

**Andrew M. Michael, PhD**  
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**EDUCATION**

- 1997      Diploma in Psychology (Honors)  
            Aquinas College, Sri Lanka
- 2001      BE in Electronics and Communication Engineering (First Class)  
            National Institute of Technology, India  
            *(All four years sponsored by Government of India one of five full scholarship)*
- 2004      MS in Electrical Engineering, Department of Electrical Engineering  
            Rochester Institute of Technology, New York  
            *Thesis: A Circle Formation Algorithm for Autonomous Agents with Local Sensing*
- 2009      PhD in Imaging Science, Chester F. Carlson Center for Imaging Science  
            Rochester Institute of Technology, New York  
            *Dissertation: Imaging Schizophrenia: Data Fusion Approaches to Characterize and Classify*

**CAREER**

- 2002 – 2004    Research Assistant, Department of Electrical Engineering  
                    Rochester Institute of Technology, New York
- 2004 – 2006    Research/Teaching Assistant, Chester F. Carlson Center for Imaging Science  
                    Rochester Institute of Technology, New York
- 2006 – 2007    Junior Fellow, The Very Large Array  
                    National Radio Astronomy Observatory, Socorro, New Mexico
- 2007 – 2009    Research Assistant, Medical Image Analysis Laboratory  
                    Mind Research Network, Albuquerque, New Mexico
- 2009 – 2013    Research Scientist, Medical Image Analysis Laboratory  
                    Mind Research Network, Albuquerque, New Mexico
- 2009 – 2013    Program Manager, Medical Image Analysis Laboratory  
                    Mind Research Network, Albuquerque, New Mexico

- 2014 – 2015    Director, Research MRI Core, Autism and Developmental Medicine Institute (ADMI)  
Geisinger Health System (GHS), Lewisburg, Pennsylvania
- 2013 –            Investigator I (Assistant Professor), ADMI  
GHS, Lewisburg, Pennsylvania
- 2013 –            Director, Laboratory of Neuroimage Analytics, ADMI  
GHS, Lewisburg, Pennsylvania
- 2013 –            Distinguished Faculty Affiliate, Departments of Electrical Engineering and  
Biomedical Engineering, Bucknell University, Lewisburg, Pennsylvania
- 2013 –            Affiliate Professor, Chester F. Carlson Center for Imaging, Rochester Institute of  
Technology, Rochester, New York
- 2013 –            Adjunct Assistant Professor,  
Mind Research Network, Albuquerque, New Mexico

## WORK EXPERIENCE

**Director, Neuroimaging Analytics Laboratory, ADMI, GHS** *(2013 – present)*

- Established the neuroimage analytics laboratory for the institute
- Setup brain image preprocessing pipelines using SPM, FSL and FreeSurfer for structural MRI, functional MRI and DTI brain images
- Setup statistical analysis and machine learning toolboxes for brain feature analyses and feature selection. Laboratory is equipped with following: Programming: Python, R, Shell, Matlab, C, C++, Data Munging: pandas, dplyr, tidyr, lubridate, Machine Learning: scikit-learn, caret, XGBoost, deep learning techniques, Data Visualization: ggplot2, shiny, seaborn
- Responsible for data transfer, database management, and archiving
- Supervise a laboratory of three PhD students, a software engineer, and a research assistant
- Provide image analytic support for investigators and clinicians at ADMI, radiology and neurosurgery

**Director, Research MRI Core, ADMI, GHS** *(2014 – 2015)*

- Supervised the scientific aspects of the installation of a new Siemens 3T MRI scanner including MR room design and construction
- Recruitment and supervision of the MR core team
- Purchase of fMRI equipment and other accessories
- Developed the MR safety and participant consent documents
- Established the MRI Core budget and scan rates

**Research Scientist, Mind Research Network** (2009 – 2013)

- Developed methods to explore whole brain structure-function and function-function networks using structural MRI, functional MRI and diffusion tensor imaging data
- Investigated if genetic variances are expressed as aberrant brain structure or function
- Developed methods using mutual/co-information to combine multiple imaging modalities
- Applied machine learning techniques to identify potential biomarkers of brain disorders
- Improved independent component/vector analyses techniques to better capture subject variability

