BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Mark S. Cohen	Director, MR Functional Activation Imaging Professor, Psychiatry, Neurology, Radiology, Biomedical Physics, Psychology
eRA COMMONS USER NAME (credential, e.g., agency login) Cohen2	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Stanford University, Stanford, CA	B.A.	1979	Human Biology
Massachusetts Institute of Technology		1977-1978	Electrical Engineering
Rockefeller University, New York, New York	Ph.D.	1985	Neurobiology and Behavior

A. Personal Statement

I am a Professor of Psychiatry at UCLA, and have joint appointments also in Neurology, Biomedical Physics, Radiological Sciences, Bioengineering, and Psychology. I am a well-established investigator, and have made meaningful contributions to many areas of neuroscience research including functional imaging, both imaging and EEG technology, cognitive science, and methods of analysis. As should be clear from my current publication list, my most recent work has been focused heavily on methods of statistical analysis of complex and large clinical data sets. I have a long-standing interest in EEG work, multimodal data analysis and disorders of attention, as well has a track record in the study of cognitive decline using imaging. The present project, “Training attentional awareness and control in adult ADHD” falls naturally into this set of core interests, and I am eager to spend time participating in these new studies.

B. Positions and Honors

Positions and Employment

1979 - 1980 Research Assistant, Stanford University, Stanford, CA
1985 - 1988 MR Applications Scientist, Siemens Medical Systems, Inc.
1988 - 1990 Senior Application Scientist, Advanced NMR Systems, Woburn, MA
1990 - 1993 Dir. High Speed Imaging Lab; Tech. Dir., Clinical NMR, MGH-NMR Center, Charlestown, MA
1990 - 1991 Instructor of Radiology, Harvard Medical School, Boston, MA
1992 - 1993 Assistant Professor of Radiology, Harvard Medical School, Boston, MA
1993 - 2001 Associate Professor of Neurology & Radiological Sciences, UCLA Medical School
2001- Professor of Psychiatry, Biomedical Physics, Neurology & Radiology, UCLA Med. School
2004- Professor of Psychology, UCLA College of Arts and Sciences
2005- Director, UCLA/Semel Neuroimaging Training Program
2009- Biomedical Engineering, Field Chair in Image Acquisition and Analysis

Other Experience and Professional Memberships

1994 - 1997 Board of Directors; International Society for Magnetic Resonance in Medicine
1994 - 1997 Chairman, Education Committee; Society of Magnetic Resonance
1993 - 1998 Associate Editor; Journal of Magnetic Resonance Imaging
1993 - 1997 Board of Directors; Society for Magnetic Resonance Imaging
2002- Board of Directors, Institute for Magnetic Resonance Safety, Education and Research
2012 UCLA Postdoctoral Mentor award

