

CURRICULUM VITAE

THE INSTITUTE OF LIVING AND YALE UNIVERSITY

Vince D. Calhoun

7 April 2003

DEMOGRAPHIC INFORMATION

Current Appointments

- Director, Medical Image Analysis Laboratory 8/2002-
Institute of Living, Hartford, CT
- Assistant Clinical Professor, Department of Psychiatry 8/2002-
Yale University, New Haven, CT
- Assistant Professor (part time), Department of Psychiatry 8/2002-
Johns Hopkins University, Baltimore, MD

Personal Data

Olin Neuropsychiatry Research Center
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Institute of Living
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Hartford, CT 06106
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Professional Experience

- Senior Research Engineer, Psychiatric Neuroimaging 12/2001-8/2002
Johns Hopkins University, Baltimore, MD
- Research Engineer, Psychiatric Neuroimaging 11/1996-11/2001
Johns Hopkins University, Baltimore, MD
- System Manager/Programmer, Psychiatric Neuroimaging 10/1993-11/1996
Johns Hopkins University, Baltimore, MD
- Research Technician, Laboratory for Studies on Controlled Release of Bioactive Materials 5/1993-10/1993
Johns Hopkins University, Baltimore, MD
- Research Assistant, Remote Sensing Laboratory 1990-1991
University of Kansas, Lawrence, KS

Education

Ph.D. Electrical Engineering University of Maryland Baltimore County, Baltimore, MD	5/2002
Certificate in Theological Studies Bethel Seminary of the East, Dresher, PA	7/2002
M.S. Information Systems Johns Hopkins University, Baltimore, MD	1/1996
M.A. Biomedical Engineering Johns Hopkins University, Baltimore, MD	5/1993
B.S. Electrical Engineering (minor in Biology and Math) University of Kansas, Lawrence, KS	5/1991

Selected Courses

Siemens MR pulse programming course	1/2003
Philips MR pulse programming course	9/1999
Workshop on the Statistics of Brain Mapping, University of Montreal	6/1998
Visiting Fellowship Program in Functional MRI, MGH Center for Functional Neuroimaging	6/1997
Symposium on fMRI & Brain Disorders, Bethesda, MD	11/1996
Two-day fMRI course, Boston, MA	6/1996
Functional MRI of the Brain, Arlington, Virginia	6/1993
Omega Training Course, GE/Bruker	11/1992

PUBLICATIONS

Full Journal Articles

- [1] B. Reifeld, 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, p. 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] G.D.Pearlson, V.D.Calhoun, M.Grygorcewicz, T.E.Schlaepfer, S.Nicastri, M.Stephane, A.Marusic, S.Dogan, D.Wong, and A.A.Harrison "Effects of Oral delta 9-tetrahydrocannabinol (THC), (Marinol) on Time Estimation, Subjective Intoxication and PET measures of Regional Cerebral Bloodflow," *Neuropsychopharmacology.*, 2000.
- [5] 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 Components Analysis," *NeuroImage*, vol. 14, pp. 1080-1088, 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, 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.
- [8] 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.
- [9] V.D.Calhoun and T.Adali "Complex Infomax: Convergence and Approximation of Infomax with Complex Nonlinearities," *IEEE Trans.Neural Networks*, 2002 (submitted).
- [10] 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.
- [11] V.D.Calhoun, T.Adali, and G.D.Pearlson, "Independent Components Analysis Applied to fMRI Data: A Generative Model for Validating Results," to appear *Journal of VLSI Signal Proc. Systems*, 2002.
- [12] 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.
- [13] 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.
- [14] 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.
- [15] 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," *Academic Radiology*, vol. 9, 2002.
- [16] V.D.Calhoun, D.Altschul, V.McGinty, R.A.Shih, D.Scott, and G.Pearlson "Alcohol Intoxication Effects on Visual Perception: An fMRI Study," *NeuroImage*, 2003 (submitted).
- [17] V.D.Calhoun, T.Adali, and J.J.Pekar "A Method for Testing Conjunctive and Subtractive Hypotheses on Group fMRI Data Using Independent Component Analysis," *Magn Reson.Med.*, 2003 (submitted).
- [18] M. Kraut, V.D. Calhoun, J. Pitcock, C. Cusik, and J. Hart, "Neural Hybrid Model of Semantic Object Memory: Implications Form Event-Related Timing Using fMRI," *J. Int. Neuropsychol. Soc.*, 2003.
- [19] S.Mostofsky, M.Abrams, J.Schafer, M.Goldberg, K.A.Flowers, S.M.Courtney, V.D.Calhoun, M.Kraut, M.Denckla, and J.J.Pekar "fMRI Evidence that the Neural Basis of Response Inhibition is Task-Dependent," *Cognitive Brain Research*, 2003 (submitted).
- [20] 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," *Radiology*, 2003 (submitted).
- [21] M.Noureldin, D.M.Yousem, A.Tekes, N.Browner, and V.D.Calhoun "Timing of Cortical Activation: A Latency-Resolved Event-Related fMRI Study," *AJNR Am.J.Neuroradiol.*, 2003 (submitted).
- [22] K.K.Oguz, N.Mikhelashvili-Browner, V.D.Calhoun, C.Wu, M.Kraut, and D.M.Yousem, "Correlation of fMRI Activation Data With Simple Reaction Times," to appear *Radiology*, 2003.