**Program Manager, Mind Research Network** (2009 – 2013)

- Managed and mentored a large research lab of research scientists, post docs, software engineers and graduate students. Worked directly under the CEO of a large neuroimaging research institute
- Designed accounting schemes to budget multiple multimillion dollar grants
- Other activities included help select new candidates, review performance, strategize projects, assist MRI service center budgeting, and interfaced with HR, accounting and IT departments

**Research Assistant, Mind Research Network** (2007 – 2009)

- Developed techniques to explore and summarize whole brain structure-function and function-function correlations of MRI data to identify abnormalities in schizophrenia
- Developed algorithms to find new features to characterize schizophrenia using multi modal data and showed how data fusion can improve classification success rate
- Preprocessed and analyzed structural MRI, functional MRI and DTI brain images
- Initiated and organized the first MRN research day that attracted about thirty research posters
- Established and conducted the weekly journal club for the image analysis lab at MRN

**Junior Fellow, Very Large Array, National Radio Astronomy Observatory** (2006 – 2007)

- Developed algorithms to reconstruct images from sparsely sampled data in the Fourier domain
- Improved multiscale deconvolution (using maximum entropy) algorithm to better reconstruct wide and compact radio sources

**Research Assistant, Chester F. Carlson Center for Imaging Science, RIT** (2004 – 2006)

- Performed a NASA project to measure the intrinsic profile of Hubble Space Telescope's host galaxy images after studying the telescope's optical, sensor and noise characteristics
- Developed a multi-agent algorithm to find multiple solutions for the host galaxy model parameters, and designed and implemented a MATLAB toolbox

**Research Assistant, Department of Electrical Engineering, RIT** (2002 – 2004)

- Developed an algorithm for a randomly oriented and distributed colony of robots to form a circle.

- The autonomous robots were in an unmapped terrain with limited sensing and no communication
- Helped organize the 3<sup>rd</sup> annual RIT student design competition for IEEE Region 1

## EDUCATIONAL ACTIVITIES

### **PhD Thesis Advisor**, ADML, GHS and Center for Imaging Science, RIT (2013 – present)

Gajendra Katuwal: Machine learning algorithms to identify sub-categories of autism spectrum

Chao Zhang: Variability of resting state functional MRI networks in healthy adults

Viraj Adduru: Deep learning methods for early diagnosis of multiple sclerosis

### **Course Planning**, Biomedical Engineering, Bucknell University (*fall, spring 2015*)

Designed Bucknell University's first Biomedical Imaging class to be offered as an elective.

### **Undergraduate Research Project Supervisor**, Bucknell University (2014 – 2018)

Supervise two university presidential scholars

### **PhD Dissertation Committee**, Center for Imaging Science, RIT, NY. (2009 – present)

Shruti Gopal, expected graduation: May 2016

Thesis Topic: Understanding the effects of ECT treatment in severe depression

Siddarth Khullar, graduation: May 2013

Thesis Title: *“Improving Brain Imaging: Novel Image processing approaches for fMRI.”*

### **Student Mentoring**, The Mind Research Network, Albuquerque, NM. (2009 – 2013)

Have mentored the following postdoctoral scholars and University of New Mexico (UNM), Dept. of Electrical Engineering doctoral students in their research projects: Robyn Miller (spatial dynamics of fMRI), Navin Gupta (genetic-DTI associations), Corbin Wilhelmi (spectral analysis of resting state fMRI), Mohammad Arbabshirani (classification of schizophrenia using functional network connectivity), Jiayu Chen (application of parallel independent component analysis to fMRI and SNP data), Alireza Ghassemi (functional network connectivity in psychopathy), Ding Nie (extraction of default mode fMRI networks)

### **Internship Supervisor**, The Mind Research Network, Albuquerque, NM. (summer 2010)

Mohammad Ghassemi (now a PhD student at ECE MIT): Investigated fMRI-SNP associations

Sahitya Konda (now a PhD student at Math UNM): higher order interactions in large datasets

### **Teaching Assistant**, Center for Imaging Science, RIT, NY. (2004 – 2005)

Helped with the Introduction to Imaging Science and Optics classes. Taught the optics ray tracing software, setup experiments for laboratory classes, graded homework and lab reports

### **Instructor**, Learning Development Center, RIT, NY. (2 quarters 2005)

Taught University Physics I & II and Calculus I & II

**Tutor**, Academic Support Center, RIT, NY. (2002 – 2006)

Tutored undergraduate students in the following areas: Mathematics, Physics, Statistics, and Electrical Engineering.

