), May 2014.
- 37) Schacht JP, Randall PK, Voronin K, Anton RF. Variation at the COMT val158met SNP Moderates Aripiprazole Effects on Drinking and Alcohol Cue-elicited Activation of the Orbitofrontal Cortex Neuropharmacology 39, S413-S414 2014
- 38) Sherrier M, Adisetiyo V, Glenn GR, Jensen JH, Helpert JA. Kurtosis fractional anisotropy: assessment of crossing fibers in the adolescent brain. (2014) Perry V. Halushka MUSC Research Day, Charleston, SC
- 39) Shih AY, Hui ES, Taylor Z, Nie X, Deardorff R, Jensen J, Helpert JA (2014). Deciphering the cerebral microinfarct using rodent models and multi-modal MRI. Soc. for Neuroscience Abs. and World Stroke Congress Abs.
- 40) Spampinato MV, Neill M, Hatch N, Jensen JH, Helpert J, Tabesh A. Altered microstructure of normal appearing white matter in multiple sclerosis: association with neurological disability. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-second scientific meeting. 3404, 2014.
- 41) Summers PM, Taylor Z, and Shih A (2014). Persistent and extensive disruption of neurovascular coupling by a single cerebral microinfarct. Soc. for Neuroscience Abs.
- 42) Taylor Z, Watson AN, and Shih AY (2014). Early capillary constriction impedes collateral blood flow to the acute stroke penumbra. Soc. for Neuroscience Abs.
- 43) Vaden, KI, Kuchinsky, SE, Ahlstrom, JB, Dubno, JR, Eckert, MA. (2014). Cingulo-opercular network support for word recognition by older adults. International Society for Magnetic Resonance in Medicine. Charleston, SC.

- 44) Vaden, KI, Kuchinsky, SE, Cute, SL, Ahlstrom, JB, Dubno, JR, Eckert, MA. (2014). The cingulo-opercular network supports word recognition in noise for older adults. Nanosymposium: Attentional Networks in Humans. Society for Neuroscience, Washington, DC.
- 45) Weber RA, Nie X, Jensen JH, Falangola MF, Helpern JA, Adkins DL. (2014). Changes in Diffusional MRI Following Experimental Stroke and Rehabilitative Training. Society for Neuroscience, 717.03.
- 46) Zhu, X., Davies, F., Forman, E., Andersen, A., Zhang, Z., Blonder, L. X., Bhatt, R. S., Naselaris, T., Hardy, P., & Joseph, J. E. (June, 2014). fMRI activation constrained by looking behavior in alert and behaviorally naive non-human primates. Poster presented at the ISMRM Workshop Series, Functional MRI: Emerging Techniques & New Interpretations, Charleston, SC.

2013

- 1) Adisetiyo V, Deardorff RL, Tabesh A, Fieremans E, Gray KM, Di Martino A, Castellanos FX, Jensen JH, Helpern JA. Medication naïve attention-deficit/hyperactivity disorder patients have low brain iron levels as detected by magnetic field correlation imaging. RSNA Annual Meeting & Press Conference 2013, Chicago.
- 2) Adisetiyo V, Tabesh A, Di Martino A, Falangola MF, Castellanos FX, Jensen JH, Helpern JA. Attention-deficit/hyperactivity disorder without comorbidity is associated with distinct atypical patterns of cerebral microstructural development – a diffusional kurtosis imaging study. ASFN Annual Meeting 2013, Charleston.
- 3) Benitez A, Fieremans E, Jensen JH, Falangola MF, Tabesh A, Deardorff RL, Babb JS, Novikov DS, Helpern JA. White matter degeneration in early- and late-myelinating tracts through the course of Alzheimer's disease. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-first scientific meeting. 993, 2013.
- 4) Benitez A, Fieremans E, Jensen JH, Falangola MF, Tabesh A, Deardorff RL, Babb JS, Novikov DS and Helpern JA. Axonal density loss and myelin breakdown in late-myelinating tracts in the course of Alzheimer's disease: An application of DKI-based white matter tract integrity (WMTI) metrics. American Society of Functional Neuroradiology 7th Annual Meeting. Salt Lake City Utah, 2013, oral presentation.
