

## CURRICULUM VITAE

**Name:** Vince D. Calhoun, Ph.D.

**Born:** October 1, 1967, Toledo, Ohio

**Family:** Married to June; son Jachin (age 6), daughter Anaiah (age 1)

### Education:

B.S. Electrical Engineering, University of Kansas, Lawrence, KS, May 1991

M.A. Biomedical Engineering, Johns Hopkins University, Baltimore, MD, May 1993

M.S. Information Systems, Johns Hopkins University, Baltimore, MD, January 1996

Ph.D. Electrical Eng., Univ. of Maryland Baltimore County, Baltimore, MD, May 2002

### Career:

1990-1991 Research Assistant, Remote Sensing Laboratory  
University of Kansas, Lawrence, KS

1993-1993 Research Technician, Laboratory for Studies on the  
Controlled Release of Bioactive Materials  
Johns Hopkins University, Baltimore, MD

1993-1996 System Manager/Programmer, Psychiatric Neuroimaging  
Johns Hopkins University, Baltimore, MD

1996-2001 Research Engineer, Psychiatric Neuroimaging  
Johns Hopkins University, Baltimore, MD

2001-2002 Senior Research Engineer, Psychiatric Neuroimaging  
Johns Hopkins University, Baltimore, MD

2002-2006 Director, Medical Image Analysis Laboratory  
Institute of Living, Hartford, CT

2002-2005 Assistant Clinical Professor, Department of Psychiatry  
Yale University, New Haven, CT

2002- Assistant Professor, Adjunct, Department of Psychiatry  
Johns Hopkins University, Baltimore, MD

2005- Associate Professor, Adjunct, Department of Psychiatry  
Yale University, New Haven, CT

2006- Associate Professor, Department of Electrical and Computer Engineering  
University of New Mexico, Albuquerque, NM

- 2006- Director Image Analysis and MR Research  
The Mind Research Network, Albuquerque, NM
- 2007- Associate Professor, Department of Neurosciences  
University of New Mexico, Albuquerque, NM
- 2007- Associate Professor, Department of Computer Science  
University of New Mexico, Albuquerque, NM
- 2009- Affiliate Professor, Chester F. Carlson Center for Imaging Science  
Rochester Institute of Technology, Rochester, NY
- 2009- Chief Technology Officer  
The Mind Research Network, Albuquerque, NM

**Professional Honors or Recognition:**

2008 Recipient, Junior Research Award  
University of New Mexico Engineering Department

Course on “Independent Component Analysis of BOLD fMRI Data” Selected for International Society of Magnetic Resonance in Medicine (ISMRM) Global Outreach Program (online 2008-2011)

2006 Recipient, American College of Neuropsychopharmacology Young Investigator Memorial Travel Award

2005 Recipient, Young Investigator Award, International Congress on Schizophrenia Research

2004 Recipient, Early Career Investigator Award, International Society for Neuroimaging in Psychiatry

1992, 1995 International Society of Magnetic Resonance in Medicine Student Travel Award

Member, Phi Beta Kappa (honor society)

Member, Omicron Delta Kappa (honor society)

Member, Secretary, Mortar Board (honor society)

Member, President, Tau Beta Pi (engineering honor society)

Member, Eta Kappa Nu (engineering honor society)

## List of Funded Research:

\*indicates obtained while at UNM

### Active

\*NIBIB; 1R01EB000840 (Calhoun)

2/1/08-1/31/12

A unified framework for flexible brain image analysis

\$350,000/year directs

The imaging findings in schizophrenia are widespread, heterogeneous, not diagnostic, and have limited replicability and it is likely that in part the lack of consistent findings is because most models do not adequately account for the variability present in the data from schizophrenia patients. The successful completion of this research will provide a powerful set of algorithms and software tools for the research community to increase the sensitivity and specificity of functional brain imaging techniques.

Role: Primary Investigator

\*NIH/NIBIB; 1R01EB006841 (Calhoun)

4/1/07 – 3/31/11

Multivariate methods for identifying multi-task/multimodal brain imaging biomarkers

\$220,000/year directs

To develop methods, based upon independent component analysis, for joint-statistical analysis of multi-task and multimodal brain data (functional MRI, DTI, structural MRI) to identify multimodal biomarkers.

Role: Primary Investigator

\*NIH/NIBIB; 2R01EB005846 (Calhoun)

5/1/09 – 4/30/13

Informed Data-Driven Fusion of Behavior, Brain Function, and Genes

\$350,000/year directs

This application proposes to further develop, enhance, and disseminate a set of sophisticated multivariate analysis tools for combination and examination of data from multiple modalities such as fMRI, ERP, genomic, and behavioral studies.

Role: Primary Investigator

\*NIH/NCRR; 1P20RR021938 (Calhoun)

8/1/08 – 7/31/13

COBRE: Neural Mechanisms of Schizophrenia: Use of Multiple Tools to Examine Dysfunctions in Neural Integration

\$1,725,415/year directs

Center grant funding 4 junior PIs and 4 cores which examines functional and anatomical connectivity in schizophrenia using multimodal neuroimaging analyses.

Role: Primary Investigator

\*NSF-CCF; 0635129 (Calhoun)

8/1/06-7/31/09

Collaborative Research: Complex-Valued Signal Processing and its Application to Analysis of Brain Imaging Data

\$100,000/year directs

To establish a framework for complex-valued signal processing such that the full potential of complex-valued signal processing can be realized and the need for simplifying assumptions such as circularity of signals can be eliminated. We will then show how this framework can be utilized to derive efficient algorithms for performing ICA in the complex domain, and focus upon functional magnetic resonance imaging (fMRI), structural MRI (sMRI) and diffusion tensor imaging (DTI).

Role: Primary Investigator

NIH/NIBIB; R01EB005846 (Calhoun)

8/1/05 – 5/31/09

Collaborative Research: Spatiotemporal Fusion of fMRI, EEG, and Genetic Data Using Independent Component Analysis

\$220,000/year directs

To develop data fusion approaches for fMRI, EEG, and gene SNP array data.

Role: Primary Investigator

NSF-SEI; 0612076 (Calhoun) 8/1/06-7/31/09  
Collaborative Research: SEI: Independent Component Analysis of  
Complex-Valued Brain Imaging Data \$200,000/year directs  
To develop multivariate methods for incorporating complex-valued processing strategies in the context of  
structural MRI, functional MRI, and diffusion tensor imaging data.  
Role: Primary Investigator

NIH: 1 R24 RR021992 (Potkin) 4/1/06-3/31/11  
BIRN: Functional Imaging Research for Schizophrenia Testbed \$157,000/year directs  
Federated database project involving 19 performance sites. PI involvement in cognitive, statistics, and  
calibration workgroups.  
Role: PI on Subcontract

NIAAA; 1 RO1 AA015615-01 (Pearlson) 3/1/05 – 2/28/09  
Alcohol and Driving: fMRI Studies \$250,000/year directs  
To study specific cognitive impairments caused by alcohol, their underlying functional anatomy and how  
they relate to performance on a validated simulated driving task.  
Role: PI on subcontract

NIMH; 2 RO1 MH43775-14 (Pearlson) 3/1/05 – 2/28/10  
Quantitative Neuroimaging in Psychosis \$250,000/year  
Investigates circuit-wide abnormalities in schizophrenia using functional and structural brain  
MRI in schizophrenia and healthy controls.  
Role: Co-Investigator

NIMH; 1 R01 MH072681-01 (Kiehl) 7/1/05-6/30/09  
Abnormal functional connectivity in psychosis \$250,000/year  
To use functional brain imaging measures to differentially diagnose schizophrenia from  
psychotic bipolar illness.  
Role: Co-Investigator

NIDA; 1 R01 DA020870-01 (Kiehl) 9/1/05-8/31/10  
Neurocognitive changes associated with behavioral treatment in \$388,096/year  
cocaine abusers  
To examine functional and structural changes associated with three cognitive behavioral  
treatment protocols in cocaine abusers.  
Role: Co-Investigator

NIMH; K23 MH070036-01 Stevens (PI) 8/01/04 - 7/01/09  
Neuroimaging Cognition in Adolescent Behavior Disorders \$142,250/year  
A 5-year Career Development Award to provide the PI skills for an independent clinical  
neuroscience research career investigating how brain function relates to diagnoses associated  
with disruptive behavior.  
Role: Co-Mentor

### **Completed**

NARSAD; (Calhoun) 4/1/04-3/31/09  
Assessment of the State-Trait Specificity of Auditory Cortex fMRI \$60,000 directs  
Synchrony Maps in Schizophrenia and Bipolar Disorder  
Study of specificity of auditory cortex maps in acute psychotic bipolar patients and after 6 months of  
medication. Maps are generated using independent component analysis methods we have developed.  
Role: Primary Investigator

## **Service:**

Treasurer-Elect, Organization for Human Brain Mapping, June 2009-

NIH Study Section, Biomedical Imaging Technology (BMIT), Charter Member, Nov 2009-

Member, Program Committee

2009 International Congress on Schizophrenia Research (ICOSR2009)

Member, Technical Committee

2009 IEEE Workshop on Statistical Signal Processing (SSP2009)

NIH Study Section, Genetics and Psychopathology (ZRG1 HOP-V), Feb 2008

NIH Study Section, Surgical Sciences, Biomed. Imaging and Bioeng. (SBIB-J), June 2007

Member

IEEE Signal Processing Society BISP Technical Committee, 2008-

Member, Program Committee IEEE International Symposium on Signal Processing and Information Technology (IEEE ISSPIT'08)

Editorial Board

NeuroImage, 2008-

Editorial Board

Frontiers in Human Neuroscience, 2007-

Editorial Board

The Open Biomedical Engineering Journal, 2007-

Associate Editor

International Journal of Computational Intelligence and Neuroscience, 2006-

Chapter Organizer, 2006

IEEE EMBS, Albuquerque

Associate Editor

IEEE Signal Processing Letters, 2005-2009

NIH Study Section, Biomedical Imaging Technology (BMIT), June 2005, Feb 2006, Sept 2007

Natural Sciences and Engineering Research Council of Canada (NSERC), Ad hoc grant reviewer, Jan 2006

The Scottish Executive Healthy Department, Ad hoc grant reviewer, Feb 2006

NIH Study Section, RFA New way of imaging neural activity, April 2006

The Wellcome Trust, Ad hoc grant reviewer, March 2005, May 2006

NSF Grant Review Panel (CRCNS), March 2006

NSF Grant Review (BCS), November 2006

Netherlands Organization for Scientific Research (NWO), Social Sciences, grant reviewer, Nov 2006

General Chair

Machine Learning for Signal Processing 2005, Mystic Connecticut

Member, Technical Committee

First International Workshop on Biosignal Processing and Classification (BPC), 2005-

Member, Program Committee

International Conference on Intelligent Knowledge Systems (IKS-2005)

NIH Study Section, Ad hoc member, Human Brain Project (HBP)/Neuroinformatics, 2005

Editorial Board

Human Brain Mapping 2004-

Member, Technical Program Committee

Machine Learning for Signal Processing (MLSP), 2004-

Member, Advisory Board

International Conference on Informatics (ICI-2004)

NIH Study Section, Ad hoc member, Human Brain Project (HBP)/BIST (Biomedical Information Science and Technology), Feb 2004

Member, Technical Program Committee

Neural Networks for Signal Processing (NNSP 2003)

Member: Tau Beta Pi Mentoring Program, 2003-

Member: International Review Panel, 2003-

Medical Science Monitor

**UNM Service (Oct 2006-Sept 2007):**

Member: ECE Promotion & Tenure Committee, 2008

Member: ECE Strategic Planning Committee, 2008

Area Chair: CompE Group, Spring 2007-

Member: Graduate Committee, ECE, Fall 2007-

Member: CompE Faculty Search Committee, Fall 2006

Chair: Bioengineering Committee, Fall 2006

Chapter organizer: UNM IEEE Engineering in Medicine and Biology Chapter

Member, Advisory council, Program in Interdisciplinary Biological and Biomedical Sciences (PIBBS)

## Full Bibliography:

### *Peer Reviewed Journal Articles:*

- [1] B. Reissfeld, S. Blackband, V. D. Calhoun, S. Grossman, S. Eller, and K. Leong, "The use of magnetic resonance imaging to track controlled drug release and transport in the brain," *Mag.Res.Imag.*, vol. 11, pp. 247-252, 1993.
- [2] S. Kalyanasundaram, V. D. Calhoun, and K. W. Leong, "A finite element model for predicting the distribution of drugs delivered intracranially to the brain," *Am.J.Physiol.*, vol. 273, pp. R1810-R1821, 1997.
- [3] V. D. Calhoun, T. Adali, M. Kraut, and G. D. Pearlson, "A Weighted-Least Squares Algorithm for Estimation and Visualization of Relative Latencies in Event-Related functional MRI," *Magn.Res.Med.*, vol. 44, pp. 947-954, 2000.
- [4] V. D. Calhoun, T. Adali, V. McGinty, J. J. Pekar, T. Watson, and G. D. Pearlson, "fMRI Activation In A Visual-Perception Task: Network Of Areas Detected Using The General Linear Model And Independent Component Analysis," *NeuroImage*, vol. 14, pp. 1080-1088, 2001.
- [5] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "A Method for Making Group Inferences from Functional MRI Data Using Independent Component Analysis," *Hum.Brain Map.*, vol. 14, pp. 140-151, 2001.
- [6] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "Spatial and temporal independent component analysis of functional MRI data containing a pair of task-related waveforms," *Hum.Brain Map.*, vol. 13, pp. 43-53, 2001.
- [7] V. D. Calhoun, T. Adali, G. D. Pearlson, P. C. van Zijl, and J. J. Pekar, "Independent component analysis of fMRI data in the complex domain," *Magn Reson.Med.*, vol. 48, pp. 180-192, 2002.
- [8] V. D. Calhoun, J. J. Pekar, V. B. McGinty, T. Adali, T. D. Watson, and G. D. Pearlson, "Different activation dynamics in multiple neural systems during simulated driving," *Hum.Brain Map.*, vol. 16, pp. 158-167, 2002.
- [9] A. Horska, V. D. Calhoun, D. H. Bradshaw, and P. B. Barker, "A rapid method for correction of partial CSF volume in quantitative proton MR spectroscopic imaging," *Magn.Res.Med.*, vol. 48, pp. 555-558, 2002.
- [10] M. A. Kraut, S. Kremen, L. R. Moo, J. B. Segal, V. D. Calhoun, and J. Hart, Jr., "Object activation in semantic memory from visual multimodal feature input," *J.Cogn Neurosci.*, vol. 14, pp. 37-47, 2002.
- [11] M. A. Kraut, S. Kremen, J. B. Segal, V. D. Calhoun, L. R. Moo, and J. Hart, Jr., "Object activation from features in the semantic system," *J.Cogn Neurosci.*, vol. 14, pp. 24-36, 2002.
- [12] N. Mikhelashvili-Browner, D. M. Yousem, A. S. Mandir, V. D. Calhoun, C. Wu, K. K. Oguz, and C. L. Vaughan, "Correlation of reaction time in and out of the functional MR unit," *Acad.Radiol.*, vol. 9, pp. 513-519, 2002.
- [13] V. D. Calhoun, T. Adali, J. J. Pekar, and G. D. Pearlson, "Latency (in)sensitive ICA: Group Independent Component Analysis of fMRI Data in the Temporal Frequency Domain," *NeuroImage*, vol. 20, pp. 1661-1669, 2003.
- [14] M. Kraut, V. D. Calhoun, J. Pitcock, C. Cusik, and J. Hart, "Neural Hybrid Model of Semantic Object Memory: Implications from Event-Related Timing Using fMRI," *J.Int.Neuropsychol.Soc.*, vol. 9, pp. 1031-1040, 2003.

- [15] N. Mikhelashvili-Browner, D. M. Yousem, C. Wu, M. A. Kraut, C. L. Vaughan, K. K. Oguz, and V. D. Calhoun, "Lack of sex effect on brain activity during a visuomotor response task: functional MR imaging study," *AJNR Am.J.Neuroradiol.*, vol. 24, pp. 488-494, 2003.
- [16] M. A. Mohamed, D. M. Yousem, A. Tekes, N. M. Browner, and V. D. Calhoun, "Timing of cortical activation: a latency-resolved event-related functional MR imaging study," *AJNR Am.J.Neuroradiol.*, vol. 24, pp. 1967-1974, 2003.
- [17] S. H. Mostofsky, J. G. Schafer, M. T. Abrams, M. C. Goldberg, A. A. Flower, A. Boyce, S. M. Courtney, V. D. Calhoun, M. A. Kraut, M. B. Denckla, and J. J. Pekar, "fMRI evidence that the neural basis of response inhibition is task-dependent," *Brain Res.Cogn Brain Res.*, vol. 17, pp. 419-430, 2003.
- [18] K. K. Oguz, N. M. Browner, V. D. Calhoun, C. Wu, M. A. Kraut, and D. M. Yousem, "Correlation of functional MR imaging activation data with simple reaction times," *Radiology*, vol. 226, pp. 188-194, 2003.
- [19] V. D. Calhoun, T. Adali, and G. D. Pearlson, "Independent Component Analysis Applied to fMRI Data: A Generative Model for Validating Results," *Journal of VLSI Signal Proc.Systems*, vol. 37, pp. 281-291, 2004.
- [20] V. D. Calhoun, D. Altschul, V. McGinty, R. A. Shih, D. Scott, and G. D. Pearlson, "Alcohol Intoxication Effects on Visual Perception: An fMRI Study," *Hum Brain Mapp*, vol. 21, pp. 15-26, 2004.
- [21] V. D. Calhoun, K. A. Kiehl, P. F. Liddle, and G. D. Pearlson, "Aberrant Localization of Synchronous Hemodynamic Activity in Auditory Cortex Reliably Characterizes Schizophrenia," *Biological Psychiatry*, vol. 55, pp. 842-849, 2004.
- [22] V. D. Calhoun, M. Stevens, G. D. Pearlson, and K. A. Kiehl, "fMRI analysis with the general linear model: Removal of latency-induced amplitude bias by incorporation of hemodynamic derivative terms," *NeuroImage*, vol. 22, pp. 252-257, 2004.
- [23] V. D. Calhoun, J. J. Pekar, and G. D. Pearlson, "Alcohol Intoxication Effects on Simulated Driving: Exploring Alcohol-Dose Effects on Brain Activation Using Functional MRI," *Neuropsychopharmacology*, vol. 29, pp. 2097-2107, 2004.
- [24] V. D. Calhoun, T. Adali, and J. J. Pekar, "A method for comparing group fMRI data using independent component analysis: application to visual, motor and visuomotor tasks," *Magn Reson Imaging*, vol. 22, pp. 1181-1191, Nov 2004.
- [25] J. S. Kim, S. A. Reading, T. Brashers-Krug, V. D. Calhoun, C. A. Ross, and G. D. Pearlson, "Functional MRI study of a serial reaction time task in Huntington's disease," *Psychiatry Res.*, vol. 131, pp. 23-30, 2004.
- [26] M. A. Mohamed, D. M. Yousem, A. Tekes, N. Browner, and V. D. Calhoun, "Correlation between the amplitude of cortical activation and reaction time: a functional MRI study," *AJR Am.J.Roentgenol.*, vol. 183, pp. 759-765, 2004.
- [27] R. S. Astur, S. Germain, E. Baker, V. D. Calhoun, G. D. Pearlson, and R. T. Constable, "fMRI Hippocampal Activity During a Virtual Radial Arm Maze," *Applied Psychophysiology and Biofeedback*, vol. 30, pp. 307-317, 2005.
- [28] V. D. Calhoun, T. Adali, M. Stevens, K. A. Kiehl, and J. J. Pekar, "Semi-blind ICA of fMRI: A method for utilizing hypothesis-derived time courses in a spatial ICA analysis," *NeuroImage*, vol. 25, pp. 527-538, 2005.
- [29] V. D. Calhoun, K. Carvalho, R. S. Astur, and G. D. Pearlson, "Using Virtual Reality to Study Alcohol Intoxication Effects on the Neural Correlates of Simulated Driving," *Applied Psychophysiology and Biofeedback*, vol. 30, pp. 285-306, 2005.