**Instructor**, School of Medicine and Dentistry, University of Rochester, NY. (*summer 2002*)

Conducted a GRE preparatory program for students seeking graduate school

### **RESEARCH SUPPORT**

- 2012 – 2013 DOE award DE-FG02-08ER64581 (internal grant): “Methods to Investigate Inter-relationships between Large Data Sets”. PI: Andrew Michael
- 2013 – 2017 Geisinger Health System startup award: To establish the Neuroimaging Analytics Laboratory at the Autism and Developmental Medicine Institute. PI: Andrew Michael
- 2014 – 2018 Bucknell University Presidential Scholars: Research time of two Bucknell University presidential scholars (yearly research stipend for two undergraduates)
- 2015 – 2016 Bucknell Geisinger Research Initiative: “Method Development to Characterize Functional Brain Networks”. PI: Andrew Michael
- 2015 – 2019 Pennsylvania Department of Health CURE Grant: “Integrating Big Data for Biomedical Discovery: Methods, Tools, and Applications”. PI: Marylyn Ritchie. Co-I: Andrew Michael (10% FTE)

### **GRANT PROPOSALS PENDING DECISION**

- 2016 – 2019 NIH call for “Early Stage Development of Technologies in Biomedical Computing, Informatics, and Big Data Science (R01)”. *Proposal Title*: “Advanced analytic tools to extract novel insights for fMRI”. PI: Andrew Michael”
- 2016 – 2019 NIH call for “BRAIN: Theories, Models and Methods for Analysis of Complex Data from the Brain (R01)”: *Proposal Title*: “Novel bio-markers of the human brain based on predictability of resting state fMRI”. PI: Andrew Michael
- 2017 – 2019 Simons Foundation, SFARI Pilot Award, *Proposal Title*: “Parallels of Brain Function and Autistic Symptoms Along the Spectrum”. PI: Andrew Michael
- 2017 – 2019 Brain and Behavior Research Foundation, Early Investigator Award, *Proposal Title*: “Early Brain Markers of Autism Spectrum Disorder and Genetic Contributions to their Variance”. PI: Andrew Michael

## PROFESSIONAL HONORS AND AWARDS

2006 –	Junior Fellowship, National Radio Astronomy Observatory
2005, 2006	Nominated for outstanding international student award, RIT
2004	Favorite tutor award, Academic Support Center, RIT
2003	Outstanding Student Achievement, Student Government, RIT
2002 – 2004	Davis and Gleason Engineering Scholarships, RIT
1997 – 2001	Government of India full scholarship (one of five) to pursue an undergraduate degree in engineering

## INVITED TALKS (APART FROM CONFERENCE ORAL PRESENTATIONS)

- Walter Reed National Military Medical Center, Washington D.C., ‘Capturing resting state fMRI subject variability using independent vector analysis’ (March 2016)
- Bucknell University, Department of Psychology and Neuroscience, Seminar Series Kickoff Speaker, ‘Introduction to fMRI and findings’ (January 2016)
- Geisinger Health System, Department of Psychiatry, Fellowship Seminar, ‘Brain Imaging and Brain Markers of NDPD’ (December 2015)
- National Institute of Health, Section of Functional Imaging Methods, ‘Novel Brain MRI Analyses Methods’ (March 2015)
- Rochester Institute of Technology, Center for Imaging Science, ‘Introduction to Brain Imaging’ (February 2015)
- Geisinger Health System, Department of Neuropsychology Grand Rounds, ‘Imaging Brain Networks Through MRI’ (October 2014)
- Rochester Institute of Technology, Department of Applied Math, ‘Mathematics of Brain Imaging’ (November 2013)
- Children’s Hospital of Philadelphia, Center for Autism Research, ‘Advance Brain Image Analytics’ (October 2013)
- Guest Speaker, Dept. of Radiology, School of Medicine, UNM, Albuquerque. (April 2012)
- Graduate Seminar, Dept. of ECE, UNM, Albuquerque. (November 2008)
- Colloquium, Consortium of the Americas for Interdisciplinary Science, UNM, Albuquerque. (November 2008)