- 5) Cortese B.M., Schacht J.P., Uhde T.W., Voronin K.E., Henderson S., Yang Q.X., Anton R.F. Lavender Odor Dampens the fMRI Bold Response to Visual Alcohol Cues in the Amygdala of Alcohol-dependent Adults. *Alcoholism: Clinical and Experimental Research*, 37, 2, Abstract #806. Presented at the Research Society on Alcoholism Annual Meeting, Orlando, Florida, June 26, 2013.
- 6) Cortese B.M., Yang Q.X., Acierno, R., Leslie, K. & Uhde T.W. Olfactory fMRI in combat veterans: brain reactivity to trauma-related odor cues. Presented at the 52st Annual Meeting of the American College of Neuropsychopharmacology (ACNP), Hollywood, Florida, December 9, 2013.
- 7) Dixit, S.; Zhu, Y.; Moore, A.; Kenney, M.; & Broome, A- M. (2013) Double-targeted theranostic nanocarriers for PDT therapy in brain tumors. Materials research Society Fall Meeting.
- 8) Dixit, S.; Miller, K.; Zhang, P.; Kenney, M.; & Broome, A-M. (2013) Multifunctional platforms for biphasic PDT drug delivery in brain tumors. World Molecular Imaging Congress.
- 9) Dixit, S.; Miller, K.; Zhang, P.; Kenney, M.; & Broome, A-M. (2013) PDT drug delivery in brain tumors. Biomedical Engineering Society Annual Meeting.

- 10) Dowdle, L. T., Devries, W., Canterberry, M., Williams, N. R., Hanlon, C. A., (2013). Functional Connectivity of Frontal-Striatal Circuits in Tourette Syndrome. Poster at Meet and Greet, MUSC. Charleston, SC
- 11) Dowdle, L. T., Devries, W., Canterberry, M., Williams, N. R., Hanlon, C. A., (2013). Probing Fronto-Striatal Connectivity with Simultaneous Brain Stimulation/Brain Imaging. Oral Presentation at Emory Exchange, Emory University. Atlanta, GA
- 12) Dowdle, L. T., Devries, W., Canterberry, M., Williams, N. R., Hanlon, C. A., (2013). Functional Connectivity of Frontal-Striatal Circuits in Tourette Syndrome. Poster at Student Research Day, MUSC. Charleston, SC
- 13) Dowdle, L. T., Devries, W., Canterberry, M., Williams, N. R., Hanlon, C. A., (2013). Functional Connectivity of Frontal-Striatal Circuits in Tourette Syndrome. Poster at Neuropalooza, College of Charleston. Charleston, SC
- 14) Dowdle, L. T., Devries, W., Canterberry, M., Williams, N. R., Hanlon, C. A., (2013). Functional Connectivity of Frontal-Striatal Circuits in Tourette Syndrome. Oral Presentation, Summer Undergraduate Research Program, MUSC. Charleston, SC
- 15) Falangola MF, Guilfoyle D, Hui ES, Nie X, Tabesh A, Jensen J, Gerum S, Hu C, LaFrancois J, Collins H, Helpert JA. Histological correlation of DKI-white matter modeling metrics in the cuprizone-induced corpus callosum demyelination. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-first scientific meeting. 2013, 2013.
- 16) Fieremans E, Benitez A, Jensen JH, Falangola MF, Tabesh A, Deardorff RL, Babb JS, Novikov DS and Helpert JA. "White matter degeneration in early- and late-myelinating tracts through the course of Alzheimer's disease. Alzheimer's Association International Conference, Boston, MA, 2013, poster.
- 17) Geyer L, Glenn GR, Canstein C, Silverman J, Van Horn M, Schoepf U, et al. CT Evaluation of Coronary Artery Stents: Impact of an Integrated Circuit Detector with Iterative Reconstruction. 2013 Radiological Society of North America, Chicago, IL.
- 18) Glenn GR, Tabesh A and Jensen JH. A Simple Retrospective Noise Correction for Diffusional Kurtosis Imaging. Proc. Intl. Soc. Mag. Reson. Med., Salt Lake City Utah, 2013, traditional poster.