- [30] N. Giuliani, V. D. Calhoun, G. D. Pearlson, A. Francis, and R. W. Buchanan, "Voxel-Based Morphometry versus Regions of Interest: A Comparison of Two Methods for Analyzing Gray Matter Disturbances in Schizophrenia," *Schizophr.Res.*, vol. 74, pp. 135-147, 2005.
- [31] B. Hong, G. D. Pearlson, and V. D. Calhoun, "Source-Density Driven Independent Component Analysis Approach for fMRI Data," *Hum.Brain Map.*, vol. 25, pp. 297-307, 2005.
- [32] K. A. Kiehl, M. Stevens, K. R. Laurens, G. D. Pearlson, V. D. Calhoun, and P. F. Liddle, "An adaptive reflexive processing model of neurocognitive function: Supporting evidence from a large scale (n=100) fMRI study of an auditory oddball task," *NeuroImage*, vol. 25, pp. 899-915, 2005.
- [33] H. Snoussi and V. D. Calhoun, "Regularized Spectral Matching for Blind Source Separation. Application to fMRI Imaging," *IEEE Trans.Signal Proc.*, vol. 53, pp. 3373-3383, 2005.
- [34] M. Stevens, V. D. Calhoun, and K. A. Kiehl, "Hemispheric Differences in Hemodynamics Elicited by Auditory Oddball Stimuli," *NeuroImage*, vol. 26, pp. 782-792, 2005.
- [35] M. Stevens, V. D. Calhoun, and K. A. Kiehl, "fMRI in an oddball task: effects of target-to-target interval," *Psychophysiology*, vol. 42, pp. 636-642, 2005.
- [36] A. Tekes, M. Noureldin, M. Kraut, V. D. Calhoun, N. Browner, and D. M. Yousem, "Effect of age on visuomotor functional MR imaging " *Acad.Radiol.*, vol. 12, pp. 739-745, 2005.
- [37] T. Adali and V. D. Calhoun, "Wide Open Window: Theme Issue on fMRI Data Analysis," *IEEE Eng.in Medicine and Biology*, vol. 25, pp. 22-23, 2006.
- [38] M. Assaf, P. Rivkin, C. Kuzu, V. D. Calhoun, M. A. Kraut, K. Groth, M. Yassa, J. Hart, Jr., and G. D. Pearlson, "Abnormal Semantic Object-Recall and Anterior Cingulate Overactivation Correlate with Formal Thought Disorder in Schizophrenia," *Biological Psychiatry*, vol. 59, pp. 452-459, 2006.
- [39] M. Assaf, V. D. Calhoun, C. Kuzu, M. A. Kraut, P. Rivkin, J. Hart, Jr., and G. D. Pearlson, "Neural Correlates of Object Recall Process in Semantic Memory," *Psych.Res.Neuroimaging*, vol. 147, pp. 115-126, 2006.
- [40] V. D. Calhoun and T. Adali, "Complex Infomax: Convergence and Approximation of Infomax with Complex Nonlinearities," *Journal of VLSI Signal Proc.Systems*, vol. 44, pp. 173-190, 2006.
- [41] V. D. Calhoun, T. Adali, K. A. Kiehl, R. S. Astur, J. J. Pekar, and G. D. Pearlson, "A Method for Multi-task fMRI Data Fusion Applied to Schizophrenia," *Hum.Brain Map.*, vol. 27, pp. 598-610, 2006.
- [42] V. D. Calhoun, T. Adali, N. Giuliani, J. J. Pekar, G. D. Pearlson, and K. A. Kiehl, "A Method for Multimodal Analysis of Independent Source Differences in Schizophrenia: Combining Gray Matter Structural and Auditory Oddball Functional Data," *Hum.Brain Map.*, vol. 27, pp. 47-62, 2006.
- [43] V. D. Calhoun and T. Adali, "'Unmixing' Functional Magnetic Resonance Imaging with Independent Component Analysis," *IEEE Eng.in Medicine and Biology*, vol. 25, pp. 79-90, 2006.
- [44] V. D. Calhoun, G. D. Pearlson, and K. A. Kiehl, "Neuronal Chronometry of Target Detection: Fusion of Hemodynamic and Event-related Potential Data," *NeuroImage*, vol. 30, pp. 544-553, 2006.
- [45] K. Carvalho, G. D. Pearlson, R. S. Astur, and V. D. Calhoun, "Simulated Driving and Brain Imaging: Combining Behavior, Brain Activity, and Virtual Reality," *CNS Spectrum*, vol. 11, pp. 52-62, 2006.

- [46] K. A. Celone, V. D. Calhoun, B. C. Dickerson, A. Atri, E. F. Chua, S. Miller, K. DePeau, D. M. Rentz, D. Selkoe, M. S. Albert, and R. A. Sperling, "Alterations in Memory Networks in Mild Cognitive Impairment and Alzheimer's Disease: An Independent Component Analysis," *Journal of Neuroscience*, vol. 26, pp. 10222-10231, 2006.
- [47] M. R. Johnson, N. Morris, R. S. Astur, V. D. Calhoun, D. H. Mathalon, K. A. Kiehl, and G. D. Pearlson, "A Functional Magnetic Resonance Imaging Study of Working Memory Abnormalities in Schizophrenia," *Biological Psychiatry*, 2006.
- [48] M. A. Kraut, J. Pitcock, V. D. Calhoun, J. Li, T. Freeman, and J. Hart, Jr., "Neuroanatomic Organization of Sound Memory in Humans," *J Cogn Neurosci.*, vol. 18, pp. 1877-1888, 2006.
- [49] Z. Wang, J. Wang, V. D. Calhoun, H. Rao, J. A. Detre, and A. R. Childress, "Strategies for reducing large fMRI data sets for ICA," *Mag.Res.Imag.*, vol. 24, pp. 591-596, 2006.
- [50] T. Adali and V. D. Calhoun, "Complex ICA of Brain Imaging Data," *IEEE Signal Proc. Magazine*, vol. 24, pp. 136-139, 2007.
- [51] V. D. Calhoun and G. D. Pearlson, "Recent Developments in Brain Imaging of Schizophrenia: A Selective Review," *Neuroscience Imaging*, vol. 1, pp. 279-294, 2007.
- [52] N. Correa, T. Adali, and V. D. Calhoun, "Performance of Blind Source Separation Algorithms for fMRI Analysis," *Mag.Res.Imag.*, vol. 25, p. 684, 2007.
- [53] A. Garrity, G. D. Pearlson, K. McKiernan, D. Lloyd, K. A. Kiehl, and V. D. Calhoun, "Aberrant 'default mode' functional connectivity in schizophrenia," *Am.J.Psychiatry*, vol. 164, pp. 450-457, 2007.
- [54] M. P. Hejnar, K. A. Kiehl, and V. D. Calhoun, "Interparticipant Correlations: A Model Free FMRI Analysis Technique," *Hum.Brain Map.*, vol. 28, pp. 860-867, 2007.
- [55] Y. Li, T. Adali, and V. D. Calhoun, "Estimating the number of independent components for fMRI data," *Hum.Brain Map.*, vol. 28, pp. 1251-1266, 2007.
- [56] Y. Li, T. Adali, and V. D. Calhoun, "A Feature-selective Independent Component Analysis Method for Functional MRI," *Int. J. Biomed. Imaging*, 2007.
- [57] Q. Lin, Y. Zheng, F. Yin, H. Liang, and V. D. Calhoun, "A Fast Algorithm for One-unit ICA-R," *Information Sciences*, vol. 177, pp. 1265-1275, 2007.
- [58] G. D. Pearlson and V. D. Calhoun, "Structural and Functional Magnetic Resonance Imaging In Psychiatric Disorders," *Can. J Psychiatry*, vol. 52, 2007.
- [59] C. Sorg, V. Riedl, M. Muhlau, V. D. Calhoun, L. L., A. Drzezga, H. Forstl, A. Kurz, C. Zimmer, and A. Wohlschlagel, "Selective changes of resting-state networks in patients at high risk for Alzheimer's disease – an example for profiling functional brain disorders," *Proc Natl Acad Sci U S A*, vol. 104, pp. 18760-18765, 2007.
- [60] M. Stevens, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional neural circuits for mental timekeeping," *Hum.Brain Map.*, vol. 28, pp. 394-408, 2007.
- [61] M. Stevens, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional neural networks underlying response inhibition in adolescents and adults," *Behavior and Brain Sciences*, vol. 181, pp. 12-22, 2007.
- [62] T. Adali, Z. J. Wang, M. J. McKeown, P. Ciuciu, L. K. Hansen, A. Cichocki, and V. D. Calhoun, "Introduction to the Issue on fMRI Analysis for Human Brain Mapping," *IEEE JSTSP*, vol. 2, pp. 813-816, 2008.
- [63] V. D. Calhoun, G. D. Pearlson, P. Maciejewski, and K. A. Kiehl, "Temporal Lobe and 'Default' Hemodynamic Brain Modes Discriminate Between Schizophrenia and Bipolar Disorder," *Hum. Brain Map.*, vol. 29, pp. 1265-1275, 2008.

- [64] V. D. Calhoun, K. A. Kiehl, and G. D. Pearlson, "Modulation of Temporally Coherent Brain Networks Estimated using ICA at Rest and During Cognitive Tasks," *Hum Brain Mapp*, vol. 29, pp. 828-838, 2008.
- [65] A. Caprihan, G. D. Pearlson, and V. D. Calhoun, "Application of Principal Component Analysis to Distinguish Patients with Schizophrenia from Healthy Controls Based on Fractional Anisotropy Measurements," *NeuroImage*, vol. 42, pp. 675-682, 2008.
- [66] Z. Chen and V. D. Calhoun, "Compensating the intensity falling-off effect in cone-beam tomography by an empirical weight formula," *Applied Optics*, vol. 47, pp. 6033-6039, 2008.
- [67] N. Correa, Y. Li, T. Adali, and V. D. Calhoun, "Canonical correlation analysis for feature-based fusion of biomedical imaging modalities to detect associative networks in Schizophrenia," *IEEE JSTSP*, vol. 2, pp. 998-1007, 2008.
- [68] O. Demirci, V. P. Clark, and V. D. Calhoun, "A Projection Pursuit Algorithm to Classify Individuals Using fMRI Data: Application to Schizophrenia," *NeuroImage*, vol. 15, pp. 1774-1782, 2008.
- [69] O. Demirci, V. P. Clark, V. Magnotta, N. C. Andreasen, J. Lauriello, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "A Review of Challenges in the use of fMRI for Disease Classification / Characterization and A Projection Pursuit Application from Multi-site fMRI Schizophrenia Study," *Brain Imaging and Behavior*, vol. 2, pp. 207-226, 2008.
- [70] N. Driesen, H. C. Leung, V. D. Calhoun, R. T. Constable, R. Gueorguieva, R. Hoffman, P. Skudlarski, P. Goldman-Rakic, and J. Krystal, "Impairment of Working Memory Maintenance and Response in Schizophrenia: Functional Magnetic Resonance Imaging Evidence," *Biological Psychiatry*, vol. 64, pp. 1026-1034, 2008.
- [71] T. Eichele, V. D. Calhoun, M. Moosmann, K. Specht, M. Jongsma, R. Quiroga, H. Nordby, and K. Hugdahl, "Unmixing concurrent EEG-fMRI with parallel independent component analysis," *Int. J. Psych.*, vol. 67, pp. 222-234, 2008.
- [72] T. Eichele, S. Debener, V. D. Calhoun, K. Specht, A. K. Engel, K. Hugdahl, D. Y. Cramon, and M. Ullsperger, "Prediction of human errors by maladaptive changes in event-related brain networks," *Proc Natl Acad Sci U S A*, vol. 105, pp. 6173-6178, 2008.
- [73] A. R. Franco, J. Ling, A. Caprihan, V. D. Calhoun, R. Jung, G. L. Heileman, and A. R. Mayer, "Multimodal and Multi-tissue Measures of Connectivity Revealed by Joint Independent Component Analysis," *IEEE JSTSP*, vol. 2, pp. 986-997, 2008.
- [74] M. Jafri, G. D. Pearlson, M. Stevens, and V. D. Calhoun, "A Method for Functional Network Connectivity Among Spatially Independent Resting-State Components in Schizophrenia," *NeuroImage*, vol. 39, pp. 1666-1681, 2008.
- [75] D. Kim, J. Burge, T. Lane, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Hybrid ICA-Bayesian Network approach reveals distinct effective connectivity differences in schizophrenia," *NeuroImage*, vol. 42, pp. 1560-1568, 2008.
- [76] D. I. Kim, G. Pearlson, K. A. Kiehl, E. Bedrick, O. Demirci, and V. D. Calhoun, "A Method for Multi-group Inter-Participant Correlation: Abnormal Synchrony in Patients with Schizophrenia During Auditory Target Detection," *NeuroImage*, vol. 39, pp. 1129-1141, 2008.
- [77] J. Liu, O. Demirci, and V. D. Calhoun, "A Parallel Independent Component Analysis Approach to Investigate Genomic Influence on Brain Function," *IEEE Signal Proc. Letters*, vol. 15, pp. 413-416, 2008.
- [78] S. Meda, J. Gelernter, J. R. Gruen, V. D. Calhoun, H. Meng, N. A. Cope, and G. D. Pearlson, "Polymorphism of DCDC2 reveals differences in cortical morphology of

- healthy individuals – A preliminary voxel based morphometry study," *Brain Imaging and Behavior*, vol. 2, pp. 21-26, 2008.
- [79] S. Meda, N. Giuliani, V. D. Calhoun, K. Jagannathan, D. Schretlen, A. Pulver, N. Cascella, M. Keshavan, W. Kates, R. J. Buchanan, T. Sharma, and G. Pearlson, "A large scale (N=400) investigation of gray matter differences in schizophrenia using optimized voxel-based morphometry," *Schizophrenia Research*, vol. 101, pp. 95-105, 2008.
- [80] S. Meda, M. Bhattarai, N. Morris, R. Astur, V. D. Calhoun, D. H. Mathalon, K. A. Kiehl, and G. D. Pearlson, "An fMRI study of working memory in first-degree unaffected relatives of schizophrenia patients," *Schizophrenia Research*, vol. 104, pp. 85-95, 2008.
- [81] M. Moosmann, T. Eichele, H. Nordby, K. Hugdahl, and V. D. Calhoun, "Joint Independent Component Analysis for Simultaneous EEG-fMRI: Principle and Simulation," *Int. J. Psych.*, vol. 67, pp. 212-221, 2008.
- [82] J. Roffmann, R. L. Gollub, V. D. Calhoun, T. Wassink, A. P. Weiss, B. C. Ho, T. White, V. P. Clark, J. Fries, N. C. Andreasen, D. C. Goff, and D. S. Manoach, "MTHFR 677C->T genotype disrupts prefrontal function in schizophrenia through an interaction with COMT 158Val->Met," *Proc Natl Acad Sci U S A*, 2008.
- [83] L. R. Skelly, V. D. Calhoun, S. A. Meda, J. Kim, D. H. Mathalon, and G. D. Pearlson, "Diffusion Tensor Imaging in Schizophrenia: Relationship to Symptoms," *Schizophrenia Research*, vol. 98, pp. 157-162, 2008.
- [84] P. Skudlarski, K. Jagannathan, V. D. Calhoun, M. Hampson, B. A. Skudlarski, and G. D. Pearlson, "Measuring Brain Connectivity : Diffusion Tensor Imaging Validates Resting State Temporal Correlations," *NeuroImage*, vol. 43, pp. 554-561, 2008.
- [85] A. Windemuth, V. D. Calhoun, G. D. Pearlson, M. Kocherla, K. Jagannathan, and G. Ruano, "Physiogenomic Analysis of Localized fMRI Brain Activity in Schizophrenia," *Annals of Biomedical Engineering*, vol. 36, pp. 877-888, 2008.
- [86] A. J. Allen, S. Meda, P. Skudlarski, V. D. Calhoun, R. Astur, K. Ruopp, and G. D. Pearlson, "Effects of alcohol on performance on a distraction task during simulated driving," *Alcoholism: Clinical & Experimental Research*, vol. 33, pp. 1-9, 2009.
- [87] M. Assaf, I. Kahn, G. D. Pearlson, M. R. Johnson, Y. Yeshurun, V. D. Calhoun, and T. Hendler, "Brain Activity Dissociates Mentalization from Motivation during an Interpersonal Competitive Game," *Brain Imaging and Behavior*, vol. 3, pp. 24-37, 2009.
- [88] M. Assaf, K. Jagannathan, V. D. Calhoun, M. Kraut, J. Hart, and G. D. Pearlson, "Temporal Sequence of Hemispheric Network Activation during Semantic Processing: A Functional Network Connectivity Analysis " *Brain and Cognition*, vol. 70, pp. 238-246, 2009.
- [89] G. Brown, G. McCarthy, D. N. Greve, S. Potkin, J. Turner, A. Bischoff-Grethe, J. M. Ford, D. Mathalon, R. Notestine, S. Gadde, V. D. Calhoun, G. H. Glover, C. G. Wible, A. Belger, R. L. Gollub, J. Lauriello, D. O'Leary, and K. Lim, "Brain-Performance Correlates of Working Memory Retrieval in Schizophrenia: A Cognitive Modeling Approach," *Schizophr Bull*, vol. 35, pp. 32-46, 2009.
- [90] V. D. Calhoun, J. Liu, and T. Adali, "A Review of Group ICA for fMRI Data and ICA for Joint Inference of Imaging, Genetic, and ERP data," *NeuroImage*, vol. 45, pp. 163-172, 2009.
- [91] O. Demirci, M. C. Stevens, N. C. Andreasen, A. Michael, J. Liu, T. White, G. D. Pearlson, V. P. Clark, and V. D. Calhoun, "Investigation of relationships between fMRI brain networks in the spectral domain using ICA and Granger causality reveals distinct differences between schizophrenia patients and healthy controls," *NeuroImage*, vol. 46, pp. 419-431, 2009.