## PUBLICATIONS

### Peer Reviewed Journals (published)

- [1] A. M. Michael, S. A. Baum, J. F. Fries, B. C. Ho, R. K. Pierson, N. C. Andreasen, and V. D. Calhoun, “A method to fuse fMRI tasks through spatial correlations: Applied to schizophrenia,” *Hum. Brain Mapp.*, vol. 30, no. 8, pp. 2512–2529, 2009.
- [2] 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, no. 2, pp. 419–431, 2009.

- [3] A. M. Michael, S. A. Baum, T. White, O. Demirci, N. C. Andreasen, J. M. Segall, R. E. Jung, G. Pearlson, V. P. Clark, R. L. Gollub, S. C. Schulz, J. L. Roffman, K. O. Lim, B. C. Ho, H. J. Bockholt, and V. D. Calhoun, "Does function follow form?: Methods to fuse structural and functional brain images show decreased linkage in schizophrenia," *Neuroimage*, vol. 49, no. 3, pp. 2626–2637, 2010.
- [4] Ü. Sakoğlu, G. D. Pearlson, K. a. Kiehl, Y. M. Wang, A. M. Michael, and V. D. Calhoun, "A method for evaluating dynamic functional network connectivity and task-modulation: Application to schizophrenia," *Magn. Reson. Mater. Physics, Biol. Med.*, vol. 23, no. 5–6, pp. 351–366, 2010.
- [5] E. Allen, E. B. Erhardt, E. Damaraju, W. Gruner, J. M. Segall, R. F. Silva, and M. Havlicek, "A baseline for the multivariate comparison of resting state networks," *Frontiers in Systems Neuroscience* 5:2, 2011.
- [6] S. Khullar, A. M. Michael, N. D. Cahill, K. A. Kiehl, G. Pearlson, S. A. Baum, and V. D. Calhoun, "ICA-fNORM: Spatial Normalization of fMRI Data Using Intrinsic Group-ICA Networks," *Frontiers in Systems Neuroscience*, vol. 5. 2011.
- [7] S. Khullar, A. Michael, N. Correa, T. Adali, S. a. Baum, and V. D. Calhoun, "Wavelet-based fMRI analysis: 3-D denoising, signal separation, and validation metrics," *Neuroimage*, vol. 54, no. 4, pp. 2867–2884, 2011.
- [8] A. M. Michael, M. D. King, S. Ehrlich, G. Pearlson, T. White, D. J. Holt, N. C. Andreasen, U. Sakoglu, B.-C. Ho, S. C. Schulz, and V. D. Calhoun, "A Data-Driven Investigation of Gray Matter-Function Correlations in Schizophrenia during a Working Memory Task.," *Front. Hum. Neurosci.*, vol. 5, no. August, p. 71, 2011.
- [9] J. Chen, V. D. Calhoun, G. D. Pearlson, S. Ehrlich, J. A. Turner, B. C. Ho, T. H. Wassink, A. M. Michael, and J. Liu, "Multifaceted genomic risk for brain function in schizophrenia," *Neuroimage*, vol. 61, no. 4, pp. 866–875, 2012.
- [10] J. Liu, M. M. Ghassemi, A. M. Michael, D. Boutte, W. Wells, N. Perrone-Bizzozero, F. Macciardi, D. H. Mathalon, J. M. Ford, S. G. Potkin, J. A. Turner, and V. D. Calhoun, "An ICA with reference approach in identification of genetic variation and associated brain networks.," *Front. Hum. Neurosci.*, vol. 6, p. 21, 2012.
- [11] J. A. Turner, V. D. Calhoun, A. Michael, T. G. M. van Erp, S. Ehrlich, J. M. Segall, R. L. Gollub, J. Csernansky, S. G. Potkin, B.-C. Ho, J. Bustillo, S. C. Schulz, Fbirn, and L. Wang, "Heritability of Multivariate Gray Matter Measures in Schizophrenia," *Twin Res. Hum. Genet.*, vol. 15, no. 03, pp. 324–335, 2012.
- [12] S. M. Plis, J. Sui, T. Lane, S. Roy, V. P. Clark, V. K. Potluru, R. J. Huster, A. Michael, S. R. Sponheim, M. P. Weisend, and V. D. Calhoun, "High-order interactions observed in multi-task intrinsic networks are dominant indicators of aberrant brain function in schizophrenia," *Neuroimage*, vol. 102, pp. 35–48, 2013.