- 19) Glenn GR, Tabesh A, Jensen JH. Noise Correction in Diffusional Kurtosis Imaging. 2013 International Society for Magnetic Resonance in Medicine, Salt Lake City, UT.
- 20) Glenn GR, Tabesh A, Jensen JH. Noise Correction in Diffusional Kurtosis Imaging. 2013 National Clinical and Translational Sciences Predoctoral Programs Meeting, Mayo Clinic, Rochester, MN.
- 21) Glenn R, Tabesh A, Jensen J. A simple retrospective noise correction for diffusional kurtosis imaging. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-first scientific meeting. 2013, 2013.
- 22) Hui E, Tabesh A, Helpert JA and Jensen JH. Application of Diffusional Kurtosis to Modeling of the Cerebral Microenvironment. Proc. Intl. Soc. Mag. Reson. Med., Salt Lake City Utah, 2013, oral presentation.
- 23) Hui ES, Jensen JH, Nie X, Tabesh A, Falangola M, Helpert JA and Adkins D. Infarction using Cerebral Microenvironment Modeling (CMM). 2013 International Society for Magnetic Resonance in Medicine, Salt Lake City, UT.
- 24) Jensen JH, Tabesh A and Helpert JA. Explicit Formula for Diffusion Orientation Distribution Function using a Kurtosis Approximation. Proc. Intl. Soc. Mag. Reson. Med., electronic poster, Salt Lake City Utah, 2013.

- 25) Joseph, J. E., Zhu, X., Davies, F., Swearingen, J., Corbly, C. R., Kangas, A., Forman, E., Andersen, A., Zhang, Z., Blonder, L. X., Bhatt, R. S., Hardy, P. R. (2013, September). fMRI in freely viewing non-human primates as a tool to understand functional brain development. Poster presented at the Inaugural Flux Congress, Pittsburgh, PA.
- 26) Joseph, J. E., Corbly, C. R., deSantis, S., Lee, D., Baik, G., Kaiser, S., Jiang, Y., Lynam, D., & Kelly, T. H. (November, 2013). Neurobehavioral predictors of alcohol problems and use. Poster presented at the International Society for Addiction Medicine, Kuala Lumpur, Malaysia.
- 27) Kuchinsky, SE, Vaden, KI, Cute, SL, Ahlstrom, JB, Dubno, JR, Eckert, MA. (2013). Word recognition benefit from attention systems in older adults with hearing loss. Aging Research Day, Charleston, SC; Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore, MD.
- 28) Nie, X.; Patrick, K.S.; Cdebaca, M.; Riley, C.H.; Wilson, D.; & Broome, A-M. (2013) Methylphenidate and [18F]-fallypride striatal binding in mice using Positron Emission Tomography. Biomedical Engineering Society Annual Meeting.
- 29) Nie X, Hui ES, Jensen JH, Helpen JA, Granholm-Bentley AE, Boger HA, Falangola MF. Preliminary evidence of abnormalities in the prefrontal cortex of 10 weeks old Ts65Dn mouse model of Down syndrome using DKI-cerebral microenvironment modeling. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-first scientific meeting. 3084, 2013.
- 30) Patrick, K.S.; Nie, X.; Cdebaca, M.; Riley, C.H.; Wilson, D.; & Broome, A-M. (2013) Influence of methylphenidate on [18F]-fallypride striatal binding in C57BL/6 mice using positron emission tomography (PET). World Molecular Imaging Congress.
- 31) Prisciandaro JJ, A Prescott, Schacht JP, Anton RF, Renshaw PF, Brown T A Preliminary Comparison of Methodologies for Quantifying Brain Gamma-Aminobutyric-Acid Concentrations In Vivo using Proton Magnetic Resonance Spectroscopy NEUROPSYCHOPHARMACOLOGY 38, S186-S187 2013
- 32) Schacht JP, Anton RF, Randall PK, Li X, Henderson S, Myrick H Varenicline Effects on Neural Reward Processing among Non-Treatment-Seeking Alcohol Dependent Individuals Neuropsychopharmacology 38, S164-S165 2013.