- [92] T. Eichele, V. D. Calhoun, and S. Debener, "Mining EEG-fMRI using independent component analysis," *Int. J. Psych.*, vol. 73, pp. 53-61, 2009.
- [93] Z. Feng, A. Caprihan, K. Blagoev, and V. D. Calhoun, "Biophysical Modeling of Phase Changes in BOLD fMRI," *NeuroImage*, vol. 47, pp. 540-548, 2009.
- [94] J. M. Ford, B. J. Roach, K. W. Jorgensen, J. A. Turner, G. G. Brown, R. Notestine, A. Bischoff-Grethe, D. N. Greve, C. G. Wible, J. Lauriello, A. Belger, B. Mueller, V. D. Calhoun, A. Preda, D. Keator, D. O'Leary, K. O. Lim, G. Glover, S. Potkin, FBIRN, and D. Mathalon, "Tuning in to the Voices: A Multisite fMRI Study of Auditory Hallucinations," *Schizophr Bull*, vol. 35, pp. 58-66, 2009.
- [95] A. R. Franco, A. Pritchard, V. D. Calhoun, and A. R. Mayer, "Inter-rater and Inter-method Reliability of Default Mode Network Selection," *Hum Brain Mapp*, vol. 30, pp. 2293-2303, 2009.
- [96] C. C. Hong, J. C. Harris, G. D. Pearlson, J. S. Kim, V. D. Calhoun, J. H. Fallon, X. Golay, J. S. Gillen, D. J. Simmonds, P. C. M. van zijl, D. S. Zee, and J. J. Pekar, "fMRI Evidence for Multisensory Recruitment Associated with Rapid Eye Movements during Sleep," *Hum Brain Mapp*, vol. 30, pp. 1705-1722, 2009.
- [97] M. Juarez, T. White, G. D. Pearlson, J. R. Bustillo, J. Lauriello, B. C. Ho, H. J. Bockholt, V. P. Clark, R. L. Gollub, V. Magnotta, G. Machado, and V. D. Calhoun, "Wide-spread brain differences in first episode and chronic schizophrenia patients during an auditory sensorimotor task revealed by independent component analysis of a large multisite study," *Hum. Brain Map.*, 2009.
- [98] D. Kim, D. Mathalon, J. M. Ford, M. Mannell, J. Turner, G. Brown, A. Belger, R. L. Gollub, J. Lauriello, C. G. Wible, D. O'Leary, K. Lim, S. Potkin, and V. D. Calhoun, "Auditory Oddball Deficits in Schizophrenia: An Independent Component Analysis of the fMRI Multisite Function BIRN Study," *Schizophr Bull*, vol. 35, pp. 67-81, 2009.
- [99] J. Liu, G. D. Pearlson, A. Windemuth, G. Ruano, N. I. Perrone-Bizzozero, and V. D. Calhoun, "Combining fMRI and SNP data to investigate connections between brain function and genetics using parallel ICA," *Hum. Brain Map.*, vol. 30, pp. 241-255, 2009.
- [100] J. Liu, K. A. Kiehl, G. D. Pearlson, N. I. Perrone-Bizzozero, and V. D. Calhoun, "Genetic Determinants of Target and Novelty Processing," *NeuroImage*, vol. 46, pp. 809-816, 2009.
- [101] S. Meda, V. D. Calhoun, R. Astur, B. Turner, K. Ruopp, and G. D. Pearlson, "Alcohol dose effects on brain circuits during simulated driving: An fMRI study," *Hum Brain Mapp*, vol. 30, pp. 1257-1270, 2009.
- [102] A. Michael, S. Baum, J. Fries, B. C. Ho, R. Pierson, N. C. Andreasen, and V. D. Calhoun, "A Method to Fuse fMRI Tasks Through Spatial Correlations: Applied to Schizophrenia," *Human Brain Mapping*, vol. 30, pp. 2512-2529, 2009.
- [103] J. M. Segall, J. T. Turner, T. Van Erp, T. White, H. J. Bockholt, R. L. Gollub, B. C. Ho, V. Magnotta, R. Jung, R. McCarley, S. C. Schulz, J. Lauriello, V. P. Clark, J. Voyvodic, M. T. Diaz, and V. D. Calhoun, "Voxel-based Morphometric Multi-site Collaborative Study on Schizophrenia," *Schizophr Bull*, vol. 35, pp. 82-95, 2009.
- [104] M. Stevens, V. D. Calhoun, G. D. Pearlson, and K. A. Kiehl, "Brain network dynamics during error commission," *Hum. Brain Map.*, vol. 30, pp. 24-37, 2009.
- [105] M. Stevens, G. D. Pearlson, and V. D. Calhoun, "Changes in the interaction of resting-state neural networks from adolescence to adulthood.," *Human Brain Mapping*, vol. 30, pp. 2356-2366, 2009.

- [106] J. Sui, T. Adali, G. Pearlson, and V. D. Calhoun, "An ICA-based Method for the Identification of Optimal fMRI Features and Components Using Combined Group-Discriminative Techniques," *NeuroImage*, vol. 46, pp. 73-86, 2009.
- [107] L. Xu, G. Pearlson, and V. Calhoun, "Joint Source Based Morphometry to Identify Relative Gray Matter and White Matter Group Differences," *NeuroImage*, vol. 44, pp. 777-789, 2009.
- [108] L. Xu, K. Groth, G. Pearlson, D. Schretlen, and V. Calhoun, "Source Based Morphometry: The Use of Independent Component Analysis to Identify Gray Matter Differences with Application to Schizophrenia," *Hum Brain Mapp*, vol. 30, pp. 711-724, 2009.

*In Press Journal Articles:*

- [1] V. D. Calhoun and T. Adali, "Feature-based Fusion of Medical Imaging Data," *IEEE Trans. Inf. Tech. in Biomedicine*, In Press.
- [2] V. D. Calhoun, T. Eichele, and G. Pearlson, "Functional Brain Networks in Schizophrenia: A Review," *Frontiers in Neuroscience*, In Press.
- [3] G. Goldstein, K. Panchalingam, R. J. McClure, J. A. Stanley, V. D. Calhoun, G. D. Pearlson, and J. W. Pettegrew, "Molecular Neurodevelopment: An in vivo 31 P - 1 H MRSI Study," *Journal of the International Neuropsychological Society*, In Press.
- [4] D. Kim, D. S. Manoach, D. Mathalon, J. Turner, G. Brown, J. M. Ford, R. L. Gollub, T. White, C. G. Wible, A. Belger, H. J. Bockholt, V. P. Clark, J. Lauriello, D. O'Leary, G. McCarthy, B. Mueller, K. Lim, N. C. Andreasen, S. Potkin, and V. D. Calhoun, "Dysregulation of working memory and default-mode networks in schizophrenia during a Sternberg item recognition paradigm: an independent component analysis of the multisite Mind and fBIRN studies," *Hum Brain Mapp*, In Press.
- [5] Y. Li, T. Adali, W. Wang, and V. D. Calhoun, "Joint Blind Source Separation by Multi-set Canonical Correlation Analysis," *IEEE Trans. Signal Processing*, In Press.
- [6] M. Mannell, A. R. Franco, V. D. Calhoun, J. M. Canive, R. J. Thoma, and A. R. Mayer, "Resting state and task-induced deactivation: A methodological comparison in patients with schizophrenia and healthy controls," *Hum Brain Mapp*, In Press.
- [7] M. Stevens, P. Skudlarski, G. D. Pearlson, and V. D. Calhoun, "Age-related cognitive gains mediated by the effects of white matter development on brain network integration," *NeuroImage*, In Press.
- [8] J. Sui, T. Adali, V. P. Clark, G. Pearlson, and V. D. Calhoun, "A Method for Accurate Group Difference Detection by Constraining the Mixing Coefficients in an ICA Framework," *Human Brain Mapping*, In Press.
- [9] T. White, V. Magnotta, H. J. Bockholt, S. Williams, R. L. Gollub, B. Mueller, B. C. Ho, R. Jung, V. P. Clark, J. Lauriello, J. R. Bustillo, S. C. Schulz, N. C. Andreasen, V. D. Calhoun, and K. O. Lim, "Global White matter abnormalities in schizophrenia: A multicenter diffusion tensor imaging study," *Schizophr Bull*, In Press.

*Book Chapters/Reviews:*

- [1] V. D. Calhoun and B. Hong, "Independent component analysis of functional magnetic resonance imaging data," in *Handbook of Pattern Recognition and Computer Vision*. vol. 3rd, C. H. Chen, Ed.: World Scientific Publishing, 2005.

- [2] M. Assaf, P. Rivkin, M. Kraut, V. D. Calhoun, J. Hart, G. D. Pearlson, J. Hart, and M. Kraut, "Schizophrenia and Semantic Memory," in *The Neural Basis of Semantic Memory*: Cambridge University Press, 2006.
- [3] V. D. Calhoun, M. Rizzo, and R. Parasuraman, "Investigation of Brain Networks Involved in Simulated Driving Using Functional Magnetic Resonance Imaging," in *NeuroErgonomics: The Brain at Work*: Oxford University Press, 2006.
- [4] V. D. Calhoun, G. D. Pearlson, F. Hillary, and J. DeLuca, "Alcohol Intoxication Effects on fMRI Activation," in *Functional Neuroimaging in Clinical Populations*: Guilford Press, 2007.
- [5] V. D. Calhoun and T. Adali, "ICA for Fusion of Brain Imaging Data," in *Signal Processing Techniques for Knowledge Extraction and Information Fusion*, D. Mandic, M. Golz, A. Kuh, D. Obradovic, and T. Tanaka, Eds.: Springer, 2008.
- [6] D. Lloyd, V. D. Calhoun, R. Astur, and G. D. Pearlson, "Functional brain imaging and the problem of other minds," in *Theory of Mind in Literature and Cognitive Science*, 2008.
- [7] N. Swanson, T. Eichele, G. D. Pearlson, and V. D. Calhoun, "Lateral Differences in the Default Mode Network in Schizophrenia," in *The two halves of the brain: Information processing in the cerebral hemispheres*: MIT Press, In Press.

#### *Conference Publications*

- [1] B. Reisfeld, S. Blackband, V. D. Calhoun, S. Grossman, and S. Eller, "Use of MRI for Tracking Controlled Drug Release and Transport in the Brain," in *Proc.SMRM*, 1992, p. 1012.
- [2] V. D. Calhoun, V. Truong, B. Reisfeld, J. Williams, and K. Leong, "Magnetic Resonance Imaging of Active Targeting Using Immuno-Microspheres," in *Proc.SMRM*, 1993, p. 493.
- [3] V. D. Calhoun, S. Kalyanasundaram, S. Eller, S. Grossman, and K. Leong, "3D T1 Mapping of a Contrast Agent Concentration Gradient: Quantifying the Transport of an Intracranial Delivery of Gd-DTPA to the Parenchyma of the Rabbit Brain," in *Proc.SMRM*, 1993, p. 630.
- [4] S. Kalyanasundaram, B. Reisfeld, V. D. Calhoun, and K. Leong, "Polymeric Controlled Release and Transport in the Brain - A Mathematical Model," in *Proc.Controlled Release Society*, 1993.
- [5] S. Kalyanasundaram, V. D. Calhoun, and K. Leong, "Coupled Convective-Diffusive Mass Transport in the Brain," in *Proc.AICHE*, 1994.
- [6] V. D. Calhoun, T. Adali, and G. D. Pearlson, "A frequency-space approach for motion correction in fMRI," in *Proc.IMDSP*, 1998, p. 229.
- [7] V. D. Calhoun, T. Adali, M. Kraut, P. Rivkin, and G. D. Pearlson, "Visualizing Spatially Distributed Hemodynamic Lag Times In Event-Related Functional MRI: Estimation Of A Characteristic Visual "Impulse Response"," in *Proc.EMBS*, 1998, pp. 2124-2127.
- [8] V. D. Calhoun and G. D. Pearlson, "Spatially-Distributed Lag Time Estimation In Event-Related fMRI Via Adaptive Filtering," in *Proc.BMES*, 1998, p. 1110.
- [9] S. Eleff, P. Rivkin, M. Grygorcewicz, V. D. Calhoun, Y. Chen, B. Chance, and G. D. Pearlson, "A novel non-invasive phase modulated near-Infrared Imaging method demonstrates abnormal cortical activation in schizophrenics during cognitive testing," in *Proc.Soc.for Neuroscience*, 1998.
- [10] G. D. Pearlson, V. D. Calhoun, D. Wong, A. Marusic, M. Grygorcewicz, S. Nicastrì, L. Ellison, and T. E. Schlaepfer, "The Effects on Cerebral Blood Flow and Time Estimation " in *Proc.ACNP*, 1998.

- [11] G. D. Pearlson, T. E. Schlaepfer, A. Marusic, V. D. Calhoun, J. Brandt, and C. Lyketsos, "SPECT RCBF Pattern and Prediction of 2-year cognitive outcome in early Alzheimer's Disease," in *Biological Psychiatry*, 1998.
- [12] V. D. Calhoun, T. Adali, and G. D. Pearlson, "(Non)Stationarity Of Temporal Dynamics In fMRI," in *Proc.EMBS/BMES Joint Meeting*, 1999, p. 1079.
- [13] V. D. Calhoun, T. Adali, and G. D. Pearlson, "Adaptive Filtering Of Visual Evoked Responses In fMRI: Variability Of Response," in *Proc.IASTED-SIP*, 1999.
- [14] M. Kraut, V. D. Calhoun, A. Mandir, L. Marsh, and G. D. Pearlson, "fMRI of Task-Timing Related Activation Patterns in the Human Supplementary Motor Area," in *Proc.RSNA*, 1999.
- [15] M. Kraut, V. D. Calhoun, and A. Mandir, "Regional Segregation of Task-Timing Related Activation in Human Supplementary Motor Area, Studies by fMRI," in *Proc.Soc.for Neuroscience*, 1999.
- [16] S. Nicastrì, V. D. Calhoun, G. D. Pearlson, C. A. Buchpiguel, A. S. Tanaka, M. C. Leite, and A. G. Andrade, "Cortical Blood Flow Abnormalities in Cocaine-Dependent Individuals Evaluated by Single Photon Emission Computed Tomography: A Method of Quantification," in *Proc.NIDA*, 1999.
- [17] G. D. Pearlson, V. D. Calhoun, D. Wong, A. Marusic, M. Grygorcewicz, S. Nicastrì, L. Ellison, S. Dogun, M. Stephane, and T. E. Schlaepfer, "THC effects on cerebral blood flow and time estimation," in *Biological Psychiatry*, 1999.
- [18] L. Amodei, V. D. Calhoun, C. Radu, S. Mori, P. E. Barta, and G. D. Pearlson, "Differences in white matter connectivity in men and women with and without schizophrenia," in *Biological Psychiatry*, 2000.
- [19] V. D. Calhoun, M. Kraut, T. Adali, and G. D. Pearlson, "A Weighted-Least Squares method for latency estimation in fMRI," in *Proc.ISMRM*, 2000, p. 814.
- [20] V. D. Calhoun, X. Golay, and G. D. Pearlson, "Improved fMRI Slice Timing Correction: Interpolation Errors and Wrap Around Effects," in *Proc.ISMRM*, 2000, p. 810.
- [21] V. D. Calhoun and G. D. Pearlson, "The brain as a black-box?: ER-fMRI latency estimation of interleaved responses to short visual, auditory, and motor stimuli," in *Proc.ISMRM*, 2000, p. 983.
- [22] V. D. Calhoun and J. J. Pekar, "Where and Where are Components Independent? On the applicability of spatial- and temporal- ICA to functional MRI Data," in *NeuroImage*, 2000, p. S682.
- [23] V. D. Calhoun, V. McGinty, T. Watson, and G. D. Pearlson, "Insights Into Functional Connectivity During A Driving Simulation Before And After Effects Of Marinol Intoxication On fMRI Activation And Cognitive Performance " in *Proc.ACNP*, 2000.
- [24] M. Kraut, V. D. Calhoun, J. B. Segal, and J. Hart, "Functional MRI of Word Association and the Search for Word Meaning," in *Radiology*, 2000.
- [25] S. Nicastrì, V. D. Calhoun, G. D. Pearlson, C. A. Buchpiguel, A. S. Tanaka, M. C. Leite, and A. G. Andrade, "Cortical Blood Flow Abnormalities in Cocaine-Dependent Individuals Evaluated by Single Photon Emission Computed Tomography: A Method of Quantification," in *Proc.CPDD*, 2000.
- [26] D. M. Yousem, M. A. Kraut, R. J. Geckle, A. S. Mandir, V. D. Calhoun, and G. D. Pearlson, "Effect of Age on motor, visual, and visuomotor fMRI tasks," in *Radiology*, 2000.
- [27] V. D. Calhoun, T. Adali, and G. D. Pearlson, "Independent Components Analysis Applied To fMRI Data: A Natural Model And Order Selection," in *Proc.NSIP*, 2001.

