

OWEN CARMICHAEL, Ph.D.

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RESEARCH INTERESTS

Brain imaging, late-life cognitive decline, and image processing methodology.

EDUCATION

- 1997 - 2003 **Carnegie Mellon University, Pittsburgh, PA.**
Ph.D. in Robotics, December 2003.
Thesis: *Discriminative Techniques for the Recognition of Complex-Shaped Objects*
Committee: Martial Hebert (chair), Henry Schneiderman, Jianbo Shi, Tom Minka, Yann LeCun.
- 1993 - 1997 **University of California, Berkeley, CA.**
B.S. with Honors in Electrical Engineering and Computer Science, May 1997.

PROFESSIONAL EXPERIENCE

- 2014-current **Pennington Biomedical Research Center, Baton Rouge, LA.**
Associate Professor and Director of the Biomedical Imaging Center.
- 2005-2014 **Neurology Department, University of California, Davis, CA.**
Associate Professor (100% appointment). Promoted from Assistant to Associate level in 2012.
- 2006-2014 **Computer Science Department, University of California, Davis, CA.**
Associate Professor (0% appointment). Promoted from Assistant to Associate level in 2012.
- 2003-2005 **Radiology Department, University of Pittsburgh, Pittsburgh, PA.**
Postdoctoral scholar studying image analysis algorithms for Alzheimer's Disease.
Advisors: Carolyn Meltzer, Yanxi Liu, Oscar Lopez, Jim Becker, Howard Aizenstein
- Winter 1999 **Minolta Corporation, Osaka, Japan.**
Developed tools for automatic recognition of human faces from 3D range data.
Advisor: Eiro Fujii
- Summer 1999 **Mitsubishi Electric Research Laboratory, Cambridge, MA.**
Implemented techniques for super-resolution of blurred images.
Advisor: Bill Freeman
- Summer 1998 **K2T Corporation, Pittsburgh, PA.**

Role: PI (with Bret Goodpaster)

R. Newton and O. Carmichael
NIH, R01 AG067765

4/01/2020 - 3/31/2025
\$4,676,066

Reducing African Americans' Alzheimer's Disease Risk Through Exercise (RAATE-MCI)

This study will determine if regular physical activity conducted over a year will reduce risk factors for developing Alzheimer's Disease in older African American adults with mild cognitive impairment. We will assess participant's brain functioning, brain structure, memory, chromosomes, and the contribution of plaques in the brain on outcomes.

Role: PI (with Robert Newton)

8/01/2019 – 3/31/2023

O. Carmichael
Nestlé Research Center, Nestec Ltd

\$ 3,106,624

The Effect of Myelin-Relevant Nutrients in Infant Formula on Brain Myelination and Cognitive Development (CONNECT)

The goal of this randomized controlled trial is to assess the impact of a myelin-relevant nutrient supplemented infant formula on brain development between birth and two years of age, relative to a standard infant formula.

Role: PI

8/01/2019 – 3/31/2024

L. Bazzano and O. Carmichael
Tulane/NIH

\$3,599,769

Lifespan Cardiovascular Risk Exposures and Alzheimer-related brain health: Bogalusa Heart Study (BHS Vascular Brain)

The goal of this study is to assess the relationship between lifespan cardiovascular risk factor exposure and midlife brain structure, function, and Alzheimer's disease biomarkers in 200 healthy middle-aged adults who have participated in the Bogalusa Heart Study.

Role: PI (with Lydia Bazzano)

12/01/2018 – 11/30/2023

L. Bazzano and O. Carmichael
Tulane/NIH

\$3,545,225

Early Life glycemic status and Alzheimer's disease neuroimaging markers in middle age: the Bogalusa Heart Study (BHS Brain 2)

The goal of this study is to recruit 200 healthy middle-aged adults who have participated in the Bogalusa Heart Study. These individuals will undergo: 1. a comprehensive clinical evaluation; 2. a brain MRI to assess brain structure and functioning; 3. brain PET scans to assess cerebral glucose metabolism and amyloid burden. We will assess associations between lifespan cardiometabolic exposures and measured brain characteristics.

Role: PI (with Lydia Bazzano)

R. Newton and O. Carmichael
NIH, 1 R01 AG062200-01

12/01/2018-11/30/2023
\$3,592,061

Reducing African Americans' Alzheimer's Disease Risk Through Exercise (RAATE)

The goal of this project is to randomize 200 community-dwelling, cognitively healthy African American older adults to one year of an aerobic exercise intervention or active control condition. Cognitive function, brain structure and function, and telomere length will be measured before and after study participation.

Role: PI (with Robert Newton)

B. Irving and O. Carmichael
Louisiana Biomedical Collaborative Research Program

7/1/2018-7/1/2019
\$69,500

Mechanisms of Premature Muscle Fatigue in Sedentary and Exercise Trained Adults

The goal of this project is to gain understanding of molecular mechanisms underlying premature muscle fatigue in individuals undergoing exercise training, using high-resolution mitochondrial respirometry and ¹³C magnetic resonance spectroscopy.

Role: Co-PI (with Brian Irving)

O. Carmichael 7/01/2017 – 6/30/2018
Philanthropic donation \$100,000

Louisiana Aging Brain Scans (LABS)

The goal of this project is to clarify the neural basis for increased fall risk due to distraction in healthy elderly individuals. Individuals who have completed distracted gait tasks will complete a distracted gait task during fMRI scanning to assess brain functional differences between those who do and do not show impairments in distracted gait performance.

Role: Co-PI (with Jeff Keller)

R. Newton and O. Carmichael 7/01/2017 – 6/30/2020
BrightFocus Foundation \$300,000

Exercise Intervention to Reduce Risk of Alzheimer's Disease in African Americans

The goal of this project is to tailor an aerobic and resistance exercise intervention to an elderly, community-dwelling African American cohort, and determine the effects of training on cognitive function and brain functioning during execution of cognitive tasks.

Role: Co-PI (with Robert Newton)

L. Bazzano 1/1/2017-12/31/2018
LaCATS Pilot Project \$50,000

Lifespan Cardiovascular Exposures and Risk of Brain Injury in the Bogalusa Heart Study

The goals of this project are to collect measurements of cognitive and brain health from members of the Bogalusa Heart Study, and to assess relationships between lifespan exposures to cardiovascular risk, and levels of brain and cognitive dysfunction in these individuals.

Role: Co-Investigator

E. Ravussin 05/01/2016 - 04/30/2021
2 P30 DK072476-11A1 NIH (NIDDK) \$5,424,848.00

Pennington/Louisiana NORC

During this upcoming NORC cycle, we plan to develop research teams focusing on maternal/Infant nutritional status, pediatric and adulthood obesity, and nutritional status at older age. These three research teams will address research questions from basic science, clinical, and population levels.

Role: Other Professional (0.6 calendar months)

O. Carmichael 10/1/2016 – present
NORC Pilot Project \$70,000

Effect of carnitine supplementation on liver mitochondria fatty acid processing

The goal of this project is to assess the impact of two weeks of oral carnitine supplementation on levels of stored carnitine in the skeletal muscle, as well as liver mitochondrial fatty acid processing.

Role: Principal Investigator

J. Peng 8/1/2015 – 7/31/2018
NSF IIS-1515538 \$487,741

Collaborative Research: Multi-Scale Estimators for Diffusion MRI of the Brain

The goal of the current project is to advance diffusion MRI toward more rigorous and standardized measurements of neural connectivity that are built from strong statistical theory. It will develop a multi-scale representation of brain structural connectivity which provides convenient and biologically interpretable multi-scale features that can be related to external variables of interests in statistical models.

Role: Co-Investigator

A. Van Gemmert 10/1/2016–9/31/2017
Louisiana Biomedical Collaborative Research Program \$50,000

Bilateral Transfer of Motor Skills and Brain Activation Patterns

The goal of this project is to collect normative data from healthy young individuals about brain activation patterns associated with transferring a newly learned motor skill from one side of the body to the other, using motor tasks performed during functional magnetic resonance imaging (fMRI).

Role: Co-PI (with Arend Van Gemmert)

D. McDougal 4/1/2015-5/31/2017
LaCATS Pilot Project \$100,000

Testing Glial Pathways to HAAF in Human Subjects using 13C Magnetic Resonance Spectroscopy

The goal of this project is to assess levels of metabolism of the cerebral glia in calorie-restricted individuals using 13C magnetic resonance spectroscopy techniques.

Role: Co-Investigator

I. Davidson 8/1/2014 – 7/31/2017
NSF IIS-1422218 \$299,980

Functional Network Discovery for Brain Connectivity

This grant develops data mining tools required for high-level network discovery tasks based on brain functional magnetic resonance imaging data.

Role: Co-PI (with Hans Mueller and Jane-Ling Wang)

O. Carmichael 2014 – 2017
Pennington Biomedical Research Foundation \$2,800,000

Start-up package for new Biomedical Imaging Center Director

This start-up package pays for the hiring of new research staff and the purchasing of new imaging equipment with a goal of increasing the depth and breadth of the Pennington Biomedical Imaging Center.

Role: Principal Investigator

O. Carmichael 9/1/2013-8/31/2016
State of California \$100,000

Determinants and consequences of white matter degeneration in Alzheimer's disease

The aim of this study is to assess associations between molecular measures of Alzheimer's disease pathology, gray matter and white matter volume from MRI, and cognitive functioning in elderly participants in the Alzheimer's Disease Neuroimaging Initiative (ADNI).

Role: Principal Investigator

O. Carmichael 4/1/2013 – 3/30/2016
Alzheimer's Association \$100,000

Imaging Biomarkers of Preclinical Cerebrovascular Disease

The aim of this study is to assess relationships among MRI markers of cerebrovascular disease and neuronal injury among healthy elderly individuals whose amyloid status has been determined through PET imaging.

Role: Principal Investigator

C. DeCarli 2001 - 2016
NIH/NIA P30 AG010129

U. C. Davis Alzheimer's Disease Core Center

Major goals of this project are to enroll, study and follow a cohort of patients and control subjects who are thoroughly characterized, and longitudinally followed to autopsy. This provides a research infrastructure for clinical and basic studies of dementia in Northern California.

Role: I am Associate Director of the Neuroimaging Core, responsible for validating and improving neuroimaging data collection for the Center.

O. Carmichael 7/1/2012 – 6/30/2015
NSF DMS-1208917 \$110,000

Multidimensional Curve Estimation for Diffusion MRI

The major goal of this project is to develop mathematically rigorous methods for tracing fiber tract trajectories in high angular resolution diffusion MRI. Collaborative proposal with DMS – 1208238 (L. Sakhanenko, PI).

Role: Principal Investigator

H. Mueller 9/1/2012 – 8/31/2015

NSF DMS-1228369 \$495,000

Statistical Representations and Algorithms for Brain Connectivity

The major goal of this project is to develop the statistical theory and quantitative algorithms necessary to allow robust quantification of inter-regional brain connectivity from functional magnetic resonance imagery.

Role: Co-PI

M. Weiner 2005 – 2012

NIH/NIA, U01 AG024904

Alzheimer's Disease Neuroimaging Initiative

The goals of this project are to perform analysis of abnormal white matter signals and stroke on subjects with normal cognition, MCI, and mild AD longitudinally followed for 3 years. These data will be combined with other data as a public resource for research on biological markers for early diagnosis and longitudinal evaluation of patients with AD.

Role: I oversee calculation of white matter hyperintensities, tissue volumes, cranial vault segmentations, and infarct ratings on all ADNI MRI scans.

O. Carmichael 2007 – 2008

UC Davis Alzheimer's Disease Center and Clinical Translational Sciences Center

Novel Hippocampal Morphometrics for Quantification of AD Structural Correlates

The goal of this pilot project is to explore the viability of a novel spatial morphometry measure for analysis of hippocampi from the University of California, Davis Alzheimer's Disease Center (UCD ADC). Sensitivity and specificity of the novel morphometric measure for prediction of AD in the UCD ADC will be evaluated.

Role: I provided leadership and data analysis for this project.

O. L. Lopez 2007 – 2012

NIH/NIA, R01AG20098

Predictors of Alzheimer's Disease in Mild Cognitive Impairment

The purpose of this final renewal of the Pittsburgh Cardiovascular Health Study Cognition Study is to determine risk of dementia among cognitively normal participants and individuals with MCI using MRI measures of brain structural integrity and cerebral perfusion as well as cognitive function, cardiovascular health, genetic characteristics, and other risk factors.

Role: I am contributing to analyses that relate brain MRI measures to risk of dementia, death, and ancillary clinical variables related to physical and vascular health.

C. DeCarli 2008 – 2009

Larry L. Hillblom Foundation

Larry L. Hillblom Network for Cognitive Neuroscience of Diabetes, Aging and Memory

The goal of this study was to understand how diabetes effects memory using structural and functional brain imaging and evoked response potentials to examine biological brain changes so that physicians can provide informed treatment and prevention recommendations for seniors and the population as a whole.

Role: I supported neuroimaging data analyses for this project.

H. Chui 2008 – 2013

NIH/NIA, P01 AG 012435

Aging Brain: Vasculature, Ischemia and Behavior

The major goal of this project is to determine how structural changes in the cerebral vasculature affect brain function and behavior in elderly persons.

Role: I oversee MRI data collection at UC Davis for this project.

O. Carmichael 2008 – 2013

NIH/NIA, K01 AG030514

MR Morphometrics and Cognitive Decline Rate in Large-Scale Aging Studies

The purpose of this study is to perform research and career development activities related to the neuroanatomical changes that occur during the course of late-life cognitive decline.

Role: Principal Investigator

- J. Lee 2008 – 2009
 UC Davis Alzheimer’s Disease Center Pilot Grant
Sex Hormones and Cerebral Imaging in Cognitive Dysfunction
 The major goals of this project were to quantify serum levels of sex hormone in a diverse cohort of community-dwelling elderly individuals and to relate sex hormone levels to MRI measures of brain structure.
Role: I performed neuroimaging data analyses for this project.
- O. Carmichael 2009 – 2012
 Dana Foundation
Novel MRI-Based Hippocampal Markers for Alzheimer’s Disease
 The major goals of this study were to adapt a novel MRI-based morphometric measure of hippocampal atrophy to a large-scale elderly neuroimaging cohort and assess associations between the measure and cognitive decline.
Role: Principal Investigator.
- N. Amenta 2011 – 2014
 NSF/IIS, 1117663
Shape Differences in the Biological Sciences
 The major goals of this project are to develop the mathematical, statistical, and computational methods required to establish anatomical correspondences among groups of biological specimens, and to apply the methods to primate skull fossils, human brain regions, and molecular surface models.
Role: As Co-PI, I provide human brain shape data based on brain MRI, as well as neuroscience expertise, that help drive development of correspondence algorithms.
- I. Davidson 2010 – 2012
 Office of Naval Research
SME: Guided Learning in Dynamic Environments
 The major goal of the grant is to develop machine learning algorithms for classification, clustering, and other problems that increase their usefulness with experience and expert user input. Applications of interest include classification and clustering of functional MRI data in various clinically-relevant tasks with input from domain expert neuroscientists.
Role: I provide functional brain MRI data and domain expertise in neuroscience for this grant.
- W. Polonik 2012 – 2015
 NSF/ DMS and MPS - 1148643
RTG: Statistics in the 21st Century - Objects, Geometry and Computing
 The project provides training to statistics graduate students in dealing with images, matrices, functions, trajectories, trees, graphs, and related objects in statistical analysis. This will prepare students and postdocs for more advanced studies and research activities in Statistics and the mathematical sciences in general
Role: As Senior Personnel, I provide neuroimaging mentorship and data to student trainees applying advanced statistical estimation techniques to the neuroimaging data.
- T. Simon 2009 – 2014
 NIH/NICHD, RO1 HD042971
Visuospatial Cognitive Deficit in Del22q11.2 Syndrome
 The goal of this project is to investigate the hypothesis that the characteristic visuospatial and numerical deficits in this disorder derive from inferior parietal lobe dysfunction.
Role: As a co-investigator, I lead computational analyses of MRI data, including regional hippocampus shape analysis and automated segmentation of relevant brain regions.

PUBLICATIONS

Peer-Reviewed Journal Papers

1. Bangen KJ, Thomas KR, Weigand AJ, Sanchez DL, Delano-Wood L, Edmonds EC, **Carmichael OT**, Schwarz CG, Brickman AM, Bondi MW, Alzheimer's Disease Neuroimaging I. *Pattern of Regional White Matter Hyperintensity Volume in Mild Cognitive Impairment Subtypes and Associations with Decline in Daily Functioning*. *Neurobiology of Aging*. 2020;86:134-142. PMID: 31791658.
2. Bernstein JPK, De Vito A, Weitzner DS, MacAulay R, Calamia M, Brouillette R, Foil H, **Carmichael OT**, Keller JN. *Examining relationships between multiple self-reported sleep measures and gait domains in cognitively healthy older adults*. *Gerontology*. 2020;66(1):47-54. PMID: 31071713.
3. Morris-Paterson TE, Stimpson SA, Miller RR, Barton ME, Leonard MS, **Carmichael O**, van Someren KA, Harridge SDR. *Total body skeletal muscle mass estimated by Magnetic Resonance Imaging and creatine (methyl-d₃) dilution in athletes*. *Scandinavian Journal of Medicine and Science in Sports*. 2019. PMID: 31715651. In Press.
4. Fiford CM, Sudre CH, Pemberton H, Walsh P, Manning E, Malone IB, Nicholas J, Bouvy WH, **Carmichael OT**, Biessels GJ, Cardoso MJ, Barnes J for the Alzheimer's Disease Neuroimaging Initiative. *Automated White Matter Hyperintensity Segmentation using Bayesian Model Selection: assessment and correlations with cognitive change*. *Neuroinformatics*. 2019. In Press.
5. Kirby KM, Pillai SR, **Carmichael OT**, Van Gemmert AWA. *Brain functional differences in visuo-motor task adaptation between dominant and non-dominant hand training*. *Experimental Brain Research*. 2019;237(12):3109-21. PMID: 31542802.
6. Satizabal CL, Adams HHH, Hibar DP, White CC, Knol MJ, Stein JL, Scholz M, Sargurupremraj M, Jahanshad N, Roshchupkin GV, Smith AV, Bis JC, Jian X, Luciano M, Hofer E, Teumer A, van der Lee SJ, Yang J, Yanek LR, Lee TV, Li S, Hu Y, Koh JY, Eicher JD, Desrivieres S, Arias-Vasquez A, Chauhan G, Athanasiu L, Renteria ME, Kim S, Hoehn D, Armstrong NJ, Chen Q, Holmes AJ, den Braber A, Kloszewska I, Andersson M, Espeseth T, Grimm O, Abramovic L, Alhusaini S, Milaneschi Y, Pappmeyer M, Axelsson T, Ehrlich S, Roiz-Santianez R, Kraemer B, Haberg AK, Jones HJ, Pike GB, Stein DJ, Stevens A, Bralten J, Vernooij MW, Harris TB, Filippi I, Witte AV, Guadalupe T, Wittfeld K, Mosley TH, Becker JT, Doan NT, Hagenaars SP, Saba Y, Cuellar-Partida G, Amin N, Hilal S, Nho K, Mirza-Schreiber N, Arfanakis K, Becker DM, Ames D, Goldman AL, Lee PH, Boomsma DI, Lovestone S, Giddaluru S, Le Hellard S, Mattheisen M, Bohlken MM, Kasperaviciute D, Schmaal L, Lawrie SM, Agartz I, Walton E, Tordesillas-Gutierrez D, Davies GE, Shin J, Ipser JC, Vinke LN, Hoogman M, Jia T, Burkhardt R, Klein M, Crivello F, Janowitz D, **Carmichael O**, Haukvik UK, Aribisala BS, Schmidt H, Strike LT, Cheng CY, Risacher SL, Putz B, Fleischman DA, Assareh AA, Mattay VS, Buckner RL, Mecocci P, Dale AM, Cichon S, Boks MP, Matarin M, Penninx B, Calhoun VD, Chakravarty MM, Marquand AF, Macare C, Kharabian Masouleh S, Oosterlaan J, Amouyel P, Hegenscheid K, Rotter JI, Schork AJ, Liewald DCM, de Zubicaray GI, Wong TY, Shen L, Samann PG, Brodaty H, Roffman JL, de Geus EJC, Tsolaki M, Erk S, van Eijk KR, Cavalleri GL, van der Wee NJA, McIntosh AM, Gollub RL, Bulayeva KB, Bernard M, Richards JS, Himali JJ, Loeffler M, Rommelse N, Hoffmann W, Westlye LT, Valdes Hernandez MC, Hansell NK, van Erp TGM, Wolf C, Kwok JBJ, Vellas B, Heinz A, Olde Loohuis LM, Delanty N, Ho BC, Ching CRK, Shumskaya E, Singh B, Hofman A, van der Meer D, Homuth G, Psaty BM, Bastin ME, Montgomery GW, Foroud TM, Reppermund S, Hottenga JJ, Simmons A, Meyer-Lindenberg A, Cahn W, Whelan CD, van Donkelaar MMJ, Yang Q, Hosten N, Green RC, Thalamuthu A, Mohnke S, Hulshoff Pol HE, Lin H, Jack CR, Jr., Schofield PR, Muhleisen TW, Maillard P, Potkin SG, Wen W, Fletcher E, Toga AW, Gruber O, Huentelman M, Davey Smith G, Launer LJ, Nyberg L, Jonsson EG, Crespo-Facorro B, Koen N, Greve DN, Uitterlinden AG, Weinberger DR, Steen VM, Fedko IO, Groenewold NA, Niessen WJ, Toro R, Tzourio C, Longstreth WT, Jr., Ikram MK, Smoller JW, van Tol MJ, Sussmann JE, Paus T, Lemaitre H, Schroeter ML, Mazoyer B, Andreassen OA, Holsboer F, Depondt C, Veltman DJ, Turner JA, Pausova Z, Schumann G, van Rooij D, Djurovic S, Deary IJ, McMahon KL, Muller-Myhsok B, Brouwer RM, Soinen H, Pandolfo M, Wassink TH, Cheung JW, Wolfers T, Martinot JL, Zwiers MP, Nauck M, Melle I, Martin NG, Kanai R, Westman E, Kahn RS, Sisodiya SM, White T, Saremi A, van Bokhoven H, Brunner HG, Volzke H, Wright MJ, van 't Ent D, Nothen MM, Ophoff RA, Buitelaar JK, Fernandez G, Sachdev PS, Rietschel M, van