- 33) Schacht JP, Cortese BM, Voronin KE, Anton RF Resting State Functional Connectivity of the Default Mode Network Predicts Impulsive Choice in Alcohol Dependence Alcoholism-Clinical and Experimental Research 37, 56A-56A 2013
- 34) Shih AY, Taylor Z, Helpen JA, and Hui SK (2013). The smallest stroke revealed through in vivo two-photon microscopy and 7T magnetic resonance imaging. Soc. for Neuroscience Abs.
- 35) Shih AY, Taylor Z, Helpen JA, Hui ES. The smallest stroke revealed through in vivo two-photon microscopy and 7T MRI. Society for Neuroscience, San Diego, CA, 2013, poster.
- 36) Spampinato MV, Pravata`Em Hatch N, Jensen JH, Helpen JA, Tabesh A. Diffusional Kurtosis Imaging of Normal Appearing White Matter in Multiple Sclerosis. American Society of Neuroradiology 51st Annual Meeting, San Diego, CA, Salt Lake City Utah, 2013, oral presentation.
- 37) Tabesh A, Jensen JH, Hui ES, Spampinato MV, Edwards JC, Helpen JA, Bonilha L. biophysical microstructure markers are correlated with disease severity in medial temporal lobe epilepsy. Proceedings of the International Society for Magnetic Resonance in Medicine twenty-first scientific meeting. 786, 2013.
- 38) Vaden, KI, Kuchinsky, SE, Cute, SL, Ahlstrom, JB, Dubno, JR, Eckert, MA. (2013). Engagement of the Cingulo-Opercular System Enhances Future Word Recognition. Neurobiology of Language Conference, San Diego, CA.

- 39) Vaden, KI, Kuchinsky, SE, Cute, SL, Ahlstrom, JB, Dubno, JR, Eckert, MA. (2013). Cingulo-opercular activity predicts subsequent word recognition. Fifth Biennial Aging and Speech Communication Conference, Bloomington, IN.
- 40) Weber R, Hui ES, Jensen JH, Nie X, Falangola MF, Helpern JA, Adkins DL. Diffusional Kurtosis Imaging: a potential novel MRI biomarker of acute stroke and rehabilitation-induced neural. Society for Neuroscience, San Diego, CA, 2013, poster.
- 41) Wuwei Feng, Edward S Hui, Jenna-Lyn Johnson, Joseph A Helpern, Jens Jensen, Ali Tabesh, Leonardo Bonilha, Mark G Bowden, Steven Kautz, Robert J Adams. Acute Damage to Corticospinal Tract Detected by Diffusional Kurtosis Correlates with Motor Outcome at 3 Months After Stroke - A Preliminary Report. International Stroke Conference, February 6-8, 2013, Honolulu, HI. Abstract # 4190, Poster Board Number P44.
- 42) Xu J, Glenn GR, Bhat H, Cauley S, Setsompop K, Lee R, Tabesh A, Jensen JH, Helpern JA, Heberlein K. Accelerated Diffusional Kurtosis Imaging using Simultaneous Multi-slice Echo Planar Imaging. 2013 International Society for Magnetic Resonance in Medicine, Salt Lake City, UT.
- 43) Zhu, X., Joseph, J. E., Corbly, C. R., Davies, F., Forman, E., Evans, A., Kangas, A., Andersen, A., Zhang, Z., Blonder, L. X., Bhatt, R. S., Hardy, P. (2013, June). Functional MRI of awake non-human primates: using eye-tracking to improve imaging quality. Poster presented at the 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle, WA.

2012

- 1) Adisetiyo V, Deardorff RL, Tabesh A, Fieremans E, Allen A, Grzadzinski R, Di Martino A, Castellanos FX, Jensen JH and Helpern JA. Magnetic Field Correlation Imaging of Brain Iron in Attention-Deficit/Hyperactivity Disorder. Proc. Intl. Soc. Mag. Reson. Med., poster, 2012.
- 2) Benitez A, Fieremans E, Falangola MF, Ferris S, Jensen JH and Helpern JA. Cognitive Processing Speed and Diffusional Kurtosis Imaging in Normal Aging, Amnesic MCI, and AD, Alzheimer's Association International Conference, Vancouver, Canada, poster, 2012.