- [28] V. D. Calhoun, J. J. Pekar, T. Adali, and G. D. Pearlson, "fMRI Of Visual Perception: Networks Identified By SPM And Independent Component Analysis," in *Proc.ISMRM*, 2001, p. 1742.
- [29] V. D. Calhoun, J. J. Pekar, T. Adali, and G. D. Pearlson, "An fMRI Analysis of Driving-Related Networks with Independent Component Analysis Applied in a Between-Condition (BC-ICA) and Within-Condition (WC-ICA) Manner," in *Proc.ISMRM*, 2001, p. 668.
- [30] V. D. Calhoun, V. McGinty, J. J. Pekar, T. Watson, and G. D. Pearlson, "Investigation of Marinol (THC) Effects upon fMRI Activation During Active and Passive Driving Using Independent Component Analysis and SPM," in *NeuroImage*, 2001, p. S388.
- [31] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "A Method for Making Group Inferences Using Independent Component Analysis of Functional MRI Data: Exploring the Visual System," in *NeuroImage*, 2001, p. S88.
- [32] V. D. Calhoun, T. Adali, and G. D. Pearlson, "Independent Components Analysis Applied to fMRI Data: A Generative Model for Validating Results," in *Proc.NNSP*, 2001.
- [33] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "Group ICA of Functional MRI Data: Separability, Stationarity, and Inference," in *Proc.Int.Conf.on ICA and BSS*, 2001, pp. 155-160.
- [34] V. D. Calhoun, V. McGinty, and G. D. Pearlson, "Driving and the Brain: An Imaging Study," in *Proc.Human Centered Trans.Sim.Conf.*, 2001.
- [35] A. Horska, V. D. Calhoun, and P. B. Barker, "A Rapid Method for Correction of CSF Partial Volume in Quantitative Proton MR Spectroscopic Imaging," in *Proc.ISMRM*, 2001, p. 216.
- [36] Y. Matsuyama and S. Imahara, "Independent Component Analysis by Convex Divergence Minimization: Applications to Brain fMRI Analysis " in *Int.Joint.Conf.on Neural Netw.*, 2001, pp. 412-417.
- [37] V. B. McGinty, R. A. Shih, E. S. Garrett, V. D. Calhoun, and G. D. Pearlson, "Assessment of Intoxicated Driving with a Simulator: A Validation Study with on Road Driving," in *Proc.Human Centered Trans.Sim.Conf.*, 2001, pp. 11-19.
- [38] S. Mostofsky, M. Abrams, S. Arnold, Y. Choe, V. D. Calhoun, and J. J. Pekar, "Functional MRI Examination of Motor Response Inhibition," in *Proc.INS*, 2001.
- [39] G. D. Pearlson, J. R. Depaulo, J. B. Potash, H. Strasser, P. E. Barta, V. D. Calhoun, K. O. Yates, P. Rivkin, A. Pulver, E. Miller, and D. Schretlen, "Schizophrenia and psychotic affective disorder: anatomic overlay? ," in *Biological Psychiatry*, 2001.
- [40] J. J. Pekar, V. D. Calhoun, T. Adali, and G. D. Pearlson, "Spatial & Temporal Independent Component Analysis of fMRI Data with Two Task-Related Waveforms," in *Proc.ISMRM*, 2001, p. 24.
- [41] P. Rivkin, J. Hart, V. D. Calhoun, and G. D. Pearlson, "Functional MRI and Formal Thought Disorder," in *Biological Psychiatry*, 2001.
- [42] K. O. Yates, H. M. Morris, H. Strasser, N. A. Honeycutt, D. Schretlen, P. Barta, J. Anthony, V. D. Calhoun, and G. D. Pearlson, "Linear Regression Model Based on Age- and Sex-Related Increase in MRI Volumes of Ventricles," in *Proc.SBP*, 2001.
- [43] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "On Complex Infomax Applied to Complex fMRI Data," in *Proc.ICASSP*, 2002.
- [44] V. D. Calhoun and G. D. Pearlson, "Using Independent Component Analysis To Study Complex Behaviors With fMRI: Application to Studies of Simulated Driving," in *Society of Biological Psychiatry*, 2002.

- [45] V. D. Calhoun, T. Adali, J. J. Pekar, and G. D. Pearlson, "Independent Component Analysis Facilitates fMRI of an Naturalistic Behavior: Hypothesized Neural Substrates of Simulated Driving," in *Proc.ISMRM*, 2002.
- [46] V. D. Calhoun, T. Adali, G. D. Pearlson, P. C. M. van Zijl, and J. J. Pekar, "Independent Component Analysis of fMRI Data in the Complex Domain," in *Proc.ISMRM*, 2002.
- [47] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "An Infomax Method for Performing ICA of fMRI Data in the Complex Domain," in *Proc.HBM*, 2002.
- [48] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "A Generative Approach to Validation and Evaluation of Independent Component Analyses of fMRI Data," in *Proc.HBM*, 2002.
- [49] V. D. Calhoun and G. D. Pearlson, "Novel Means for Designing, Analyzing and Interpreting Functional MRI Studies," in *Society of Biological Psychiatry*, 2002.
- [50] V. D. Calhoun and T. Adali, "Complex Infomax: Convergence and Approximation of Infomax with Complex Nonlinearities," in *Proc.NNSP*, 2002.
- [51] V. D. Calhoun, V. McGinty, R. A. Shih, D. Altschul, D. Scott, J. Shaikh, and G. D. Pearlson, "Intoxication Effects on fMRI Studies of Simulated Driving," in *Proc.ACNP*, 2002.
- [52] A. Horska, M. A. Jacobs, V. D. Calhoun, and P. B. Barker, "A Rapid Method for Brain Tissue Segmentation " in *Proc.RSNA*, 2002.
- [53] J. Kim, R. Kanaan, V. D. Calhoun, S. Mori, and G. D. Pearlson, "More Averages vs. More Gradients: Which is Right for Reliable Diffusion Tensor MRI?," in *Proc.RSNA*, 2002.
- [54] J. T. Little, G. S. Smith, C. C. Meltzer, B. Mulsant, B. G. Pollock, M. D. Miller, V. D. Calhoun, G. D. Pearlson, and C. F. Reynold, "Cerebral metabolic change with paroxetine treatment in geriatric depression," in *Am.J.Geriatric Psych.*, 2002, pp. 73-74.
- [55] S. Mostofsky, M. Abrams, M. Goldberg, J. Schafer, J. J. Pekar, S. M. Courtney, V. D. Calhoun, M. Kraut, and M. Denckla, "Supplementary Motor Area in Motor Response Inhibition and Preparation: Evidence From an fMRI Study of a Go/No-go Task," in *Proc.Amer.Acad.of Neur.*, 2002.
- [56] H. Strasser, N. A. Honeycutt, D. Schretlen, J. R. Depaulo, A. Pulver, J. Anthony, R. Hopokins, P. Barta, V. D. Calhoun, E. Miller, and G. D. Pearlson, "Amygdala volumes in psychotic and nonpsychotic bipolars and schizophrenia," in *Society of Biological Psychiatry*, 2002.
- [57] R. Arya, S. Roys, V. D. Calhoun, T. Adali, J. Greenspan, and R. Gullapali, "Distance Measure for Ranking Spatial ICA Component of Functional MRI Data," in *Proc.ISMRM*, 2003.
- [58] V. D. Calhoun, D. Altschul, V. McGinty, and G. D. Pearlson, "Alcohol Intoxication Effects on A Driving-Related Visual Perception Task: An fMRI Study," in *Society of Biological Psychiatry*, 2003.
- [59] V. D. Calhoun, T. Adali, G. D. Pearlson, and J. J. Pekar, "A Method for Testing Conjunctive and Subtractive Hypotheses on Group fMRI Data Using Independent Component Analysis," in *Proc.ISMRM*, 2003.
- [60] V. D. Calhoun, T. Adali, J. J. Pekar, and G. D. Pearlson, "Independent Component Analysis of fMRI Power Spectra: Spatial Grouping and Latency Estimation," in *Proc.ISMRM*, 2003.
- [61] V. D. Calhoun, J. Kim, and G. D. Pearlson, "fMRI Connectivity Measured by Mutual Information and Correlation: Linear Dependence vs. General Dependence," in *Proc.ISMRM*, 2003.

- [62] V. D. Calhoun, D. Scott, D. Altschul, R. A. Shih, and G. D. Pearlson, "Alcohol Intoxication Effects on A Visual Perception Task: An fMRI Study," in *Proc.ISMRM*, 2003.
- [63] V. D. Calhoun and T. Adali, "Complex ICA for fMRI Analysis: Performance of Several Approaches," in *Proc.ICASSP*, 2003.
- [64] V. D. Calhoun, T. Adali, J. C. Hansen, J. Larsen, and J. J. Pekar, "ICA of fMRI: An Overview," in *Proc.Int.Conf.on ICA and BSS*, 2003.
- [65] V. D. Calhoun, K. A. Kiehl, K. A. Kiehl, P. F. Liddle, and G. D. Pearlson, "Aberrant Localization of Synchronous fMRI Activity in Temporal Auditory Cortex Reliably Characterizes Schizophrenia," in *Proc.Int.Cong.on Schiz.Res.*, Colorado Springs, CO, 2003.
- [66] V. D. Calhoun, T. Adali, J. J. Pekar, and G. D. Pearlson, "Latency (in)sensitive Group Independent Component Analysis of fMRI Data in the Temporal Frequency Domain," in *Proc.HBM*, 2003.
- [67] V. D. Calhoun, K. A. Kiehl, P. F. Liddle, and G. D. Pearlson, "Aberrant Localization of Temporal Lobe Auditory Cortex Synchronous fMRI Activity Reliably Characterizes Schizophrenia," in *Proc.HBM*, 2003.
- [68] V. D. Calhoun, P. Rivkin, and G. D. Pearlson, "Synchronous Auditory Cortex Fluctuations in Schizophrenia: An fMRI Study," in *Society of Biological Psychiatry*, 2003.
- [69] V. D. Calhoun and G. D. Pearlson, "A Novel Approach for Investigative Dose-Response and Case-Control Changes in Multiple Spatially-Independent Networks: Applications to fMRI of Simulated Driving and Alcohol," in *Proc.ACNP*, 2003.
- [70] E. Egolf and V. D. Calhoun, "Group ICA of fMRI Toolbox," in *Proc.Biomedical Engineering Alliance and Consortium*, Hartford, CT 2003.
- [71] E. Formisano, V. D. Calhoun, N. van Atteveldt, F. Esposito, F. Di Salle, J. J. Pekar, and R. Goebel, "Analysis of group fMRI data with cortex-based intersubject alignment and independent component analysis," in *Proc.HBM*, Sendai, Japan, 2003.
- [72] A. Horska, M. A. Jacobs, V. D. Calhoun, A. Arslanoglu, and P. B. Barker, "A Fast Method for Image Segmentation: Application to Quantitative Proton MRSI at 3 Tesla," in *Proc.ISMRM*, 2003.
- [73] J. Kim, V. D. Calhoun, and G. D. Pearlson, "3D Visualization of White Matter Tracts Using LIC," in *Proc.ASNR*, 2003.
- [74] J. Kim, V. D. Calhoun, and G. D. Pearlson, "DTI of Huntington Disease," in *Proc.ISMRM*, 2003.
- [75] J. Kim and V. D. Calhoun, "Evaluation of Quantization Error in DICOM images for fMRI Application," in *Proc.RSNA*, 2003.
- [76] M. Noureldin, D. M. Yousem, A. Tekes, N. Browner, and V. D. Calhoun, "Correlation between the amplitude of cortical activation and reaction time: An fMRI Study " in *Proc.ASNR*, 2003.
- [77] G. D. Pearlson, K. A. Kiehl, P. F. Liddle, and V. D. Calhoun, "Abberant Localization of Auditory Cortex Synchronous Hemodynamic Activity Reliably Characterizes Schizophrenia," in *Proc.ACNP*, 2003.
- [78] T. Adali, T. Kim, and V. D. Calhoun, "Independent Component Analysis By Complex Nonlinearities," in *Proc.ICASSP*, 2004, pp. 525-528.
- [79] M. Assaf, C. Kuzu, P. Rivkin, V. D. Calhoun, J. Hart, Jr., M. Kraut, M. Yassa, and G. D. Pearlson, "fMRI Evidence for Abnormal Semantic Processing in Schizophrenia " in *Proc.SBP*, New York, NY, 2004.
- [80] V. D. Calhoun and G. D. Pearlson, "Intoxication Effects on fMRI Studies of Simulated Driving: ICA Reveals Disruption in Synchronous Networks," in *Proc.ICANA*, 2004.

- [81] V. D. Calhoun, "Intoxication effects on fMRI studies of simulated driving reveals disruption in specific synchronous networks," in *Proc.SBP*, New York, NY, 2004.
- [82] V. D. Calhoun, T. Adali, and Y. Li, "Independent component analysis of complex-valued functional magnetic resonance imaging data by complex nonlinearities," in *Proc.ISBI*, 2004, pp. 984-987.
- [83] V. D. Calhoun, K. A. Kiehl, and G. D. Pearlson, "Are two tasks better than one?: Multi-task coupling of fMRI independent sources in schizophrenia," in *Proc.Int.Cong.on Schiz.Res.*, 2004.
- [84] K. Celone, V. D. Calhoun, A. Driscoll, E. Rand-Giovannetti, E. Chua, B. Dickerson, M. Albert, D. Blacker, and R. Sperling, "ICA of fMRI Associative Memory Networks in Normal Aging, MCI and Mild AD," in *Proc.Soc.for Neuroscience*, 2004.
- [85] E. Egolf, K. A. Kiehl, and V. D. Calhoun, "Group ICA of fMRI Toolbox (GIFT)," in *Proc.HBM*, 2004.
- [86] T. Franklin, V. D. Calhoun, K. A. Kiehl, J. A. Gray, N. Sciortino, and A. R. Childress, "An Independent component analysis of BOLD fMRI to cigarette stimuli: Identifying the brain regions that act as a functional unit in response to smoking cues " in *Proc.SRNT*, 2004.
- [87] N. Giuliani, G. D. Pearlson, and V. D. Calhoun, "Alcohol Versus Marinol Intoxication Effects on Visual Perception: An fMRI Study," in *Proc.ICANA*, 2004.
- [88] M. P. Hejnar, M. M. Kurtz, K. A. Keihl, G. D. Pearlson, and V. D. Calhoun, "Performance on the Penn Conditional Exclusion Task (PCET) in Patients with Schizophrenia (SZ) and Healthy Controls: An fMRI Analysis " in *Proc.SBP*, New York, NY, 2004.
- [89] B. Hong and V. D. Calhoun, "On an Adaptive ICA Method with Application to Biomedical Image Analysis," in *Seventh International Conference on Signal Processing*, 2004.
- [90] B. Hong and V. D. Calhoun, "Source Density Driven Adaptive Independent Component Analysis Approach for fMRI Signal Analysis " in *Proc.MLSP*, San Paulo, Brazil, 2004.
- [91] B. Hong, G. D. Pearlson, E. Egolf, and V. D. Calhoun, "Identification of Brain Activity in a Visual Stimulation Task - An Adaptive ICA Approach for fMRI Data " in *Proc.HBM*, Budapest, Hungary, 2004.
- [92] K. A. Kiehl, M. Stevens, K. R. Laurens, G. D. Pearlson, V. D. Calhoun, and P. F. Liddle, "The Amygdala as a salience detector: Evidence from a large-scale study (N=100) of auditory target detection " in *Proc.HBM*, Budapest, Hungary, 2004.
- [93] C. Kuzu, P. Rivkin, G. D. Pearlson, J. Hart, Jr., V. D. Calhoun, M. Kraut, M. Yassa, and M. Assaf, "fMRI activation during a feature-binding semantic task in schizophrenia," in *Proc.APA*, New York, NY 2004.
- [94] Y. Li, T. Adali, and V. D. Calhoun, "Independent component analysis with feature selective filtering," in *Proc.MLSP*, 2004.
- [95] M. A. Mohamed, D. M. Yousem, I. Kusevic, V. D. Calhoun, C. Cristinzio, N. A. Honeycutt, A. El-Deib, M. Yassa, B. Caffo, and S. Basset, "Lack of Education Effect on Brain Activity in a Memory Based Functional MRI Experiment," in *Proc.ASNR*, 2004.
- [96] P. Rivkin, M. Yassa, J. Hart, Jr., M. Kraut, R. Kanaan, V. D. Calhoun, and G. D. Pearlson, "Abnormal rCBF activation in schizophrenic individuals during a semantic feature-binding task " in *Proc.SBP*, New York, NY, 2004.
- [97] A. Tekes, V. D. Calhoun, M. A. Mohamed, B. Yagmurlu, N. Mikhelashvili-Browner, and D. M. Yousem, "Effect of age in volume of activation in block design and single-event paradigms using visuomotor functional MR imaging," in *Proc.ASNR*, 2004.
- [98] A. Tekes, M. A. Mohamed, N. Mikhelashvili-Browner, V. D. Calhoun, and D. M. Yousem, "Effect of age on visuomotor functional MR Imaging," in *Proc.ASNR*, 2004.