- Haren NEM, Fisher SE, Beiser AS, Francks C, Saykin AJ, Mather KA, Romanczuk-Seiferth N, Hartman CA, DeStefano AL, Heslenfeld DJ, Weiner MW, Walter H, Hoekstra PJ, Nyquist PA, Franke B, Bennett DA, Grabe HJ, Johnson AD, Chen C, van Duijn CM, Lopez OL, Fornage M, Wardlaw JM, Schmidt R, DeCarli C, De Jager PL, Villringer A, Debette S, Gudnason V, Medland SE, Shulman JM, Thompson PM, Seshadri S, Ikram MA. *Genetic Architecture of Subcortical Brain Structures in 38,851 Individuals*. *Nature Genetics*. 2019;51(11):1624-36. PMID: 31636452.
7. Pasiakos SM, Berryman CE, Karl JP, Lieberman HR, Orr JS, Margolis LM, Caldwell JA, Young AJ, Montano MA, Evans WJ, Vartanian O, **Carmichael OT**, Gadde KM, Johannsen NM, Beyl RA, Harris MN, Rood JC. *Effects of testosterone supplementation on body composition and lower-body muscle function during severe exercise- and diet-induced energy deficit: A proof-of-concept, single centre, randomised, double-blind, controlled trial*. *EBioMedicine*. 2019;46:411-22. PMID: 31358477.
 8. **Carmichael O**, Stuchlik P, Pillai S, Biessels GJ, Dhullipudi R, Madden-Rusnak A, Martin S, Hsia DS, Fonseca V, Bazzano L. *High-normal adolescent fasting plasma glucose is associated with poorer midlife brain health: Bogalusa heart study*. *J Clin Endocrinol Metab*. 2019;104:4492-4500. PMID: 31058974.
 9. Espeland MA, Hayden KM, Lockhart SN, Yassine HN, Hoscheidt S, Yasar S, Luchsinger JA, Neiberg RH, Brinton RD, **Carmichael O**, Action for Health in Diabetes Brain Magnetic Resonance Imaging Research G. *Sex-related differences in brain volumes and cerebral blood flow among overweight and obese adults with type 2 diabetes: Exploratory analyses from the action for health in diabetes brain magnetic resonance imaging study*. *J Gerontol A Biol Sci Med Sci* 2019. PMID: 30997482. [Epub ahead of print].
 10. **Carmichael O**, Newton R, Jr. *Brain MRI findings related to Alzheimer's Disease in older African American adults*. *Prog Mol Biol Transl Sci*. 2019;165:3-23. PMID: 31481168.
 11. Huang X, Chafi H, Matthews KL II, **Carmichael O**, Li T, Miao Q, Wang S, Jia G. *Magnetic resonance elastography of the brain: A study of feasibility and reproducibility using an ergonomic pillow-like passive driver*. *Magnetic Resonance Imaging* 2019;59:68-76. PMID: 30858002.
 12. DeCarli C, Villeneuve S, Maillard P, Harvey D, Singh B, **Carmichael O**, Fletcher E, Olichney J, Farias S, Jagust W, Reed B, Mungas D. *Vascular burden score impacts cognition independent of Amyloid PET and MRI measures of AD and vascular brain injury*. *Journal of Alzheimer's Disease* 2019;68(1):187-196. PMID: 30775991.
 13. McDougal DH, Darpolor MM, DuVall MA, Sutton EF, Morrison CD, Gadde KM, Redman LM, **Carmichael OT**. *Glial acetate metabolism is increased following a 72-hour fast in metabolically healthy men and correlates with susceptibility to hypoglycemia*. *Acta Diabetologica*. 2018;55(10):1029-1036. PMID: 29931424.
 14. Calamia M, De Vito A, Bernstein JPK, Weitzner DS, **Carmichael OT**, Keller JN. *Pedometer-Assessed Steps Per Day as a Predictor of Cognitive Performance in Older Adults*. *Neuropsychology*. 2018;32(8):941-949. PMID: 30080077.
 15. Espeland MA, **Carmichael O**, Yasar S, Hugenschmidt C, Hazzard W, Hayden KM, Rapp SR, Neiberg R, Johnson KC, Hoscheidt S, Mielke MM, Action for Health in Diabetes Research Group. *Sex-related differences in the prevalence of cognitive impairment among overweight and obese adults with type 2 diabetes*. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*. 2018;14:1184-1192. PMID: 30201101.
 16. Espeland MA, Dutton GR, Neiberg R, **Carmichael O**, Hayden KM, Johnson K, Jeffery RW, Baker LD, Cook DR, Kitzman D, Rapp S, Action for Health in Diabetes Research Group. *Impact of a Multidomain Intensive Lifestyle Intervention on Complaints about Memory, Problem-Solving, and Decision-Making*

Abilities: The Action for Health in Diabetes Randomized Controlled Clinical Trial. J Gerontol A Biol Sci Med Sci. 2018; 73(11):1560-1567. PMCID: PMC6175017. PMID: 29846553.

17. Wood BM, Jia G, **Carmichael O**, McKlveen K, Homberger DG. *3D MRI modeling of thin and spatially complex soft tissue structures without shrinkage: Lamprey Myosepta as an example*. Anatomical Record. 2018; 301:1745-1763. PMID: 29752863.
18. **Carmichael O**, Pillai S, Shankapal P, McLellan A, Kay DG, Keller JN. *A combination of essential fatty acids, panax ginseng extract, and green tea catechins modifies brain fMRI signals in healthy older adults*. Journal of Nutrition, Health & Aging. 2018; 22:837-846. PMID: 30080229.
19. Yan H, **Carmichael O**, Paul D, Peng J for the Alzheimer's Disease Neuroimaging Initiative. *Estimating fiber orientation distribution from diffusion MRI with spherical needlets*. Medical Image Analysis. 2018; 46: 57-72. PMID: 29502033.
20. King JL, Fearnbach SN, Ramakrishnapillai S, Shankpal P, Geiselman PJ, Martin CK, Murray KB, Hicks JL, McClernon FJ, Apolzan JW, **Carmichael OT**. *Perceptual Characterization of the Macronutrient Picture System (MaPS) for Food Image fMRI*. Frontiers in Psychology-Eating Behavior. 2018; 9:17. PMCID: PMC5790788 PMID: 29434559.
21. **Carmichael O**, Schwarz AJ, Chatham CH, Scott D, Turner JA, Upadhyay J, Coimbra A, Goodman JA, Baumgartner R, English BA, Apolzan JW, Shankapal P, Hawkins KR. *The role of fMRI in drug development*. Drug Discovery Today. 2018 Feb; 23:333-348. PMCID: PMC5931333 PMID: 29154758.
22. Dadar M, Maranzano J, Ducharme S, **Carmichael OT**, DeCarli C, Collins L, Alzheimer's Disease Neuroimaging Initiative. *Validation of T1w-based segmentations of white matter hyperintensity volumes in large-scale datasets of aging*. Human Brain Mapping. 2018 Mar; 39:1093-1107. PMID: 29181872.
23. Fiford CM, Ridgway GR, Cash DM, Modat M, Nicholas J, Manning EN, Malone IB, Biessels GJ, Ourselin S, **Carmichael OT**, Cardoso MJ, Barnes J. *Patterns of progressive atrophy vary with age in Alzheimer's disease patients*. Neurobiology of Aging. 2018 Mar; 63:22-32. PMCID: PMC5805840. PMID: 29220823.
24. Zhan L, Jenkins LM, Zhang A, Conte G, Forbes A, Harvey D, Angkustsiri K, Goodrich-Hunsaker NJ, Durdle C, Lee A, Schumann C, **Carmichael O**, Kalish K, Leow AD, Simon TJ. *Baseline connectome modular abnormalities in the childhood phase of a longitudinal study on individuals with chromosome 22q11.2 deletion syndrome*. Human Brain Mapping. 2018 Jan; 39:232-248. PMCID: PMC5757536. PMID: 28990258.
25. Espeland MA, Luchsinger JA, Neiberg RH, **Carmichael O**, Laurienti PJ, Pi-Sunyer X, Wing RR, Cook D, Horton E, Casanova R, Erickson K, and Bryan NR, for the Action for Health in Diabetes Brain Magnetic Resonance Imaging Research Group. *Long Term Effect of Intensive Lifestyle Intervention on Cerebral Blood Flow*. Journal of the American Geriatric Society. 2018 Jan; 66:120-126. PMCID: PMC5777883. PMID: 29082505.
26. Bourgeois B, Watts K, Thomas DM, **Carmichael O**, Hu FB, Heo M, Hall JE, Heymsfield SB. *Associations between height and blood pressure in the United States population*. Medicine. 2017 Dec; 96:e9233. PMID: 29390353.
27. Espeland MA, **Carmichael O**, Hayden K, Neiberg RH, Newman AB, Keller JN, Wadden TA, Rapp SR, Hill JO, Horton ES, Johnson KC, Wagenknecht L, Wing RR, Action for Health in Diabetes Brain Magnetic Resonance Imaging, Action for Health Movement, Memory Ancillary Study Research Groups. *Long-term Impact of Weight Loss Intervention on Changes in Cognitive Function: Exploratory Analyses from the Action for Health in Diabetes Randomized Controlled Clinical Trial*. Journals of Gerontology Series A: Biomedical Sciences and Medical Sciences. 2018 Mar; 73:484-491. PMCID: PMC5861893 PMID: 28958022.

28. Dadar M, Maranzano J, Misquitta K, Anor CJ, Fonov VS, Tartaglia MC, **Carmichael OT**, Decarli C, Collins DL, Alzheimer's Disease Neuroimaging Initiative. *Performance comparison of 10 different classification techniques in segmenting white matter hyperintensities in aging*. Neuroimage. 2017 Aug 15; 157:233-249. PMID: 28602597.
29. Aboualizadeh E, ***Carmichael O**, He P, Albarado D, Morrison C, *Hirschmugl C. *Quantifying biochemical alterations in brown and subcutaneous white adipose tissues of mice using Fourier transform infrared widefield imaging*. Frontiers in Endocrinology. 2017; 8:121. PMCID: PMC5450226. PMID: 28620356. (*Both authors contributed equally as senior author)
30. Pasiakos SM, Berryman CE, Karl JP, Lieberman HR, Orr JS, Margolis LM, Caldwell JA, Young AJ, Montano MA, Evans WJ, Vartanian O, **Carmichael OT**, Gadde KM, Harris M, Rood JC. *Physiological and psychological effects of testosterone during severe energy deficit and recovery: A study protocol for a randomized, placebo-controlled trial for Optimizing Performance for Soldiers (OPS)*. Contemporary Clinical Trials. 2017 Jul; 58:47-57. PMID: 28479217.
31. Watson C, Busovaca E, Foley JM, Allen IE, Schwarz CG, Jahanshad N, Nir TM, Esmacili-Firidouni P, Milanini B, Rosen H, **Carmichael OT**, Thompson PM, Valcour VG. *White Matter Hyperintensities Correlate to Cognition and Fiber Tract Integrity in Older Adults with HIV*. Journal of Neurovirology. 2017 Jun; 23(3):422-429. PMID: 28101804.
32. Dadar M, Pascoal T, Manitsirikul S, Misquitta K, Tartaglia C, Brietner J, Rosa-Neto P, Carmichael O, DeCarli C, Collins DL. *Validation of a regression technique for segmentation of white matter hyperintensities in Alzheimer's disease*. IEEE Trans Med Imaging. 2017 Apr 12. PMID: 28422655.
33. Fiford CM, Manning EN, Bartlett JW, Cash DM, Malone IB, Ridgway GR, Lehmann M, Leung KK, Sudre CH, Ourselin S, Biessels GJ, **Carmichael OT**, Fox NC, Cardoso MJ, Barnes J, Alzheimer's Disease Neuroimaging Initiative. *White matter hyperintensities are associated with disproportionate progressive hippocampal atrophy*. Hippocampus. 2017 Mar; 27(3):249-262. PMCID: PMC5324634. PMID: 27933676.
34. Scott JA, Tosun D, Braskie MN, Maillard P, Thompson P, Weiner M, DeCarli C, **Carmichael OT**. *Independent value added by diffusion MRI for prediction of cognitive function in older adults*. NeuroImage: Clinical. 2017; 14:166-173. PMID: 28180075.
35. Hibar DP, Adams HH, Jahanshad N, Chauhan G, Stein JL, Hofer E, Renteria ME, Bis JC, Arias-Vasquez A, Ikram MK, Desrivieres S, Vernooij MW, Abramovic L, Alhusaini S, Amin N, Andersson M, Arfanakis K, Aribisala BS, Armstrong NJ, Athanasiu L, Axelsson T, Beecham AH, Beiser A, Bernard M, Blanton SH, Bohlken MM, Boks MP, Bralten J, Brickman AM, **Carmichael O**, Chakravarty MM, Chen Q, Ching CR, Chouraki V, Cuellar-Partida G, Crivello F, Den Braber A, Doan NT, Ehrlich S, Giddaluru S, Goldman AL, Gottesman RF, Grimm O, Griswold ME, Guadalupe T, Gutman BA, Hass J, Haukvik UK, Hoehn D, Holmes AJ, Hoogman M, Janowitz D, Jia T, Jorgensen KN, Karbalai N, Kasperaviciute D, Kim S, Klein M, Kraemer B, Lee PH, Liewald DC, Lopez LM, Luciano M, Macare C, Marquand AF, Matarin M, Mather KA, Mattheisen M, McKay DR, Milaneschi Y, Munoz Maniega S, Nho K, Nugent AC, Nyquist P, Loohuis LM, Oosterlaan J, Pampmeyer M, Pirpamer L, Putz B, Ramasamy A, Richards JS, Risacher SL, Roiz-Santianez R, Rommelse N, Ropele S, Rose EJ, Royle NA, Rundek T, Samann PG, Saremi A, Satizabal CL, Schmaal L, Schork AJ, Shen L, Shin J, Shumskaya E, Smith AV, Sprooten E, Strike LT, Teumer A, Tordesillas-Gutierrez D, Toro R, Trabzuni D, Trompet S, Vaidya D, Van der Grond J, Van der Lee SJ, Van der Meer D, Van Donkelaar MM, Van Eijk KR, Van Erp TG, Van Rooij D, Walton E, Westlye LT, Whelan CD, Windham BG, Winkler AM, Wittfeld K, Woldehawariat G, Wolf C, Wolfers T, Yanek LR, Yang J, Zijdenbos A, Zwiens MP, Agartz I, Almasy L, Ames D, Amouyel P, Andreassen OA, Arepalli S, Assareh AA, Barral S, Bastin ME, Becker DM, Becker JT, Bennett DA, Blangero J, van Bokhoven H, Boomsma DI, Brodaty H, Brouwer RM, Brunner HG, Buckner RL, Buitelaar JK, Bulayeva KB, Cahn W, Calhoun VD, Cannon DM, Cavalleri GL, Cheng CY, Cichon S, Cookson MR, Corvin A, Crespo-Facorro B, Curran JE, Czisch M, Dale AM, Davies GE, De Craen AJ, De Geus EJ, De Jager PL, De Zubicaray GI, Deary IJ, Dobbie S, DeCarli C, Delanty N, Depondt C, DeStefano A, Dillman A, Djurovic S, Donohoe G, Drevets WC, Duggirala R, Dyer TD, Enzinger C, Erk S, Espeseth T, Fedko IO, Fernandez G, Ferrucci L, Fisher SE,

Fleischman DA, Ford I, Fornage M, Foroud TM, Fox PT, Francks C, Fukunaga M, Gibbs JR, Glahn DC, Gollub RL, Goring HH, Green RC, Gruber O, Gudnason V, Guelfi S, Haberg AK, Hansell NK, Hardy J, Hartman CA, Hashimoto R, Hegenscheid K, Heinz A, Le Hellard S, Hernandez DG, Heslenfeld DJ, Ho BC, Hoekstra PJ, Hoffmann W, Hofman A, Holsboer F, Homuth G, Hosten N, Hottenga JJ, Huentelman M, Pol HE, Ikeda M, Jack CR, Jr., Jenkinson M, Johnson R, Jonsson EG, Jukema JW, Kahn RS, Kanai R, Kloszewska I, Knopman DS, Kochunov P, Kwok JB, Lawrie SM, Lemaitre H, Liu X, Longo DL, Lopez OL, Lovestone S, Martinez O, Martinot JL, Mattay VS, McDonald C, McIntosh AM, McMahon FJ, McMahon KL, Mecocci P, Melle I, Meyer-Lindenberg A, Mohnke S, Montgomery GW, Morris DW, Mosley TH, Muhleisen TW, Muller-Myhsok B, Nalls MA, Nauck M, Nichols TE, Niessen WJ, Nothen MM, Nyberg L, Ohi K, Olvera RL, Ophoff RA, Pandolfo M, Paus T, Pausova Z, Penninx BW, Pike GB, Potkin SG, Psaty BM, Reppermund S, Rietschel M, Roffman JL, Romanczuk-Seiferth N, Rotter JI, Ryten M, Sacco RL, Sachdev PS, Saykin AJ, Schmidt R, Schmidt H, Schofield PR, Sigurdsson S, Simmons A, Singleton A, Sisodiya SM, Smith C, Smoller JW, Soininen H, Steen VM, Stott DJ, Sussmann JE, Thalamuthu A, Toga AW, Traynor BJ, Troncoso J, Tsolaki M, Tzourio C, Uitterlinden AG, Hernandez MC, Van der Brug M, van der Lugt A, van der Wee NJ, Van Haren NE, van 't Ent D, Van Tol MJ, Vardarajan BN, Vellas B, Veltman DJ, Volzke H, Walter H, Wardlaw JM, Wassink TH, Weale ME, Weinberger DR, Weiner MW, Wen W, Westman E, White T, Wong TY, Wright CB, Zielke RH, Zonderman AB, Martin NG, Van Duijn CM, Wright MJ, Longstreth WT, Schumann G, Grabe HJ, Franke B, Launer LJ, Medland SE, Seshadri S, Thompson PM, Ikram MA. *Novel genetic loci associated with hippocampal volume*. Nat Commun. 2017 Jan 18; 8:13624. PMID: 28098162.