- 3) Broome, A-M.; Ramamurthy, G.; Lavik, K.; Verma, A.; Pinter, M.; Basilion, J.P. (2012) Molecular imaging of the cancer signature using targeted-split enzyme complementation. American Association for Cancer Research, 103rd Annual Meeting.
- 4) Broome, A-M.; Ramamurthy, G.; Lavik, K.; Pinter, M.; Kinstlinger, I.; & Basilion, J.P. (2012) Targeted-split enzyme complementation to interrogate the cancer signature using molecular imaging. World Molecular Imaging Congress.
- 5) Broome, A-M.; Meyers, J.D.; Cheng, Y.; Agnes, R.S.; Wang, X.; Kenney, M.; Burda, C. & Basilion, J.P. (2012) Optical imaging and photodynamic therapy of brain tumors with multifunctional gold theranostic nanoparticles. World Molecular Imaging Congress.
- 6) Canterbury M, Hanlon CA, Li X, Hartwell KJ, George MS, Brady KT. (2012, June). Changing your mind about craving: How practical advances in real-time fMRI have launched the first clinical trial for smoking. Oral presentation at 2012, annual meeting of the College on Problems of Drug Dependence, Palm Springs, CA.
- 7) Chung, S.; Wen, A.; DeBaz, C.; Dey, S.; Steinmetz, N.F.; & Broome, A-M. (2012) Targeting inaccessible tumors in the brain with viral nanoparticles. Foundations of Nanoscience: Self-Assembled Architectures and Devices, 9th Annual Meeting.

- 8) Chung, S.; Wen, A.M.; DeBaz, C.M.; Dey, S.; Steinmetz, N.F.; & Broome, A-M. (2012) Targeting inaccessible tumors in the brain with viral nanoparticles. BMES Annual Meeting.
- 9) Chung, S.; Wen, A.M.; DeBaz, C.M.; Dey, S.; Steinmetz, N.F.; & Broome, A-M. (2012) Viral nanoparticles as novel tumor targeting carriers to image brain cancers. World Molecular Imaging Congress.
- 10) Cortese BM, Hartwell KJ, Stein SV, Freeman WC, LaRowe SD, McClernon FJ, Uhde TW, Yang QX, and Brady KT. (2012, April). Olfactory Cued-reactivity and Craving in Nicotine-dependent Smokers. Poster presentation at the 34th annual meeting of the Association for Chemoreception Sciences, Huntington Beach, CA.
- 11) Cortese BM, Uhde TW, Voronin KE, Henderson S, Schacht JP, Yang QX, & Anton RF Odor Modulation During an Alcohol Cue-reactivity Paradigm: A Functional Magnetic Resonance Imaging (fMRI) Preliminary Investigation. Presented at the 51st Annual Meeting of the American College of Neuropsychopharmacology (ACNP), Hollywood, Florida, December 4, 2012.
- 12) Dyakin VV, Falangola MF, Guilfoyle D, Gerum S, Hu C, Hui ES, Nixon R. Preliminary Evidence of DKI Abnormalities in the Hippocampus of a Mouse Model of Down Syndrome. 2012 International Society for Magnetic Resonance in Medicine, Melbourne, AU.
- 13) Falangola MF, Guilfoyle D, Hui ES, Hu C, Gerum S, LaFrancois J, Nie X, Jensen JH, Tabesh A, Helpern JA. Diffusional kurtosis imaging detects age-related grey matter changes in the normal mouse brain. Proceedings of the International Society for Magnetic Resonance in Medicine twentieth scientific meeting. 3601, 2012.
- 14) Fieremans E, Jensen JH, Deardorff RL, Allen A, Kwon J, Tabesh A, Falangola MF, Ferris SH and Helpern JA. Assessment of White Matter Integrity in Mild Cognitive Impairment and Alzheimer's Disease. Proc. Intl. Soc. Mag. Reson. Med., oral presentation, 2012.
- 15) Fieremans E, Jensen JH, Helpern JA, Kim S, Grossman RI, Inglese M and Novikov DS. Diffusion distinguishes between axonal loss and demyelination in brain white matter. Proc. Intl. Soc. Mag. Reson. Med., oral presentation, 2012.