Short Papers

- [1] 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*, Hong Kong, 1998.
- [2] V.D. Calhoun, T. Adali, and G.D. Pearlson, "A Frequency-Space Approach for Motion Correction in FMRI," in *Proc. IMDSP*, Alpbach, Austria, p. 229, 1998.
- [3] V.D. Calhoun and G.D. Pearlson, "Spatially-Distributed Lag Time Estimation In Event-Related FMRI Via Adaptive Filtering," in *Proc. BMES*, Atlanta, GA, 1998.
- [4] V.D. Calhoun, T. Adali, and G.D. Pearlson, "(Non)Stationarity Of Temporal Dynamics In FMRI," in *Proc. EMBS/BMES Joint Meeting*, Atlanta, GA, 1999.
- [5] V.D. Calhoun, T. Adali, and G.D. Pearlson, "Adaptive Filtering Of Visual Evoked Responses In FMRI: Variability Of Response," in *Proc. IASTED-SIP*, Nassau, Bahamas, 1999.
- [6] V.D. Calhoun, V. McGinty, and G.D. Pearlson, "Driving and the Brain: An Imaging Study," in *Proc. Human Centered Trans. Sim. Conf.*, Iowa City, IA, 2001.
- [7] V.D. Calhoun, T. Adali, and G.D. Pearlson, "Independent Components Analysis Applied to FMRI Data: A Generative Model for Validating Results," in *Proc. IEEE Workshop on Neural Networks for Signal Processing (NNSP)*, Falmouth, MA, 2001.
- [8] 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 Independent Component Analysis and Blind Signal Separation*, San Diego, CA, pp. 155-160, 2001.
- [9] 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*, Baltimore, MD, 2001.
- [10] V.B. McGinty, R.A. Shih, E.S. Garrett, and V.D. Calhoun, "Assessment of Intoxicated Driving With a Simulator: A Validation Study With on Road Driving," in *Proc. Human Centered Trans. Sim. Conf.*, Iowa City, IA, 2001.
- [11] V.D. Calhoun and T. Adali, "Complex Infomax: Convergence and Approximation of Infomax With Complex Nonlinearities," in *Proc. IEEE Workshop on Neural Networks for Signal Processing (NNSP)*, Switzerland, 2002.
- [12] V.D. Calhoun, T. Adali, G.D. Pearlson, and J.J. Pekar, "On Complex Infomax Applied to Complex FMRI Data," in *Proc. ICASSP*, Orlando, FL, 2002.
- [13] V.D. Calhoun and T. Adali, "Complex ICA for FMRI Analysis: Performance of Several Approaches," in *Proc. ICASSP*, Hong Kong, China, 2003.
- [14] V.D. Calhoun, T. Adali, J.C. Hansen, J. Larsen, and J.J. Pekar, "ICA of FMRI: An Overview," in *Proc. Int. Conf. on Independent Component Analysis and Blind Signal Separation*, Nara, Japan, 2003.

Abstracts

- [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*, Berlin, Germany, p. 1012, 1992.
- [2] 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*, New York, NY, p. 630, 1993.
- [3] V.D. Calhoun, V. Truong, B. Reisfeld, J. Williams, and K. Leong, "Magnetic Resonance Imaging of Active Targeting Using Immuno-Microspheres," in *Proc. SMRM*, New York, NY, p. 493, 1993.
- [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*, Washington, DC, 1993.