36. Adams HH, Hibar DP, Chouraki V, Stein JL, Nyquist PA, Renteria ME, Trompet S, Arias-Vasquez A, Seshadri S, Desrivieres S, Beecham AH, Jahanshad N, Wittfeld K, Van der Lee SJ, Abramovic L, Alhusaini S, Amin N, Andersson M, Arfanakis K, Aribisala BS, Armstrong NJ, Athanasiu L, Axelsson T, Beiser A, Bernard M, Bis JC, Blanken LM, Blanton SH, Bohlken MM, Boks MP, Bralten J, Brickman AM, **Carmichael O**, Chakravarty MM, Chauhan G, Chen Q, Ching CR, Cuellar-Partida G, Braber AD, Doan NT, Ehrlich S, Filippi I, Ge T, Giddaluru S, Goldman AL, Gottesman RF, Greven CU, Grimm O, Griswold ME, Guadalupe T, Hass J, Haukvik UK, Hilal S, Hofer E, Hoehn D, Holmes AJ, Hoogman M, Janowitz D, Jia T, Kasperaviciute D, Kim S, Klein M, Kraemer B, Lee PH, Liao J, Liewald DC, Lopez LM, Luciano M, Macare C, Marquand A, Matarin M, Mather KA, Mattheisen M, Mazoyer B, McKay DR, McWhirter R, Milaneschi Y, Mirza-Schreiber N, Muetzel RL, Maniega SM, Nho K, Nugent AC, Loohuis LM, Oosterlaan J, Pappmeyer M, Pappa I, Pirpamer L, Pudas S, Putz B, Rajan KB, Ramasamy A, Richards JS, Risacher SL, Roiz-Santianez R, Rommelse N, Rose EJ, Royle NA, Rundek T, Samann PG, Satizabal CL, Schmaal L, Schork AJ, Shen L, Shin J, Shumskaya E, Smith AV, Sprooten E, Strike LT, Teumer A, Thomson R, Tordesillas-Gutierrez D, Toro R, Trabzuni D, Vaidya D, Van der Grond J, Van der Meer D, Van Donkelaar MM, Van Eijk KR, Van Erp TG, Van Rooij D, Walton E, Westlye LT, Whelan CD, Windham BG, Winkler AM, Woldehawariat G, Wolf C, Wolfers T, Xu B, Yanek LR, Yang J, Zijdenbos A, Zwiers MP, Agartz I, Aggarwal NT, Almasy L, Ames D, Amouyel P, Andreassen OA, Arepalli S, Assareh AA, Barral S, Bastin ME, Becker DM, Becker JT, Bennett DA, Blangero J, van Bokhoven H, Boomsma DI, Brodaty H, Brouwer RM, Brunner HG, Buckner RL, Buitelaar JK, Bulayeva KB, Cahn W, Calhoun VD, Cannon DM, Cavalleri GL, Chen C, Cheng CY, Cichon S, Cookson MR, Corvin A, Crespo-Facorro B, Curran JE, Czisch M, Dale AM, Davies GE, De Geus EJ, De Jager PL, de Zubicaray GI, Delanty N, Depondt C, DeStefano AL, Dillman A, Djurovic S, Donohoe G, Drevets WC, Duggirala R, Dyer TD, Erk S, Espeseth T, Evans DA, Fedko IO, Fernandez G, Ferrucci L, Fisher SE, Fleischman DA, Ford I, Foroud TM, Fox PT, Francks C, Fukunaga M, Gibbs JR, Glahn DC, Gollub RL, Goring HH, Grabe HJ, Green RC, Gruber O, Gudnason V, Guelfi S, Hansell NK, Hardy J, Hartman CA, Hashimoto R, Hegenscheid K, Heinz A, Le Hellard S, Hernandez DG, Heslenfeld DJ, Ho BC, Hoekstra PJ, Hoffmann W, Hofman A, Holsboer F, Homuth G, Hosten N, Hottenga JJ, Pol HE, Ikeda M, Ikram MK, Jack CR, Jr., Jenkinson M, Johnson R, Jonsson EG, Jukema JW, Kahn RS, Kanai R, Kloszewska I, Knopman DS, Kochunov P, Kwok JB, Lawrie SM, Lemaitre H, Liu X, Longo DL, Longstreth WT, Jr., Lopez OL, Lovestone S, Martinez O, Martinot JL, Mattay VS, McDonald C, McIntosh AM, McMahon KL, McMahon FJ, Mecocci P, Melle I, Meyer-Lindenberg A, Mohnke S, Montgomery GW, Morris DW, Mosley TH, Muhleisen TW, Muller-Myhsok B, Nalls MA, Nauck M, Nichols TE, Niessen WJ, Nothen MM, Nyberg L, Ohi K, Olvera RL, Ophoff RA, Pandolfo M, Paus T, Pausova Z, Penninx BW, Pike GB, Potkin SG, Psaty BM, Reppermund S, Rietschel M, Roffman JL, Romanczuk-Seiferth N, Rotter JI, Ryten M, Sacco RL, Sachdev PS, Saykin AJ, Schmidt R, Schofield PR, Sigurdsson S, Simmons A, Singleton A, Sisodiya SM, Smith C, Smoller JW, Soininen H,

- Srikanth V, Steen VM, Stott DJ, Sussmann JE, Thalamuthu A, Tiemeier H, Toga AW, Traynor BJ, Troncoso J, Turner JA, Tzourio C, Uitterlinden AG, Hernandez MC, Van der Brug M, Van der Lugt A, Van der Wee NJ, Van Duijn CM, Van Haren NE, Van TED, Van Tol MJ, Vardarajan BN, Veltman DJ, Vernooij MW, Volzke H, Walter H, Wardlaw JM, Wassink TH, Weale ME, Weinberger DR, Weiner MW, Wen W, Westman E, White T, Wong TY, Wright CB, Zielke HR, Zonderman AB, Deary IJ, DeCarli C, Schmidt H, Martin NG, De Craen AJ, Wright MJ, Launer LJ, Schumann G, Fornage M, Franke B, DeBette S, Medland SE, Ikram MA, Thompson PM. *Novel genetic loci underlying human intracranial volume identified through genome-wide association*. Nat Neurosci. 2016 Dec; 19(12):1569-82. PMCID: PMC5227112. PMID: 27694991.
37. Scott JA, Braskie MN, Duygu T, Maillard P, Thompson PM, DeCarli C, **Carmichael OT**. *Cerebral Amyloid is Associated with Greater White Matter Hyperintensity Accrual in Cognitively Normal Elderly*. Neurobiol Aging. 2016 Dec; 48:48-52. PMID: 27639120.
 38. Petersen A, Zhao J, **Carmichael O**, Muller HG. *Quantifying Individual Brain Connectivity with Functional Principal Component Analysis for Networks*. Brain Connect. 2016 Jun 7. PMID: 27267074.
 39. Scott JA, Goodrich-Hunsaker N, Kalish K, Lee A, Hunsaker MR, Schumann CM, **Carmichael OT**, Simon TJ. *The hippocampi of children with chromosome 22q11.2 deletion syndrome have localized anterior alterations that predict severity of anxiety*. J Psychiatry Neurosci. 2016 Apr; 41(3): 203–13. PMID: 26599134.
 40. Raji CA, Merrill DA, Eyre H, Mallam S, Torosyan N, Erickson KI, Lopez OL, Becker JT, **Carmichael OT**, Gach HM, Thompson PM, Longstreth WT Jr., Kuller LH. *Longitudinal relationships between caloric expenditure and gray matter in the Cardiovascular Health Study*. J Alzheimers Dis. 2016 Mar 11; 52(2): 719–29. PMID: 26967227.
 41. Cook PF, Reichmuth C, Rouse AA, Libby LA, Dennison SE, **Carmichael OT**, Kruse-Elliott KT, Bloom J, Singh B, Fravel VA, Barbosa L, Stuppino JJ, Van Bonn WG, Gulland FMD, Ranganath C. *Algal toxin impairs sea lion memory and hippocampal connectivity, with implications for strandings*. Science. 2015 Dec 18; 350(6267): 1545–7. PMID: 26668068.
 42. Heymsfield SB, Hu HH, Shen W, **Carmichael O**. *Emerging technologies and their applications in lipid compartment measurement*. Trends Endocrinol Metab. 2015 Dec 3; 26(12): 688-98. PMID: 26596676.
 43. Scott JA, Braskie MN, Tosun D, Thompson PM, Weiner M, DeCarli C, **Carmichael OT**, Alzheimer's Disease Neuroimaging Initiative. *Cerebral amyloid and hypertension are independently associated with white matter lesions in elderly*. Front. Aging Neurosci. 2015 Dec 01; 7:221. PMID: 26648866.
 44. Jack CR, Barnes J, Bernstein MA, Borowski BJ, Brewer J, Clegg S, Dale AM, **Carmichael O**, Ching C, DeCarli C, Desikan RS, Fennema-Notestine C, Fjell AM, Fletcher E, Fox NC, Gunter J, Gutman BA, Holland D, Hua X, Insel P, Kantarci K, Killiany RJ, Krueger G, Leung KK, Mackin S, Maillard P, Molone I, Mattsson N, McEvoy L, Modat M, Mueller S, Nosheny R, Ourselin S, Schuff N, Senjem ML, Simonson A, Thompson PM, Rettmann D, Vemuri P, Walhovd K, Zhao Y, Zuk SM, Weiner M. *Magnetic resonance imaging in Alzheimer's Disease Neuroimaging Initiative 2*. Alzheimers Dement. 2015 Jul; 11(7): 740-56. PMCID: PMC4523217. PMID: 26194310.
 45. Tosto G, Zimmerman ME, Hamilton JL, **Carmichael OT**, Brickman AM, Alzheimer's Disease Neuroimaging Initiative. *The effect of white matter hyperintensities on neurodegeneration in mild cognitive impairment*. Alzheimers Dement. 2015 Jun 13. pii: S1552-5260(15)00183-1. doi: 10.1016/j.jalz.2015.05.014. PMID: 26079417.
 46. **Carmichael O**, Sakhanenko L. *Estimation of integral curves from high angular resolution diffusion imaging (HARDI) data*. Linear Algebra Appl. 2015 May 15; 473:377-403. PMCID: PMC4415655. PMID: 25937674.

47. Deng Y, Goodrich-Hunsaker NJ, Cabaral M, Amaral DG, Buonocore MH, Harvey D, Kalish K, **Carmichael OT**, Schumann CM, Lee A, Dougherty RF, Perry LM, Wandell BA, Simon TJ. *Disrupted fornix integrity in children with chromosome 22q11.2 deletion syndrome*. Psychiatry Res. 2015 Apr 30; 232(1):106-14. PMID: PMC4404209. PMID: 25748884.
48. Maillard P, **Carmichael OT**, Reed B, Mungas D, DeCarli C. *Cooccurrence of vascular risk factors and late-life white-matter integrity changes*. Neurobiol Aging. 2015 Apr; 36(4):1670-7. PMID: PMC4380772. PMID: 25666995.
49. Lockhart SN, Luck SJ, Geng J, Beckett L, Disbrow EA, **Carmichael O**, DeCarli C. *White matter hyperintensities among older adults are associated with futile increase in frontal activation and functional connectivity during spatial search*. PLoS One. 2015 Mar 20; 10(3):e0122445. PMID: PMC4368687. PMID: 25793922.
50. Yokoyama JS, Lee AK, Takada LT, Busovaca E, Bonham LW, Chao SZ, Tse M, He J, Schwarz CG, **Carmichael OT**, Matthews BR, Karydas A, Weiner MW, Coppola G, DeCarli CS, Miller BL, Rosen HJ. *Apolipoprotein ε4 is associated with lower brain volume in cognitively normal Chinese but not white older adults*. PLoS One. 2015 Mar 4; 10(3):e0118338. PMID: PMC4349764. PMID: 25738563.
51. Boyle CP, Raji CA, Erickson KI, Lopez OL, Becker JT, Gach HM, Longstreth WT Jr, Teverovskiy L, Kuller LH, **Carmichael OT**, Thompson PM. *Physical activity, body mass index, and brain atrophy in Alzheimer's disease*. Neurobiol Aging. 2015 Jan; 36 Suppl 1:S194-202. PMID: PMC4303036. PMID: 25248607.
52. **Carmichael O**. *Preventing vascular effects on brain injury and cognition late in life: knowns and unknowns*. Neuropsychol Rev. 2014 Sep; 24(3):371-87. PMID: PMC4169073. PMID: 25085314.
53. Riverol M, Becker JT, Lopez OL, Raji CA, Thompson PM, Carmichael OT, Gach HM, Longstreth WT, Jr., Fried L, Tracy RP, Kuller LH. *Relationship between systemic and cerebral vascular disease and brain structure integrity in normal elderly individuals*. J Alzheimers Dis. 2015; 44(1):319–28. PMID: PMC4297227 PMID: 25213770.
54. Tosto G, Zimmerman ME, **Carmichael OT**, Brickman AM; *Predicting aggressive decline in mild cognitive impairment: the importance of white matter hyperintensities*. Alzheimer's Disease Neuroimaging Initiative.
55. JAMA Neurol. 2014 Jul 1;71(7):872-7. PMID: PMC4107926. PMID: 24821476.
56. Fletcher E, **Carmichael O**, Pasternak O, Maier-Hein KH, DeCarli C. *Early brain loss in circuits affected by Alzheimer's Disease is predicted by fornix microstructure but may be independent of gray matter*. Frontiers in Aging Neuroscience, 2014 May 28;6:106. PMID: PMC4035735. PMID: 24904414.
57. **Carmichael O** and Sakhanenko L. *Integral Curves From Noisy Diffusion MRI Data With Closed-Form Uncertainty Estimates*. Stat Inference Stoch Process. 2015:1-31.
58. Disbrow EA, **Carmichael O**, He J, Lanni KE, Dressler EM, Zhang L, Malhado-Chang N, Sigvardt KA. *Resting State Functional Connectivity is Associated with Cognitive Dysfunction in Non-Demented People with Parkinson's Disease*. Journal of Parkinson's disease. 2014; 4(3):453–65. PMID: 24662193.
59. Maillard P, Fletcher E, Lockhart SN, Roach AE, Reed B, Mungas D, DeCarli C, **Carmichael OT**. *White Matter Hyperintensities and their Penumbra Lie Along a Continuum of Injury In The Aging Brain*. Stroke. 2014 Jun;45(6):1721-6. PMID: PMC4102626. PMID: 24781079.
60. Lockhart SN, Roach AE, Luck SJ, Geng J, Beckett L, **Carmichael O**, DeCarli C. *White matter hyperintensities are associated with visual search behavior independent of generalized slowing in aging*. Neuropsychologia. 2014 Jan; 52: 93-101. PMID: PMC3924853. PMID: 24183716.

61. **Carmichael O**, Chen J, Paul D, Peng J. *Diffusion tensor smoothing through weighted Karcher means*. Electronic Journal of Statistics. 2013;7: 1913-56. PMCID: PMC4239671. PMID: 25419264.
62. Fletcher E, Raman M, Huebner P, Liu A, Mungas D, **Carmichael O**, DeCarli C. *Loss of fornix white matter volume as a predictor of cognitive impairment in cognitively normal elderly individuals*. JAMA Neurology. 2013 Nov;70(11):1389-95. PMCID: PMC4059679. PMID: 24018960.
63. Barnes J, **Carmichael OT**, Leung KK, Schwarz C, Ridgway GR, Bartlett JW, Malone IB, Schott JM, Rossor MN, Biessels GJ, DeCarli C, Fox NC, Alzheimer's Disease Neuroimaging Initiative. *Vascular and Alzheimer's disease markers independently predict brain atrophy rate in Alzheimer's Disease Neuroimaging Initiative controls*. Neurobiology of Aging. 2013 Aug;34(8):1996-2002. PMCID: PMC3810644. PMID: 23522844.
64. Xie J, Fletcher E, Singh B, **Carmichael O**. *Robust Measurement of Individual Localized Changes to The Aging Hippocampus*. Computer Vision and Image Understanding. 2013 Sep 1;117(9): 1128-37. PMCID: PMC4130487. PMID: 25132791.
65. Farias ST, Park LQ, Harvey DJ, Simon C, Reed BR, **Carmichael O**, Mungas D. *Everyday Cognition in older adults: Associations with neuropsychological performance and structural brain imaging*. Journal of the International Neuropsychological Society. 2013 Apr;19(4): 430-41. PMCID: PMC3818105. PMID: 23369894.
66. Haight TJ, Landau SM, **Carmichael O**, Schwarz C, DeCarli C, Jagust WJ, Alzheimer's Disease Neuroimaging Initiative. *Dissociable effects of Alzheimer's Disease and white matter hyperintensities on brain metabolism*. JAMA Neurology. 2013 Aug;70(8):1039-45. PMCID: PMC3779687. PMID: 23779022.
67. Guzman, V.A., **Carmichael, O.T.**, Schwarz, C., Tosto, G., Zimmerman, M.E., Brickman, A.M. for the Alzheimer's Disease Neuroimaging Initiative. *White matter hyperintensities and amyloid are independently associated with entorhinal cortex volume among individuals with mild cognitive impairment*. Alzheimers and Dementia 2013 Jan 30. PMCID: PMC3663926. PMID: 23375566.
68. **Owen Carmichael**, Donald G McLaren, Douglas Tommet, Dan Mungas, Richard N Jones. *Coevolution of brain structures in amnesic mild cognitive impairment*. Neuroimage, Volume 66, 1 February 2013, Pages 449-456. PMCID: PMC3593811. PMID: 23103689.
69. Bradley T Wyman; Danielle J Harvey; Karen Crawford; Matt A Bernstein; **Owen Carmichael**; Patricia E Cole; Paul Crane; Charles DeCarli; Nick C Fox; Jeffrey L Gunter; Derek Hill; Ronald J Killiany; Chahin Pachai; Adam J Schwarz; Norbert Schuff; Matthew L Senjem; Joyce Suhy; Paul M Thompson; Michael Weiner; Clifford R Jack Jr. *Standardization of Analysis Sets for Reporting Results from ADNI MRI data*. Alzheimers Dement. May 2013;9(3):332-337. PMCID: PMC3891834. PMID: 23110865.
70. Pauline Maillard, Sudha Seshadri, Alexa Beiser, Jayandra Himali, Rhoda Au, Evan Fletcher, **Owen Carmichael**, Philip A Wolf, Charles DeCarli. *Effects of systolic blood pressure on white-matter integrity in young adults in the Framingham Heart Study: a cross-sectional study*. The Lancet Neurology, Volume 11, Issue 12, December 2012, Pages 1039-1047. PMCID: PMC3510663.
71. Jasmine Nettiksimmons, Laurel Beckett, Christopher Schwarz, **Owen Carmichael**, Evan Fletcher, Charles DeCarli, and the Alzheimer's Disease Neuroimaging Initiative. *Subgroup of ADNI normal controls characterized by atrophy and cognitive decline associated with vascular damage*. Psychology and aging, 28(1), 191-201. PMCID: PMC3751169. PMID: 23527743.
72. Evan Fletcher, Alexander Knaack, Baljeet Singh, Evan Lloyd, Evan Wu, **Owen Carmichael**, Charles DeCarli, and the Alzheimer's Disease Neuroimaging Initiative. *Combining Boundary-Based Methods with Tensor-Based Morphometry in the Measurement of Longitudinal Brain Change*. IEEE Transactions on Medical Imaging, 2013 Feb;32(2):223-36. PMCID: PMC3775845. PMID: 23014714.