- 16) Fieremans E, Jensen JH, Hui ES, Novikov DS, Tabesh A, Bonilha L and Helpern JA. Direct evidence for decreased intra-axonal diffusivity in ischemic human stroke. Proc. Intl. Soc. Mag. Reson. Med., poster, 2012.
- 17) Glenn GR, Tabesh A, Jensen JH. Noise Correction in Diffusional Kurtosis Imaging. 2012 22nd Annual MSTP Student Research Day, Charleston SC.
- 18) Glenn GR, Tabesh A, Jensen JH. Noise Correction in Diffusional Kurtosis Imaging. 2012 Southeastern Medical Scientist Symposium, Vanderbilt University, Nashville, TN.
- 19) Hartwell KJ, Cortese BM, Stein SV, Freeman WC, McClernon FJ, Uhde TW, and Brady KT. (2012, March). Odor Cue-elicited Craving in Nicotine-Dependent Smokers. Poster Presentation at the 18th annual meeting of the Society for Research on Nicotine and Tobacco, Houston, Texas.
- 20) Hartwell KJ, LeMatty T, McRae-Clark A, Gray K, Kevin A. Johnson KA, George MS, Brady KT. (2012, March). Neural Changes in Resisting the Urge to Smoke and Cue-elicited Craving during Successful Smoking Cessation with Varenicline. Poster Presentation at the 18th annual meeting of the Society for Research on Nicotine and Tobacco, Houston, Texas.
- 21) Helpern JA, Hui ES, Bonilha L, Tabesh Ali, Feng WW, Adams R and Jensen JH. Diffusional Kurtosis Imaging Assessment of Motor Impairment in Stroke Patients, American Society for Neuroradiology 50th Annual Meeting, New York, NY, Oral presentation, 2012.

- 22) Hui ES, Bonilha L, Tabesh A, Jensen JH, Helpert JA. Effects of ischemic stroke on cerebral tissue microenvironment using diffusional kurtosis imaging. Proceedings of the International Society for Magnetic Resonance in Medicine twentieth scientific meeting. 3204, 2012.
- 23) Hui ES, Feng WW, Tabesh Ali, Bonilha L, Jensen JH, Helpert JA. Assessment of motor impairment in acute/subacute stroke patients with diffusional kurtosis metrics. A Preliminary diffusional kurtosis imaging study of medial temporal lobe epilepsy. Proceedings of the International Society for Magnetic Resonance in Medicine twentieth scientific meeting. 3207, 2012.
- 24) Hui ES, Helpert JA, Guilfoyle D, Gerum S, Hu C, LaFrancois J, Nie X, Jensen JH, Tabesh A and Falangola MF. Diffusional Kurtosis Detects Cortical Demyelination in the Cuprizone Mouse Model. Proc. Intl. Soc. Mag. Reson. Med., poster, 2012.
- 25) Hui ES, Lee CY, Debbins JP, Duong TQ and Helpert JA. Diffusional kurtosis imaging: Towards optimal subacute assessment of the microenvironment of ischemic tissue. Proc. Intl. Soc. Mag. Reson. Med., poster, 2012.
- 26) Joseph, J. E., Clark, J. D., Zhu, X., Swearingen, J. E., Ruble, L., Glaser, P., Bhatt, R. S. (2012). Brain basis of face processing in Autism Spectrum Disorder: Developmental delay or atypical functional organization? Program No. 245.03. 2012 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience 2012. Online.
- 27) Meyers, J.D.; Broome, A-M.; Cheng, Y.; Agnes, R.S.; Wang, X.; Kenney, M.E.; Burda, C.; and Basilion, J.P. (2012) EGFR-targeted gold nanoparticles for intraoperative detection and treatment of brain tumors. BMES Annual Meeting.
- 28) Meyers, J.D.; Broome, A-M.; Cheng, Y.; Agnes, R.S.; Wang, X.; Kenney, M.E.; Burda, C.; and Basilion, J.P. (2012) Applying new light to the detection and treatment of brain cancers using targeted photodynamic therapy. American Association for Cancer Research, 103rd Annual Meeting.