C. Selected Peer-Reviewed Publications

1. A Lenartowicz, GV Simpson, CM Haber and **MS Cohen**, "*Neurophysiological signals of ignoring and attending are separable, and related to performance during sustained inter-sensory attention.*" Journal of Cognitive Neuroscience. 2014 (in press).
2. H Xia, D Ruan and **MS Cohen**. "*BCG Artifact Removal for Reconstructing Full-scalp EEG inside the MR Scanner.*" in *Pattern Recognition in NeuroImaging*. Philadelphia, PA. 2013
3. A Lenartowicz, GV Simpson and **MS Cohen**, "*Perspective: causes and functional significance of temporal variations in attention control.*" Front Hum Neurosci, **7**: p. 381. 2013. 3719045
4. PK Douglas, E Lau, A Anderson, A Head, W Kerr, M Wollner, D Moyer, W Li, M Durnhofer, J Bramen and **MS Cohen**, "*Single trial decoding of belief decision making from EEG and fMRI data using independent components features.*" Front Hum Neurosci, **7**: p. 392. 2013. 3728485
5. JB Colby, JD Rudie, JA Brown, PK Douglas, **MS Cohen** and Z Shehzad, "*Insights into multimodal imaging classification of ADHD.*" Frontiers in Neuroscience. 2012.
6. WT Kerr, A Anderson, EP Lau, AY Cho, H Xia, J Bramen, PK Douglas, ES Braun, JM Stern and **MS Cohen**, "*Automated diagnosis of epilepsy using EEG power spectrum.*" Epilepsia. 2012.
7. PO Harvey, J Lee, **MS Cohen**, SA Engel, DC Glahn, KH Nuechterlein, JK Wynn and MF Green, "*Altered dynamic coupling of lateral occipital complex during visual perception in schizophrenia.*" NeuroImage, **55**(3): p. 1219-1226. 2011. 3049854
8. D Han, A Anderson, M Turk and **MS Cohen**, "*HMM-based Temporal Pattern Modeling of Brain States in Smoke Rehabilitation using fMRI.*" Neural Information Processing Systems (NIPS): p. 139. 2012.
9. A Anderson, JS Labus, EP Vianna, EA Mayer and **MS Cohen**, "*Common component classification: What can we learn from machine learning?*" NeuroImage, **56**(2): p. 517-524. 2011. 2966513
10. E Martinez-Montes, PA Valdes-Sosa, F Miwakeichi, RI Goldman and **MS Cohen**, "*Concurrent EEG/fMRI analysis by multiway Partial Least Squares.*" NeuroImage, **22**(3): p. 1023-1034. 2004.
11. **MS Cohen**, "*Method and apparatus for reducing contamination of an electrical signal*, USPTO, Editor. The Regents of the University of California (Oakland, CA, US) : United States of America. 2003. PMCID
12. W Kerr, A Anderson, H XIA, E Braun, E Lau, A Cho and **MS Cohen**, "*Parameter selection in Mutual Information-Based Feature Selection in Automated Diagnosis of Multiple Epilepsies using Scalp EEG.*" PRNI. 2013.
13. DS Rivera, **MS Cohen**, WG Clark, AC Chu, RL Nunnally, J Smith, D Mills and JW Judy, "*An implantable RF solenoid for magnetic resonance microscopy and microspectroscopy.*" IEEE Transactions in Biomedical Engineering, **59**(8): p. 2118-2125. 2012.
14. A Anderson, D Han, PK Douglas, J Bramen and **MS Cohen**, "*Real-time functional MRI Classification of Brain States using Markov-SVM Hybrid Models: Peering inside the rt-fMRI black box.*" Neural Information Processing Systems (NIPS). 2011.
15. MF Green, J Lee, **MS Cohen**, SA Engel, AS Korb, KH Nuechterlein, JK Wynn and DC Glahn, "*Functional neuroanatomy of visual masking deficits in schizophrenia.*" Archives of General Psychiatry, **66**(12): p. 1295-1303. 2009. 2907419

D. Research Support

ACTIVE

6 R33 DA026109-06 (Cohen) 09/25/2008 – 06/30/2014 (NCTE)
NIH/NIDA
Real-Time Automated Detection of Craving States with fMRI and EEG
The goal of this project is to develop, characterize and validate a method of real-time detection of cognitive states relevant to the study of drug abuse using concurrent electrophysiological recordings, first to enhance the state discriminations and, later, to serve potentially as a proxy for the neuroimaging brain-state data.

1R21MH096239 01A1 (Cohen) 06/11/2012 – 05/31/2014
NIH/NIMH

Understanding attention-control across functional systems and temporal scales
By concurrent recording of instantaneous electrical activity (EEG) and slower fluctuations in regional metabolism during a variety of attentionally demanding tasks with multimodal distractors, this project will help to improve our understanding of the interactions between brain mechanisms that allows is to ignore distractions and to sustain attention for extended periods.

5 T90 DA22768-07 (Cohen) 09/1/2011 - 08/31/2016
NIH
Comprehensive training in Neuroimaging Fundamentals and Applications
The major goal of this study is to provide two years of training to graduate students in the fundamentals and applications of neuroimaging. Students in the NITP complete a year of graduate training in the Neurosciences, including fundamentals of Neuroanatomy, Systems Neuroscience, Neurophysiology and/or Cognitive Neuroscience, followed by a second year of graduate training which entails an intensive program in the tools of neuroimaging, including acquisition, data processing, analysis and experimental design.