73. Maillard P, **Carmichael O**, Harvey D, Fletcher E, Reed B, Mungas D, Decarli C. *FLAIR and Diffusion MRI Signals Are Independent Predictors of White Matter Hyperintensities*. *AJNR Am J Neuroradiol*. 2013 Jan;34(1):54-61. PMID: PMC3710440. PMID: 22700749.
74. Xie J, **Carmichael O**. *Brain shape regression components*. *Conf Proc IEEE Eng Med Biol Soc*. 2012;2012:2680-3. PMID: PMC3770859. PMID: 23366477.
75. Viswanath V, Fletcher E, Singh B, Smith N, Paul D, Peng J, Chen J, **Carmichael O**. *Impact of DTI smoothing on the study of brain aging*. *Conf Proc IEEE Eng Med Biol Soc*. 2012;2012:94-7. PMID: PMC3786184. PMID: 23365840.
76. Schwarz CG, Fletcher E, Singh B, Liu A, Smith N, DeCarli C, **Carmichael O**. *Most edges in markov random fields for white matter hyperintensity segmentation are worthless*. *Conf Proc IEEE Eng Med Biol Soc*. 2012;2012:2684-7. PMID: PMC3775838. PMID: 23366478.
77. Maillard P, Seshadri S, Beiser A, Himali JJ, Au R, Fletcher E, **Carmichael O**, Wolf PA, DeCarli C. *Effects of systolic blood pressure on white-matter integrity in young adults in the framingham heart study: A cross-sectional study*. *Lancet Neurol*. Dec 2012;11(12):1039-47. PMID: PMC3510663. PMID: 23122892.
78. Fletcher E, Singh B, Harvey D, **Carmichael O**, DeCarli C. *Adaptive image segmentation for robust measurement of longitudinal brain tissue change*. *Conf Proc IEEE Eng Med Biol Soc*. 2012;2012:5319-22. PMID: PMC3776590. PMID: 23367130.
79. Fletcher E, **Carmichael O**, Decarli C. *MRI non-uniformity correction through interleaved bias estimation and b-spline deformation with a template*. *Conf Proc IEEE Eng Med Biol Soc*. 2012;2012:106-9. PMID: PMC3775836. PMID: 23365843.
80. **Carmichael OT**, Salloway S. *Imaging markers of incipient dementia: The white matter matters*. *Neurology*. Aug 2012;79(8):726-7. PMID: 22843261.
81. **Carmichael O**, Lockhart S. *The role of diffusion tensor imaging in the study of cognitive aging*. *Curr Top Behav Neurosci*. 2012;11:289-320. PMID: 22081443.
82. Cardenas VA, Reed B, Chao LL, Chui H, Sanossian N, DeCarli CC, Mack W, Kramer J, Hodis HN, Yan M, Buonocore MH, **Carmichael O**, Jagust WJ, Weiner MW. *Associations among vascular risk factors, carotid atherosclerosis, and cortical volume and thickness in older adults*. *Stroke*. Nov 2012;43(11):2865-70. PMID: PMC3732460. PMID: 22984010.
83. Oscar L. Lopez, James T. Becker, Yue-fang Chang, Robert A. Sweet, Steven T. DeKosky, Michael H. Gach, **Owen T. Carmichael**, Eric McDade, and Lewis H. Kuller. *Incidence of mild cognitive impairment in the Pittsburgh CHS Cognition Study*. *Neurology*. 2012 Oct 9;79(15):1599-606. PMID: PMC3475628. PMID: 23019262.
84. Pauline Maillard, **Owen Carmichael**, Evan Fletcher, Bruce R. Reed, Dan Mungas, and Charles S. DeCarli. *Co-Evolution of White Matter Hyperintensities and Cognition in the Elderly* *Neurology* July 31, 2012 vol. 79 no. 5 442-448. PMID: PMC3405254. PMID: 22815562.
85. Dong Young Lee, Evan Fletcher, **Owen Carmichael**, Baljeet Singh, Dan Mungas, Bruce Reed, Oliver Martinez, Michael Buonocore, Maria Persianinova, Charles DeCarli. *Sub-regional hippocampal injury is associated with fornix degeneration in Alzheimer's disease*. *Front Aging Neurosci*. 2012;4:1. PMID: PMC3323836. PMID: 22514534.
86. Samuel Neal Lockhart, Adriane B. V. Mayda, Alexandra E. Roach, Evan Fletcher, **Owen Carmichael**, Pauline Maillard, Christopher G. Schwarz, Andrew P. Yonelinas, Charan Ranganath, Charles DeCarli. *Episodic memory function is associated with multiple measures of white matter integrity in cognitive aging*. *Frontiers in Human Neuroscience*, 6(56), 2012. PMID: PMC3305887. PMID: 22438841.

87. Jing He, **Owen Carmichael**, Evan Fletcher, Baljeet Singh, Ana-Maria Iosif, Oliver Martinez, Bruce Reed, Andy Yonelinas, Charles DeCarli. *Influence of Functional Connectivity and Structural MRI Measures on Episodic Memory*. *Neurobiology of Aging*, Volume 33, Issue 11, November 2012, Pages 2612-2620. PMID: PMC3353006. PMID: 22285758.
88. Jing He, Victoria S. S. Wong, Evan Fletcher, Pauline Maillard, Dong Young Lee, Ana-Maria Iosif, Baljeet Singh, Oliver Martinez, Alexandra E. Roach, Samuel N. Lockhart, Laurel Beckett, Dan Mungas, Sarah Tomaszewski Farias, **Owen Carmichael**, Charles DeCarli. *The contributions of MRI-based measures of gray matter, white matter hyperintensity and white matter integrity to late-life cognition*. *American Journal of Neuroradiology*, 2012 Oct;33(9):1797-803. PMID: PMC3694809. PMID: 22538073.
89. Cyrus A Raji, Oscar L Lopez, Lewis H Kuller, **Owen T Carmichael**, W. T Longstreth, Michael Gach, John Boardman, Charles B Bernick, Paul M Thompson, James T Becker. *White Matter Lesions and Brain Gray Matter Volume in Cognitively Normal Elders*. *Neurobiology of Aging*, Volume 33, Issue 4, April 2012. PMID: PMC3248984. PMID: 21943959.
90. Sarah Tomaszewski Farias, Dan Mungas, Bruce Reed, **Owen T. Carmichael**, Laurel Beckett, Danielle Harvey, John Olichney, Amanda Simmons, Charles DeCarli. *Maximal brain size remains an important predictor of cognition in old age independent of current brain pathology*. Volume 33, Issue 8, August 2012, Pages 1758-1768. PMID: PMC3177982. PMID: 21531482.
91. **Owen Carmichael**, Dan Mungas, Laurel Beckett, Danielle Harvey, Sarah T Farias, Bruce R Reed, John Olichney, Joshua W Miller, Charles DeCarli. *MRI predictors of cognitive change in a diverse and carefully characterized elderly population*. *Neurobiology of Aging*, 2012 Jan; 33 (1): 83-95. PMID: PMC2909327. PMID: 20359776.
92. **Carmichael**, Jing Xie, M.S.; Evan Fletcher, PhD; Baljeet Singh; Charles DeCarli; Alzheimer's Disease Neuroimaging Initiative. *Localized hippocampus measures are associated with Alzheimer pathology and cognition independent of total hippocampal volume*. *Neurobiology of Aging*, 2012 Volume 33, Issue 6, Pages 1124.e31-1124.e41. PMID: PMC3323681. PMID: 22169204.
93. Schwarz CG, Tsui A, Fletcher E, Singh B, DeCarli C, **Carmichael O**. *Impact of markov random field optimizer on mri-based tissue segmentation in the aging brain*. *Conf Proc IEEE Eng Med Biol Soc*. 2011;2011:7812-5. PMID: PMC3806072. PMID: 22256150.
94. P. Vemuri, SD Weigand, SA Przybelski, DS Knopman, GE Smith, JQ Trojanowski, LM Shaw, CS Decarli, **O Carmichael**, MA Bernstein, PS Aisen, M Weiner, RC Petersen, CR Jack Jr; on behalf of the Alzheimer's Disease Neuroimaging Initiative. *Cognitive reserve and Alzheimer's disease biomarkers are independent determinants of cognition*. *Brain*. 2011 May;134(Pt 5):1479-1492. PMID: PMC3097887. PMID: 21478184.
95. Pauline Maillard, Evan Fletcher, Danielle Harvey, **Owen T. Carmichael**, Bruce Reed, Dan Mungas, Charles DeCarli. *White Matter Hyperintensity Penumbra*. *Stroke*, Jul;42(7):1917-22. 2011. PMID: PMC3125449. PMID: 21636811.
96. James T. Becker, Joanne Sanders, Sarah K. Madsen, Ann Ragin, Lawrence Kingsley, Victoria Maruca, Bruce Cohen, Karl Goodkin, Eileen Martin, Eric N. Miller, Ned Sacktor, Jeffery R. Alger, Peter B. Barker, Priyanka Saharan, **Owen T. Carmichael**, and Paul M. Thompson, for the Multicenter AIDS Cohort Study. *Subcortical Brain Atrophy Persists Even in HAART-Regulated HIV Disease*. *Brain Imaging and Behavior*, 2011 Jun;5(2):77-85. PMID: PMC3082694. PMID: 21264551.
97. Dan Mungas, Laurel Beckett, Danielle Harvey, Sarah Farias, Bruce Reed, **Owen Carmichael**, John Olichney, Josh Miller, Charles DeCarli. *Heterogeneity of cognitive trajectories in diverse older persons*. *Psychology and Aging*, Volume 25, Issue 3, September 2010, Pages 606-619. PMID: PMC2943999. PMID: 20677882.

98. Jack CR Jr, Bernstein MA, Borowski BJ, Gunter JL, Fox NC, Thompson PM, Schuff N, Krueger G, Killiany RJ, Decarli CS, Dale AM, **Carmichael OT**, Tosun D, Weiner MW; Alzheimer's Disease Neuroimaging Initiative. *Update on the magnetic resonance imaging core of the Alzheimer's disease neuroimaging initiative*. *Alzheimers Dement*. 2010 May;6(3):212-20. PMID: PMC2886577. PMID: 20451869.
99. Jasmine Nettiksimmons, Danielle Harvey, James Brewer, **Owen Carmichael**, Charles DeCarli, Clifford R Jack, Jr., Ronald Petersen, Leslie M Shaw, John Q Trojanowski, Michael W Weiner, Laurel Beckett. *Subtypes based on CSF and MRI markers in normal elderly predict cognitive decline*. *Neurobiology of Aging*, Volume 31, Issue 8, August 2010, Pages 1419-1428. PMID: PMC2902683. PMID: 20542598.
100. Dong Young Lee, Evan Fletcher, Oliver Martinez, Natalia Zozulya, Jane Kim, Jeannie Tran, Michael Buonocore, **Owen Carmichael**, Charles DeCarli. *Vascular and degenerative processes differentially affect regional interhemispheric connections in normal aging, mild cognitive impairment, and Alzheimer's Disease*. *Stroke*, 2010 Aug;41(8):1791-7. PMID: PMC2922914. PMID: 20595668.
101. **Owen Carmichael**, Christopher Schwarz, David Drucker, Evan Fletcher, Danielle Harvey, Laurel Beckett, Clifford R. Jack Jr., Michael Weiner, Charles DeCarli, and the Alzheimer's Disease Neuroimaging Initiative. *Longitudinal Changes In White Matter Disease and Cognition in the First Year of the Alzheimer's Disease Neuroimaging Initiative*. *Archives of Neurology*, 2010 Nov;67(11):1370-8. PMID: PMC3082636. PMID: 21060014.
102. A. J. Ho, J. Stein, X. Hua, S. Lee, D. Hibar, A. Leow, I. Dinov, A. Toga, A. Saykin, L. Shen, T. Foroud, N. Pankratz, M. Huentelman, D. Craig, J. Gerber, A. Allen, J. Corneveaux, D. Stephan, C. DeCarli, B. DeChairo, S. Potkin, C. Jack, M. Weiner, C. Raji, O. Lopez, J. Becker, **O. Carmichael**, P. Thompson. *A commonly carried allele of the obesity-related FTO gene is associated with reduced brain volume in healthy elderly*. *Proceedings of the National Academy of Sciences*, 2010 May 4;107(18):8404-9. PMID: PMC2889537. PMID: 20404173.
103. Jing He, Ana-Maria Iosif, Dong Young Lee, Oliver Martinez, Shugang Chu, **Owen Carmichael**, James A. Mortimer, Qianhua Zhao, Ding Ding, Qihao Guo, Douglas Galasko, David P. Salmon, Qi Dai, Yougui Wu, Ronald C. Petersen, Zhen Hong, Amy R. Borenstein, Charles DeCarli. *Brain structure and cerebrovascular risk in cognitively impaired patients: Shanghai Community Brain Health Initiative-pilot phase*. *Archives of Neurology*, 2010 Oct;67(10):1231-7. PMID: PMC3051396. PMID: 20937951.
104. Beutner KR, 3rd, Prasad G, Fletcher E, DeCarli C, **Carmichael OT**. *Estimating uncertainty in brain region delineations*. *Inf Process Med Imaging*. 2009;21:479-90. PMID: PMC2881550. PMID: 19694287.
105. Schwarz C, Fletcher E, DeCarli C, **Carmichael O**. *Fully-automated white matter hyperintensity detection with anatomical prior knowledge and without flair*. *Inf Process Med Imaging*. 2009;21:239-51. PMID: PMC2864489. PMID: 19694267.
106. **Carmichael OT**, Lopez O, Becker JT, Kuller L. *Trajectories of brain loss in aging and the development of cognitive impairment*. *Neurology*. 2009;72(8):771; author reply -2. PMID: 19237712.
107. CA Raji, OL Lopez, LH Kuller, **OT Carmichael**, JT Becker. *Age, Alzheimer disease, and brain structure*. *Neurology*. 2009 Dec 1;73(22):1899-905. PMID: PMC2788799. PMID: 19846828.
108. D. Y. Lee, E. Fletcher, O. Martinez, M. Ortega, N. Zozulya, J. Kim, J. Tran, M. Buonocore, **O. T. Carmichael**, and C. DeCarli. *Regional pattern of white matter microstructural changes in normal aging, MCI, and AD*. *Neurology*. 2009 Nov 24;73(21):1722-8. PMID: PMC2788808. PMID: 19846830.

109. J. Xie, D. A. Alcantara, N. Amenta, E. Fletcher, O. Martinez, M. Persianinova, C. DeCarli, and **O. T. Carmichael**. *Spatially-Localized Hippocampal Shape Analysis in Late-Life Cognitive Decline*. *Hippocampus* 2009 Jun;19(6):526-32. PMID: PMC2862726. PMID: 19437501.
110. D. Alcantara, **O. T. Carmichael**, W. Harcourt-Smith, K. Sterner, S. Frost, R. Dutton, P. Thompson, E. Delson, N. Amenta. *Exploration of Shape Variation Using Localized Components Analysis*. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)* 2009 Aug;31(8):1510-6. PMID: PMC2864033. PMID: 19542583.
111. W. Dai, O. L. Lopez, **O. T. Carmichael**, J. T. Becker, Lewis H. Kuller, H. M. Gach. *Mild cognitive impairment and alzheimer disease: patterns of altered cerebral blood flow at MR imaging*. *Radiology* 2009;250:856-866. PMID: PMC2680168. PMID: 19164119.
112. W. Dai, **O. T. Carmichael**, O. L. Lopez, J. T. Becker, L. H. Kuller, H. M. Gach. *Effects of image normalization on the statistical analysis of perfusion MRI in elderly brains*. *J Magn Reson Imaging*. 2008 Dec;28(6):1351-60. PMID: PMC2600661. PMID: 19025942.
113. P. Harris, D. A. Alcantara, N. Amenta, O. L. Lopez, G. Eiriksdottir, S. Sigurdsson, V. Gudnason, S. Madsen, P. M. Thompson, L. J. Launer, **O. T. Carmichael**, *Localized Measures of Callosal Atrophy Are Associated with Late-Life Hypertension: AGES-Reykjavik Study*. *Neuroimage* 43 (2008), pp. 489-496. PMID: PMC2590639. PMID: 18692143.
114. Y. Y. Chou, N. Lepore, G. de Zubicaray, **O. T. Carmichael**, J. T. Becker, A. Toga. *Automated Ventricular Mapping with Multi-Atlas Fluid Image Alignment Reveals Genetic Effects in Alzheimer's Disease*. *Neuroimage* 40 (2), 1 April 2008: 615-630. PMID: PMC2720413. PMID: 18222096.
115. W. Dai, O. L. Lopez, **O. T. Carmichael**, J. T. Becker, L. H. Kuller, H. M. Gach. *Abnormal regional cerebral blood flow in cognitively normal elderly subjects with hypertension*. *Stroke*. 39(2):349-354, February 2008. PMID: PMC2701215. PMID: 18174483.
116. **O. T. Carmichael**, L. H. Kuller, O. L. Lopez, P. M. Thompson, R. A. Dutton, A. Lu, S. E. Lee, J. Y. Lee, H. J. Aizenstein, C. C. Meltzer, Y. Liu, A. W. Toga, J. T. Becker. *Cerebral Ventricular Changes Associated With Transitions Between Normal Cognitive Function, Mild Cognitive Impairment, and Dementia*. *Alzheimer's Disease and Associated Disorders*, January/March 2007; 21(1):14-24. PMID: PMC2879163. PMID: 17334268.
117. **Carmichael OT**, Kuller LH, Lopez OL, Thompson PM, Dutton RA, Lu A, Lee SE, Lee JY, Aizenstein HJ, Meltzer CC, Liu Y, Toga AW, Becker JT. *Acceleration of cerebral ventricular expansion in the cardiovascular health study*. *Neurobiol Aging*. September 2007;28(9):1316-21. PMID: PMC2877585. PMID: 16875759.
118. **O. Carmichael**, L. H. Kuller, O. L. Lopez, P. M. Thompson, A. Lu, S. E. Lee, J. Y. Lee, H. J. Aizenstein, C. C. Meltzer, Y. Liu, A. W. Toga, J. T. Becker. *Ventricular volume and dementia progression in the Cardiovascular Health Study*. *Neurobiology of Aging*, V. 28 (3), February 2007, pp 389-397. PMID: PMC2866509. PMID: 16504345.
119. M. Wu, **O. Carmichael**, C. S. Carter, J. L. Figurski, P. Lopez-Garcia, H. J. Aizenstein. *Quantitative comparison of neuroimage registration by AIR, SPM, and a fully deformable model*. *Human Brain Mapping* V. 27(9), September 2006, pp. 747-54. PMID: PMC2886594. PMID: 16463385.
120. **O. Carmichael**, H. J. Aizenstein, S. W. Davis, J. T. Becker, P. M. Thompson, C. C. Meltzer, Y. Liu. *Atlas-Based Hippocampus Segmentation In Alzheimer's Disease and Mild Cognitive Impairment*. *NeuroImage*, V. 27 (4), October 2005, pp 979-990. PMID: PMC2862692. PMID: 15990339.
121. **O. Carmichael**, M. Hebert, *Shape-based Recognition Of Wiry Objects*, *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, V. 25 (12), December 2004. PMID: 15573816.

122. W. T. Freeman, E.C. Pasztor, **O. Carmichael**. *Learning Low-Level Vision*. International Journal Of Computer Vision, V. 40 (1), October 2000, pp 25-47
123. V. S. H. Wen, **O. T. Carmichael**, H. Yamashita, Andrew R. Neureuther. *Rigorous simulation of statistical electron-electron interactions with fast multipole acceleration and a network of workstations*. Journal of Vacuum Science & Technology B: Microelectronics and Nanometer Structures, V. 16 (6), November 1998, pp. 3221-3226

Full-Length Peer-Reviewed Conference Papers

Note: The Computer Science conference publications listed below are full-length (4-12 page) papers reviewed through competitive, double-blind processes and published in book format. Conference papers in this area are highly-competitive, highly-respected, and carry similar intellectual weight to journal papers.

1. Chia-Tung Kuo, Xiang Wang, Peter Walker, **Owen Carmichael**, Jieping Ye, Ian Davidson. *Unified and Contrasting Cuts in Multiple Graphs: Application to Medical Imaging Segmentation*. KDD 2015: The 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining.
2. Chia-Tung Kuo, Peter B. Walker, **Owen Carmichael**, and Ian Davidson. *Spectral Clustering for Medical Imaging*, The Fourteenth IEEE International Conference on Data Mining (ICDM 2014)
3. Ian Davidson, Sean Gilpin, **Owen Carmichael**, Peter Walker. *Network Discovery via Constrained Tensor Analysis of fMRI Data*. KDD 2013: The 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining.
4. Alex Tsui, Devin Fenton, Phong Vuong, Joel Hass, Patrice Koehl, Nina Amenta, David Coeurjolly, Charles DeCarli, **Owen Carmichael**. *Globally optimal cortical surface matching with exact landmark correspondence*. Proceedings of Information Processing in Medical Imaging (IPMI) 2013.
5. Phong Vuong, David Drucker, Chris Schwarz, Evan Fletcher, Charles DeCarli, and **Owen Carmichael**, for the Alzheimer's Disease Neuroimaging Initiative. *Effects of T2-Weighted MRI Based Cranial Volume Measurements on Studies of the Aging Brain*. Proceedings of SPIE: Medical Imaging 2013.
6. Evan Fletcher, Baljeet Singh, Danielle Harvey, **Owen T. Carmichael**, Charles DeCarli. *Adaptive Image Segmentation for Robust Measurement of Longitudinal Brain Tissue Change*. Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012).
7. Varsha Viswanath, Evan Fletcher, Baljeet Singh, Noel Smith, Debashis Paul, Peng Jie, Jun Chen, **Owen T. Carmichael**. *Impact of DTI Smoothing on the Study of Brain Aging*. Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012).
8. Christopher G. Schwarz, Evan Fletcher, Baljeet Singh, Amy Liu, Noel Smith, Charles DeCarli, **Owen T. Carmichael**. *Most Edges in Markov Random Fields for White Matter Hyperintensity Segmentation are Worthless*. Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012).
9. Evan Fletcher, **Owen T. Carmichael**, Charles DeCarli. *MRI Non-Uniformity Correction Through Interleaved Bias Estimation and B-Spline Deformation with a Template*. Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012).
10. Jing Xie, **Owen T. Carmichael**. *Brain Shape Regression Components*. Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012).