- [5] S. Kalyanasundaram, V.D. Calhoun, and K. Leong, "Coupled Convective-Diffusive Mass Transport in the Brain," in *Proc. AICHE*, San Francisco, CA, 1994.
- [6] 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*, Los Angeles, CA, 1998.
- [7] 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*, Puerto Rico, 1998.
- [8] 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 *Biol. Psychiatry*, vol. 43, 1998.
- [9] 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*, Chicago, IL, 1999.
- [10] 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*, New Orleans, LA, 1999.
- [11] 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.
- [12] 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 *Biol. Psychiatry*, vol. 45, 1999.
- [13] 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 *Biol. Psychiatry*, vol. 48, 2000.
- [14] 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*, vol. 11, p. S682, 2000.
- [15] 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*, Denver, CO, p. 983, 2000.
- [16] V.D. Calhoun, X. Golay, and G.D. Pearlson, "Improved fMRI Slice Timing Correction: Interpolation Errors and Wrap Around Effects," in *Proc. ISMRM*, Denver, CO, p. 810, 2000.
- [17] 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*, Puerto Rico, 2000.
- [18] V.D. Calhoun, M. Kraut, T. Adali, and G.D. Pearlson, "A Weighted-Least Squares Method for Latency Estimation in fMRI," in *Proc. ISMRM*, Denver, CO, p. 814, 2000.
- [19] M. Kraut, V.D. Calhoun, J.B. Segal, and J. Hart, "Functional MRI of Word Association and the Search for Word Meaning," in *Radiology*, Chicago, IL, vol. 217, 2000.
- [20] S. Nicastrì, V.D. Calhoun, G.D. Pearlson, C.A. Buchpiguel, A.S. Tanaka, M.C. eite, and A.G. ndrade, "Cortical Blood Flow Abnormalities in Cocaine-Dependent Individuals Evaluated by Single Photon Emission Computed Tomography: A Method of Quantification," in *Proc. CPDD*, 2000.
- [21] P. Rivkin, J. Hart, V.D. Calhoun, and G.D. Pearlson, "Functional MRI and Formal Thought Disorder," in *Biol. Psychiatry*, vol. 47, 2000.
- [22] D.M. Yousem, M.A. Kraut, R.J. Geckle, A.S. Mandir, V.D. Calhoun, and G. Pearlson, "Effect of Age on Motor, Visual, and Visuomotor fMRI Tasks," in *Radiology*, Chicago, IL, vol. 217, 2000.

- [23] 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*, vol. 13, p. S388, 2001.
- [24] 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*, vol. 13, p. S88, 2001.
- [25] 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*, Glasgow, Scotland, p. 1742, 2001.
- [26] 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*, Glasgow, Scotland, p. 668, 2001.
- [27] 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*, Glasgow, Scotland, p. 216, 2001.
- [28] 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.
- [29] 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 *Biol. Psychiatry*, Puerto Rico, vol. 49, 2001.
- [30] 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*, Glasgow, Scotland, p. 24, 2001.
- [31] P. Rivkin, J. Hart, V.D. Calhoun, and G.D. Pearlson, "Functional MRI and Formal Thought Disorder," in *Biol. Psychiatry*, vol. 49, 2001.
- [32] 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.
- [33] V.D. Calhoun and G.D. Pearlson, "Novel Means for Designing, Analyzing and Interpreting Functional MRI Studies," in *Society of Biological Psychiatry*, Philadelphia, PA, 2002.
- [34] 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*, Honolulu, HI, 2002.
- [35] 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*, Sendai, Japan, 2002.
- [36] 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*, Sendai, Japan, 2002.
- [37] 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*, Philadelphia, PA, 2002.
- [38] 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*, San Juan, Puerto Rico, 2002.
- [39] 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*, Honolulu, HI, 2002.
- [40] A. Horska, M.A. Jacobs, V.D. Calhoun, and P.B. Barker, "A Rapid Method for Brain Tissue Segmentation," in *Proc. RSNA*, Chicago, IL, 2002.
- [41] J. Kim, R. Kanaan, V.D. Calhoun, S. Mori, and G. Pearlson, "More Averages Vs. More Gradients: Which Is Right for Reliable Diffusion Tensor MRI?," in *Proc. RSNA*, Chicago, IL, 2002.