- [13] A. M. Michael, M. Anderson, R. L. Miller, Tulay Adali, and V. D. Calhoun, "Preserving subject variability in group fMRI analysis: performance evaluation of GICA vs. IVA," *Front. Syst. Neurosci.*, vol. 8, p. 106, 2014.
- [14] D. W. Evans, S. M. Lazar, K. B. Boomer, A. D. Mitchel, A. M. Michael, and G. J. Moore, "Social Cognition and Brain Morphology: Implications for Developmental Brain Dysfunction," *Brain Imaging Behav.*, 2014.
- [15] M. S. Çetin, S. Khullar, E. Damaraju, A. M. Michael, S. A. Baum, and V. D. Calhoun, "Enhanced disease characterization through multi network functional normalization in fMRI," *Front. Neurosci.*, vol. 9, no. March, pp. 1–15, 2015.
- [16] C. N. Gupta, J. Chen, J. Liu, E. Damaraju, C. Wright, N. Perrone-bizzozero, G. Pearlson, L. Luo, A. M. Michael, J. a Turner, and V. D. Calhoun, "Genetic Markers of White Matter Integrity in Schizophrenia Revealed by Parallel ICA studies," *Front. in Human Neurosci* vol. 9, no. March, p. 103472, 2015.
- [17] S. Gopal, R. L. Miller, A. M. Michael, T. Adali, M. Cetin, S. Rachakonda, ... & Calhoun, V. D. (2015). "Spatial Variance in Resting fMRI Networks of Schizophrenia Patients: An Independent Vector Analysis". *Schizophrenia bulletin*, sbv085.
- [18] Miller, R. L., Erhardt, E. B., Allen, E. A., Michael, A. M., Turner, J. A., Bustillo, J., ... & Calhoun, V. D. (2015). "Multidimensional frequency domain analysis of full-volume fMRI reveals significant effects of age, gender and mental illness on the spatiotemporal organization of resting-state brain activity". *Frontiers in Neuroscience*, 9, 203.
- [19] Dougherty, C., Evans, D., Myers, S., Moore, G., Michael, A.M. (2015). A comparison of structural brain imaging findings in autism spectrum disorder and attention-deficit hyperactivity disorder". *In press Neuropsychology Review*
- [20] Katuwal, G.J., Baum, S.A., Cahill, N.D., Michael, A.M. (2016) "Divide and conquer: sub-grouping of ASD improves ASD detection based on brain morphometry", PLoS ONE

Peer Reviewed Journals (in review / in preparation)

- [1] Michael, A.M., Dougherty, C.C., Evans, D.W., Moreno-De-Luca, A., Moore, G.J. (in review). "Brain/Behavior Shifts and Associations in 16p11.2 De Novo Deletions Compared to Non-Carrier Siblings"
- [2] Dougherty, C.C, Evans,D.W., Katuwal, G.J., Michael, A.M. (in review). "Asymmetry of fusiform structure in Autism Spectrum Disorder: trajectory and association with symptom severity"