11. Christopher G. Schwarz, Alex Tsui, Evan Fletcher, Baljeet Singh, Charles DeCarli, **Owen T. Carmichael**. *Impact of Markov Random Field Optimizer on MRI-based Tissue Segmentation in the Aging Brain*. Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'11).
12. K. R. Beutner III, G. Prasad, E. Fletcher, C. DeCarli, **O. T. Carmichael**. *Estimating Uncertainty in Brain Region Delineations*. Proceedings of Information Processing in Medical Imaging (IPMI), 2009 (Acceptance Rate: 39%).
13. C. G. Schwarz, E. Fletcher, C. DeCarli, and **O. T. Carmichael**. *Fully-Automated White Matter Hyperintensity Detection With Anatomical Prior Knowledge and Without FLAIR*. Proceedings of Information Processing in Medical Imaging (IPMI), 2009 (Acceptance Rate: 39%).
14. J. Xie, D. A. Alcantara, N. Amenta, E. Fletcher, O. Martinez, M. Persianinova, C. DeCarli, and **O. T. Carmichael**. *Spatially-Localized Hippocampal Shape Analysis in Late-Life Cognitive Decline*. Proceedings MICCAI Workshop on Computational Anatomy and Physiology of the Hippocampus (CAPH), September 6, 2008. (10 pages).
15. M. Hlawitschka, G. Scheuermann, G. H. Weber, **O. T. Carmichael**, B. Hamann, A. Anwander. *Interactive Volume Rendering of Diffusion Tensor Data*. Proceedings 2007 Dagshtul Scientific Visualization Conference. Also appears in Visualization and Processing of Tensor Fields: Advances and Perspectives. Editors: D. H. Laidlaw and J. Weickert: Springer, Berlin, 2008.
16. D. A. Alcantara, **O. T. Carmichael**, E. Delson, W. Harcourt-Smith, K. Sterner, S. Frost, R. Dutton, P. Thompson, H. Aizenstein, O. Lopez, J. Becker, N. Amenta. *Localized Components Analysis*. Proceedings, Information Processing in Medical Imaging (IPMI) 2007, pp. 519-531. (Acceptance rate: 33%)
17. Y. Y. Chou, N. Lepore, G. Zubicaray, S. Rose, **O. T. Carmichael**, J. T. Becker, A. Toga, P. Thompson. *Automated 3D Mapping and Shape Analysis Of The Lateral Ventricles Via Fluid Registration of multiple Surface-Based Atlases*. Proceedings of the IEEE International Symposium on Biomedical Imaging, pp. 1288-1291, April 2007. (Acceptance rate: roughly 50%)
18. L. Teverovskiy, **O. T. Carmichael**, H. J. Aizenstein, N. Lazar, Y. Liu. *Feature-Based vs. Intensity-Based Neuroimage Registration: Comprehensive Comparison Using Mutual Information*. Proceedings of the IEEE International Symposium on Biomedical Imaging, pp. 576-579, April 2007. (Acceptance rate: roughly 50%)
19. **O. T. Carmichael**, P. M. Thompson, R. A. Dutton, A. Lu, S. E. Lee, J. Y. Lee, L. H. Kuller, O. L. Lopez, H. J. Aizenstein, C. C. Meltzer, Y. Liu, A. W. Toga, J. T. Becker. *Mapping Ventricular Changes Related to Dementia and Mild Cognitive Impairment in a Large Community-Based Cohort*. Proceedings of the IEEE International Symposium on Biomedical Imaging, April 2006, pp. 315-318. (Acceptance rate: roughly 50%)
20. Y. Liu, L. Teverovskiy, **O. Carmichael**, R. Kikinis, M. Shenton, C.S. Carter, V.A. Stenger, S. Davis, H. Aizenstein, J. Becker, O. Lopez, and C. Meltzer. *Discriminative MR Image Feature Analysis for Automatic Schizophrenia and Alzheimer's Disease Classification*, Proceedings of the International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), September 2004, pp. 393-401. (Acceptance rate: roughly 40%).
21. **O. Carmichael**, M. Hebert. *A Hybrid Object-Level/Pixel-Level Framework For Shape-based Recognition*. Proceedings of the British Machine Vision Conference, (BMVC) 2004, (Acceptance rate: 33%)
22. **O. Carmichael**, M. Hebert, *Shape-based Recognition Of Wiry Objects*, Proceedings of the IEEE Int. Conference On Computer Vision And Pattern Recognition (CVPR) 2003, V. 2, pp. 401-408. (Acceptance rate: 23%)

23. **O. Carmichael**, M. Hebert, *Object Recognition by a Cascade of Edge Probes*, Proceedings of the British Machine Vision Conference (BMVC) 2002, pp. 103-112. (Acceptance rate: 43%)
24. D.F. Huber, **O. Carmichael**, and M. Hebert. *3D Map Reconstruction From Range Data*. Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Vol. 1, April, 2000, pp. 891 - 897 (Acceptance rate: 59%)
25. **O. Carmichael**, D.F. Huber, and M. Hebert. *Large Data Sets and Confusing Scenes in 3-D Surface Matching and Recognition*. Proceedings of the Second International Conference on 3-D Digital Imaging and Modeling (3DIM), October, 1999, pp. 358-367
26. **O. Carmichael** and M. Hebert. *3D Cueing: A Data Filter For Object Recognition*, Proceedings 1999 IEEE Int. Conference on Robotics and Automation (ICRA) pp. 944-950.(Acceptance rate: 62%)
27. **O. Carmichael** and M. Hebert. *Unconstrained Registration of Large 3D Point Sets for Complex Model Building*, Proceedings 1998 IEEE/RSJ International Conference On Intelligent Robotic Systems (IROS) V. 1, pp. 360-367. (Acceptance rate: 68%)
28. Victor S.H. Wen, **O. Carmichael**, Hiroshi Yamashita, and Andrew R. Neureuther. *Rigorous Simulation of Statistical Electron-Electron Interactions with Fast Multipole Acceleration and a Network of Workstations*, Proceedings of the 1998 International Conference On Electron, Ion and Photon Beam Technology and Nanofabrication (3BEAMS), Chicago, IL

Book chapters

- **O. Carmichael**, R. Newton, Jr. *Brain MRI findings related to Alzheimer's disease in older African American adults*. In *Progress in Molecular Biology and Translational Science*. Elsevier, 2019. *In Press*.
- **O. Carmichael**, S. Lockhart. *The role of diffusion tensor imaging in the study of cognitive aging*. In *Brain Imaging in Behavioral Neuroscience*, in the *Current Topics in Behavioral Neurosciences* series. Cameron Carter and Jeff Dalley, editors. Published by Springer, 2011.

Abstracts

- Singh M, Carmichael OT. The Molecular Basis for 31P MRS-Based Phosphocreatine Muscle Resynthesis Rate Measurements in Healthy Adults. Digital poster presentation. ISMRM 28th Annual Meeting & Exhibition in Sydney, Australia.
- Duncan ES, Nakkawita S, Lucas H, **Carmichael OT**, de Queiroz M. Effects of Transcranial Direct Current Stimulation (tDCS) on Operator Vigilance: A Double-blind, Sham-controlled Study. Cognitive Neuroscience Society annual meeting 2020.
- **Carmichael O**, Brouillete R, Beyl R, Johnson W, Hebert C, Carter L, Harris M, Newton, RL. Lack of cognitive benefit to twelve weeks of physical activity promotion among community-dwelling African Americans: Program for African American Cognition and Exercise (PAACE). Poster presentation, Cognitive Aging Conference 2020.
- Carter L, Beyl R, Johnson W, Harris M, Hebert C, **Carmichael O**, Newton RL. The effect of a physical activity intervention on physical function in older African American Adults. The 41st Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine, April 1-4, 2020, San Francisco, CA.
- Yassine HN, Anderson A, Brinton R, **Carmichael O**, Espeland MA, Hoscheidt S, Hugenschmidt C, Keller JN, Peters A, Pi-Sunyer X. Do Menopausal Status and APOE4 Genotype Alter the Long-Term Effects of Intensive

Lifestyle Intervention on Cognitive Function in Women with Type 2 Diabetes Mellitus? Alzheimer's Association International Conference (AAIC), July 16, 2019, Los Angeles, CA.

- Kirby K, Ramakrishnapillai S, Brouillette R, Keller J, DeVito A, Bernstein J, Van Gemmert A, **Carmichael O**. Performance and Brain Activation in a Dual Task Mimicking Distracted Walking. Alzheimer's Imaging Consortium (AIC), July 13, 2019, Los Angeles, CA. Alzheimer's Association International Conference (AAIC), July 16, 2019, Los Angeles, CA.
- **Carmichael O**, Hayden KM, Lockhart SN, Yassine HN, Hoscheidt S, Yasar S, Luchsinger JA, Neiberg RH, Brinton RD, Espeland MA. Sex-Related Differences in Brain Volumes and Cerebral Blood Flow Among Overweight and Obese Adults with Type 2 Diabetes. Alzheimer's Imaging Consortium (AIC), July 13, 2019, Los Angeles, CA. Alzheimer's Association International Conference (AAIC), July 15, 2019, Los Angeles, CA.
- S. Nicole Fearnbach, Corby Martin, Steven Heymsfield, John Shepherd, Amanda Staiano, Roberts Newton, Alex C. Garn, Samantha Kennedy, **Owen T. Carmichael**, Kori Murray, Graham Finlayson. Implicit bias for sedentary activities is positively associated with BMI z-score in children. 26th European Congress on Obesity, April 2019, Glasgow, Scotland.
- S. Nicole Fearnbach, Amanda Staiano, Neil Johannsen, Daniel Hsia, Corby Martin, **Owen T. Carmichael**. Post-exercise eating behavior profiles of adolescents ranging from overweight to severe obesity. 26th European Congress on Obesity, April 2019, Glasgow, Scotland.
- S. Nicole Fearnbach, Amanda Staiano, Neil Johannsen, Daniel Hsia, Corby Martin, **Owen T. Carmichael**. Sex Differences in Body Fat Versus Fitness in Adolescents Ranging from Overweight to Severe Obesity. Obesity Week 2018, November 13, 2018, Nashville, TN.
- Krystal Kirby, Arend W. Van Gemmert, **Owen T. Carmichael**. Dual Tasking of a Rhythmic Motor and Cognitive Task Deteriorates Performance of Both Tasks in Older Adults. Poster Presentation. 59th Psychonomic Society Annual Meeting 2018, November 2018, New Orleans, LA.
- **Owen T. Carmichael**, Sreekrishna Pillai, Preetham Shankapal, Alex McLellan, Denis G. Kay, Brian T. Gold, Jeffrey N. Keller. A combination of essential fatty acids, panax ginseng extract, and green tea catechins significantly increases brain activation and functional connectivity during an fMRI task in healthy older adults. Proceedings of the Alzheimer's Association International Conference (AAIC) July 2018, Chicago, IL.
- **Owen Carmichael**, Patrick Stuchlik, Sreekrishna Pillai, Ram Dhullipudi, Anna Madden, Shane Martin, Daniel Hsia, Vivian Fonseca, Lydia Bazzano. High-normal fasting plasma glucose in adolescence is associated with poorer brain structure and function in midlife: The Bogalusa Heart Study. Proceedings of the Alzheimer's Association International Conference (AAIC) July 2018, Chicago, IL.
- Mark A. Espeland, **Owen Carmichael**, Kathleen M. Hayden, William Hazzard, Siobhan Hoscheidt, Christina Hugenschmidt, Karen C. Johnson, Michelle M. Mielke, Rebecca Neiberg, Stephen R. Rapp, and Sevil Yasar for the Action for Health in Diabetes (Look AHEAD) Research Group. Sex-related differences in cognitive impairment among overweight and obese adults with type 2 diabetes. Proceedings of the Alzheimer's Association International Conference (AAIC) 2018, July 25, 2018, Chicago, IL.
- **Owen T. Carmichael**, Rebecca Neiberg, Gareth R. Dutton, Kathleen M. Hayden, Edward Horton, Xavier Pi-Sunyer, Karen Johnson, Stephen R. Rapp, Adam P. Spira, and Mark A. Espeland for the Action for Health in Diabetes (Look AHEAD) Research Group. Associations between ten-year change in diabetes markers and cognitive performance in type 2 diabetes. Proceedings of the Alzheimer's Association International Conference (AAIC) 2018, July 25, 2018, Chicago, IL.
- Gareth Dutton, Mark Espeland, Rebecca Neiberg, **Owen Carmichael**, Kathleen Hayden, Karen Johnson, Robert Jeffery, Laura Baker, Delilah Cook, Dalane Kitzman, and Steve Rapp. *Impact of Intensive Lifestyle Intervention for Weight Management on Self-Reported Cognitive Function—The Action for Health in Diabetes*

(Look AHEAD) Randomized Controlled Trial. Poster Presentation, American Diabetes Association's 78th Scientific Sessions 2018.

- Bradley M. Wood, G. Jia, **Owen Carmichael**, Kevin McKlveen, Dominique G. Homberger. *3D Imaging Using MRI of a Non-Mineralized Complex Organism: The Jawless Sea Lamprey (*Petromyzon marinus*) as a Model*. Poster Presentation, Experimental Biology 2017.
- Hans-Georg Mueller, Yang Zhou, Jane-Ling Wang and **Owen Carmichael**. *Gradient synchronization as a measure for brain functional connectivity*. Oral presentation, 11th International Conference on Computational and Financial Econometrics (CFE) 2017: CMStatistics.
- Krystal Kirby, **Owen Carmichael** and Arend W. Van Gemmert. *Changes in brain activation patterns as a result of bilateral transfer of learning of a visuo-motor task*. Poster presentation, Neuroscience 2017.
- Jill King, Preetham Shankapal, Paula Geiselman, Corby Martin, Kori Murray, Jason Hicks, Joe McClernon and **Owen Carmichael**. *Behavioral and fMRI validation of the Macronutrient Picture System (MaPS)*. Poster presentation, The Obesity Society (TOS) Annual Meeting 2016.
- Ebrahim Aboualizadeh, **Owen T Carmichael**, Ping He, Diana C. Albarado, Christopher D. Morrison, Carol J Hirschmugl. *Characterizing brown and subcutaneous white adipose tissue activity level with Fourier Transform Infrared (FTIR) Imaging*. Oral presentation, The Obesity Society (TOS) Annual Meeting 2016.
- Preetham Shankapal, Jill King, Kori Murray, Corby Martin, Paula Geiselman, Joseph McClernon, and **Owen Carmichael**. *Task-related functional connectivity within the reward network during food image viewing*. Oral presentation, The Obesity Society (TOS) Annual Meeting 2016.
- Julia Scott, Meredith N Braskie, Duygu Tosun, Paul Thompson, Michael W Weiner, Charles DeCarli, and **Owen T Carmichael**. *MRI and CSF Biomarker Predictors of Executive Function and Memory in the Elderly*. Poster presentation, Alzheimer's Association International Conference (AAIC) 2016
- Julia Scott, Meredith N Braskie, Duygu Tosun, Paul Thompson, Michael W Weiner, Charles DeCarli, and **Owen T Carmichael**. *Cerebral Amyloid Is Associated with Greater White Matter Hyperintensity Accrual over 2 Years in the Elderly*. Poster presentation, Alzheimer's Association International Conference (AAIC) 2016
- Julia Scott, Pauline Maillard, Meredith Braskie, Duygu Tosun, Paul Thompson, Michael Weiner, Charles DeCarli, Owen Carmichael. *Cerebral Amyloid Is Associated with Poorer Integrity of White Matter Lesions, Penumbra, and Healthy White Matter in the Elderly*. Alzheimer's Association International Conference 2015
- Mahsa Dadar, Tharick Pascoal, Sarinporn Manitsirikul, John Breitner, Pedro Rosa-Neto, Owen Carmichael, D. Collins. **Spatial Distribution of White Matter Hyperintensities in Elderly Individuals**. Alzheimer's Association International Conference 2015
- Julia A. Scott, Meredith N. Braskie, Duygu Tosun, Paul Thompson, Michael Weiner, Charles DeCarli, Owen T. Carmichael. *White matter hyperintensity associated with cerebral amyloidosis independent of hypertension history*. Oral presentation, American Academy of Neurology Annual Meeting 2015.
- Phong Vuong, Alex Tsui, Evan Fletcher, Baljeet Singh, Noel Smith, Charles DeCarli, **Owen Carmichael**. *Brain Structural Covariance in Midlife: The Framingham Offspring Study*. Proceedings of the Alzheimer's Association International Conference 2014.
- Evan Fletcher, **Owen Carmichael**, Charles DeCarli. *In cognitively healthy elderly, fornix microstructure but not medial temporal gray matter predicts brain atrophy in circuits affected by Alzheimer's Disease*. Proceedings of the Alzheimer's Association International Conference 2014.

- P. Maillard, **Owen Carmichael**, D. Mungas, B.Reed, C. DeCarli. *Greater Longitudinal White Matter Degeneration Is Associated With Greater Concurrent Cognitive Decline: a Diffusion Tensor Imaging Study*. Proceedings of the Alzheimer's Association International Conference 2014.
- Charles DeCarli, **Owen Carmichael**, Oliver Martinez, Baljeet Singh, Evan Fletcher and Pauline Maillard. *Baseline white matter hyperintensities and gray matter volume independently predict cognitive trajectories in ADNI II*. Proceedings of the Alzheimer's Association International Conference 2014.
- Charles DeCarli, Dan Mungas, **Owen Carmichael**, Sylvia Villeneuve, Evan Fletcher, Baljeet Singh, William Jagust, Bruce Reed. *Vascular risk factors impact cognition independent of PIB PET and MRI measures of AD and vascular brain injury*. Proceedings of the Alzheimer's Association International Conference 2014.
- Cassidy Fiford, Emily N Manning, Manja Lehmann, Gerard R Ridgway, David M Cash, Jonathan W Bartlett, Kelvin K Leung, Geert Jan Biessels, **Owen Carmichael**, Nick C Fox, Josephine Barnes, for the Alzheimer's Disease NeuroImaging Initiative. *Age and WMH have independent associations with whole-brain and hippocampal atrophy rates*. Proceedings of the Alzheimer's Association International Conference 2014.
- Josephine Barnes, Emily N Manning, Cassidy Fiford, Manja Lehmann, Gerard R Ridgway, David M Cash, Jonathan W Bartlett, Kelvin K Leung, Geert Jan Biessels, **Owen Carmichael**, and Nick C Fox for the Alzheimer's Disease NeuroImaging Initiative. *White matter hyperintensity volume is associated with disproportionate hippocampal atrophy in controls*. Proceedings of the Alzheimer's Association International Conference 2014.
- Jennifer Nicholas, Tom Meade, Cassidy Fiford, Kelvin K Leung, Emily N Manning, **Owen Carmichael**, Geert Jan Biessels, Jonathan W Bartlett, Nick C Fox, Chris Frost, Josephine Barnes. *Impact of baseline adjustment for vascular risk factors on sample size estimates for Alzheimer's disease clinical trials with atrophy rate outcomes*. Proceedings of the Alzheimer's Association International Conference 2014.
- Katherine Heller, Charles DeCarli, Duane Beekly, Lilah Besser, Mark Bollenbeck, Joylee Wu, **Owen Carmichael**, Creighton Phelps, Walter Kukull. *The National Alzheimer's Coordinating Center MRI Database*. Proceedings of the Alzheimer's Association International Conference 2014.
- Christina Boyle, Cyrus A. Raji, Kirk I. Erickson, Oscar Lopez, James T. Becker, H. Michael Gach, William T. Longstreth, Leonid Teverovskiy, Lewis Kuller, **Owen Carmichael**, Paul M. Thompson. *Estrogen Use, Brain Volume and Cognitive Function in a Cohort of Elderly Women*. Organization for Human Brain Mapping 2014.
- P. Maillard, **O. Carmichael**, D. Mungas, B.Reed, C. DeCarli. *Greater longitudinal white matter degeneration in type 2 diabetes with hypertension than hypertension alone In Cognitively Normal Elderly*. International Society of Vascular, Cognitive and Behavioural Disorders Congress (VASCOG) 2013.
- Alexandra Roach, Samuel Lockhart, **Owen Carmichael**, Charles DeCarli. *Effects of diabetes mellitus and white matter hyperintensities on Stroop and flanker inhibitory control in cognitively normal older adults*. International Society of Vascular, Cognitive and Behavioural Disorders Congress (VASCOG) 2013.
- Samuel N. Lockhart, Alexandra E. Roach, Steven J. Luck, Joy Geng, Laurel Beckett, **Owen Carmichael**, Charles DeCarli. *White matter hyperintensities are associated with hyperactivation independent of age during cue-guided spatial search*. International Society of Vascular, Cognitive and Behavioural Disorders Congress (VASCOG) 2013.
- Jing He, Baljeet Singh, Evan Fletcher, Oliver Martinez, Bruce Reed, Dan Mungas, Charles DeCarli, **Owen Carmichael**. *The effect of white matter hyperintensity on resting hippocampal functional connectivity*. International Society of Vascular, Cognitive and Behavioural Disorders Congress (VASCOG) 2013.
- P Maillard, E Fletcher, B Reed, D Mungas, C DeCarli, **O. Carmichael**. *White Matter Hyperintensity Penumbra are Differentially Vulnerable to Further Degeneration in the Elderly*. Alzheimer's Association International Conference 2013.