- [42] 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.*, vol. 10, pp. 73-74, 2002.
- [43] 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.*, Denver, CO, 2002.
- [44] 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*, Philadelphia, PA, 2002.
- [45] R.Arya, S.Roys, V.D.Calhoun, T.Adali, J.Greenspan, and R.Gullapali "Comparative Study of Several Multivariate fMRI Processing Methods: PCA, Factor Analysis, Infomax, FASTICA, and MELODIC," *Proc.ISMRM*, 2003 (submitted).
- [46] 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," *Proc.ISMRM*, 2003 (submitted).
- [47] V.D.Calhoun, T.Adali, J.J.Pekar, and G.Pearlson, "Independent Component Analysis of fMRI Power Spectra: Spatial Grouping and Latency Estimation," *Proc.ISMRM*, 2003.
- [48] V.D.Calhoun, P.Rivkin, and G.D.Pearlson, "Synchronous Auditory Cortex Fluctuations in Schizophrenia: An fMRI Study," *Society of Biological Psychiatry*, 2003.
- [49] V.D.Calhoun, J.Kim, and G.Pearlson, "fMRI Connectivity Measured by Mutual Information and Correlation: Linear Dependence vs. General Dependence," *Proc.ISMRM*, 2003.
- [50] V.D.Calhoun, T.Adali, G.Pearlson, and J.J.Pekar, "A Method for Testing Conjunctive and Subtractive Hypotheses on Group fMRI Data Using Independent Component Analysis," *Proc.ISMRM*, 2003.
- [51] V.D.Calhoun, D.Scott, D.Altschul, R.A.Shih, and G.Pearlson, "Alcohol Intoxication Effects on A Visual Perception Task: An fMRI Study," *Proc.ISMRM*, 2003.
- [52] V.D.Calhoun, D.Altschul, V.McGinty, and G.D.Pearlson, "Alcohol Intoxication Effects on Driving-Related Visual Perception Task: An fMRI Study," *Society of Biological Psychiatry*, 2003.
- [53] 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," *Proc.ISMRM*, 2003 (submitted).
- [54] J. Kim, V.D. Calhoun, and G. Pearlson, "3D Visualization of White Matter Tracts Using LIC," in *Proc. ASNR*, Washington, D.C., 2003.
- [55] J. Kim, V.D. Calhoun, and G. Pearlson, "DTI of Huntington Disease," in *Proc. ISMRM*, Toronto, Canada, 2003.
- [56] 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," *Proc.ASNR*, 2003 (submitted).
- [57] A.Tekes, M.Noureldin, M.Kraut, V.D.Calhoun, N.Browner, and D.M.Yousem "Effect of age on visuomotor functional MR imaging," *Proc.ASNR*, 2003 (submitted).

RESEARCH SUPPORT

NIH RO1 (PI)

Title: Multi-group Semi-blind ICA of fMRI

Agency: NIBIB: 1 R01 EB 000840-01

4/1/2003-4/1/2007

Summary: The overall goal of this proposed research is to develop, evaluate the performance of, and optimize semi-blind independent component analysis methods for the analysis of multi-group (or multi-paradigm) functional magnetic resonance imaging data and to use these methods to study data collected from patients with schizophrenia and healthy controls performing an auditory oddball task.

Role: Principle-Investigator (50% effort)

Amount: \$1,000,000

FM Kirby Center Pilot Grant (PI)

Title: “Refinement and validation of functional latency mapping techniques in event-related fMRI: A set of timing probes for simple visual, auditory, motor, and language tasks” 1999-2000

Pilot Award for Five Scan Sessions

\$50K Competitive Research Grant to Hartford Hospital in July 2002 (PI)

Title: Functional Mapping of the Neocortical Network in Schizophrenia: Executive-Function Impairments and Spontaneous Fluctuations in fMRI

NIH R01 (Co-Investigator)

Title: “Aging, Brain Imaging, and Cognition”

Agency: NIA, 5 R01 MH46034 (Pearlson)

05/01/1999-04/30/2004

Summary: Seeks to extend a cross-sectional study of age-related correlations among measures of neuroanatomy, cognitive performance and adaptive functioning in normal adults by adding longitudinal follow-up and functional brain imaging.

Role: Co-Investigator (16% effort)

NIH R01 (Co-Investigator)

Title: “Quantitative Structural Neuroimaging in Psychosis”

Agency: NIMH, 5 R01 MH43775-08 (Pearlson)

07/01/1999-06/30/2004

Summary: Investigates putative diagnostic markers of schizophrenia using structural brain MRI in schizophrenics, bipolars and healthy controls.