- [3] Evans, D.W., Michael, A.M., Buirkle, J., Lusk, L.G., Moore, G.J. (in review). "Neural Substrates of Schizophrenia-Spectrum Behavior in Typically-Developing Children: Further Evidence of a Normal-Pathological Continuum"
- [4] Evans, D.W., Lusk, L.G., Slanea, M.M., Michael, A.M., (in review). "Dimensional Assessment of Psychiatric Traits in Children and their Parents: Validation on a Representative U.S. Sample"
- [5] Katuwal, G.J., Baum, S.A., Michael, A.M. (in review). "Inter-method Discrepancy Drives Inconsistent Findings in Neuroimaging: Evidence through Brain Volume in Autism"
- [6] Michael, A.M. Evans, E., Moore, G.J. (in review). "Influence of Group on Individual Subject Maps in SPM Voxel Based Morphometry DARTEL Registration"
- [7] Troiani, V. Dougherty, C.C., Michael, A.M., Olson, I.R. (in review). "Characterization of Face-Selective Patches in orbitofrontal cortex"
- [8] Zhang, C., Baum, S.A., Cahill, N.D., Michael, A.M. (in preparation). "Sex and Age Effects of Functional Connectivity in Early Adulthood"
- [9] Michael, A.M., Zhang, C. (in preparation). "Resting state fMRI Networks through an advanced Mutual Information algorithm"

Peer Reviewed Conferences Proceedings / Abstracts

- [1] Michael, A.M., Baum, S.A., O'Dea, C. "A PSF Deconvolution Algorithm for Quasar Images" Astronomical Data Analysis Software and Systems, Astronomical Society of the Pacific, Tucson, AZ, October 2006 (Oral Presentation)
- [2] Jing, S., Michael, A.M., Calhoun, V.D. "A constrained coefficient ICA algorithm for group difference enhancement", IEEE ICASSP, Las Vegas, NV, March 2008
- [3] Michael, A.M., Fries, J.F., Baum, S.A., Andreasen, N.C., Calhoun, V.D., "A Method to Analyze Correlations between Multiple Brain Imaging Tasks to Characterize Schizophrenia," IEEE SSIAI, Santa Fe, NM, March 2008 (Oral Presentation)
- [4] Michael, A.M., Calhoun, V.D., Andreasen, N.C., Baum, S.A. "A Method to Classify Schizophrenia Using Inter-Task Spatial Correlations of Functional Brain Images", IEEE EMBS, Vancouver, BC, August 2008 (Oral Presentation)
- [5] Michael, A.M., Calhoun, V.D., Baum, S.A., Caprihan, A. "Correlations of Diffusion Tensor Imaging Values and Symptom Scores in Patients with Schizophrenia", in IEEE EMBS, Vancouver, BC, August 2008 (Oral Presentation)
- [6] Michael, A.M., Baum, S.A., White, T., Demirci, O., Andreasen, N.C., Segall, J.M., Jung, R.E., Pearlson, G., Clark, V., Gollub, R.L., Schulz, S.C., Roffman, J.L., Lim, K.O., Ho, B.C.,

Bockholt, H.J., Calhoun, V.D. “Fusion of Structural-Functional Brain Images Reveals Differences in Schizophrenia in a Multi Site Study”, ISMRM, Hawaii, April 2009