- [99] V. D. Calhoun, T. Adali, K. A. Kiehl, R. S. Astur, J. J. Pekar, and G. D. Pearlson, "Are two tasks better than one?: Multi-task coupling of fMRI independent sources in schizophrenia," in *Proc.ISMRM*, 2005.
- [100] V. D. Calhoun, T. Adali, J. Pekar, and K. A. Kiehl, "Semi-blind ICA of fMRI: A method for utilizing hypothesis-derived time courses in a spatial ICA analysis," in *Proc.ISMRM*, 2005.
- [101] V. D. Calhoun, T. Adali, and J. Pekar, "Semi-blind ICA of fMRI: A Method for Utilizing Hypothesis-Derived Time Courses in A Spatial ICA Analysis," in *NeuroImage*, 2005.
- [102] V. D. Calhoun, K. A. Keihl, and G. D. Pearlson, "A Method for Multi-task fMRI Data Fusion Applied to Schizophrenia," in *NeuroImage*, 2005.
- [103] V. D. Calhoun, K. A. Keihl, and G. D. Pearlson, "A Method for Multi-task fMRI Data Fusion Applied to Schizophrenia," in *Proc.SBP*, 2005.
- [104] V. D. Calhoun, T. Adali, K. A. Kiehl, and G. D. Pearlson, "Neuronal Chronometry Of Target Detection: Fusion Of Hemodynamic And Event-related Potential Data," in *Proc.MLSP*, 2005.
- [105] N. Correa, T. Adali, Y. Li, and V. D. Calhoun, "Comparison of blind source separation algorithms for fMRI using a new matlab toolbox: GIFT," in *Proc.IEEE Int.Conf.Acoustics, Speech, Signal Processing (ICASSP)*, 2005.
- [106] N. Giuliani, V. D. Calhoun, and W. Cunningham, "Similarities between evaluative and non-evaluative judgments: A pluralistic fMRI analysis using SPM and Semi-blind ICA," in *Proc.CNS*, 2005.
- [107] K. Groth, T. Benios, N. Giuliani, V. D. Calhoun, and G. D. Pearlson, "General Intelligence Correlates to Brain Structure Differently in Men and Women," in *Proc.SAGE IV*, 2005.
- [108] C. C. Hong, V. D. Calhoun, and J. J. Pekar, "REM sleep eye movements are associated with oculomotor circuit activation and periventricular deactivation," in *Proc.ISMRM*, 2005.
- [109] M. R. Johnson, N. Morris, R. S. Astur, V. D. Calhoun, K. A. Kiehl, and G. D. Pearlson, "Schizophrenia and Working Memory: A Closer Look at fMRI of the Dorsolateral Prefrontal Cortex During a Working Memory Task," in *Proc.CNS*, 2005.
- [110] Y. Li, T. Adali, and V. D. Calhoun, "Feature-selective ICA and its convergence properties," in *Proc.IEEE Int.Conf.Acoustics, Speech, Signal Processing (ICASSP)*, 2005.
- [111] K. McKiernan, M. Fujimoto, K. March, V. D. Calhoun, and G. D. Pearlson, "Independent Component Analysis Identifies a Resting State Neural Network in Healthy Adults," in *Proc.CNS*, 2005.
- [112] R. Mutihac, J. G. Schafer, C. K. Jones, B. A. Chodkowski, J. Gillen, S. Mostofsky, A. Boyce, M. Goldberg, M. B. Denckla, S. M. Courtney, M. Kraut, V. D. Calhoun, T. Adali, and J. J. Pekar, "Listening to the Scanner: Modulation of Auditory Perception During Visuo-Motor fMRI," in *Proc.ISMRM*, 2005.
- [113] H. Snoussi and V. D. Calhoun, "Bayesian Blind Source Separation for Brain Imaging," in *Proc.ICIP*, 2005.
- [114] H. Snoussi and V. D. Calhoun, "Bayesian Blind Source Separation for Brain Imaging," in *Proc.SETIT*, 2005.
- [115] M. Stevens, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional neural circuits for mental timekeeping," in *Human Brain Mapping*, Florence, Italy, 2005.
- [116] J. Bentwich, A. Caparelli, C. E. Foerster, B. Maletic-Savatich, V. D. Calhoun, and H. Benveniste, "'MORE' MAY BE 'LESS': DEFICIENT DICHOTIC LISTENING PERFORMANCE IN HFA IS ASSOCIATED WITH HYPERACTIVATION OF BILATERAL LANGUAGE BRAIN AREAS," in *Proc.ISMRM*, 2006.

- [117] J. Bentwich, A. Caparelli, C. E. Foerster, B. Maletic-Savatich, V. D. Calhoun, and H. Benveniste, "'MORE' MAY BE 'LESS': DEFICIENT DICHOTIC LISTENING PERFORMANCE IN HFA IS ASSOCIATED WITH HYPERACTIVATION OF BILATERAL LANGUAGE BRAIN AREAS," in *Proc.IMFAR*, 2006.
- [118] V. D. Calhoun and T. Adali, "Fusion of Multisubject Functional MRI and Event-Related Potential Data Using Independent Component Analysis," in *Proc.ICASSP*, 2006.
- [119] V. D. Calhoun, "A Feature-based Approach to Combine Multimodal Brain Imaging Data," in *Proc.ISMRM*, Seattle, WA, 2006.
- [120] V. D. Calhoun, T. Adali, and J. Liu, "A Feature-based Approach to Combine Functional MRI, Structural MRI, and EEG Brain Imaging Data," in *Proc.EMBS*, 2006.
- [121] V. D. Calhoun, T. Adali, K. A. Kiehl, and G. D. Pearlson, "Classification of Schizophrenia and Bipolar Disorder using Temporally Coherent Functional Networks," in *Proc.ACNP*, 2006.
- [122] T. Eichele, M. Moosmann, V. D. Calhoun, K. Specht, H. Nordby, and K. Hugdahl, "Joint ICA of Simultaneous Single Trial ERP-fMRI," in *Proc.HBM*, 2006.
- [123] A. Garrity, G. D. Pearlson, K. McKiernan, D. Lloyd, K. A. Kiehl, and V. D. Calhoun, "Aberrant functional connectivity of the 'default mode' in schizophrenia," in *Trinity Papers*, 2006.
- [124] A. Garrity, G. D. Pearlson, K. McKiernan, D. Lloyd, K. A. Kiehl, and V. D. Calhoun, "Aberrant functional connectivity of the 'default mode' in schizophrenia," in *Neuron*, 2006.
- [125] M. Jafri and V. D. Calhoun, "Functional Classification of Schizophrenia Using Feed Forward Neural Networks," in *Proc.EMBS*, 2006.
- [126] Y. Li, T. Adali, and V. D. Calhoun, "Sample Dependence Correction For Order Selection In fMRI Analysis," in *Proc.ISBI*, 2006.
- [127] J. Liu and V. D. Calhoun, "A novel approach to analyzing fMRI and SNP data via parallel independent component analysis," in *Proc.SPIE*, 2006, pp. 1301-1311.
- [128] D. H. Mathalon, K. A. Kiehl, V. D. Calhoun, T. McGlashan, G. D. Pearlson, and S. W. Woods, "Abnormal fronto-temporal cortical activation during fMRI attention and working memory tasks in prodromal and early illness patients with schizophrenia," in *Proc.ACNP*, 2006.
- [129] G. D. Pearlson, D. A. Wallace, V. D. Calhoun, M. Assaf, M. C. Stevens, S. Meda, and J. Gelernter, "Alpha7 nicotinic cholinergic receptor (CHRNA7) polymorphisms discriminate figural memory abilities in healthy adults and influence related structural and functional MRI patterns," in *Proc.ACNP*, 2006.
- [130] Q. Wang, V. Megalooikonomou, D. Kontos, M. Erickson, and V. D. Calhoun, "Similarity Searches in Brain Image Databases," in *Proc.HBM*, 2006.
- [131] A. J. Allen, S. Meda, R. Astur, V. D. Calhoun, K. Ruopp, B. Cuadra, and G. D. Pearlson, "Effect of alcohol on performance on visual oddball task: an fMRI study," in *Proc.ICANA*, 2007.
- [132] M. Assaf, M. Johnson, R. Schultz, R. Sahl, V. D. Calhoun, T. Hendler, and G. D. Pearlson, "Abnormal Brain Activation During Implicit Mentalization in Autism Spectrum," in *Society of Biological Psychiatry*, 2007.
- [133] G. K. Beatty, R. A. Anderson, W. Kodituwakku, V. D. Calhoun, and V. P. Clark, "Response time variability and fMRI signal changes during a cognitive interference task in stimulant dependent patients," in *Proc. Society for Neuroscience*, San Diego, CA, 2007.

- [134] M. Benavidez, V. P. Clark, G. Kuperberg, K. Lim, and V. D. Calhoun, "Functional Networks Identified in an Auditory Oddball Task of Chronic and First Episode Schizophrenia Patients (N=261) Collected from the MIND Clinical Imaging Consortium," in *Proc. Society for Neuroscience*, San Diego, CA, 2007.
- [135] H. J. Bockholt, J. Turner, D. L. Johnson, V. D. Calhoun, D. N. Greve, A. W. Toga, C. G. Wible, K. Lim, B. Mueller, J. Lauriello, D. S. O'Leary, G. H. Glover, J. T. Voyvodic, G. McCarthy, J. M. Ford, S. Potkin, and FBIRN, "Morphometric analysis of a multi-site study of schizophrenia using freesurfer," in *Proc. Society for Neuroscience*, San Diego, CA, 2007.
- [136] V. D. Calhoun, G. D. Pearlson, P. Maciejewski, and K. A. Kiehl, "Use of Hemodynamic Brain Modes vs Conventional fMRI Analysis and Structural Brain Measures In Schizophrenia and Bipolar Disorder," in *Proc. ICOSR*, 2007.
- [137] V. D. Calhoun, R. Silva, and J. Liu, "Identification of Multimodal MRI and EEG Biomarkers Using Joint-ICA and Divergence Criteria," in *Proc.MLSP*, 2007.
- [138] V. P. Clark, D. S. Manoach, R. L. Gollub, B. C. Ho, K. Lim, J. Burge, T. Lane, P. Lesnik, V. D. Calhoun, and N. C. Andreasen, "A Multi-site fMRI Study of Schizophrenia: Effects of Illness type and Duration on Brain Function and Connectivity," in *Proc. ICOSR*, 2007.
- [139] K. P. Cosgrove, J. K. Staley, F. Wang, V. D. Calhoun, I. L. Petrakis, E. Perry, E. Frohlich, E. Ruff, H. P. Blumberg, and J. Krystal, "Decreased gray and white matter volume in alcohol dependent subjects: a voxel based morphometry study," in *Proc.ICANA*, 2007.
- [140] O. Demirci and V. D. Calhoun, "Detection of Schizophrenia using fMRI Data via Projection Pursuit," in *Proc.MLSP*, 2007.
- [141] R. L. Gollub, D. S. Manoach, J. Fries, M. Vangel, T. White, N. C. Andreasen, and V. D. Calhoun, "Multi-site fMRI study of DLPFC activation differences between subjects with schizophrenia and controls," in *Proc. Society for Neuroscience*, San Diego, CA, 2007.
- [142] M. Jafri, G. D. Pearlson, and V. D. Calhoun, "A maximal-correlation approach using ICA for testing functional network connectivity applied to Schizophrenia," in *Proc.ISBI*, 2007.
- [143] M. Jafri and V. D. Calhoun, "Interdependencies among Resting-State networks in Schizophrenia using Independent Component Analysis," in *Proc.ISMRM*, 2007.
- [144] M. Jafri, G. D. Pearlson, and V. D. Calhoun, "Resting State Functional Network Connectivity among ICA Components using Bayesian Networks," in *Proc.HBM*, 2007.
- [145] Y. Li, T. Adali, and V. D. Calhoun, "A Model For Comparison Of Two Functional MRI Datasets By Canonical Correlation Analysis And Independent Component Analysis," in *Proc.MLSP*, 2007.
- [146] Y. Li, W. Wang, T. Adali, and V. D. Calhoun, "CCA for Joint Blind Source Separation of Multiple Datasets with Application to Group fMRI Analysis," in *Proc.MLSP*, 2007.
- [147] Y. Li, T. Adali, and V. Calhoun, "A multivariate model for comparison of two datasets and its application to fMRI analysis," in *Proc.MLSP*, 2007.
- [148] J. Liu and V. D. Calhoun, "Parallel independent component analysis for multimodal analysis: Application to fMRI and EEG Data," in *Proc.ISBI*, Washington, D. C., 2007.
- [149] J. Liu, G. D. Pearlson, and V. D. Calhoun, "Investigation of Multiple Brain Imaging and Genetic Modalities via Parallel Independent Component Analysis," in *Proc. HBM*, Chicago, Il, 2007.
- [150] G. Machado, M. Juarez, V. P. Clark, R. L. Gollub, V. Magnotta, T. White, and V. D. Calhoun, "Probing Schizophrenia With A Sensorimotor Task: Large-Scale (N=273)

- Independent Component Analysis Of First Episode And Chronic Schizophrenia Patients," in *Proc. Society for Neuroscience*, San Diego, CA, 2007.
- [151] S. Meda, J. R. Gruen, V. D. Calhoun, J. Gelernter, and G. D. Pearlson, "Single Nucleotide Polymorphism in DCDC2 affects Brain Morphology -A Voxel Based Morphometric Study," in *Proc.ISMRM*, 2007.
- [152] J. Roffmann, R. L. Gollub, D. S. Manoach, and V. Calhoun, "Interactive effects of MTHFS C677T and COMT Val158Met on executive function and prefrontal activation in schizophrenia," in *Proc.SIRS*, 2007.
- [153] P. Skudlarski, V. D. Calhoun, and G. D. Pearlson, "Disruption of connectivity in schizophrenia measured by Diffusion Tensor Imaging fiber tracking and resting correlation," in *Proc. HBM*, 2007.
- [154] M. Stevens, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional neural networks underlying response inhibition in adolescents and adults," in *Human Brain Mapping*, 2007.
- [155] T. Van Erp, J. B. Segall, J. Turner, D. N. Greve, A. W. Toga, C. G. Wible, K. Lim, B. Mueller, J. Lauriello, D. S. O'Leary, G. H. Glover, G. Brown, J. T. Voyvodic, G. McCarthy, S. Potkin, and V. D. Calhoun, "Voxel-Based Morphometric analysis of a multi-site study on schizophrenia," in *Proc. Society for Neuroscience*, San Diego, CA, 2007.
- [156] L. Xu, J. Liu, and V. D. Calhoun, "Functional Connectivity Among Spatially Independent Brain Regions During a VR Task," in *Proc. HBM*, Chicago, IL, 2007.
- [157] A. J. Allen, S. Meda, R. Astur, V. D. Calhoun, P. Skudlarski, and G. D. Pearlson, "Effect of alcohol on performance on secondary task while driving," in *Proc. CNS*, 2008.
- [158] H. J. Bockholt, J. Ling, M. Scully, A. Scott, S. Lane, V. Magnotta, T. White, K. Lim, R. L. Gollub, and V. D. Calhoun, "Real-time Web-scale Image Annotation for Semantic-based Retrieval of Neuropsychiatric Research Images," in *Proc.HBM*, 2008.
- [159] H. J. Bockholt, S. Williams, M. Scully, V. Magnotta, R. L. Gollub, J. Lauriello, K. Lim, T. White, R. Jung, S. C. Schulz, N. C. Andreasen, and V. D. Calhoun, "The MIND Clinical Imaging Consortium as an application for novel comprehensive quality assurance procedures in a multi-site heterogeneous clinical research study," in *Proc.HBM*, 2008.
- [160] G. Book, K. A. Kiehl, V. D. Calhoun, M. Stevens, and G. D. Pearlson, "Fusion of fMRI and the Pupil Response During an Auditory Oddball Task," in *Proc. CNS*, Portland, OR, 2008.
- [161] V. D. Calhoun, "Does the Brain Rest?: An Independent Component Analysis of Temporally Coherent Brain Networks at Rest and During a Cognitive Task," in *Proc. IEEE SSIAI*, Santa Fe, NM, 2008.
- [162] V. D. Calhoun, K. A. Kiehl, G. D. Pearlson, and J. Liu, "Moving Beyond Single Candidate Genes: A Parallel ICA Approach for Joint Analysis of SNP, fMRI, and ERP Data," in *Proc.ACNP*, Scottsdale, AZ, 2008.
- [163] A. Caprihan, G. Pearlson, and V. Calhoun, "Discriminatory PCA applied to Schizophrenia DTI Data," in *Proc.ISMRM*, Toronto, Canada, 2008.
- [164] V. P. Clark, G. K. Beatty, R. E. Anderson, P. Kodituwakku, V. D. Calhoun, and J. Phillips, "fMRI Activity in Cingulate and insular cortex predicts relaps in recovering stimulant addicts," in *Proc. Society for Neuroscience*, San Diego, CA, 2008.
- [165] N. Correa, T. Adali, Y. Li, and V. D. Calhoun, "Examining associations between fMRI and EEG data using canonical correlation analysis," in *Proc. ISBI*, Washington, D.C., 2008.

- [166] T. Eichele, S. Debener, V. Calhoun, K. Specht, A. K. Engel, K. Hugdahl, D. Von Cramon, and M. Ullsperger, "Prediction of human errors by maladaptive changes in event-related brain networks " in *Proc.HBM*, 2008.
- [167] T. Eichele, R. Scheeringa, V. Calhoun, K. Hugdahl, and M. Bastiaansen, "Deconvolution of Hemodynamic Responses from Alpha-band EEG," in *Proc.HBM*, 2008.
- [168] T. Eichele, V. Calhoun, M. Moosmann, K. Specht, L. A. Jongsma, R. Quiroga, H. Nordby, and K. Hugdahl, "Unmixing concurrent EEG-fMRI with parallel independent component analysis," in *Proc.HBM*, 2008.
- [169] Z. Feng, A. Caprihan, K. Blagoev, F. Zhao, and V. D. Calhoun, "Modeling of Phase Changes in BOLD fMRI," in *Proc.ISMRM*, Toronto, Canada, 2008.
- [170] B. C. Ho, T. White, L. M. Rohrer, E. Epping, T. Wassink, V. Magnotta, H. J. Bockholt, K. O. Lim, V. D. Calhoun, J. Roffmann, R. L. Gollub, S. C. Schulz, and N. C. Andreasen, "Associations between DISC1 and White Matter Abnormalities in Schizophrenia: A Diffusion Tensor Imaging Study," in *Proc. ACNP*, Scottsdale, AZ, 2008.
- [171] K. Jagannathan, M. Assaf, V. D. Calhoun, and G. D. Pearlson, "Functional Network Connectivity in semantic object recall task using independent component analysis," in *Proc.ISMRM*, Toronto, Canada, 2008.
- [172] K. Jagannathan, M. Assaf, V. D. Calhoun, and G. D. Pearlson, "Functional network connectivity in semantic memory," in *Proc.CNS*, San Francisco, CA, 2008.
- [173] O. Jeromine, V. D. Calhoun, and M. Pattichis, "Optimal Sampling Geometries for TV-Norm Reconstruction of fMRI Data," in *Asiolar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, 2008.
- [174] C. Kim, D. Spring, J. Kroger, V. D. Calhoun, and V. P. Clark, "Exogenously Cued Attention Switching Recruits Frontal Pole: an fMRI Study," in *Proc. CNS*, San Francisco, CA, 2008.
- [175] J. Kroger, D. Spring, C. Kim, V. P. Clark, and V. D. Calhoun, "Double Dissociations between Lateral and Medial Frontopolar Cortex for Maintenance and Manipulation of Integrated Information: An fMRI Study," in *Proc.CNS*, San Francisco, CA, 2008.
- [176] Y. Li, W. Wang, T. Adali, and V. D. Calhoun, "CCA for Joint Blind Source Separation of Multiple Datasets with Application to Group fMRI Analysis," in *Proc. ICASSP*, 2008.
- [177] J. Liu, L. Xu, A. Caprihan, and V. Calhoun, "Extracting Principle Components for Discriminant Analysis of fMRI Images," in *Proc. ICASSP*, 2008.
- [178] J. Liu, J. N. Bixler, and V. D. Calhoun, "A multimodality ICA study-integrating genomic single nucleotide polymorphisms with functional neuroimaging data," in *Proc. BIBM*, 2008.
- [179] S. Meda, V. D. Calhoun, and G. D. Pearlson, "Diffusion Tensor Analysis in Schizophrenia and First Degree Relatives," in *Proc. SOBP*, 2008.
- [180] S. Meda, M. Stevens, B. S. Folley, V. D. Calhoun, and G. D. Pearlson, "Evidence for anomalous network connectivity during working memory in schizophrenia: an ICA based analysis," in *Proc. SOBP*, 2008.
- [181] A. Michael, J. Fries, S. Baum, B. C. Ho, N. C. Andreasen, and V. D. Calhoun, "A Method to Analyze Correlations between Multiple Brain Imaging Tasks to Characterize Schizophrenia," in *Proc. IEEE SSIAP*, Santa Fe, NM, 2008.
- [182] A. Michael, V. D. Calhoun, S. Baum, and N. C. Andreasen, "A Method to Classify Schizophrenia using Inter-Task Spatial Correlations of Functional Brain Images," in *Proc. EMBC*, 2008.