Role: Co-Investigator (20% effort)

\$50K Competitive Research Grant to Hartford Hospital in July 2002 (Co-Investigator)

Differentiating the neural systems involved in psychosis: Affective disorder versus schizophrenia

(Submitted) \$50K Competitive Research Grant to Hartford Hospital in July 2002 (Co-Investigator)

In-vivo investigation of neural organization in the schizophrenia spectrum using diffusion tensor MR imaging

EDUCATIONAL ACTIVITIES

Teaching

At Yale University

Guest Instructor: Biomedical Engineering Seminar (BENG480a)

10/2003

Yale University School of Biomedical Engineering

At Trinity College

Guest Instructor: Neuroscience Seminar 10/2003
Trinity College School of Engineering

At Johns Hopkins

Invited to Teach Course on SPM Analysis of fMRI Data 2/2002
National Institute of Health Gerontology Research Center

Organizer and Instructor: Course on SPM Analysis of PET and fMRI Data 8/2001, 1/2002
Johns Hopkins Division of Psychiatric Neuro-Imaging

Organizer and Instructor: Course on fMRI Analysis Methods 9/1999
Johns Hopkins Division of Psychiatric Neuro-Imaging

Organizer of Functional Imaging Journal Club 5/1996-
Johns Hopkins Division of Psychiatric Neuro-Imaging
FM Kirby Center for Functional Brain Imaging

Instructor, Course on MEASURE, volumetric analysis of structural MRI 10/1995, 8/1996
Johns Hopkins Division of Psychiatric Neuro-Imaging

At The University of Maryland, Baltimore County

Guest Instructor: Neural Networks 10/2001
University of Maryland, Baltimore County

Guest Instructor: Computer Visualization 11/1998
University of Maryland, Baltimore County

Training/Mentoring (Selected Recent)

Students

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

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.

Fellows/Researchers

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.

Editorial Activities

Ad hoc Referee for:

CRC Press

NeuroImage

IEEE Journal of Signal Processing

IEEE Journal of VLSI Signal Processing

IEEE Potentials Magazine

ISMRM

Member: International Review Panel: Medical Science Monitor

ORGANIZATIONAL ACTIVITIES

Invited Chair/panel member

Invited co-organizer, workshop on "Independent Component Analysis of fMRI Data" 5/2003
Annual meeting on Independent Component Analysis (ICA 2003)

Co-chair and organizer, workshop on "Novel Methods for processing fMRI Data" 5/2002
Annual meeting of the Society of Biological Psychiatry

Invited Panelist and Speaker, NINDS Workshop on 11/2000
"Opportunities in Cognitive Neuroscience Research: Neuroimaging and Beyond"

Panel member, session on "How to do fMRI" 8/1999
Kennedy Krieger Institute Center for Functional Brain Imaging

Committees

Member, Program Committee for Neural Networks for Signal Processing (NNSP 2003)

Professional Memberships and Honors

International Society for Magnetic Resonance in Medicine 1991-present

Institute for Electrical and Electronics Engineers 1991-present

Organization for Human Brain Mapping 2001-present

American Scientific Affiliation 1999-present

Phi Beta Kappa 1991-present

Tau Beta Pi (president)	1989-1991
Eta Kappa Nu	1989-1991
Omicron Delta Kappa	1989-1991
Mortar Board (treasurer)	1990-1991

RECOGNITION

Selected Lectures

Presenter at Neuropsychopharmacology Grand Rounds, Institute of Living “Intoxication Effects on Simulated Driving”	10/2002
Invited Speaker, Human Brain Mapping “A Infomax Method for Performing ICA of fMRI Data in the Complex Domain”	6/2002
Lecturer at fMRI Seminar Series Yale University School of Medicine	10/2003
Lecturer at Bioimaging Seminar Series Yale University School of Medicine	11/2003
Chairman’s Grand Rounds Presentation at Wayne State University “Simulated Driving: Quantification, Validation and fMRI Studies of Driving While Intoxicated”	3/2002
Presenter at Psychiatry Research Seminar, Johns Hopkins University “Simulated Driving and the Effects of Marinol: An fMRI Study”	11/2001
Presenter at Psychiatry Research Seminar, Johns Hopkins University “An Introduction to fMRI and its Use in the Study of Complex Behaviors”	5/2001
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 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
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

Presenter at Psychiatry Research Seminar, Johns Hopkins University “Visual Evoked Responses in fMRI”	11/1998
Presenter at Psychiatry Research Potpourri, Johns Hopkins University “Movies of the brain: Simultaneous display of spatial and temporal functional MRI data”	5/1998
Presenter at Graduate Seminar, University of Maryland, Baltimore County “Motion Correction in functional MRI (fMRI)”	4/1998

OTHER ACTIVITES

Music Team (Christ Presbyterian Church)	9/2002-
Technical Team (Grace Fellowship Church)	1/1997-2002
Music Team (JHMI Christian Fellowship)	1/1992-2002
Special Project Trip to Kyrgystan, Central Asia	6/1999
Special Project Trip to Kyrgystan, Central Asia	12/1995-1/1996

HOBBIES AND INTERESTS

Tennis, Music (clarinet, piano, guitar), jogging, racquetball, basketball