- Jing He, Baljeet Singh, Evan Fletcher, Oliver Martinez, Bruce Reed, Dan Mungas, Charles DeCarli, **O. Carmichael**. *Longitudinal hippocampal atrophy is associated with longitudinal hippocampus functional connectivity changes in cognitively normal elders*. Alzheimer's Association International Conference 2013.
- Evan Fletcher, Philip Huebner, **O. Carmichael**, Charles DeCarli. *Fornix white matter degeneration is a sensitive indicator of incipient cognitive decline in a diverse community cohort*. Alzheimer's Association International Conference 2013.
- P. Maillard, **O. Carmichael**, D. Mungas, B. Reed, C. DeCarli. *Type 2 Diabetes Is Associated With Accelerated Longitudinal White Matter Degeneration In The Elderly*. Alzheimer's Association International Conference 2013.
- Samuel N. Lockhart, Alexandra E. Roach, Steven J. Luck, Joy Geng, Laurel Beckett, **O. Carmichael**, Charles DeCarli. *White matter injury is associated with visual search behavior independent of generalized slowing in aging*. Cognitive Neuroscience Society Annual Meeting 2013.
- Alexandra E. Roach, Samuel N. Lockhart, **O. Carmichael**, Charles DeCarli. *Effects of age and vascular risk factors on performance during three inhibitory control paradigms in cognitively normal older adults*. Cognitive Neuroscience Society Annual Meeting 2013.
- Christina Boyle, Cyrus A. Raji, Kirk I. Erickson, Oscar Lopez, James T. Becker, H. Michael Gach, William T. Longstreth, Leonid Teverovskiy, Lewis Kuller, **Owen T. Carmichael**, Paul M. Thompson (2013). *Physical Activity is Correlated with Regional Brain Volumes in Normal Aging and Alzheimer's Disease*. Organization for Human Brain Mapping, Seattle, WA, June 2013.
- Qiang Wang, **Owen Carmichael**, Chris Griesemer, Jeff Walton, Josh Rushakoff, Robert Berman. *Longitudinal brain volume and shape changes in the CGG KI mouse model of the Fragile X permutation and FXTAS*. 13th International Fragile X Conference, 2012.
- Evan Fletcher, Amy Liu, Jasmeen Pabla, Anthony Sheu, Mekala Raman, **Owen Carmichael**, Dan Mungas, Bruce Reed, Charles DeCarli. *Combined fornix degeneration and CA1 hippocampal loss predict conversion of normal to MCI*. Alzheimers Imaging Consortium and Alzheimer's Association International Conference 2012.
- **Owen Carmichael**, Donald G. McLaren, Douglas Tommet, Dan Mungas, Richard N. Jones. *Coevolution of brain structures in mild cognitive impairment*. Alzheimers Imaging Consortium and Alzheimer's Association International Conference 2012.
- Jing He, Baljeet Singh, Bruce Reed, Dan Mungas, Charles DeCarli, **Owen Carmichael** *Hippocampal volume and functional connectivity in cognitive health, amnesic mild cognitive impairment, and Alzheimer's Disease*. Alzheimers Imaging Consortium and Alzheimer's Association International Conference 2012.
- S. N. Lockhart, A. E. Roach, J. He, E. Fletcher, P. Maillard, C. G. Schwarz, C. DeCarli, **O. Carmichael** *Heterogeneity of functional connectivity reductions in normal cognitive aging*. Alzheimers Imaging Consortium and Alzheimer's Association International Conference 2012.
- Yi Deng, Naomi J. Goodrich-Hunsaker, Margarita Cabaral, David G. Amaral, Kristopher Kalish, **Owen Carmichael**, Robert F. Dougherty, Michael Perry, Brian A. Wandell, Tony J. Simon. *Altered Hippocampal Connectivity and Midline Brain Anomalies in Children with Chromosome 22q11.2 Deletion Syndrome*. 18th Biennial International 22q11.2 Conference, 2012.
- Mario Riverol, James Becker, Oscar Lopez, Cyrus Raji, Paul Thompson, **Owen Carmichael**, H. Gach, W. T. Longstreth, Linda Fried, Russell Tracy, Lewis Kuller. *Cystatin C Predicts Changes in Brain Structure and Cognition in the Elderly*. 2012 American Academy of Neurology Annual Meeting.

- Mario Riverol, James Becker, Oscar Lopez, Cyrus Raji, Paul Thompson, **Owen Carmichael**, H. Gach, W. T. Longstreth, Linda Fried, Russell Tracy, Lewis Kuller. *Systemic Inflammatory Markers, Cognition and Brain Structure among Cognitively Normal Elderly*. 2012 American Academy of Neurology Annual Meeting.
- L. Lopez, J. T. Becker, Y.F Chang, R.A Sweet, S.T. Dekosky, H M. Gach, **Owen Carmichael**, E. McDade, L.H. Kuller. *Incidence of mild cognitive impairment in the CHS Cognition Study*. 2012 American Academy of Neurology Annual Meeting.
- Pauline Maillard, Sudha Seshadri, Alexa S. Beiser, Philip A. Wolf, Jayandra J. Himali, Sarah Preis, Rhoda Au, **Owen Carmichael**, Evan Fletcher, Charles DeCarli. *Effects of Vascular Risk Factors on White Matter Integrity in Middle-Aged Adults: A Voxel-Based Diffusion Tensor Imaging Study*. 2012 American Academy of Neurology Annual Meeting.
- **Owen Carmichael**, Jing Xie, Baljeet Singh, Evan Fletcher, Charles DeCarli. *Baseline CSF amyloid and tau are associated with localized hippocampus change independent of total hippocampus volume*. 2012 American Academy of Neurology Annual Meeting.
- James T. Becker, Leonid Teverovisky, H. Gach, **Owen T. Carmichael**, Paul M. Thompson, Lewis Kuller and Oscar L. Lopez. *Differential Rates of Brain Volume Loss as a Function of Time To Develop AD among Cognitively Normal Individuals*. 2012 American Academy of Neurology Annual Meeting.
- Vanessa A. Guzman, C. G. Schwarz, **O. Carmichael**, Adam M. Brickman. *Entorhinal cortex volume, white matter hyperintensities, and memory in Mild Cognitive Impairment*. International Neuropsychological Society Annual Meeting 2012.
- S.N. Lockhart, A.B.V. Mayda, A.E. Roach, P. Maillard, C. G. Schwarz, **O. Carmichael**, E. Fletcher, C. DeCarli. *White matter injury is associated with episodic memory function independent of age and microstructural changes*. International Society of Vascular Behavioural and Cognitive Disorders (VasCog) 2011.
- Pauline Maillard, **Owen Carmichael**, Danielle Harvey, Evan Fletcher, Bruce Reed, Dan Mungas, Charles DeCarli. *FLAIR and DTI as predictors of White Matter Hyperintensities*. International Society of Vascular Behavioural and Cognitive Disorders (VasCog) 2011.
- Jing He, **Owen Carmichael**, Baljeet Singh, Evan Fletcher, Oliver Martinez, Bruce Reed, Dan Mungas, Charles DeCarli. *Functional connectivity, grey matter, and WMH volume independently predict memory performance in cognitively normal elders*. International Society of Vascular Behavioural and Cognitive Disorders (VasCog) 2011.
- Jing He, Charles Decarli, Dan Mungas, Bruce Reed, Jing He, Evan Fletcher, Baljeet Singh, Ana-Maria Iosif, Oliver Martinez, **Owen Carmichael**. *Correlations between functional connectivity, structural brain volume, and episodic memory in cognitively normal older adults*. 2011 International Conference on Alzheimer's Disease.
- Natalie L Marchant, Cindee Madison, William Jagust, **Owen Carmichael**, Charles DeCarli, Bruce Reed, Oliver Martinez. *Effects of MRI markers of cerebrovascular disease on amyloid burden and cognition in aging*. 2011 International Conference on Alzheimer's Disease.
- Josephine Barnes, **Owen Carmichael**, Kelvin Leung, Christopher Schwarz, Gerard R Ridgway, Jonathan Bartlett, Ian Malone, Jonathan M Schott, Martin N Rossor, Geert Jan Biessels, Charlie DeCarli, Nick C Fox. *The independent effects of white matter hyperintensity volume and cerebrospinal fluid amyloid levels on brain atrophy*. Oral presentation, 2011 International Conference on Alzheimer's Disease Alzheimer's Imaging Consortium.

- Jennifer Lee, Danielle Harvey, **Owen Carmichael**, Dan Mungas, Bruce Reed, John Olichney, Berneet Kaur, Joshua Miller, Charles DeCarli. *Androgen-Estrogen Balance, SHBG, and Cognitive Trajectories in Older Men and Women*. 2011 American Academy of Neurology Annual Meeting.
- Pauline Maillard, Evan Fletcher, Danielle Harvey, **Owen Carmichael**, Bruce Reed, Dan Mungas, Charles DeCarli. *White Matter Hyperintensity Penumbra*. 2011 American Academy of Neurology Annual Meeting.
- Aria Jafari, Christopher Schwarz, **Owen Carmichael**, Evan Fletcher, Michael Greicius. *Interactive Effects of Structural and Functional Brain Changes in Age-Related Cognitive Decline*. 2011 American Academy of Neurology Annual Meeting.
- Lovingly Park, Sarah Farias, **Owen Carmichael**, Dan Mungas, Charles DeCarli. *Structural Changes in the Prefrontal Cortex and White Matter Disease Differentially Relate to Cognitive Functioning*. 2011 American Academy of Neurology Annual Meeting.
- **Owen Carmichael**, Jing Xie, Evan Fletcher, Baljeet Singh, Charles DeCarli. *Localized Hippocampus Markers Change Earlier in the Alzheimer Pathological Process Than Total Hippocampus Volume Does*. 2011 American Academy of Neurology Annual Meeting.
- Jing He, **Owen Carmichael**, Evan Fletcher, Baljeet Singh, Bruce Reed, Dan Mungas, Charles DeCarli. *Functional Connectivity, Structural Brain and Cognitive Performance in Elderly*. 2011 American Academy of Neurology Annual Meeting.
- **Owen Carmichael**, Dan Mungas, Laurel Beckett, Danielle Harvey, Sarah Tomaszewski Farias, Bruce Reed, Jing He, John Olichney, Joshua Miller, Charles DeCarli. *Predictors of clinical conversion to dementia in a diverse cohort*. 2010 International Conference on Alzheimer's Disease (ICAD).
- James T. Becker, Bruce Cohen, Eileen Martin, Eric M. Miller, Joanne Mullen, Ann Ragin, Ned Sacktor, Ola Selnes, **Owen Carmichael**. *Predictors of Ventricular Volume in HIV Disease*. 2010 American Academy of Neurology Annual Meeting.
- **Owen Carmichael**, Dan Mungas, Laurel Beckett, Danielle Harvey, Sarah Tomaszewski Farias, Bruce Reed, John Olichney, Joshua Miller, Charles DeCarli. *MRI predictors of cognitive change in a diverse and carefully characterized elderly population*. 2010 American Academy of Neurology Annual Meeting.
- Charles DeCarli, David Drucker, Evan Lloyd, **Owen Carmichael**, Evan Fletcher, Dan Mungas. *Amyloid Beta Effects on Cognition Are Mediated by Cell Injury (Tau) and Death (Progressive Atrophy)*. 2009 American Academy of Neurology Annual Meeting.
- Evan Fletcher, Evan Lloyd, David Drucker, **Owen Carmichael**, Charles DeCarli. *ApoE Genotype Is Associated with Rate of Hippocampal Atrophy Independent of Clinical Diagnosis: Data from the ADNI Study*. 2009 American Academy of Neurology Annual Meeting.
- Dan Mungas, David Drucker, Evan Lloyd, **Owen Carmichael**, Evan Fletcher, Charles DeCarli. *Regional Rates of Brain Atrophy Are Significantly Associated with Rates of Cognitive Decline Even after Adjusting for Clinical Syndrome*. 2009 American Academy of Neurology Annual Meeting.
- Jing He, Evan Fletcher, Oliver Martinez, **Owen Carmichael**, Charles DeCarli. *White Matter Hyperintensities, Incident MRI Infarcts Correlate with Cognition (ADNI Study)*. 2009 American Academy of Neurology Annual Meeting.
- Dan Mungas, Bruce Reed, Sarah Farias, **Owen Carmichael**, Kimberly Carter, Charles DeCarli. *Intracranial Volume and Brain Structure Effects on Cognition in Diverse Older Persons*. 2009 American Academy of Neurology Annual Meeting.

- C. Raji, O. Lopez, L. Kuller, **O. T. Carmichael**, J. Becker. *Independent Effects of Age and Alzheimer's Disease on Gray Matter Volume*. 2009 American Academy of Neurology Annual Meeting.
- Cyrus Raji, Oscar Lopez, James Becker, Weiyang Dai, **Owen Carmichael**, Lewis Kuller. *Hypertension-related Gray Matter Volume Loss in Normal Aging, Mild Cognitive Impairment, and Alzheimer Disease Brains*. 2008 Radiological Society of North America Annual Meeting.
- C. DeCarli, **O. T. Carmichael**, D. Mungas, B. Reed, O. Martinez, M. Persianinova, M. Ortega, E. Fletcher. *Evidence for transynaptic degeneration of fornix fibers in Alzheimer's disease*. 2008 International Conference on Alzheimer's Disease (ICAD) and ICAD Alzheimer's Imaging Consortium.
- C. DeCarli, E. Fletcher, B. Reed, S. Farias, **O. T. Carmichael**, O. Martinez, M. Ortega, D. Mungas. *Regional fractional anisotropy (FA) and cognitive performance in normal cognition, MCI and dementia*. 2008 International Conference on Alzheimer's Disease (ICAD) Alzheimer's Imaging Consortium.
- **O. T. Carmichael**, David Drucker, E. Fletcher, M. Ortega, Jing He, Mitsuhiro Yoshita, C. DeCarli. *Baseline MRI measures of cerebrovascular disease in the Alzheimer's Disease neuroimaging initiative*. 2008 International Conference on Alzheimer's Disease (ICAD) and ICAD Alzheimer's Imaging Consortium.
- E. Fletcher, M. Persianinova, **O. T. Carmichael**, Alexa Beiser, Sudha Seshadri, Rhoda Au, Philip A. Wolf, C. DeCarli. *Hippocampal shape change correlates with delayed memory performance in middle aged adults of the Framingham heart study (FHS)*. 2008 International Conference on Alzheimer's Disease (ICAD) and ICAD Alzheimer's Imaging Consortium.
- Jing Xie, C. DeCarli, E. Fletcher, D. Mungas, B. Reed, O. Martinez, M. Persianinova, D. Alcantara, N. Amenta, **O. T. Carmichael**. *Spatially-localized hippocampal atrophy measures correlate with domain-specific cognitive decline, AD, and MCI sub-type*. 2008 International Conference on Alzheimer's Disease (ICAD) and ICAD Alzheimer's Imaging Consortium.
- **O. T. Carmichael**, David Drucker, Christopher Schwarz, E. Fletcher, O. Martinez, Mitsuhiro Yoshita, Jing He, C. DeCarli. *Longitudinal changes in cognition and cerebrovascular disease in the Alzheimer's Disease neuroimaging initiative*. 2008 International Conference on Alzheimer's Disease (ICAD) and ICAD Alzheimer's Imaging Consortium.
- E. Fletcher, B. Reed, S. Farias, **O. T. Carmichael**, O. Martinez, M. Ortega, D. Mungas, C. DeCarli. *Regional Fractional Anisotropy (FA) and Cognitive Performance in Individuals with normal and impaired cognition*. 2008 American Academy of Neurology Annual Meeting.
- C. DeCarli, **O. T. Carmichael**, D. Mungas, B. Reed, O. Martinez, M. Persianinova, M. Ortega, E. Fletcher. *Hippocampal atrophy is accompanied by degeneration of fornix white matter tracts in Alzheimer's Disease*. 2008 American Academy of Neurology Annual Meeting.
- E. Fletcher, D. Mungas, B. Reed, M. Ortega, O. Martinez, **O. T. Carmichael**, C. DeCarli. *Vascular risk factors affect white matter integrity after accounting for the effect of white matter hyperintensities*. 2008 American Academy of Neurology Annual Meeting.
- P. Harris, D. Alcantara, N. Amenta, O. Lopez, G. Eiriksdottir, S. Sigurdsson, V. Gudnason, P. Thompson, L. Launer, **O. T. Carmichael**. *Localized Measures of Callosal Atrophy Are Associated with Late-Life Hypertension in a Population-Based Study: AGES-Reykjavik Study*. 2008 American Academy of Neurology Annual Meeting.
- **O. T. Carmichael**, D. Drucker, E. Fletcher, M. Ortega, M. Yoshita, J. He, C. DeCarli. *MRI Measures of Cerebrovascular Disease in the Alzheimer's Disease Neuroimaging Initiative*. 2008 American Academy of Neurology Annual Meeting.