- [183] A. Michael, S. Baum, V. D. Calhoun, and A. Caprihan, "Correlations of Diffusion Tensor Imaging Values and Symptom Scores in Patients with Schizophrenia," in *Proc. EMBC*, 2008.
- [184] V. Potluru and V. D. Calhoun, "Group Learning using NMF Variants," in *Proc.ISCAS*, 2008.
- [185] V. Potluru, S. M. Plis, and V. D. Calhoun, "Sparse shift-invariant NMF," in *Proc. IEEE SSIAT*, Santa Fe, NM, 2008.
- [186] C. C. Schultz, A. Georgopoulos, R. L. Gollub, N. C. Andreasen, B. C. Ho, J. Lauriello, and V. D. Calhoun, "Linear Discriminate Analysis Applied to a Multicenter First Episode Schizophrenia Sample," in *Winter Workshop on Schizophrenia*, 2008.
- [187] M. Scully, B. Anderson, T. Lane, H. J. Bockholt, J. Burge, V. P. Clark, R. L. Gollub, J. Lauriello, C. C. Schultz, V. D. Calhoun, and R. Jung, "A Dynamic Bayesian Network Analysis of Functional Network Difference During the Oddball Task, Related To General Intelligence," in *Proc. Society for Neuroscience*, San Diego, CA, 2008.
- [188] R. F. Silva and V. D. Calhoun, "Identification of Brain Imaging Biomarkers by Optimized Selection of Multimodal Independent Components," in *Proc. IEEE SSIAT*, Santa Fe, NM, 2008.
- [189] R. Silva and V. D. Calhoun, "Identification of Brain Image Biomarkers by Optimized Selection of Multimodal Datasets," in *Proc.ISMRM*, Toronto, 2008.
- [190] P. Skudlarski, K. Jagannathan, V. D. Calhoun, B. Skulkarska, and G. D. Pearlson, "Measuring Brain Connectivity using Diffusion Tensor Imaging and Resting State Temporal Correlations," in *Proc.HBM*, 2008.
- [191] P. Skudlarski, S. Meda, V. Calhoun, and G. Pearlson, "Effect of alcohol on the resting state correlations," in *Proc.HBM*, 2008.
- [192] J. Sui, J. Liu, L. Wu, A. Michael, L. Xu, T. Adali, and V. D. Calhoun, "A Constrained Coefficient ICA Algorithm For Group Difference Enhancement," in *Proc. ICASSP*, 2008.
- [193] J. Sui and V. D. Calhoun, "A Method for Group Difference Enhancement by Constraining Mixing Coefficients of ICA Framework," in *Proc.ISMRM*, Toronto, 2008.
- [194] J. Sui and V. D. Calhoun, "Exploration of Optimal Group-Discriminating Features Using CC-ICA," in *Proc.Asilomar*, Pacific Grove, CA, 2008.
- [195] J. Turner, H. J. Bockholt, J. B. Segal, and V. D. Calhoun, "A comparison of volumetric methods in a multi-site study of schizophrenia," in *Proc. Society for Neuroscience*, San Diego, CA, 2008.
- [196] T. van Erp, M.-C. Chiang, D. Sun, M.-C. E. Hardt, J. H. Bockholt, J. A. Turner, V. D. Calhoun, H. J. Johnson, D. N. Greve, S. Williams, D. O'Leary, J. Lauriello, C. G. Wible, K. O. Lim, B. A. Mueller, G. G. Brown, J. Voyvodic, G. McCarthy, D. Mathalon, J. M. Ford, S. G. Potkin, T. D. Cannon, P. M. Thompson, A. W. Toga, and F. ;, "3D Pattern of Brain Abnormalities in Chronic Schizophrenia Visualized Using Tensor-Based Morphometry: a Multi-Site Structural Imaging Study," in *Proc.HBM*, 2008.
- [197] W. Wang, Y. Li, H. Li, T. Adali, and V. D. Calhoun, "On ICA of Complex-Valued fMRI: Advantages and Order Selection," in *Proc. ICASSP*, 2008.
- [198] T. White, V. Magnotta, H. J. Bockholt, S. Williams, R. Pierson, H. Johnson, S. Wallace, R. L. Gollub, V. D. Calhoun, and K. Lim, "Frontal and age-related white matter abnormalities in schizophrenia: a multi-site diffusion tensor imaging study," in *Winter Workshop on Schizophrenia*, 2008.
- [199] L. Wu and V. D. Calhoun, "An Approach for Fusion between EEG and fMRI Data," in *Proc.ISMRM*, Toronto, Canada, 2008.

- [200] L. Xu, J. Liu, T. Adali, and V. D. Calhoun, "Source Based Morphometry And Its Application To Identify Relative Gray Matter And White Matter Differences In Schizophrenia Versus Controls," in *Proc. ICASSP*, 2008.
- [201] L. Xu, G. D. Pearlson, and V. D. Calhoun, "Joint Source Based Morphometry to Identify Sources of Gray Matter and White Matter Relative Differences in Schizophrenia Versus Healthy Controls," in *Proc. ISMRM*, Toronto, Canada, 2008.
- [202] H. J. Bockholt, M. Scully, W. Courtney, S. Rachakonda, A. Scott, A. Caprihan, J. Fries, R. Kalyanam, J. Segall, R. de la Garza, S. Lane, and V. D. Calhoun, "Mining the Mind Research Network: A Novel framework for exploring large scale, heterogeneous translational neuroscience research data sources," in *Proc. HBM*, San Francisco, CA, 2009.
- [203] Z. Chen, V. D. Calhoun, and A. Caprihan, "Realistic modeling of intravoxel phase dispersion in the presence of surrounding voxels," in *Proc. HBM*, San Francisco, CA, 2009.
- [204] V. P. Clark, G. K. Beatty, R. E. Anderson, P. Kodituwakku, J. Phillips, K. A. Kiehl, and V. D. Calhoun, "Cingulate and insula activity predicts relapse in recovering stimulant addicts," in *Proc. HBM*, San Francisco, CA, 2009.
- [205] V. P. Clark, B. Coffman, C. Garcia, M. P. Weisend, A. Vandermerwe, E. Browning, T. Lane, K. Kelly, A. R. Mayer, A. Puffer, E. Rayborn, V. D. Calhoun, M. Bikson, E. Wassermann, and J. Phillips, "Transcranial Direct Current Stimulation (TDCS) Targeted Using Brain Imaging Greatly Accelerates Visual Learning," in *Proc. SFN*, 2009.
- [206] N. Correa, Y. Li, T. Adali, and V. D. Calhoun, "Fusion of fMRI, sMRI, and EEG Data Using Canonical Correlation Analysis," in *Proc. IEEE Int. Conf. Acoustics, Speech, Signal Processing (ICASSP)*, Taiwan, 2009.
- [207] N. Correa, Y. Li, T. Adali, and V. D. Calhoun, "Investigating associations across fMRI, sMRI, and EEG data for the auditory oddball task using canonical correlation analysis," in *Proc. HBM*, San Francisco, CA, 2009.
- [208] N. Driesen, G. McCarthy, Z. Bhagwager, V. D. calhoun, D. C. D'Souza, J. Holub, P. T. Morgan, and J. K. Krystal, "NMDA Receptor Antagonist Ketamine Produces Opposing Effects on Resting and Task-Related Brain Activation During Working Memory in Humans," in *Proc. HBM*, San Francisco, CA, 2009.
- [209] S. Ehrlich, E. E. Morrow, S. Wallace, M. Naylor, H. J. Bockholt, D. Holt, A. Lundquist, A. Yendiki, J. Roffmann, T. White, V. P. Clark, V. D. Calhoun, and R. L. Gollub, "The COMT Val158Met Polymorphism and Temporal Lobe Volumetry in Patients with Schizophrenia and Healthy Adults," in *Proc. HBM*, San Francisco, CA, 2009.
- [210] T. Eichele, S. Rachakonda, and V. D. Calhoun, "EEGIFT: A toolbox for group temporal ICA event-related EEG," in *Proc. HBM*, San Francisco, CA, 2009.
- [211] Z. Feng, Z. Chen, A. Caprihan, K. Blagoev, and V. D. Calhoun, "Predicting Phase Changes Patterns in BOLD fMRI," in *Proc. HBM*, San Francisco, CA, 2009.
- [212] J. M. Ford, B. J. Roach, K. W. Jorgensen, J. A. Turner, G. G. Brown, R. Notestine, A. Bischoff-Grethe, D. N. Greve, C. G. Wible, J. Lauriello, A. Belger, B. Mueller, V. D. Calhoun, A. Preda, D. Keator, D. O'Leary, K. O. Lim, G. Glover, S. Potkin, F. BIRN, and D. Mathalon, "Functional pathology progresses with age in schizophrenia," in *Proc. HBM*, San Francisco, CA, 2009.
- [213] A. R. Franco, M. Mannell, J. Ling, B. Bedrick, V. D. Calhoun, and A. R. Mayer, "Connectivity Between Consistent Resting State Networks and Fractional Anisotropy Revealed by Joint Independent Component Analysis," in *Proc. HBM*, San Francisco, CA, 2009.

- [214] M. Havlicek, J. Jan, and V. Calhoun, "Evaluation of Functional Network Connectivity in Event-related fMRI Data Based on ICA and Time-frequency Granger Causality," in *Proc. World Congress on Medical Physics and Biomedical Engineering*, 2009.
- [215] M. Havlicek, J. Jan, and V. Calhoun, "Extended Time-frequency Granger Causality for Evaluation of Functional Network Connectivity in Event-related fMRI Data," in *Proc. EMBS*, 2009.
- [216] K. Jagannathan, V. D. Calhoun, J. Liu, S. Meda, and G. D. Pearlson, "Combining sMRI and SNP data to investigate genetic influences on brain structure using parallel ICA in healthy controls & schizophrenia," in *Proc. HBM*, San Francisco, CA, 2009.
- [217] M. Juarez, T. White, G. D. Pearlson, J. R. Bustillo, J. Lauriello, B. C. Ho, H. J. Bockholt, V. P. Clark, R. Gollub, V. Magnotta, G. Machado, and V. D. Calhoun, "Functional connectivity differences in first episode and chronic schizophrenia patients during an auditory sensorimotor task revealed by independent component analysis of a large multisite study," in *Proc. HBM*, San Francisco, CA, 2009.
- [218] E. Karageorgiou, R. L. Gollub, N. C. Andreasen, B. C. Ho, J. Lauriello, V. D. Calhoun, S. C. Schulz, and A. Georgopoulos, "Neuropsychological Testing and Structural Magnetic Resonance Imaging in the Diagnosis of Schizophrenia after a First Psychotic Episode," in *Proc. ICOSR*, 2009.
- [219] Y. Li, T. Adali, and V. D. Calhoun, "A group study of simulated driving fMRI data by multi-set canonical correlation analysis," in *Proc. HBM*, San Francisco, CA, 2009.
- [220] J. Liu, K. E. Hutchison, and V. D. Calhoun, "A simple yet effective analysis on genome-wide association using fMRI brain activation on alcohol abuse," in *Proc. HBM*, San Francisco, CA, 2009.
- [221] A. Michael, S. Baum, V. P. Clark, R. Jung, K. O. Lim, T. White, B. C. Ho, R. L. Gollub, and V. D. Calhoun, "Fusion of Structural-Functional Brain Images Reveals Differences in Schizophrenia in a Multi Site Study," in *Proc. ISMRM*, Honolulu, Hawaii, 2009.
- [222] A. Michael, V. D. Calhoun, G. Pearlson, S. Baum, and A. Caprihan, "Application of Canonical Correlation Analysis to Identify Regions of Significant Correlation between Symptom Scores and DTI Measures in Schizophrenia," in *Proc. ISMRM*, Honolulu, Hawaii, 2009.
- [223] A. Michael, S. Baum, and V. D. Calhoun, "A Technique to Detect Outliers Automatically in Multi-Site fMRI Data," in *Proc. ISMRM*, Honolulu, Hawaii, 2009.
- [224] A. Michael, V. D. Calhoun, G. D. Pearlson, S. Baum, and A. Caprihan, "An Analysis of using Diffusion Tensor Imaging Measures and Symptom Scores to Classify Patients with Schizophrenia," in *Proc. HBM*, San Francisco, CA, 2009.
- [225] A. Michael, S. Baum, T. J. White, N. C. Andreasen, J. M. Segall, R. E. Jung, V. P. Clark, R. L. Gollub, S. C. Schulz, J. L. Roffman, B. C. Ho, K. O. Lim, H. J. Bockholt, and V. D. Calhoun, "Inter-voxel Cross-Correlation Reveals Aberrantly Low Structural and Functional Linkage in Schizophrenia in a Multi-Site Study," in *Proc. HBM*, San Francisco, CA, 2009.
- [226] S. M. Plis, V. Potluru, V. D. Calhoun, and T. Lane, "Correlated Noise: How it Breaks NMF, and What to Do About It," in *Proc. MLSP*, Grenoble, France, 2009.
- [227] S. M. Plis, T. Lane, M. P. Weisend, and V. D. Calhoun, "MEG and fMRI for nonlinear estimation of neural activity," in *Proc. Asilomar*, Pacific Grove, CA, 2009.
- [228] V. Potluru, S. M. Plis, M. Morup, V. D. Calhoun, and T. Lane, "Efficient Multiplicative updates for Support Vector Machines," in *Proc. SDM*, Sparks, NV, 2009.

- [229] U. Sakoglu and V. D. Calhoun, "Dynamic windowing reveals task-modulation of functional network connectivity in schizophrenia patients vs healthy controls," in *Proc. ISMRM*, Honolulu, Hawaii, 2009.
- [230] U. Sakoglu and V. D. Calhoun, "Functional network connectivity with temporal derivatives of sICA time-courses in schizophrenia patients vs healthy controls," in *Proc. ISMRM*, Honolulu, Hawaii, 2009.
- [231] U. Sakoglu, A. Michael, and V. D. Calhoun, "Classification of schizophrenia patients vs healthy controls based on dynamic functional network connectivity," in *Proc. HBM*, San Francisco, CA, 2009.
- [232] U. Sakoglu and V. D. Calhoun, "Temporal Dynamics of Functional Network Connectivity at Rest: A Comparison of Schizophrenia Patients and Healthy Controls " in *Proc. HBM*, San Francisco, CA, 2009.
- [233] R. Silva and V. D. Calhoun, "Divergence Measurements for the Optimal Identification of Multimodal Biomarkers," in *Proc. HBM*, San Francisco, CA, 2009.
- [234] J. Sui and V. D. Calhoun, "An Automatic Artifact Removal Method for Independent Components Derived from Second-level FMRI Analysis," in *Proc. HBM*, San Francisco, CA, 2009.
- [235] J. Sui and V. D. Calhoun, "Identification of Optimal FMRI Components Using Combined Group-Discriminative Techniques," in *Proc. HBM*, San Francisco, CA, 2009.
- [236] J. Sui, Y. Li, T. Adali, and V. D. Calhoun, "A New Joint Blind Source Separation Model for Two Datasets and Its Application to Second-level FMRI Group Analysis," in *Proc. HBM*, San Francisco, CA, 2009.
- [237] T. White, L. Leybya, B. C. Ho, V. P. Clark, V. D. Calhoun, S. Wallace, H. J. Bockholt, R. Gollub, N. C. Andreasen, S. C. Schulz, V. Magnotta, and K. O. Lim, "Cigarette Smoking Disrupts White Matter Integrity in Patients with Schizophrenia," in *Proc. HBM*, San Francisco, CA, 2009.
- [238] T. White, V. Magnotta, H. J. Bockholt, S. Williams, R. Gollub, B. Mueller, B. C. Ho, R. Jung, V. P. Clark, J. Lauriello, J. R. Bustillo, S. C. schulz, N. C. Andreasen, V. D. calhoun, and K. O. Lim, "Evidence for Progressive White Matter Abnormalities in Schizophrenia: A Multi-site diffusion tensor imaging study," in *ICOSR*, 2009.
- [239] L. Wu, V. D. Calhoun, and T. Eichele, "Functional connectivity in eyes open vs. eyes closed resting state fMRI," in *Proc. HBM*, San Francisco, CA, 2009.
- [240] L. Xu and V. D. Calhoun, "SMRI COMPLEX FRAMEWORK FOR EVALUATING RELATIVE GRAY AND WHITE MATTER GROUP DIFFERENCES," in *Proc. ISMRM*, Honolulu, Hawaii, 2009.
- [241] L. Xu and V. D. Calhoun, "Source Based Morphometry: Approaches to Identify Gray and White Matter Group Differences with Application to Schizophrenia," in *Proc. HBM*, San Francisco, CA, 2009.