R01 MH095878 Green (PI) 07/01/2012 - 06/30/2017
NIMH
Visual Tuning and Performance in Schizophrenia and Bipolar Disorder
The proposed study will recruit 90 SZ patients, 90 BD patients and 90 healthy controls that will be group matched on key demographic variables. The subjects will participate in perceptual performance, electrophysiological (EEG), cognition, and functional magnetic resonance imaging (fMRI) procedures to address the following three aims: 1) To examine visual neural tuning in SZ using specialized EEG and fMRI methods; 2) To examine visual neural tuning cross-diagnostically among SZ, BD, and healthy controls with specialized EEG and fMRI methods; and 3) To examine the implications of visual tuning deficits in SZ, BD, and healthy controls for perceptual and higher-level cognitive domains

2P50 HD055784:06 (Bookheimer) 07/1/2007-06/31/2017
NIH/NICHHD
Biomarkers of Developmental Trajectories and Treatment in ASD
This is a renewal application for the UCLA Autism Center of Excellence. The UCLA Autism Center of Excellence is dedicated to identifying the causes of autism, discovering how risk factors translate into abnormal brain development, developing and validating novel interventions, and targeting the core deficits to change trajectories and outcomes in individuals with autism spectrum disorder.
Role: Project 4 Investigator

1R01MH084955 01-A1 (Altshuler) 7/1/09 – 6/30/14
NIMH
Mapping Brain Structure to Function in Euthymic Subjects with Bipolar Disorder
Goal: To compare brain functional deficits in persons with bipolar disorder (observed during the performance of neuropsychological tasks during functional MRI) to gray and white matter volume data obtained from structural MRI.

5R01HD061504-03 (Asarnow) 04/09/10 – 03/31/15
NICHD
Reconnection of Neural Networks and Cognitive Recovery After Pediatric TBI
The study will explore the structure and function of brain systems that are particularly vulnerable to white matter disruptions caused by traumatic brain injury. By explicating mechanisms that underlie naturally-occurring white matter injury and repair, the proposed project will identify potential new targets for interventions designed to accelerate the process of neurocognitive recovery.

WM Keck Foundation (Weiss, PI) 1/1/2013-12/30/2014
Leveraging Sparsity

Our goal is to leverage mathematical advances to transform the way imaging and related data are acquired, analyzed, and understood. The result will be richer, more meaningful, data through significant changes in how experiments are currently conducted and, in so doing, advancing the science of imaging. We propose critical tests of the advantages of sparsification using two diverse sets of experiments, in which leading mathematicians work closely with top imaging scientists. If these test cases are successful, the advances will apply broadly across many fields involving imaging. We are placed uniquely to develop the theory, to carry out the tests, to generalize the results, and to disseminate the tools we create.

1 R01 HD073983-01 Pelphrey (PI, Yale) 7/1/12-6/30/17
NIMH
In this project, we will pool together our interdisciplinary expertise and recruitment efforts across four leading Centers for the study of autism spectrum disorder (Yale, UCLA, Harvard, and University of Washington) in an effort to: 1) Identify difference between boys and girls in brain mechanisms underlying autism spectrum disorder; 2) Search for relationships between brain mechanisms and underlying genetic differences; 3) discover the brain and genetic mechanisms underlying heterogeneity in the presentation and severity of autism spectrum disorder in boys and girls.
Role: Acquisition Site Investigator

8 R21 EB015895-03 (Hahn) 9/15/2010 – 6/30/2014 (NCTE)
NIBIB
A new Ultra-low field in-vivo EPR technology for biomedical applications
Using superconducting quantum interference detection in a low magnetic field we are performing electron spin resonance imaging experiments at energy levels compatible with in-vivo human imaging, a technique heretofore impossible. EPR has the advantage of superior chemical resolution and sensitivity.

Completed Research Support
Korean Basic Science Institute (Cohen, Co-PI) 03/01/09 -12/31/10
Neuroimaging Studies of Hypnotically Induced Deception
Evaluate the validity of functional MRI (fMRI) as a method for the detection of deception, and compare it to the gold standard of polygraphy. Better understand the extent to which false memories may be created that are indistinguishable from true memories. Attempt to detect physiological changes that might differentiate false from true Memories. Study brain changes that occur under hypnosis, especially when the subjects are under hypnosis.
Role: Co-PI