- **O. T. Carmichael**, P. M. Thompson, R. Dutton, A. Lu, S. Lee, J. Lee, L. Kuller, O. Lopez, H. Aizenstein, C. Meltzer, Y. Liu, A. Toga, J. T. Becker *Spatial Mapping of Ventricular Changes Related to Dementia and Mild Cognitive Impairment in a Large Community-Based Cohort*. Podium presentation, American Academy of Neurology Annual Meeting, April 28-May 5, 2007.
- W. Dai, O. L. Lopez, **O. T. Carmichael**, J.T. Becker, L.H. Kuller, H. M. Gach. *Effects of Cardiovascular Disease Risk Factors on Regional Cerebral Blood Flow in Dementia*. Poster presentation, International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Meeting, May 19-25, 2007, Berlin: 2151.
- S. Ziolko, R. Narendran, C. Becker, **O. T. Carmichael**, W. Frankle, W. Kaye, J. Price. *A comparison of automated, fully deformable atlas based segmentation and manually drawn striatal volumes of interest as applied to PET scans*. Poster presentation, Organization for Human Brain Mapping Annual Meeting, 2007.
- M. Yoshita, E. Fletcher, **O.T. Carmichael**, M. Ortega, O. Martinez, D. Mungas, B. Reed, C. DeCarli. *Diffusion Tensor Imaging of Cognitive Normal Elderly in Cerebral White Matter: Relation to White Matter Hyperintensities*. Oral presentation, International Stroke Conference 2007.
- W. Dai, **O. T. Carmichael**, O. T. Lopez, J. T. Becker, L. H. Kuller, H. M. Gach. *Assessment of hypertension on cerebral blood flow and dementia using CASL MRI*. Poster presentation, International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Meeting, 2006.
- W. Dai, **O. T. Carmichael**, O. T. Lopez, H. M. Gach. *Comparison of two spatial normalization methods in the elderly brain*. Poster presentation, International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Meeting, 2006.
- **O. T. Carmichael**, L. H. Kuller, O. L. Lopez, P. M. Thompson, R. A. Dutton, A. Lu, S. E. Lee, J. Y. Lee, H. J. Aizenstein, C. C. Meltzer, Y. Liu, A. W. Toga, J. T. Becker. *Longitudinal study of cerebral ventricular atrophy rates in the Cardiovascular Health Study*. Poster presentation, American Academy of Neurology (AAN) Annual Meeting 2006.
- L. Teverovskiy, Y. Liu, J. Spears, J. Becker, H. Aizenstein, **O. T. Carmichael**, C. Meltzer. *Brain asymmetry as a predictor of age*, Poster presentation, Organization for Human Brain Mapping Annual Meeting, 2005
- J. Spears, P. Greer, S. Ziolko, H. Aizenstein, **O. T. Carmichael**, J. Becker, C. Meltzer. *Construction and Evaluation of an age-specific neurological template*, Poster presentation, Organization for Human Brain Mapping Annual Meeting, 2005
- **O. T. Carmichael**, P. Thompson, R. Dutton, A. Lu, S. Lee, J. Lee, K. Hayashi, A. Toga, O. Lopez, H. Aizenstein, Y. Liu, C. Meltzer, J. Becker. *Dementia-Associated Ventricular Volume Changes In A Community Cohort*, Poster presentation, Organization for Human Brain Mapping Annual Meeting, 2005
- **O. T. Carmichael**, P. Thompson, R. Dutton, A. Lu, S. Lee, J. Lee, K. Hayashi, A. Toga, O. Lopez, H. Aizenstein, Y. Liu, C. Meltzer, J. Becker. *Mapping 3-Dimensional Ventricular Changes in HIV/AIDS With Manual and Fully-Automated Tracings*, Poster presentation, Organization for Human Brain Mapping Annual Meeting, 2005
- **O. T. Carmichael**, H. J. Aizenstein, S. W. Davis, J. T. Becker, P. M. Thompson, C. C. Meltzer, Y. Liu. *Atlas-Based Hippocampus Segmentation In Alzheimer's Disease and Mild Cognitive Impairment*. Oral presentation, International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Meeting, 2005
- W. Dai, O. L. Lopez, **O. T. Carmichael**, V. Lakkavaram, S. Z. Grahovac, J. T. Becker, L. H. Kuller, H. M. Gach. *Differences of regional cerebral blood flow in mild cognitive impairment and early Alzheimer's Disease measured with CASL*. Oral presentation, International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Meeting, 2005

- M. Wu, **O. T. Carmichael**, H. J. Aizenstein. *Quantitative Comparison of Neuroimage Registration for fMRI Analyses by AIR, SPM, and a Fully Deformable Model*. Poster presentation, International Society for Magnetic Resonance in Medicine (ISMRM) Scientific Meeting, 2005
- W. Dai, O.L. Lopez, **O. T. Carmichael**, V. Lakkavaram, J. T. Becker, H. M. Gach. *Changes of regional cerebral blood flow in mild cognitive impairment and early Alzheimer's Disease measured with continuous arterial spin labeled MRI*. Oral presentation, American Academy of Neurology Annual Meeting, November 2004
- Y. Liu, L. Teverovskiy, **O. T. Carmichael**, H. Aizenstein, J. T. Becker, O. L. Lopez, V. A. Stenger, C. Meltzer. *AD and MCI Classification from Cross-sectional MRI using Discriminative Subspace Analysis*. Poster presentation, American Academy of Neurology Annual Meeting, November 2004

Non-Peer-Reviewed Papers

- Henry Phillips, Peter Walker, Carrie Kennedy, **Owen Carmichael**, Ian Davidson. *Guided Learning Algorithms: An Application of Constrained Spectral Partitioning to Functional Magnetic Resonance Imaging*. Proceedings of HCI International 2013.
- **O. Carmichael**, S. Salloway. *Imaging markers of incipient dementia: The white matter matters* Editorial, In Press, Neurology 2012.
- **O. Carmichael**, O.L. Lopez, J. T. Becker, L. Kuller. *Trajectories of brain loss in aging and the development of cognitive impairment* (Comment on Neurology 70(11):828-33, Mar 11 2008), Neurology 72(8):771, Feb 24 2009.
- V. Broz, **O. Carmichael**, S. Thayer, J. Osborn, and M. Hebert. *ARTISAN: An Integrated Scene Mapping and Object Recognition System*. American Nuclear Society 8th Intl. Topical Meeting on Robotics and Remote Systems, American Nuclear Society, April, 1999
- Johnson, **O. Carmichael**, D. Huber, M. Hebert. *Toward A General 3-D Matching Engine: Multiple Models, Complex Scenes, and Efficient Data Filtering*. Proceedings 1998 Image Understanding Workshop (IUW)
- A.R. Neureuther and **O. Carmichael**, *Computer Intensive Problems in Simulation of Integrated Circuit Lithography and Topography*, Proceedings of NASA AMES Workshop, March 1996

Technical Reports

- **O. Carmichael**, H. J. Aizenstein, S. W. Davis, J. T. Becker, P. M. Thompson, C. C. Meltzer, Y. Liu. *Atlas-Based Hippocampus Segmentation in Alzheimer's Disease and Mild Cognitive Impairment*. Carnegie Mellon University Robotics Institute Technical Report CMU-RI-TR-04-53, December 2004
- **O. Carmichael**, S. Mahamud, M. Hebert, *Discriminant Filters For Object Recognition*, Robotics Institute Technical Report TR-02-09, Carnegie Mellon University, March 4, 2002

INVITED TALKS AND LECTURES

- February 5, 2020. "Lifestyle change and brain aging." Invited lecture, LSU Psychology Club and Psi Chi Honors Society.
- January 24, 2020. "Unintentional weight loss in older adults." Obesity NORC Day, Tulane University Medical Center.

- January 15, 2020. “Alzheimer’s disease: Genetics, family history, and race/ethnicity.” Alzheimer’s Services of the Capitol Area Lunch-N-Learn Series.
- December 11, 2019. “Does Intervening Against Cardiovascular Disease Enhance Brain Aging?” LSU Health Sciences Center Shreveport, Department of Pharmacology, Toxicology & Neuroscience.
- October 17, 2019. “Does Intervening Against Cardiovascular Disease Enhance Brain Aging?” LSU School of Veterinary Medicine, Department of Comparative Biomedical Sciences.
- September 26, 2019. “Body Composition and Energy Expenditure Assessment: Equipment and Procedures.” 14th Annual Diabetes, Obesity, and Cardiovascular Disease Summit, Pennington Biomedical Research Center.
- July 8, 2019. “Computational analysis of neuroimaging data: why it matters.” Invited seminar speaker. Xidian University, School of Computer Science and Technology. Xi’an, China.
- June 14, 2019. “Current status of functional neuroimaging in the study of energy balance.” Invited presentation, Novo Nordisk National Advisory Board.
- January 24, 2019. “Diabetes and the Aging Brain.” Invited seminar speaker, The University of Mississippi Medical Center.
- October 8, 2018. “Metabolism and Body Composition.” Postdoctoral Nutrition Course, Pennington Biomedical Research Center.
- September 18, 2018. “Advanced statistical analysis of neuroimaging data: why it matters.” Invited colloquium, Michigan State University Department of Statistics and Probability
- October 25, 2017. “MRI studies of brain metabolism and effects of exercise.” Invited lecture, Sticht Center Conference on Aging, Wake Forest University, Winston-Salem, NC.
- February 23, 2017. “Functional MRI of the brain in clinical trials of drugs and supplements.” Invited seminar, PEI BioAlliance, Charlottetown, Canada.
- October 29, 2016. “The Current Landscape of PET Imaging in Alzheimer’s Disease.” Fall Educational Symposium, Southwestern Chapter of the Society of Nuclear Medicine and Molecular Imaging.
- October 3, 2016. “In vivo imaging measurement of body composition and metabolism.” Postdoctoral nutrition course, Pennington Biomedical Research Center.
- September 12, 2016. “In vivo human brain and metabolic imaging opportunities at Pennington Biomedical Research Center.” Departmental Seminar, Cell Biology and Anatomy Department, LSUHSC New Orleans.
- May 27, 2016. “Functional Neuroimaging of the Brain in Obesity.” Alcohol and Drug Abuse Center of Excellence Scientific Retreat, LSU Health Sciences Center, New Orleans.
- April 20, 2016. 23rd Annual Conference on Alzheimer’s Disease. “Living Well with a Purpose.” Pennington Biomedical Research Center, Baton Rouge, LA.
- January 27, 2016. Overview of clinical neuroscience activity at the Pennington Center. Tulane University neuroscience seminar series.
- January 5, 2016. Research Opportunities In Late-Life Neurological Disorders. Invited Seminar, M.S. Ramaiah University of Applied Sciences, Bangalore, India.

- October 2, 2015. The puzzle of mixed vascular and Alzheimer pathologies in cognitive aging. Invited seminar, LSUHSC Shreveport Neuroscience Day.
- June 10, 2015. Some Mathematical Problems in Neuroimaging. Invited seminar, LSU Math Circle.
- June 30, 2015. Open FDA problems in functional MRI.” Invited talk, Frontiers in Functional Data Analysis workshop, Banff International Research Station.
- February 28, 2015. The Resistant Brain: Nourishing our Bodies against Alzheimer’s @ TEDxLSU
- April 17, 2015. Vascular brain aging: Testing the healthy heart, healthy mind hypothesis. Invited Seminar, LSU Life Course and Aging Center Annual Luncheon.
- December 12, 2014, *Neuroimaging Studies of Brain Aging*. MIND Center Seminar, University of Mississippi Medical Center.
- December 2, 2014, Why Brain Imaging is Essential to the Study of Alzheimer’s Disease. Invited Seminar, Pennington Biomedical Research Foundation, Scientific Dinner Series.
- October 9, 2014, *In vivo primate MRI opportunities at the Pennington Center*. Invited Seminar, Tulane National Primate Research Center.
- September 5, 2014, *Magnetic Resonance Research Opportunities at the Pennington Center*. Invited Seminar, Medical Physics graduate program, LSU.
- October 2, 2013, *The Brain as an End Organ of Cardiovascular and Metabolic Disorders*. Invited Seminar, Pennington Biomedical Research Center.
- September 4, 2013, *Update on PET imaging in Alzheimer’s Disease*. Frontiers in Biomedical Imaging Seminar Series, Radiology Department, UC Davis.
- May 29, 2013, *Alzheimer’s Disease: Overview of current research, caregiver issues, and advocacy*. Greater Sacramento Health Ministry Network Meeting.
- May 27, 2013, *Estimating Brain Networks From Neuroimaging Data: The Wild West Era*. Invited Seminar, NYU Poly Computer Science and Engineering Department.
- April 12, 2013, *Estimating Brain Networks From Neuroimaging Data: The Wild West Era*. UC Davis Statistical Sciences Symposium 2013.
- January 24, 2013, *Imaging Aging Brain Networks: The View From The Wild West*. UC Davis Neurology Department Grand Rounds. (Average evaluation score: 4.75 / 5.)
- January 16, 2013, *Why are there no effective drugs for Alzheimer’s Disease?*. California Retired Teachers Association General Meeting (Division 67), Roseville, CA.
- December 13, 2012, *New Faculty Workshop: Understanding Differences Among The Faculty Series*. Group discussion leader, UC Davis Health System.
- November 29, 2012, *Working Dads Need Career Flexibility Too: How to Integrate Work, Life and Family*. Panel discussion, UC Davis Health System.
- November 2, 2012, *Imaging Aging Brain Networks: Findings and Challenges*. UCSF Memory and Aging Center Grand Rounds.

- October 22, 2012, *Should You Publish in Open Access Journals?* Panel discussion organized by UC Davis Health Sciences Libraries.
- June 18, 2012, *The Pathological Course of Alzheimer's Disease: Why Finding a Cure Has Been So Hard.* California Retired Teachers Association Division 25 Annual Symposium, Carmichael, CA.
- May 30, 2012, *The Pathological Course of Alzheimer's Disease: Why Finding a Cure Has Been So Hard.* Keynote address at Alzheimer's Disease: Continuum of Care VI, Petaluma, CA
- January 26, 2012, *Statistical challenges in diffusion MRI and resting state functional MRI.* Statistics Colloquium, Department of Statistics and Graduate Group in Biostatistics, UC Davis.
- November 30, 2011, *The Pathological Course of Alzheimer's Disease: Why Finding a Cure Has Been So Hard.* Keynote address at Understanding Memory Loss: Strategies for Success III, Yountville, CA
- October 11, 2011, *Diffusion MRI and resting state functional MRI: two brain imaging modalities that need statistical help.* Statistics Department colloquium, Michigan State University.
- June 14, 2011, *Alzheimer's Disease Neuroimaging: Overview And Recent Developments.* Frontiers in Biomedical Imaging Seminar Series, Radiology Department, UC Davis.
- May 25, 2011, *Why are there no effective drugs for Alzheimer's Disease?.* California Retired Teachers Association General Meeting (Yolo County, Division 83), Woodland, CA.
- March 15, 2011, *Why are there no effective drugs for Alzheimer's Disease?.* California Retired Teachers Association Annual Symposium (Sacramento Area 3, Division 5), Sacramento CA.
- February 11, 2011, *Functional connectivity of the aging human brain from resting BOLD fMRI.* Computational Neuroscience Colloquium, UC Davis.
- October 28, 2010, *Novel imaging biomarkers for Alzheimer's disease and cerebrovascular disease.* Neurology Department Grand Rounds, UC Davis (Average evaluation score: 4.75 / 5.)
- July 15, 2010, *MRI markers for AD in an ethnically-diverse population.* Invited talk, International Conference on Alzheimer's Disease.
- March 13, 2010, *Dynamics of brain changes and cognitive changes in aging and late-life neurodegenerative disease.* Invited talk, UC Davis One-Day Workshop on Modeling Dynamical Systems.
- March 17, 2009, *Dementia: overview and current research.* California Retired Teachers Association Annual Symposium (Sacramento Area 3, Division 5), Sacramento CA.
- January 10, 2009, *Current mathematical challenges in imaging of the aging brain.* Graduate Group in Applied Mathematics Mini-Conference, UC Davis.
- October 16, 2008, *Novel neuroimaging-based measures of brain structure in healthy aging and dementia.* Neurology Department Scientific Research Conference, UC Davis.
- October 15, 2007, *Current Mathematical Challenges in Neuroimaging.* Graduate Group in Applied Mathematics Seminar, UC Davis.
- September 22, 2007, *Computational Methods for Brain Structure Quantification From In Vivo Human MRI.* Center For Neuroscience Retreat, UC Davis.
- July 2, 2007, *Advanced MR Morphometric Measures and Late-Life Cognitive Decline.* Neuroradiology Seminar, Leiden University Medical Center.

- February 12, 2007, *Automated Image Processing For Brain Change Analysis in Late-Life Cognitive Decline*. Biomedical Engineering Department Seminar, UC Davis
- June 30, 2006, *Large-scale studies of cerebral ventricle dilation in mild cognitive impairment and dementia*. Alzheimer's Association Northern California Research Symposium .
- October 10, 2006, *Gross-Scale Morphological Changes Associated With Mild Cognitive Impairment, Dementia, and Cardiovascular Conditions From In-Vivo Structural MRI*. Neurological Surgery Grand Rounds, UC Davis Medical Center
- October 20, 2005, *Image Processing Methods for Large-Scale Studies of Neurodegenerative Disease*. Neurology Grand Rounds, UC Davis Medical Center. (Average evaluation score: 4.71 / 5.)
- October 13, 2005, *Image Processing Methods for Large-Scale Studies of Neurodegenerative Disease*. Computer Science Department Colloquium, UC Davis
- July 20, 2004, *Computational Methods for Prediction of Late-Life Cognitive Decline..* Computer and Information Sciences Department Seminar, University of Pennsylvania
- July 20, 2004, *Computational Methods for Prediction of Late-Life Cognitive Decline..* Section of Biomedical Image Analysis Seminar, University of Pennsylvania
- September 16, 2002, *Detecting Wiry, Holey Objects In Cluttered Scenes*. VASC Seminar, Carnegie Mellon University

SERVICE AND PROFESSIONAL ACTIVITIES

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| 2019 | Agency Advisory Council (PBRC/PBRF) |
| 2019 | National Alzheimer Coordinating Center (NACC) External Advisory Board, 08/27/2019 |
| 2015 | LSU Council on Biomedical Research |
| 2015 | LSU-PBRC Strategic Partnership Committee |
| 2015 | National Alzheimer's Coordinating Center External Advisory Board 1997 - Present |
| 2005-Present | <p>Manuscript Reviews</p> <p>Obesity (2015), Journal of Neuroscience, IEEE International Symposium on Biomedical Imaging (ISBI 2014, 2015), Neuroscience, IEEE Transactions on Biomedical Engineering, Information Processing in Medical Imaging (IPMI) conference (2011, 2013, 2015), Neuroimage: Clinical, Human Molecular Genetics, Journal of the Neurological Sciences (2015), Knowledge and Information Systems, Handbooks of Alzheimer's Disease, Human Brain Mapping, Neurology, International Conference on Software Engineering (ICSE 2010), Brain Research, Radiotherapy and Oncology, Archives of Neurology, Gender Medicine, International Journal of Geriatric Psychiatry, Magnetic Resonance Materials in Physics Biology and Medicine (MAGMA), Faculty of 1000 Medicine, Conference on Medical Image Computing and Computer-Aided Interventions (MICCAI 2008, 2012, 2013, 2016), MICCAI Workshop on Computational Anatomy and Physiology of the Hippocampus (CAPH 2008), Neuroimage, Neurocase, Neuroradiology, Journal of Magnetic Resonance Imaging, Journal of Computer Science and Technology, American Journal of Neuroradiology, Biological Psychiatry, IEEE Transactions on Medical Imaging (TMI), Neurobiology of Aging, Annals of Neurology, Psychiatry Research: Neuroimaging, Computer Vision and Image Understanding (CVIU), IEEE Transactions on Pattern Analysis And Machine</p> |

Intelligence (PAMI), IEEE Transactions On Robotics And Automation (ITRA), Image and Vision Computing (IVC), IEEE Conference On Computer Vision And Pattern Recognition (CVPR), International Conference On Computer Vision (ICCV), IEEE Conference On Robotics And Automation (ICRA), IEEE/RSJ International Conference On Intelligent Robotic Systems (IROS), International Conference On Pattern Recognition (ICPR), International Joint Conference on Artificial Intelligence (IJCAI 2005), Cardiovascular Health Study Publications and Presentations Committee, International Journal of Obesity (IJO) (2017), PloS ONE, Pediatric Obesity, Brain Sciences, Frontiers in Endocrinology (2018), Frontiers in Human Neuroscience (2018), Medicine & Science in Sports & Exercise (MSSE) (2018), Prostaglandins, Leukotrienes and Essential Fatty Acids (PLEFA) (2018), Biological Psychiatry: Cognitive Neuroscience and Neuroimaging (2019), Frontiers Molecular Biosciences (2019),

2008-Present

Editorial Boards

American Journal of Neurodegenerative Disease, Alzheimer's Disease and Associated Disorders, World Journal of Radiology, Biochimica et Biophysica Acta Clinical, Frontiers in Mathematics of Biomolecules

2005-Present

Conference Organizing and Abstract Reviews

Symposium Chair, Dec. 2015 fMRI in Clinical Trials: State of the Science and Future Directions
Abstract reviewer, 2013 Alzheimer's Association International Conference
Oral session co-chair, 2012 IEEE Engineering in Medicine and Biology Conference
Scientific Review Committee, 2011 and 2013 Information Processing in Medical Imaging (IPMI) Program Committee, 2010 American Association for Artificial Intelligence Annual Meeting
Abstract reviewer, 2011 International Conference on Alzheimer's Disease
Abstract reviewer, 2010 Organization for Human Brain Mapping Annual Meeting
Abstract reviewer and oral session co-chair, 2008-2009 and 2011 American Academy of Neurology Annual Meeting Program Committee, 2005 ICCV Workshop on Computer Vision for Biomedical Image Applications (CVBIA), Applications Reviewer for 2016 LA CaTS Meritorious Roadmap Scholar Program, Organizing Committee for Imaging Symposium: Biomedical, Materials & Computation 2016, Paper Reviewer for MICCAI Conference 2016.