- 29) Moreau, N., Coker-Bolt, P., Perkel, J., Holthaus, K., & Jenkins, D. Magnetic resonance spectroscopy (MRS) findings correlate with kinematic measures of motor test performance in high risk preterm infants. Free paper, The American Academy for Cerebral Palsy and Developmental Medicine 66th Annual Meeting, Toronto, Canada, September 2012.
- 30) Moreau, N., Balleh, Holthaus, K., Perkel, J., Coker-Bolt, P. & Jenkins, D. (2012). Muscle architectural difference between preterm infants at high and low risk for developmental delay. Free paper. American Academy for Cerebral Palsy and Developmental Medicine 66th Annual Meeting, Toronto, Canada, 2012.
- 31) Nesland, T., Bonilha, L., Tabesh, A., Davies, F., Clark, J. D., Bhatt, R. S., Ruble, L., Glaser, P., Joseph, J. E. (2012). Network analysis of structural networks in Autism Spectrum Disorder. Program No. 245.02. 2012 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience 2012. Online.
- 32) Novikov DS, Jensen JH and Helpert JA. Increase of structural disorder along neurites is leading cause for diffusivity drop in acute ischemia. Proc. Intl. Soc. Mag. Reson. Med., poster, 2012.
- 33) Schacht JP, Anton RF, Randall PK, Li X, Henderson S, Myrick H Interacting effects of naltrexone and oprm1 and dat variation on the neural response to alcohol cues Alcoholism-Clinical and Experimental Research 36, 366A-366A 2012
- 34) Shuler L, Jarrett L, Coker-Bolt P, Perkel J, Jenkins D. Neonatal neuroimaging: Correlating early motor skills to white matter abnormalities in preterm infants. MUSC STUDENT RESEARCH DAY 2012

- 35) Shuler L, Jarrett L, Coker-Bolt P, Perkel J, Jenkins D. Neonatal neuroimaging: Correlating early motor skills to white matter abnormalities in preterm infants. Research Poster, The American Occupational Therapy Annual Conference and Exposition, San Diego, CA 2013.
- 36) Swearingen, J. E., Zhu, X., Clark, J. D., Bhatt, R. S., Ruble, L., Davies, F., Glaser, P., Joseph, J. E., (2012). Brain Networks in Autism Spectrum Disorder: a graph theoretic approach to functional connectivity. Program No. 245.01. 2012 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience 2012. Online.
- 37) Tabesh A, Jensen JH and Helpen JA. Accuracy of Diffusional Kurtosis Imaging in Resolving White Matter Fiber Crossings. Proc. Intl. Soc. Mag. Reson. Med., poster, 2012.
- 38) Tabesh A, Jensen JH, Helpen JA, Deardorff R, Allen A, Barley JE, Edwards JC, Bonilha L. A Preliminary diffusional kurtosis imaging study of medial temporal lobe epilepsy. Proceedings of the International Society for Magnetic Resonance in Medicine twentieth scientific meeting. 3206, 2012.
- 39) Tabesh A, Jensen JH, Helpen JA. Accuracy of diffusional kurtosis imaging in resolving white matter fiber crossings. Proceedings of the International Society for Magnetic Resonance in Medicine twentieth scientific meeting. 3627, 2012.
- 40) Turan TN, Rumboldt Z, Brown T, Helwig S, Adams RJ. High Resolution Magnetic Resonance Imaging (HRMRI) in Intracranial Atherosclerosis. Poster presented at 2012 American Neurological Association Meeting, Boston, MA.
- 41) Vaden, KI, Gebregziabher, M, Kuchinsky, SE, Eckert, MA. (2012). Multiple imputation toolkit for group level fMRI statistics. 13th Annual Frontiers in Neuroscience Research Day: Neurodegenerative Disorders, Seabrook, SC.
- 42) Vaden, KI, Kuchinsky, SE, Cuta, SL, Ahlstrom, JB, Dubno, JR, Eckert, MA. (2012). Anterior insula and frontal operculum support word recognition in younger and older adults. Society for Neuroscience, New Orleans, LA.



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