### **Educational Activities: Teaching/Lecturing**

*At UNM:*

ECE Seminar "Data Driven Brain Image Analysis: Algorithms & Applications" matlab	4/2006
ECE Seminar "Data Driven Brain Image Analysis: Algorithms & Applications: Part II"	6/2006

2-day ICA and GIFT Software Workshop The MIND Institute	4/2006
Organized 4-part mini-series on biomedical ECE Seminar	Fall 2006
Neuroscience Seminar “Fusion of multi-task and multi-modal brain imaging data: An integrated approach and several examples”	9/2007
ECE 595: Analysis Methods in fMRI (18 students)	Spring 2007
ECE 595: Medical Imaging (33 students)	Fall 2007
CS/591C 004, Stat/579D 004, Math/579D 004, Anthro 560, Bio 503 004 Topics in Interdisciplinary Biology and Biological Sciences: Functional Imaging of the Brain	Fall 2007
ECE 340: Probabilistic Methods in Engineering	Spring 2008
Lecturing for Undergraduate survey in Bioengineering	Spring 2008
ECE 510: Medical Imaging (12 students)	Fall 2008
ECE 595: Analysis Methods in fMRI (10 students)	Spring 2009
<i>Outside UNM:</i>	
Instructor, Course on MEASURE, volumetric analysis of structural MRI Johns Hopkins Division of Psychiatric Neuro-Imaging Development of Software Manuals, Training Material, and Course Syllabi	10/1995
Instructor, Course on MEASURE, volumetric analysis of structural MRI Johns Hopkins Division of Psychiatric Neuro-Imaging Development of Software Manuals, Training Material, and Course Syllabi	8/1996
Organizer of Functional Imaging Journal Club Johns Hopkins Division of Psychiatric Neuro-Imaging FM Kirby Center for Functional Brain Imaging	1996-2002
Lecturer at Graduate Seminar, University of Maryland, Baltimore County “Motion Correction in functional MRI (fMRI)”	4/1998
Lecturer at Psychiatry Research Potpourri, Johns Hopkins University “Movies of the brain: Simultaneous display of spatial and temporal functional MRI data”	5/1998

Lecturer at Psychiatry Research Seminar, Johns Hopkins University “Visual Evoked Responses in fMRI”	11/1998
Guest Instructor: Computer Visualization University of Maryland, Baltimore County	11/1998
Statistics Grand Rounds Presentation at Johns Hopkins Public Health School “Methods for Exploring Temporal Dynamics of fMRI of the Visual System”	5/1999
Speaker at Opening Symposium for FM Kirby Center for Functional Brain Imaging “Temporal Dynamics of Functional MRI in the Visual System”	5/1999
Organizer and Instructor: Course on fMRI Analysis Methods Johns Hopkins Division of Psychiatric Neuro-Imaging	9/1999
Presenter at Psychiatry Research Potpourri, Johns Hopkins University “Brain Networks activated during a Motor-Free Visual Perception Task: An fMRI Analysis of Functional Connectivity”	5/2000
Presenter at Graduate Seminar, University of Maryland, Baltimore County “A Weighted-Least Squares Method for Estimating Latencies in functional MRI”	5/2000
Invited Panelist and Speaker, NINDS Workshop "Opportunities in Cognitive Neuroscience Research: Neuroimaging and Beyond"	11/2000
Presenter at Graduate Seminar, University of Maryland, Baltimore County “An ICA Model for Application to fMRI: Application to a Simulated Driving Paradigm”	4/2001
Presenter at Psychiatry Research Seminar, Johns Hopkins University “An Introduction to fMRI and its Use in the Study of Complex Behaviors”	5/2001
Organizer and Instructor: Course on SPM Analysis of PET and fMRI Data Johns Hopkins Division of Psychiatric Neuro-Imaging	8/2001
Guest Instructor: Neural Networks University of Maryland, Baltimore County	10/2001
Presenter at Psychiatry Research Seminar, Johns Hopkins University “Simulated Driving and the Effects of Marinol: An fMRI Study”	11/2001
Organizer and Instructor: Course on SPM Analysis of PET and fMRI Data Johns Hopkins Division of Psychiatric Neuro-Imaging	1/2002
Invited Course: Statistical Parametric Mapping analysis of fMRI Data National Institute of Health Gerontology Research Center	2/2002
Chairman’s Grand Rounds Presentation at Wayne State University “Simulated Driving: Quantification, Validation and fMRI Studies of Driving While	3/2002

Intoxicated”	
Co-chair and organizer, workshop on “Novel Methods for processing fMRI Data” Annual meeting of the Society of Biological Psychiatry	5/2002
Invited Speaker, Human Brain Mapping “An Infomax Method for Performing ICA of fMRI Data in the Complex Domain”	6/2002
Presenter at Neuropsychopharmacology Grand Rounds, Institute of Living “Intoxication Effects on Simulated Driving”	10/2002
Invited co-organizer, workshop on “Independent Component Analysis of fMRI Data” Annual meeting on Independent Component Analysis (ICA 2003)	5/2003
Guest Instructor: Biomedical Engineering Seminar (BENG480a) Yale University School of Biomedical Engineering	10/2003
Lecturer at fMRI Seminar Series: “Independent Component Analysis for fMRI” Yale University School of Medicine	10/2003
Guest Instructor: Neuroscience Seminar Trinity College School of Engineering	10/2003
Lecturer at Bioimaging Seminar Series: “Complex-valued fMRI data analysis” Yale University School of Medicine	11/2003
Lecturer for Statistics Series: “The use of higher order statistics for the analysis of functional brain imaging data” Yale University School of Medicine	11/2003
Invited Panelist and Speaker, workshop on virtual reality Society of Biological Psychiatry	12/2003
Lecturer: Neuroimaging in Neuropsychiatry Yale University School of Medicine	4/2004
Invited Speaker, University of Toronto “Independent Component Analysis of fMRI: What?, When?, and How?”	7/2004
Training and initial release of GIFT Software Software available at: <a href="http://icatb.sourceforge.net">http://icatb.sourceforge.net</a>	7/2004
Lecturer: Neuroimaging in Neuropsychiatry Yale University School of Medicine	11/2004

Psychiatry Grand Rounds: “Update on the Olin Center: Medical Image Analysis Lab” Yale University School of Medicine	11/2004
Instructor: Independent Component Analysis for fMRI Olin Neuropsychiatry Research Center Attended by 20 individuals from multiple labs	11/2004
Lecturer at fMRI Seminar Series: “Fusion of multi-task and multi-modal imaging data: joint-ICA modeling approaches” Yale University School of Medicine	12/2004
Organizer/Lecturer: Neuroimaging in Neuropsychiatry I: Methods This is a course on neuroimaging methods and techniques targeted at residents, clinical interns, and neuroscience graduate students	7/2005-12/2005
Guest Instructor: Neuroscience Seminar Trinity College School of Engineering	11/2005
Invited Speaker, BIRN All Hands Meeting “Applications of Independent Component Analysis to fMRI”	11/2005
Organizer and Lecturer, 3-day course on fMRI Data Acquisition and Analysis Olin Neuropsychiatry Research Center, Hartford, CT 30 attendees from around the world	6/2005
Organizer, workshop on “Mining the Complexity of Functional MRI Data” Organization for Human Brain Mapping	5/2005
Organizer and Lecturer, 3-day course on fMRI Data Acquisition and Analysis Olin Neuropsychiatry Research Center, Hartford, CT 50 attendees from around the world	11/2005
Organizer/Lecturer: Neuroimaging in Neuropsychiatry II: Applications This is a course on neuroimaging applications targeted at residents, clinical interns, and neuroscience graduate students	1/2006-5/2006
Organizer and Lecturer, 3-day course on fMRI Data Acquisition and Analysis Olin Neuropsychiatry Research Center, Hartford, CT 50 attendees from around the world	3/2006
Organizer and Lecturer: Workshop on GIFT Software MIND Institute, University of New Mexico, Albuquerque, New Mexico 15 attendees	4/2006
Instructor: International Society for Magnetic Resonance in Medicine “Multi-Modal fMRI: Physiology, Acquisition, and Analysis”	5/2006
Instructor: Mining Brain Dynamics A Tutorial Workshop on Independent Component Analysis in Neuroimaging Bergen, Norway	9/2006

ICA and GIFT Software Workshop  
MGH and MIT  
40 attendees

3/2007

Instructor: International Society for Magnetic Resonance in Medicine  
“Multi-Modal fMRI: Physiology, Acquisition, and Analysis”

6/2007

## **Educational Activities: Training/Mentoring**

### *Faculty*

Dr. Alireza Atri, M.D., Ph.D., Harvard  
Mentor for NIH K32: Modeling cholinergic modulation of fMRI memory networks

Dr. Judy Ford: Professor, Yale University  
Mentor for NIH K02: FMRI Analysis

Dr. Michael Stevens, Assistant Professor, Yale University  
Mentor for NIH K02 award: FMRI Analysis

Dr. Julie Staley: Assistant Professor, Yale University  
Training in SPM and Voxel-based Morphometry

Dr. Robert Schultz: Associate Professor, Yale University  
Training in Voxel-based Morphometry, Pulse Sequence Setup for 3T Siemens Trio

Dr. Wil Cunningham: Assistant Professor, University of Toronto  
Training in Group ICA of fMRI

Dr. David Schretlen, Associate Professor, Johns Hopkins University  
Training in SPM and Voxel-based Morphometry

Dr. Reisa Sperling, Assistant Professor, Harvard University  
Training on Independent Component Analysis of FMRI data and the GIFT software

### *Post Doctoral Fellows*

Dr. Jean Liu: Postdoctoral Fellow in the Medical Image Analysis Lab, on fusion of functional MRI, genetics, and EEG data

Dr. Madiha Jafri: Postdoctoral Fellow in the Medical Image Analysis Lab, on multivariate functional connectivity in schizophrenia

Dr. Baoming Hong: Postdoctoral Fellow in the Medical Image Analysis Lab, on the signal properties of fMRI, ICA, and the development of realistic constraints for ICA analysis.

Dr. Jinsuh Kim: Postdoctoral Fellow in the Medical Image Analysis Lab.

Dr. Mona Noureldin: JHU Radiology fellow, on using SPM99 to analyze fMRI to study normal motor paradigms and Parkinson disease, 2002-present.

Dr. Nina Mikhelashvili: JHU Radiology fellow, on using SPM99 to analyze fMRI to study normal motor paradigms and Parkinson disease, 2001-2002.

Dr. Kader Karli Oguz: JHU Radiology, on using SPM99 to analyze fMRI of normal motor paradigms, 2001.

### *Students*

Recent PhD Dissertation/MS thesis committees served (7; Li Yiou (2006), Nicole Correa (2006), Karyn Backus (2006), Xiaoyang Cheng (2006), Zhao Juan (2007), Matt Sutherland (2007), Matthias Moosman (2007), Tom Eichele (2007))

Lai Xu: PhD Student, UNM ECE, 2006-

Lei Wu: PhD Student, UNM ECE, 2006-

Rogers Silva: MS Student, UNM ECE, 2006-

Eduardo Castro-Witting: MS Student, UNM ECE 2007-

Vamsi Potluru: MS Student, UNM CS, 2006-

Andrew Michaels: PhD Student, RIT Imaging Science, 2007-

Guilherme Machado: Senior undergraduate student, UNM ECE, 2006

Jeffrey Lie: Senior undergraduate student, UNM ECE, 2007  
Worked with me as part of the EYES program

Chris Parchert: Senior undergraduate student, UNM ECE, 2007-

Janet Nguyen: Senior undergraduate student, UNM ECE 2007-

Michelle Juarez: Senior undergraduate student, UNM ECE 2006-2007

Doris Nguyen: Undergraduate Student (via the TBP mentor program), 2003-2005.

Samara Reynolds: Undergraduate Student, Trinity College: Matlab toolbox for 1) timing correction, 2) laterality analysis, and 3) latency estimation for fMRI

Abbie Garrity: Undergraduate Student, Trinity College: differences in the default mode network in schizophrenia, Fall/Spring 2004-2006

Christina Davidson: High school senior, Albuquerque, 2007

Nicole Giuliani: Accepted to Stanford Graduate School PhD Program, Fall 2005.

David Schneider: Graduate Student, University of Connecticut: Accepted to PhD program in Biomedical Engineering at Columbia University, Spring 2006

Kim Celone: Accepted to PhD Program, Boston College

Li Yiou: PhD Student, University of Maryland, Dept. of CSEE

Nicolle Correa: PhD Student, University of Maryland, Dept. of CSEE

Alvin Chon: Undergraduate Student, Trinity College, senior project in informatics: multimodality database and data mining techniques applied to functional MRI, structural MRI, diffusion tensor MRI, and EEG, Fall 2003.

Deanna McDevitt: Undergraduate Student, Yale University, Directed Reading in Psychology on a Depression and the Christian Psychologist, Spring 2003.

Eric Egolf: Undergraduate Computer Science Student: Trinity College, senior project: development of functional connectivity toolbox for SPM99, 2002-2003.

Adam Dziorny: Undergraduate Biomedical Engineering Student, Johns Hopkins University, fMRI processing strategies and research skills, 2001-2002.

Mayur Pandya: Third Year Medical Student, Ohio University College of Osteopathic Medicine, doing neuro-imaging research elective, 2001.

Joseph Hong, High School Student, learning research skills in the Psychiatric Neuro-Imaging Lab, 2000.

Daniel Hong, High School Student, learning research skills in the Psychiatric Neuro-Imaging Lab, 1999.

## **Annotated list of Trainees:**

Peer-reviewed publications with students are listed. Student's names are highlighted in bold font.

### ***Lai Xu***

PhD Student, University of New Mexico, Dept. of ECE

Role: Advisor for PhD

Ms. Xu is a current PhD student funded from my NSF grant. She won a fellowship funded by Howard Hughes as part of the Program in Interdisciplinary Biology and Biological Sciences (PIBBS) program at UNM. She also had a poster at the Human Brain Mapping meeting, and has a journal article which is currently under revision (expected to be published soon in the Human Brain Mapping Journal).

#### ***Publications:***

- [1] **L. Xu**, J. Liu, and V. D. Calhoun, "Functional Connectivity among Spatially Independent Brain Regions During a Vr Task," in *Proc. HBM*, Chicago, IL, 2007.
- [2] **L. Xu**, K. Groth, G. Pearlson, D. Schretlen, and V. Calhoun, "Source Based Morphometry: The Use of Independent Component Analysis to Identify Gray Matter Differences with Application to Schizophrenia," *Hum Brain Mapp*, Under revision.

### ***Rogers Silva***

MS Student, University of New Mexico, Dept. of ECE

Role: Advisor for Masters thesis (expected Spring 2008)

Mr. Silva is a current masters student funded from my NIH R01 grant. He contributed to a technical paper published this year, and is currently working on a journal article on the selection of imaging biomarkers from multimodal data.

#### ***Publications:***

- [1] V. D. Calhoun, **R. Silva**, and J. Liu, "Identification of Multimodal Mri and Eeg Biomarkers Using Joint-Ica and Divergence Criteria," in *Proc.MLSP*, 2007.

### ***Guilherme Machado***

Undergraduate Exchange Student, University of New Mexico, Dept. of ECE

Role: Advisor for senior project

Guilherme was an undergraduate student from Brazil who spent the semester at UNM. He worked with me on a project which resulting in a publication. He is currently applying for the MS program at UNM.

#### ***Publications:***

- [1] **G. Machado**, V. P. Clark, R. L. Gollub, V. Magnotta, T. White, and V. D. Calhoun, "Probing Schizophrenia with a Sensorimotor Task: Large-Scale (N=273) Independent Component Analysis of First Episode and Chronic Schizophrenia Patients," in *Proc. Society for Neuroscience San Diego, CA*, 2007.

### ***Vamsi Potluru***

MS/PhD Student, University of New Mexico, Dept. of CS

Role: Research mentor

Vamsi is working on his Masters thesis with me and expects to finish next semester. He is also moving on to a PhD. During his time with me he has an accepted conference paper and is working on a journal article.

#### ***Publications:***

- [1] **V. Potluru** and V. D. Calhoun, "Group Learning Using Nmf Variants," in *Proc.ISCAS*, 2008.

### ***Michael Benevidez***

Medical Student, University of New Mexico

Michael has been working for the past year on a research project with me. He already has an abstract accepted and is working on a journal article.

#### ***Publications:***

- [1] **M. Benevidez**, V. P. Clark, G. Kuperberg, K. Lim, and V. D. Calhoun, "Functional Networks Identified in an Auditory Oddball Task of Chronic and First Episode Schizophrenia Patients (N=261) Collected from the Mind Clinical Imaging Consortium," in *Proc. Society for Neuroscience* San Diego, CA, 2007.

### ***Madiha Jafri***

PhD Student, University of Virginia

Madiha is a current PhD student. She has passed her qualifying exams and is working on her thesis presentation. Madiha has also published 4 conference papers and has a journal article currently under revision (expected to be published soon in *NeuroImage*).

#### ***Publications:***

- [1] **M. Jafri** and V. D. Calhoun, "Interdependencies among Resting-State Networks in Schizophrenia Using Independent Component Analysis," in *Proc. ISMRM*, 2007.
- [2] **M. Jafri**, G. D. Pearlson, and V. D. Calhoun, "A Maximal-Correlation Approach Using Ica for Testing Functional Network Connectivity Applied to Schizophrenia," in *Proc. ISBI*, 2007.
- [3] **M. Jafri** and V. D. Calhoun, "Functional Classification of Schizophrenia Using Feed Forward Neural Networks," in *Proc. EMBS*, 2006.
- [4] **M. Jafri**, G. D. Pearlson, and V. D. Calhoun, "Resting State Functional Network Connectivity among Ica Components Using Bayesian Networks," in *Proc. HBM*, 2007.
- [5] **M. Jafri**, G. D. Pearlson, M. Stevens, and V. D. Calhoun, "Aberrant Connectivity among Spatially Independent Resting-State Networks in Schizophrenia," *Hum. Brain Map.*, Under revision.

### ***Matt Sutherland***

PhD Student, University of New Mexico, Dept. of Psychology

Role: Serving on dissertation committee (prelim was 2006, defense is Oct 2007)

### ***Nicolle Correa***

PhD Student, University of Maryland, Dept. of CSEE

Role: Co-advisor for Masters thesis (received 2006), Co-advisor for PhD thesis

Ms. Correa is currently a masters student co-mentored by myself and Tulay Adali and is funded from my NIH R01 grant. This training occurs via e-mail, phone conference, and monthly travel between Baltimore and Hartford and now Albuquerque.

#### ***Publications:***

- [1] **N. Correa**, T. Adali, Y. Li, and V. D. Calhoun, "Comparison of Blind Source Separation Algorithms for FMRI Using a New Matlab Toolbox: GIFT," in *Proc. IEEE Int. Conf. Acoustics, Speech, Signal Processing (ICASSP)*, Philadelphia, PA, 2005.
- [2] **N. Correa**, T. Adali, V. D. Calhoun, "A Quantitative Evaluation of Blind Source Separation Algorithms for FMRI Data", *Human Brain Mapping*, 2005 (in preparation).

### ***Yiou Li***

PhD Student, University of Maryland, Dept. of CSEE

Role: Co-advisor for PhD thesis (successful preliminary proposal 15 Nov 2006)

Mr Li is currently co-mentored by myself and Tulay Adali and is funded from my NIH R01 grant. This training occurs via e-mail, phone conferences, and monthly travel between Baltimore and Hartford and now Albuquerque.