2006-Present

Grant/Funding Reviews

University of Arizona Alzheimer's Disease Center Pilot Grant Program (2007), University of Pittsburgh Older Americans Independence Center Pilot Program (2007 and 2008), UC Davis School of Medicine Bridge Funding Program, France-Berkeley Fund (2009), Alzheimer's Association Research Grant Program (2008-2012, 2014-2015), National Institutes of Health Special Emphasis Panels ZRG1 MDCN-A (58) (July 2009), ZNS1 SRB-R 59 / 60 (June 2012), ZRG1 F02A-J (June 2013, Oct 2013), Department of Veterans Affairs Rehabilitation Research and Development Service Merit Review (August 2012), University of Southern California Alzheimer's Disease Research Center Pilot Grant Program (2012, 2013), Militarily Relevant Peer Reviewed Alzheimer's Disease Research Program (MRPRA, 2013), LSU Biomedical Collaborative Research Program (2015), Alzheimer's Research UK (2015), NIH study section ETTN-E(55) (March 2016), Co-Chair NIH study section ETTN-E(55) (March 16, 2017), Reviewed for ETTN-E(55) (March, June, and October 2017; February 2018), HDM-Y(57) (June 2017), SRB-M(01) (June 2017), CCTS Partner Network Multidisciplinary Pilot Grants Program (November 2017), CCTS (Center for Clinical and Translational Sciences) at UAB (December 2017), LA CaTS Center Round 6 Pilot Grants Program (December 2017), LSU Graduate School Economic Development Assistantships (December 2017), protocol review for USARIEM (December 2017), LA CaTS Roadmap Scholar Grant Program (2018), USC Southern California Clinical and Translational Science Institute Grant Program (2018), LA CaTS Center Round 7 Pilot Grants Program (May 2018), Edward Mallinckrodt, Jr. Foundation pre-proposals for LSU (2018), NIH grants for review panel ZNS1 SRB-M(06) (June 2018). LSU Graduate School Economic Development Assistantships (December 2018), Boston Area Diabetes Endocrinology Research Center Pilot and Feasibility Grant (January 2019), LA CaTS Roadmap Applications (February 2019), Chaired NIH study section ZNS1 SRB-M(08) (March 2019), NIH study section ZAG1 ZIJ-P (J1) (August 29, 2019), Austrian Science Fund project KLI 829-B (January 2020)

2007, 2012	Member, University of Southern California Alzheimer's Disease Research Center External Advisory Committee
2007-2008	Member, UC Davis Biomedical Engineering Graduate Group Admissions Committee
2008 - Present	Member, UC Davis Neurology Department Faculty Development Committee
2009	Chair, UC Davis Neurology Department Academic Federation Peer Committee
2010-2013	Member, UC Davis Academic Senate Grade Change Committee
2010-2011	Member, UC Davis Applied Mathematics Graduate Group Admissions Committee
2003 - Present	Member, then Senior Member (2014), Institute for Electrical and Electronics Engineers

Media

June 30, 2015:	Open FDA Problems in Functional MRI
May 17, 2015:	Talking healthy brains and women's health research on Talk 107.3
February 28, 2015:	The Resistant Brain: Nourishing our Bodies against Alzheimer's @ TEDxLSU
September 9, 2013:	Evan Fletcher's paper on fornix degeneration and risk of future cognitive decline was covered by Medscape and others
September 8, 2013:	I was interviewed for a Sacramento Bee article profiling a relatively young individual who was diagnosed with Alzheimer's disease
August 23, 2013:	The Alzheimer's Association made a video of me talking about Alzheimer's disease and my new grant from them.
January 1, 2013:	I was interviewed for a Sacramento Bee article on effects of exercise on the brain.
November 6, 2012:	Pauline Maillard's paper on high blood pressure and brain injury in Framingham Generation 3 was covered by Forbes, Time, and Bottom Line's Daily Health News.
August 16, 2012:	Neurology Today covered an editorial by myself and Steve Salloway on the imaging of white matter changes in dementia.
November 23, 2011:	Radio interview on Alzheimer's disease for "Health Bits" segment of 1440 AM KVON
November 19, 2010:	Voice of America and The Davis Enterprise covered my paper on white matter disease in the ADNI cohort.
January 28, 2009:	The Davis Enterprise covered my localized hippocampus analysis work.

TEACHING AND MENTORING EXPERIENCE

Teaching, Pennington Biomedical Research Center

fMRI Working Group	Created an ongoing lecture and discussion group on functional magnetic resonance imaging for staff and faculty at Pennington Biomedical
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Invited course instructor “Introduction to Image Processing and Analysis,” Xidian University, Xi’an, China, July 4-11 2019.

Junior Faculty Mentoring, Pennington Biomedical Research Center

John Apolzan Assistant Professor, Ingestive Behavior Laboratory

Marc Dalecki Assistant Professor, LSU School of Kinesiology

Student Mentoring, Pennington Biomedical Research Center

Sreekrishna Pillai Computer Science and Engineering Ph.D. student, LSU. Research topic: Machine learning methods for analysis of functional connectivity from fMRI data.

Krystal Kirby Medical Physics Ph.D. student, LSU. Research topic: Multiple quantum coherence MRI methods for quantification of adipose tissue and tumor composition.

Leila Chowdury Agricultural Engineering undergraduate, LSU. Research Topic: Characterization of the performance characteristics of a gustometer designed for fMRI research.

Jill King Psychology undergraduate, LSU. Research Topic: Characterization of the perceptual properties of a food photography data set. **Current status:** Neuroscience Ph.D. student, Tulane University

Christina Goehl Medical Student, Southern Illinois University School of Medicine. Topic: NMR spectroscopic characterization of fat, muscle, and metabolic processes.

Haley Harrington Undergraduate, Samford University. Topic: Clinical applications of 31P spectroscopy to skeletal muscle diseases.

Anna Beth Madden Psychology undergraduate, LSU. Research topic: Effects of diabetes treatment on cognitive functioning. **Current status:** Ph.D. student in neuroscience, Texas State University.

Postdoctoral Fellows, Pennington Biomedical Research Center

Moses Darpolor MR spectroscopy techniques in obesity.
Current status: Assistant Professor, Stillman College.

Nicole Fearnbach Pediatric energy balance including cognitive mediators of sedentary time.
Current status: Assistant Professor, Pennington Biomedical Research Center

Keely Hawkins *Secondary mentor (Obesity T32)

Ping He Research topic: Nuclear magnetic resonance and magnetic resonance spectroscopy of TCA cycle metabolites using ¹³C labeled compounds

Preetham Shankpal Research topic: Development of MRI data post processing algorithms.
Current status: Assistant Professor at MS Ramaiah School of Engineering and Applied Science

Non-Employee Trainees, Pennington Biomedical Research Center

Jonathan Peterson Research topic: Functional MRI of working memory

Eric Chin Research topic: Functional MRI with food photography

Jill King Research topic: Psychometric properties of food photography data sets

Master's Thesis Committees at LSU

Katy Venable LSU School of Veterinary Medicine, Comparative Biological Sciences. **Thesis topic: ???**
Thesis advisor: Dr. Lee?

Hatim Chafi Medical Physics Graduate Group. **Thesis topic:** Magnetic Resonance Elastography of the liver and brain. **Thesis advisor:** Guang Jia.

Ryan Schurr Medical Physics Graduate Group. **Thesis topic:** Chemical exchange saturation transfer (CEST) magnetic resonance imaging. **Thesis advisor:** Guang Jia.

PhD Dissertation and Qualifying Exam Committees at LSU

Tyler Reekes LSU Health Sciences Center Shreveport, Department of Pharmacology, Toxicology & Neuroscience. **Topic. Advisor.**

Master's Thesis Committees at UC Davis

Leonid Shamis Computer Science Graduate Group. **Thesis topic:** Constraint Based Framework for Optimal k-Clustering. **Thesis advisor:** Ian Davidson.

Vladimir Glavtchev Computer Engineering Graduate Group. **Thesis topic:** Using graphics processing units to detect road signage from video sequences. **Thesis advisor:** John Owens.

Karl Beutner Applied Mathematics Graduate Group. **Thesis topic:** Uncertainty estimation in MRI-based brain region segmentation. **Thesis advisor:** Owen Carmichael.

PhD Dissertation and Qualifying Exam Committees at UC Davis

Arlie Capps Computer Science Graduate Group. **Thesis topic:** Visualization and Analysis of Microstructure in Images of the Living Human Retina. **Thesis advisors:** Bernd Hamann and Jack Warner.

Jinjiang He Statistics Graduate Group. **Thesis topic:** Functional correlation measures for functional MRI data. **Thesis advisor:** Jang-Ling Wong.

Tom Kuo Computer Science Graduate Group. **Thesis topic:** Data mining methods for network discovery. **Thesis advisor:** Ian Davidson.

Yang Zhou Statistics Graduate Group. **Thesis topic:** Covariance estimation in spatio-temporal processes. **Thesis advisor:** Jane-Ling Wang.

Lin Zheng Computer Science Graduate Group. **Thesis topic:** Multi-modal medical image volume visualization. **Thesis advisor:** Kwan-Liu Ma.

Yuanfeng Zhu Computer Science Graduate Group. **Thesis topic:** Real time simulation of interactive motion. **Thesis advisor:** Michael Neff.

Sean Gilpin Computer Science Graduate Group. **Thesis topic:** Tensor decomposition with constraints. **Thesis advisor:** Ian Davidson.

Buyue Qian Computer Science Graduate Group. **Thesis topic:** Active transfer learning. **Thesis advisor:** Ian Davidson.

Andrea Quintero Neuroscience Graduate Group. **Thesis topic:** Visuospatial attention in three neurodevelopmental disorders. **Thesis advisor:** Tony Simon.

Yingying Wang Computer Science Graduate Group. **Thesis topic:** Perception and Synthesis of Conversational Gestures for Virtual Characters. **Thesis advisor:** Michael Neff.

Ryan James Physics Graduate Group. **Thesis topic:** Efficient estimation of the synchronization properties of computational mechanics models. **Thesis advisor:** Jim Crutchfield.

Maria Gonzalez Electrical Engineering Graduate Group. **Thesis topic:** Electrical engineering applications of prolate spheroidal wave functions. **Thesis advisor:** Hong Xiao.

Chun-Jung Huang Biostatistics Graduate Group. **Thesis topic:** Statistical summaries of large-scale neuroimaging data. **Thesis advisor:** Danielle Harvey.

Christopher Schwarz Computer Science Graduate Group. **Thesis topic:** Markov random field simplification via link removal. **Thesis advisor:** Owen Carmichael.

Bess-Carolina Dolmo Biomedical Engineering Graduate Group. **Thesis topic:** Point-based representation methods for cortical surface analysis. **Thesis advisor:** Owen Carmichael.

Samuel Lockhart Neuroscience Graduate Group. **Thesis topic:** White matter integrity, functional connectivity, and executive control in aging. **Thesis advisor:** Charles DeCarli.

Anna Tikhonova Computer Science Graduate Group. **Thesis topic:** Visualizing large, complex data sets. **Thesis advisor:** Kwan-Liu Ma.

Fatemeh Abbasinejad Computer Science Graduate Group. **Thesis topic:** Shape matching of proteins using accelerated graphics cards.. **Thesis advisor:** Nina Amenta.

Xiang Wang Computer Science Graduate Group. **Thesis topic:** Clustering, learning, and ranking in complex graphs. **Thesis advisor:** Ian Davidson.

Jun Chen Statistics Graduate Group. **Thesis topic:** Smoothing and regression on Riemannian manifolds. Thesis advisors: Debashis Paul and Jie Peng.

Jing Xie Computer Science Graduate Group. **Thesis topic:** Shape analysis of brain regions from imaging data. **Thesis advisor:** Owen Carmichael.

Deboshmita Ghosh Computer Science Graduate Group. **Thesis topic:** Automated landmark placement on biomedical shape models. **Thesis advisor:** Nina Amenta.

Jinxiu Liao Biomedical Engineering Graduate Group. **Thesis topic:** Automated segmentation and reconstruction of positron emission tomography images. **Thesis advisor:** Jinyi Qi.

Blake Hunter Applied Mathematics Graduate Group. **Thesis topic:** Sparse feature selection in high-dimensional data sets. **Thesis advisor:** Thomas Strohmer.

Mauricio Hess-Flores	Computer Science Graduate Group. Thesis topic: Recovering 3D scene structure from aerial photographs. Thesis advisor: Ken Joy.
Ernest Woei	Applied Mathematics Graduate Group. Thesis topic: Heat diffusion methods for shape description and classification. Thesis advisor: Naoki Saito.
Lin Fu	Biomedical Engineering Graduate Group. Thesis topic: Iterative reconstruction of positron emission tomography images. Thesis advisor: Jinyi Qi.
Zijie Qi	Computer Science Graduate Group. Thesis topic: Data mining with constraints. Thesis advisor: Ian Davidson.
Pengcheng Luo	Computer Science Graduate Group. Thesis topic: Character animation based on motion capture data. Thesis advisor: Michael Neff.

Courses at LSU

KIN 4900	Independent study course for Kinesiology undergraduates, Spring 2017.
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Courses at UC Davis

RTG	Series of lectures on neuroimaging for the NSF-funded Research Training Group on Objects, Geometry, and Computing in Fall 2013.
HDE 117	"Meet The Scientists" guest lecture for HDE 117, "Longevity," November 7, 2012.
PSC 263	Created PSC 263, "Cognitive Neuroscience of Aging;" Instructor of record for PSC 263 in Spring Quarter 2012 (Overall rating was "Excellent" on 7 / 8 student evaluations).
ECS 173	Instructor of Record for ECS 173 (formerly ECS 189H) Spring Quarter 2009 (Average student evaluation score: 9.33 / 10), Fall Quarter 2010 (9.1 / 10), Spring 2013 (9.1 / 10).
ECS 289H	Created ECS 289H, "Advanced Image Processing and Analysis;" Instructor of record for ECS 289H in Spring Quarter 2008, (Average student evaluation score: 9.5 / 10), Fall Quarter 2009 (9.75 / 10), Winter Quarter 2012 (10/10).
STA 280	Co-Instructor of record for STA 280, "Introduction to Functional Data Analysis and Representations of Brain Connectivity" (with Hans Mueller and Jane-Ling Wang), Fall 2013
Lecture for residents	Lecturer on MRI techniques for UC Davis Neurology Residency Program didactic course, 9/6/2007.
Journal Club	Periodic guest faculty for Neuroimaging Journal Club, 2006-2013
Independent study	Instructor of Record for three independent study projects in computer science (CS 199), two in neuroscience (NEU 199), and one in biomedical engineering (BME 199).
ECS 189H	Created ECS 189H, "Introduction To Image Processing and Analysis;" Instructor of record for ECS 189H in Winter Quarter 2007. (Average student evaluation score: 9.75 / 10)

Student Mentoring at the UC Davis

Julia Scott (Postdoctoral fellow, Neuroscience) **Research topic:** Relationships between biomarkers of Alzheimer’s disease neuropathology, white matter and gray matter markers, and cognitive decline. **Current status:** Lecturer at Santa Clara University

Casey Wilson (B.S. student, Computer Science) **Research topic:** Automated matching of 3D surfaces of the human face. **Research product:** Software system for 3D matching of face surfaces.

Melissa Chenok (B.A. student, Neuroscience, Smith College) **Research topic:** Reliability of protocols for tracing sulci on human brain surfaces.

Jessica Liu (B.S. student, Neurobiology, Physiology, and Behavior) **Research topic:** Protocols for tracing sulci on human brain surfaces. **Research product:** One manuscript in Prized Writing undergraduate journal.

Devin Fenton (B.S. student, Neurobiology, Physiology, and Behavior) **Research topic:** Mathematical complexity of sulcal curves on the aging brain. **Research product:** One Undergraduate Research Conference presentation.

Chris Patton (B.S. student, Computer Science) **Research topic:** Detecting salamanders in video feeds for conservation ecology research. **Research product:** One Undergraduate Research Conference presentation.

Varsha Viswanath (B.S. student, Biomedical Engineering) **Research topic:** Noise removal from diffusion MRI data. **Research products:** One manuscript.

Alex Tsui (Ph.D. student, Computer Science) **Research topic:** Geometric correspondences between MRI-based brain surfaces. **Research products:** Two published manuscripts.

Phong Vuong (Ph.D. student, Computer Science) **Research topic:** Assessment of uncertainty in brain region delineations. **Research products:** One published manuscript.

Kristopher Kalish (Ph.D. student, Computer Science) **Research topic:** Point-based surface methods applied to neuroimaging shape analysis and segmentation.

Lovingly Quitania Park (Postdoctoral fellow, Neuropsychology) **Research topic:** Relationships between cognitive decline, neuropsychiatric symptoms, and brain anatomy in aging. **Primary mentor:** Sarah Farias.

Qiang Wang (Postdoctoral fellow, Mathematics) **Research topic:** Statistics on populations of mouse brain MRIs. **Co-mentor:** Rob Berman. **Current position:** Product development engineer, Aaken Lab, Woodland, CA.

Brian Alger (M.S. student, Applied Math) **Research topic:** Automated brain region segmentation from MRI.

Jagadeesh Pakaravoor (Ph.D. student, Computer Science) **Research topic:** Automated alignment of brain regions in MRI.

Karl Beutner (M.S. student, Applied Math) **Research topic:** Automated segmentation of human brain regions. **Research products:** One manuscript and master’s thesis.

Jing Xie (Ph.D. student, Computer Science) **Research topic:** Intuitive parameterization of ensembles of biological shapes. **Research products:** Four manuscripts.

Chris Schwarz	(Ph.D. student, Computer Science) Research topic: Automated detection of white matter lesions in structural MR images of the brain. Research products: Three manuscripts. Current status: Assistant Professor of Radiology at the Mayo Clinic.
Sean Mann	(B.S. student, Computer Science). Research topic: Automated construction of 3D shape models of brain regions. Current status: Graduate student in Computer Science, UCLA.
Gautam Prasad	(B.S. student, Computer Science). Research topic: Automated delineation of brain regions from structural MRI. Research products: Oral presentation at 2007 UC Davis Undergraduate Research Conference. Current status: Assistant Professor, Computer Science, University of Southern California.
Ana Rapoport	(B.S. student, Biology). Research topic: User interfaces for manual tracing of brain regions. Research product: Poster presentation at 2007 UC Davis Undergraduate Research Conference.
Peter Harris	(B.A. student, Exercise Biology). Research topic: Effects of chronic hypertension on morphology of the elderly brain. Research products: Journal paper, two UCD undergraduate journal papers, poster presentation at 2007 UC Davis Undergraduate Research Conference. Current status: Medical student at Dartmouth Medical College
Joseph Hong	(B.S. student, Biology). Research topic: Manual tracing of the cingulate cortex in elderly brains.

Graduate Student Mentoring in Pittsburgh

During my postdoctoral fellowship, I met regularly with graduate students and their primary faculty advisors to help the students formulate and advance their independent research projects in medical image analysis.

Leonid Teverovskiy	(PhD student, Center for Automated Learning and Discovery, Carnegie Mellon University). Research product: Two conference papers published.
Weiyang Dai	(PhD student, Electrical Engineering, University of Pittsburgh). Research products: Three journal papers published. Current status: Postdoctoral fellow, Harvard Medical School
Minjie Wu	(PhD student, Electrical Engineering, University of Pittsburgh). Research product: One journal paper published

Teaching at Carnegie Mellon University and University of Pittsburgh

Advanced Perception	Guest presentation on salient point detection in the Advanced Perception graduate seminar. Instructor: Dr. Martial Hebert
Medical Image Analysis	Guest lectures on image segmentation and shape modeling in University of Pittsburgh Medical Image Analysis course. Instructor: Dr. George Stetten
Image Processing	Guest lecture on shape-based object recognition in University of Pittsburgh undergraduate Introduction to Image Processing course. Instructor: Dr. Ching-Chung Li
Teaching Assistant	Graduate-level Mathematical Fundamentals For Robotics course at Caregie Mellon University. Instructor: Dr. Michael Erdmann