- [7] Michael, A.M., Calhoun, V.D., Caprihan, A. “Application of Canonical Correlation Analysis to Identify Regions of Significant Correlation between Symptom Scores and DTI Measures in Schizophrenia”, ISMRM, Hawaii, April 2009
- [8] Michael, A.M., Calhoun, V.D. “A Technique to Detect Outliers Automatically in Multi-Site fMRI Data”, ISMRM, Hawaii, April 2009
- [9] Michael, A.M., Baum, S.A., White, T., Demirci, O., Andreasen, N.C., Segall, J.M., Jung, R.E., Pearlson, G., Clark, V., Gollub, R.L., Schulz, S.C., Roffman, J.L., Lim, K.O., Ho, B.C., Bockholt, H.J., Calhoun, V.D. “Inter-voxel Cross-Correlation Reveals Aberrantly Low Structural and Functional Linkage in Schizophrenia in a Multi-Site Study”, OHBM, San Francisco, August 2009
- [10] Sakoglu, U., Michael, A.M., & Calhoun, V.D. ”Classification of schizophrenia patients vs healthy controls based on dynamic functional network connectivity”. OHBM, San Francisco, August 2009
- [11] Michael, A.M., Calhoun, V.D., Caprihan, A. “An Analysis of using Diffusion Tensor Imaging Measures and Symptom Scores to Classify Patients with Schizophrenia”, OHBM, San Francisco, August 2009
- [12] Michael, A.M., King, M.D., Calhoun, V.D., “A Method to Explore and Reduce Gray Matter–Function Whole Brain Correlations: Differences in Schizophrenia”, Neural Computation II, Los Alamos National Labs, NM, February 2011
- [13] Khullar, S., Michael, A.M., Correa, N., Adali, T., Baum, S., and Calhoun, V., “Wavelet-based denoising and independent component analysis for improving multi-group inference in fMRI data”, in Proc. of IEEE Intl. Symp. Biomed. Imag., Chicago, IL, March 2011.
- [14] Khullar, S., Michael, A.M., Baum, S.A., Correa, N., Adali, T., Calhoun, V.D., “A new metric to measure shape differences in fMRI activity”, in SPIE Medical Imaging, Orlando, FL, February 2011
- [15] Khullar, S., Michael, A.M., Baum, S.A., Correa, N., Adali, T., Calhoun, V.D. “Improved 3-D Wavelet-based De-noising of fMRI data”, in SPIE Medical Imaging, Orlando, FL, February 2011

- [16] Michael, A.M., King, M.D., Calhoun, V.D., “Gray Matter Concentration and Functional Activation for a Working Memory Task Shows Inverse Correlation in Schizophrenia”, ICOSR, Colorado Springs, CO, April 2011
- [17] Michael, A.M., King, M.D., Ehrlich, S., Pearlson, G., White, T., Holt, D., Andreasen, N.C., Sakoglu, U., Ho, B.C., Schulz, C.S., Calhoun, V.D. Calhoun, V.D., “A Method to Identify Brain Clusters with Altered Structure-Function Correlation between Two Groups”, OHBM, Quebec City, June 2011.
- [18] Ghassemi, M., Liu, J., Boutte, D., Wells, S., Perrone-Bizzozero, N., Macciardi, F., Mathalon, D., Ford, J., Potkin, S., Turner, J., Calhoun, V.D., Michael, A.M., “Identification of Brain Functional Networks Linked to Genetic Variation: A Constrained ICA ApproachA”, OHBM, Quebec City, June 2011.
- [19] Khullar, S., Michael, A.M., Cahill, N., Baum, S.A., Calhoun, V.D. “Functional normalization through ICA (ICA-fNORM) with intrinsic networks as functional templates”, OHBM, Quebec City, June 2011.
- [20] Michael, A.M., Konda, S., Allen, E., Plis, S., Caprihan. A., Calhoun, V.D., “A Better Approach to Identify Non-Linear Associations in Datasets”, OHBM, Beijing, June 2012
- [21] Plis, S., Roy, S., Potluru, V., Lane, T., Michael, A.M., Clark, V., Weisend, M., Calhoun, V.D., “Capturing high-order interactions in neuroimaging data”, OHBM, Beijing, June 2012 (Oral Presentation)
- [22] Michael, A.M., Miller, R., Anderson, M., Adali, T., Calhoun, V.D., “Capturing Inter-Subject Variability in fMRI Networks: A Performance Evaluation of ICA and IVA”, OHBM, Seattle, June 2013
- [23] Gopal, S., Calhoun, V.D., Caprihan, A., Michael, A.M., Turner, J., Baum, S.A., Abbott, C., “Fusion of DTI and fMRI with Joint-ICA differentiates remitters versus non-remitters for ECT”, OHBM, Seattle, June 2013
- [24] Miller, R., Erhardt, E., Allen, E., Michael, A.M., et al., “4-D Fourier Analysis of Whole-Brain Resting fMRI Distinguishes Schizophrenia Patients from Controls”, OHBM, Seattle, June 2014
- [25] Gopal, S., Miller, R., Michael, A.M., Adali, T., Baum, S.A., Calhoun, “V.D. A study of spatial variation in fMRI brain networks via independent vector analysis: Application to schizophrenia”, Pattern Recognition in Neuroimaging, Tubingen, June 2014 (Oral Presentation)