#### ***Publications:***

- [1] N. Correa, T. Adali, **Y. Li**, and V. D. Calhoun, "Comparison of Blind Source Separation Algorithms for FMRI Using a New Matlab Toolbox: GIFT," in Proc. IEEE Int. Conf. Acoustics, Speech, Signal Processing (ICASSP), Philadelphia, PA, 2005.
- [2] **Y. Li**, T. Adali, and V. D. Calhoun, "Feature-Selective ICA and Its Convergence Properties," in Proc. IEEE Int. Conf. Acoustics, Speech, Signal Processing (ICASSP), Philadelphia, PA, 2005. **BEST PAPER AWARD**
- [3] V. D. Calhoun, T. Adali, and **Y. Li**, "Independent Component Analysis of Complex-Valued Functional Magnetic Resonance Imaging Data by Complex Nonlinearities," in Proc. ISBI, Washington, D.C., 2004.
- [4] **Y. Li**, T. Adali, and V. D. Calhoun, "Independent Component Analysis With Feature Selective Filtering," in Proc. MLSP, Sao Luiz, Brazil, 2004.
- [5] **Y. Li**, T. Adali and V. D. Calhoun, "Incorporation of spatial smoothness into data reduction algorithms", NeuroImage 2005 (in preparation).
- [6] **Y. Li**, T. Adali, and V. D. Calhoun, "Sample Dependence Correction for Order Selection in Fmri Analysis," in Proc. ISBI, 2006.
- [7] **Y. Li**, T. Adali, and V. D. Calhoun, "A Model for Comparison of Two Functional Mri Datasets by Canonical Correlation Analysis and Independent Component Analysis," in Proc. MLSP, 2007.
- [8] **Y. Li**, T. Adali, and V. D. Calhoun, "Estimating the Number of Independent Components for Fmri Data," Hum. Brain Map., In Press.
- [9] **Y. Li**, T. Adali, and V. D. Calhoun, "A Feature-Selective Independent Component Analysis Method for Functional Mri," Int. J. Biomed. Imaging, Under revision.

### ***Tom Eichele***

PhD Student, University of Bergen, Norway

Role: Member of PhD committee

Mr Eichele is preparing his PhD dissertation. He visited me for three weeks in 2005 and Aug 2007 and since then we have been in close contact via e-mail and also I visited Norway to give an educational course.

#### ***Publications:***

- [1] **T. Eichele**, M. Moosmann, V. D. Calhoun, K. Specht, H. Nordby, and K. Hugdahl, Joint ICA of Simultaneous Single Trial ERP-FMRI Proc. HBM, 2006.
- [2] M. Moosmann, **T. Eichele**, H. Nordby, K. Hugdahl, and V. D. Calhoun, "Joint Independent Component Analysis for Simultaneous Eeg-Fmri: Principle and Simulation," *Int. J. Psych.*, In Press.
- [3] **T. Eichele**, V. D. Calhoun, M. Moosmann, K. Specht, M. Jongsma, R. Quiroga, H. Nordby, and K. Hugdahl, "Unmixing Concurrent Eeg-Fmri with Parallel Independent Component Analysis," *Int. J. Psych.*, In Press.

### ***Nicole Giuliani***

Role: Primary supervisor of post-graduate training period, 2003-2005

Accepted to Stanford Graduate School PhD Program, Fall 2005.

#### ***Publications:***

- [1] V. D. Calhoun, T. Adali, **N. Giuliani**, J. J. Pekar, G. D. Pearlson, and K. A. Kiehl "A Method for Multimodal Analysis of Independent Source Differences in Schizophrenia: Combining Gray Matter Structural and Auditory Oddball Functional Data," *Hum. Brain Map.*, 2005 (in press).
- [2] **N. Giuliani**, G. D. Pearlson, and V. D. Calhoun, "Alcohol Versus Marinol Intoxication Effects on Visual Perception: An FMRI Study," in *Proc. ICANA*, New Haven, CT, 2004.
- [3] **N. Giuliani**, V. D. Calhoun, G. D. Pearlson, A. Francis, and R. W. Buchanan, "Voxel-Based Morphometry Versus Regions of Interest: A Comparison of Two Methods for Analyzing Gray Matter Disturbances in Schizophrenia," *Schizophr. Res.*, vol. 74, pp. 135-147, 2005.
- [4] K. Groth, T. Benios, **N. Giuliani**, V. D. Calhoun, and G. D. Pearlson, "General Intelligence Correlates to Brain Structure Differently in Men and Women," in *Proc. SAGE IV*, Winston-Salem, NC, 2005.

### ***Matthais Moosman***

PhD Student, University of Bergen, Norway

Role: Member of PhD committee

Mr Eichele is preparing his PhD dissertation in medical physics. He visited me for three weeks in 2005 and since then we have been in close contact via e-mail and also I visited Norway to give an educational course.

#### ***Publications:***

- [1] T. Eichele, **M. Moosmann**, V. D. Calhoun, K. Specht, H. Nordby, and K. Hugdahl, Joint ICA of Simultaneous Single Trial ERP-FMRI *Proc. HBM*, 2006.
- [2] Tom Eichele, Vince D. Calhoun, **Matthias Moosmann**, Karsten Specht, Marijtje L.A. Jongsma, Rodrigo Quiroga, Helge Nordby, Kenneth Hugdahl, Stimulus Predictability affects ERP and fMRI correlates of early auditory change detection, *Int. Journal Psychology* (submitted) 2006.
- [3] **M. Moosmann**, T. Eichele, H. Nordby, K. Hugdahl, and V. D. Calhoun, "Joint Independent Component Analysis for Simultaneous Eeg-Fmri: Principle and Simulation," *Int. J. Psych.*, In Press.
- [4] T. Eichele, V. D. Calhoun, **M. Moosmann**, K. Specht, M. Jongsma, R. Quiroga, H. Nordby, and K. Hugdahl, "Unmixing Concurrent Eeg-Fmri with Parallel Independent Component Analysis," *Int. J. Psych.*, In Press.

### ***David Schneider:***

Masters Graduate Student in Biomedical Engineering, University of Connecticut

Role: co-advisor, 2004-2005

Accepted to Columbia PhD Graduate Program, Fall 2006

### ***Abbie Garrity:***

Undergraduate Student, Trinity College

Role: Advisor for volunteer project, 2005-

Differences in the default mode network in schizophrenia, Fall/Spring 2004

#### ***2006 Brain Dance Research Award***

#### ***Publications:***

- [1] **A. Garrity**, G. D. Pearlson, K. McKiernan, V. Calhoun "The Default Mode Network and Schizophrenia" *American Journal of Psychiatry*, 2005 (in press).
- [2] **A. Garrity**, G. D. Pearlson, K. McKiernan, D. Lloyd, K. A. Kiehl, and V. D. Calhoun, "Aberrant Functional Connectivity of the 'Default Mode' in Schizophrenia," in *Trinity Papers*, 2006.
- [3] K. Groth, **A. Garrity**, G. D. Pearlson, and V. D. Calhoun "Independent Component Analysis of Gray Matter in Schizophrenia Detects Novel Structural Variations in Heteromodal Association Cortex," *Am.J.Psychiatry*, 2006 (submitted).

### ***Samara Reynolds:***

Undergraduate Student, Trinity College

Role: Advisor for senior project, 2004-2005

#### ***Publications:***

- [1] **M. Assaf**, S. Reynolds, V. Calhoun "Laterality changes in verbal binding associated with schizophrenia" *Biol. Psych.*, 2006 (in preparation).

### ***Hichem Snoussi***

Post-doctoral fellow

Role: Primary mentor

#### ***Publications:***

- [1] **H. Snoussi** and V. D. Calhoun, "Bayesian Blind Source Separation for Brain Imaging," in Proc. SETIT, Susa, Tunisia, 2005.
- [2] **H. Snoussi** and V. D. Calhoun, "Regularized Spectral Matching for Blind Source Separation. Application to FMRI Imaging," *IEEE Trans. Signal Proc.*, 2005.
- [3] **H. Snoussi** and V. D. Calhoun, "Bayesian Blind Source Separation for Brain Imaging," in Proc. ICIP, Genova, Italy, 2005.

### ***Michael Stevens, Ph.D.***

Appointed junior faculty in the Olin Neuropsychiatry Research Center, 2002-2004

Role: co-advisor 2002-2004; co-mentor on K-Award (2005-2009).

Currently K-awardee (2004-2009)

#### ***Publications:***

- [1] V. D. Calhoun, **M. Stevens**, G. D. Pearlson, and K. A. Kiehl, "Fmri Analysis with the General Linear Model: Removal of Latency-Induced Amplitude Bias by Incorporation of Hemodynamic Derivative Terms," *NeuroImage*, vol. 22, pp. 252-257, 2004.
- [2] K. A. Kiehl, **M. Stevens**, K. R. Laurens, G. D. Pearlson, V. D. Calhoun, and P. F. Liddle, "The Amygdala as a Salience Detector: Evidence from a Large-Scale Study (N=100) of Auditory Target Detection " in *Proc.HBM*, Budapest, Hungary, 2004.
- [3] V. D. Calhoun, T. Adali, **M. Stevens**, K. A. Kiehl, and J. J. Pekar, "Semi-Blind Ica of Fmri: A Method for Utilizing Hypothesis-Derived Time Courses in a Spatial Ica Analysis," *NeuroImage*, vol. 25, pp. 527-538, 2005.
- [4] K. A. Kiehl, **M. Stevens**, K. R. Laurens, G. D. Pearlson, V. D. Calhoun, and P. F. Liddle, "An Adaptive Reflexive Processing Model of Neurocognitive Function: Supporting Evidence from a Large Scale (N=100) Fmri Study of an Auditory Oddball Task," *NeuroImage*, vol. 25, pp. 899-915, 2005.
- [5] **M. Stevens**, V. D. Calhoun, and K. A. Kiehl, "Hemispheric Differences in Hemodynamics Elicited by Auditory Oddball Stimuli," *NeuroImage*, vol. 26, pp. 782-792, 2005.
- [6] **M. Stevens**, V. D. Calhoun, and K. A. Kiehl, "Fmri in an Oddball Task: Effects of Target-to-Target Interval," *Psychophysiology*, vol. 42, pp. 636-642, 2005.
- [7] **M. Stevens**, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional Neural Circuits for Mental Timekeeping," in *Human Brain Mapping*, Florence, Italy, 2005.
- [8] G. D. Pearlson, D. A. Wallace, V. D. Calhoun, M. Assaf, M. C. Stevens, S. Meda, and J. Gelernter, "Alpha7 Nicotinic Cholinergic Receptor (Chrna7) Polymorphisms Discriminate Figural Memory Abilities in Healthy Adults and Influence Related Structural and Functional Mri Patterns," in *Proc.ACNP*, 2006.
- [9] M. C. Stevens, K. A. Kiehl, G. Pearlson, and V. D. Calhoun, "Functional Neural Circuits for Mental Timekeeping," *Hum Brain Mapp*, Aug 30 2006.
- [10] **M. Stevens**, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional Neural Circuits for Mental Timekeeping," *Hum. Brain Map.*, vol. 28, 2007.
- [11] **M. Stevens**, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional Neural Networks Underlying Response Inhibition in Adolescents and Adults," *Behavior and Brain Sciences*, vol. 181, 2007.
- [12] **M. Stevens**, K. A. Kiehl, G. D. Pearlson, and V. D. Calhoun, "Functional Neural Networks Underlying Response Inhibition in Adolescents and Adults," in *Human Brain Mapping*, 2007.
- [13] **M. Stevens**, V. D. Calhoun, G. D. Pearlson, and K. A. Kiehl, "Brain Network Dynamics During Error Commission," *Hum. Brain Map.*, In Press.

- [14] M. Jafri, G. D. Pearlson, **M. Stevens**, and V. D. Calhoun, "Aberrant Connectivity among Spatially Independent Resting-State Networks in Schizophrenia," *Hum.Brain Map.*, Submitted.
- [15] **M. Stevens**, G. D. Pearlson, V. D. Calhoun, and K. A. Kiehl, "Are Separate Neural Networks Specialized for Regular Movement Timing? An Examination of Brain Hemodynamics During Regularly-Paced Finger Tapping," *Neuropsychologia*, Submitted.

***Mona Noureldin Mohamed, M.D.***

Postdoc, Johns Hopkins University

Role: co-advisor for post graduate training period, primary mentor for fMRI training.

*Publications:*

- [1] **M. A. Mohamed**, D. M. Yousem, A. Tekes, N. M. Browner, and V. D. Calhoun, "Timing of Cortical Activation: a Latency-Resolved Event-Related Functional MR Imaging Study," *AJNR Am. J. Neuroradiol.*, vol. 24, pp. 1967-1974, 2003.
- [2] **M. Noureldin**, D. M. Yousem, A. Tekes, N. Browner, and V. D. Calhoun, "Correlation Between the Amplitude of Cortical Activation and Reaction Time: An FMRI Study," in *Proc. ASNR*, Washington, D.C., 2003.
- [3] A. Tekes, **M. Noureldin**, M. Kraut, V. D. Calhoun, N. Browner, and D. M. Yousem, "Effect of Age on Visuomotor Functional MR Imaging," in *Proc. ASNR*, Washington, D.C., 2003.
- [4] **M. A. Mohamed**, D. M. Yousem, A. Tekes, N. Browner, and V. D. Calhoun, "Correlation Between the Amplitude of Cortical Activation and Reaction Time: a Functional MRI Study," *AJR Am. J. Roentgenol.*, vol. 183, pp. 759-765, 2004.
- [5] **M. A. Mohamed**, D. M. Yousem, I. Kusevic, V. D. Calhoun, C. Cristinzio, N. A. Honeycutt, A. El-Deib, M. Yassa, B. Caffo, and S. Basset, "Lack of Education Effect on Brain Activity in a Memory Based Functional MRI Experiment," in *Proc. ASNR*, 2004.
- [6] A. Tekes, V. D. Calhoun, **M. A. Mohamed**, B. Yagmurlu, N. Mikhelashvili-Browner, and D. M. Yousem, "Effect of Age in Volume of Activation in Block Design and Single-Event Paradigms Using Visuomotor Functional MR Imaging," in *Proc. ASNR*, 2004.
- [7] A. Tekes, **M. A. Mohamed**, N. Mikhelashvili-Browner, V. D. Calhoun, and D. M. Yousem, "Effect of Age on Visuomotor Functional MR Imaging," in *Proc. ASNR*, 2004.
- [8] A. Tekes, **M. Noureldin**, M. Kraut, V. D. Calhoun, N. Browner, and D. M. Yousem, "Effect of Age on Visuomotor Functional MR Imaging," to appear *Acad. Radiol.*, 2005.

***Kim Celone***

Role: tutor for post-graduate training period, 2003-2005

Accepted to PhD Program, Boston College

*Publications:*

- [1] **K. Celone**, V. D. Calhoun, A. Driscoll, E. Rand-Giovannetti, E. Chua, B. Dickerson, M. Albert, D. Blacker, and R. Sperling "ICA of fMRI Associative Memory Networks in Normal Aging, MCI and Mild AD," 2005. (in preparation).
- [2] R. Sperling, E. Chua, B. Dickerson, D. Blacker, M. Albert, V. D. Calhoun, and **K. Celone**, "Compensatory Recruitment of Memory and Attentional Networks in Mild Cognitive Impairment," in *Proc. Amer. Acad. of Neur.*, San Diego, CA, 2005.
- [3] **K. Celone**, V. D. Calhoun, A. Driscoll, E. Rand-Giovannetti, E. Chua, B. Dickerson, M. Albert, D. Blacker, and R. Sperling, "ICA of FMRI Associative Memory Networks in Normal Aging, MCI and Mild AD," in *Proc. Soc. for Neuroscience*, San Diego, CA, 2004.

***Martin Hejnar***

Role: Primary supervisor of post-graduate training period, 2003-2004

*Publications:*

- [1] **M. P. Hejnar**, M. M. Kurtz, K. A. Keihl, G. D. Pearlson, and V. D. Calhoun, "Performance on the Penn Conditional Exclusion Task (PCET) in Patients With Schizophrenia (SZ) and Healthy Controls: An FMRI Analysis," in *Proc. SBP*, 2004.
- [2] D. Kim, **M. P. Hejnar**, K. A. Kiehl, E. Bedrick, and V. D. Calhoun "Interparticipant Correlations: A Model Free FMRI Analysis Technique," *Hum.Brain Map.*, 2007 (in press).

***Eric Egoif:***

Role: co-advisor senior project

***Publications:***

- [1] **E. Egoif** and V. D. Calhoun, "Group ICA of FMRI Toolbox," in *Proc. Biomedical Engineering Alliance and Consortium*, 2003.
- [2] **E. Egoif**, K. A. Kiehl, and V. D. Calhoun, "Group ICA of FMRI Toolbox (GIFT)," in *Proc. HBM*, Budapest, Hungary, 2004.
- [3] B. Hong, G. D. Pearlson, **E. Egoif**, and V. D. Calhoun, "Identification of Brain Activity in a Visual Stimulation Task - An Adaptive ICA Approach for FMRI Data," in *Proc. HBM*, 2004.

***Jinsuh Kim, M.D.:***

Post doctoral fellow

Role: primary supervisor 2002-2004

Joined faculty at University of Wisconsin

***Publications:***

- [1] **J. Kim**, R. Kanaan, V. D. Calhoun, S. Mori, and G. D. Pearlson, "More Averages Vs. More Gradients: Which Is Right for Reliable Diffusion Tensor MRI?," in *Proc. RSNA*, Chicago, IL, 2002.
- [2] V. D. Calhoun, **J. Kim**, and G. D. Pearlson, "FMRI Connectivity Measured by Mutual Information and Correlation: Linear Dependence Vs. General Dependence," in *Proc. ISMRM*, Toronto, Canada, 2003.
- [3] **J. Kim**, V. D. Calhoun, and G. D. Pearlson, "DTI of Huntington Disease," in *Proc. ISMRM*, Toronto, Canada, 2003.
- [4] **J. Kim**, V. D. Calhoun, and G. D. Pearlson, "3D Visualization of White Matter Tracts Using LIC," in *Proc. ASNR*, Washington, D.C., 2003.
- [5] **J. Kim** and V. D. Calhoun, "Evaluation of Quantization Error in DICOM Images for FMRI Application," in *Proc. RSNA*, Chicago, IL, 2003.