- [26] Cota, N., Chen, J., Turner, J., Perrone-Bizzozero, N., Pearlson, G., Luo, L., Damaraju, E., Michael, A.M., Calhoun, V.D., “Genetic Markers of White Matter Integrity in Schizophrenia Revealed by Parallel ICA”, OHBM, Hamburg, June 2014
- [27] Cetin, M., Khullar, S., Michael, A.M., Baum, S.A., Calhoun, V.D., “Enhanced disease biomarkers through multi network Functional normalization in fMRI” , OHBM, Hamburg, June 2014
- [28] Gopal, S., Michael, A.M., Miller, R., Cetin, M., Rachakonda, S., Baum, S.A., Calhoun, V.D., “Enhanced disease biomarkers through multi network Functional normalization in fMRI” , OHBM, Hamburg, June 2014
- [29] Michael, A.M., Anderson, M., Miller, R., Adalı, T., Calhoun, V.D., “Application of independent vector analysis for resting state fMRI can better preserve subject specific features”, Resting State Brain Connectivity, Boston, September 2014
- [30] Michael, A.M., Katuwal, G.J., Cahill, N., Baum, S.A., Moore, G.J., “Challenges of Finding Brain Biomarkers: A Comprehensive Investigation through a Large Autism Dataset”, EMBS BRAIN Grand Challenges, November 2014
- [31] Michael, A.M., Katuwal, G.J., “On the Question of Brain Overgrowth in ASD: An In Depth Methodological Analysis Using the Large ABIDE Dataset”, IMFAR, Salt Lake City, May 2015 (Oral Presentation).
- [32] Katuwal, G.J., Cahill, N., Dougherty, C.C., Evans, E., Baum, S.A., Moore, G.J., Michael, A.M., “Inter-Method Inconsistencies of Brain Volume Estimation and Inter-site Variability in Autism”, OHBM, Honolulu, June 2015
- [33] Katuwal, G.J.; Cahill, N.D.; Baum, S.A.; Michael, A.M., “The predictive power of structural MRI in Autism diagnosis”, EMBS, Milan September 2015

#### Theses

- [1] Michael, A., “Imaging Schizophrenia: Data Fusion Approaches to Characterize and Classify”, Doctoral dissertation, Center for Imaging Science, Rochester Institute of Technology, Rochester, NY, April 2009
- [2] Michael, A., “Circle formation algorithm for autonomous agents with local sensing”, Master’s thesis, Department of Electrical Engineering, Rochester Institute of Technology, Rochester, NY, July 2004

## **PREVIOUS AND CURRENT PROFESSIONAL AFFILIATIONS**

- Institute of Electrical and Electronics Engineers (IEEE)
- IEEE Engineering and Medicine Biological Society (EMBS)
- Organization of Human Brain Mapping (OHBM)
- International Society for Magnetic Resonance in Medicine (ISMRM)
- Society for Imaging Science and Technology (IS&T)

## **AD HOC REVIEWER**

- Journals: Neuroimage, Human Brain Mapping, Neurophysiology and Biological Psychiatry
- Grants: The Health Research Board of Ireland

## **WORKSHOPS ATTENDED**

- Cost Principles, MRN, Albuquerque, NM *(November 2010)*
- Mathematics of Brain Imaging, UCLA, Los Angeles, CA *(July 2008)*
- Functional MRI, MRN, Albuquerque, NM *(February 2008)*
- Multi-Modal Neuroimaging, Harvard-MIT Center for Biomed. Imaging, Boston, MA *(June 2007)*
- Synthesis Imaging (Interferometry), UNM, Albuquerque, NM *(June 2006)*
- Hubble Space Telescope Calibration, Space Telescope Institute, Baltimore, MD *(October 2005)*