

CURRICULUM VITAE

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EDUCATION

1993	B.Sc., Psychology, Biology emphasis, University of California, Davis
1996	M.A., Psychology, University of British Columbia
2000	Ph.D., Psychology, University of British Columbia

ACADEMIC POSITIONS

2000-01	Assistant Research Professor, Department of Psychiatry, University of British Columbia, Vancouver, British Columbia
2001-07	Director, Clinical Cognitive Neuroscience Laboratory, Olin Neuropsychiatry Research Center, The Institute of Living at Hartford Hospital, Hartford, Connecticut
2001-05	Assistant Clinical Professor, Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut
2005-07	Associate Clinical Professor, Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut
2002-07	Lecturer, Department of Psychology, Yale University
2007-	Associate Professor (with tenure), Department of Psychology, University of New Mexico, Albuquerque, New Mexico
2007-	Associate Professor, Department of Neuroscience, University of New Mexico School of Medicine, Albuquerque, New Mexico
2007-	Director, Mobile Imaging Core and Clinical Cognitive Neuroscience, Mental Illness and Neuroscience Discovery (MIND) Institute, Mind Research Network, Albuquerque, New Mexico (www.mrn.org)

HONORS AND AWARDS

1991-93	Dean's Honor List, University of California, Davis
1993	President's Undergraduate Fellowship for honors thesis research, University of California Davis
1996-00	Nobel Laureate Michael Smith Graduate Scholarship, Medical Research Council of Canada, University of British Columbia
1999	McGeer Award for best scientific paper presentation, Department of Psychiatry, University of British Columbia
2000	Category 1 (highest attainable) ranking of doctoral dissertation. University of British Columbia

2000	Necia Elvin Award for early career contributions to schizophrenia research, inaugural recipient. University of British Columbia
2000	Best clinical poster presentation, Neuroscience Graduate student forum, University of British Columbia
2001-03	NARSAD Young Investigator Award
2004-06	NIH Student Loan Repayment Award
2004	Early Career Award - EEG & Clinical Neuroscience Society
2005	Society for Psychophysiological Research (SPR) Award for Distinguished Early Career Contributions to Psychophysiology
2006-08	NIH Student Loan Repayment Award – Competitive Renewal

PROFESSIONAL ACTIVITIES

SOCIETY MEMBERSHIPS AND SERVICE

1993 -	Society for Psychophysiological Research
1993 -	Cognitive Neuroscience Society
1994 -	International Organization of Human Brain Mapping
1995 -	International Society for Magnetic Resonance in Medicine
2005 -	Society for the Scientific Study of Psychopathy (SSSP), Charter Member
2005-07	Web developer for SSSP
2007-	Elected to Board of Directors SSSP
2007-	Neuroethics Society
2008-	Society for Neuroscience
2009-	American Psychological Association

FEDERAL GOVERNMENT AND OTHER ADVISORY PANELS

1999-00	Canada Foundation for Innovation (CFI) grant program
2001	General Electric (GE) Medical Advisory Board Committee Member on functional magnetic resonance imaging (fMRI)
2003	NIH Study Section, Exploratory/Developmental grants in Social Neuroscience
2004	NIH Study Section, Ad hoc member, Language and Communication Disorders (LCOM)
2004	NIDA Special Emphasis Panel, Developing Efficacious Behavioral Therapies for Criminal Justice-Involved Populations.
2005	NIH Study Section, Ad hoc member, Cognitive Neuroscience (COG)
2005	NIH Study Section, Ad hoc member, Adult Psychopathology and Disorders of Aging (APDA).
2005	NIH Study Section, Ad hoc member, Mood Disorders.
2005	NIDA Grant Reviewer for the Imaging - Science Track Award for Research Transition Program (I-START).
2006	NIH Study Section for the Extramural Student Loan Repayment Program
2006	NIH Study Section for the NIH Blueprint initiative: Training in Neuroimaging: Integrating First Principles and Applications (T90)
2007-09	National Science Foundation (NSF) Cognitive Neuroscience Study Section – standing member for 2007-2009.
2007-	Chair, Psychopathy Working Group and Panel Member of the John T. and Catherine D. MacArthur Foundation ‘Law and Neuroscience Project’

(PI: Michael Gazzinaga and Hank Greely).

www.lawandneuroscienceproject.org

- 2008 NIMH Study Section for Conte Centers
 2009 NIDA Study Section on 'Interactions Between Physical Activity and Drug Abuse'
 2010-14 NIH Adult Psychopathology and Disorders of Aging (APDA) Study Section, Charter Member

EDITORIAL POSITIONS

- 2006-07 Associate Editor, *Psychophysiology*

AD HOC REVIEWER

American Journal of Neuroradiology, Assessment, Archives of General Psychiatry, Biological Psychiatry, Biological Psychology, Brain, Cognitive Brain Research, Emotion, Frontiers in Human Neuroscience, Human Brain Mapping, International Journal of Psychophysiology, Journal of Abnormal Psychology, Journal of Cognitive Neuroscience, Nature Neuroscience, NeuroImage, Neuropsychology, NeuroReport, Psychological Assessment, Psychological Science, Psychophysiology, Psychopharmacology, Neuropsychopharmacology, Neuropsychology, Trends in Cognitive Sciences

UNIVERSITY SERVICE (UNM)

- 2007 - Department of Psychology, UNM, Colloquium Committee
 2008 - Department of Psychology, UNM, Graduate Admissions Committee
 2008 - Department of Psychology, UNM, Grant writing workshop for graduate students
 2009 - Department of Psychology, UNM, Web site Committee

TEACHING EXPERIENCE AND EDUCATIONAL WORKSHOPS

- 1993 Research Methods Tutor, Department of Psychology, University of California, Davis
 1993 Laboratory Teaching Assistant for Physiological Psychology, Department of Psychology, University of California, Davis
 1994 - 00 Teaching Assistant for Abnormal Psychology, Introductory Psychology, Personality Psychology, and Biological Psychology, Department of Psychology, University of British Columbia
 2002 Statistical Parametric Mapping for Functional Brain Imaging, Department of Psychology, Yale University (Psychology 755).
 2002 Clinical Cognitive Neuroscience, Department of Psychology, Yale University (Psychology 673a/473a).
 2003, 2005 Neuroimaging Analysis Course, Department of Psychology, Yale University (Psychology 412a/612a).

- 2005 Statistical Parametric Mapping (SPM) Short Course Faculty and local host, Yale University, New Haven, CT.
- 2005-07 fMRI Image Acquisition and Analyses Course, Co-sponsored by the Olin Neuropsychiatry Research Center and Yale University. Faculty lecturer and primary coordinator. With Vince Calhoun, Tom Nichols, and Rik Henson
- 2007 - fMRI Image Acquisition and Analyses Course, Co-sponsored by the Mind Research Network and University of New Mexico. Faculty lecturer and primary coordinator. With Vince Calhoun and Tor Wager.
- 2007 - Three-day training workshop on research and assessment of psychopathy. The Mind Research Network and the University of New Mexico. Primary lecturer and coordinator.
- 2007 Clinical Cognitive Neuroscience Undergraduate/Graduate Seminar, Department of Psychology, University of New Mexico (Psychology 450/650).
- 2008 Diagnostic Interview Training Workshop on Schedule for Affective Disorders and Schizophrenia for School-Aged Children-Present and Lifetime Version (K-SADS-PL). Primary coordinator and lecturer. With Katie Herzig as primary lecturer.
- 2008- Lecturer - Judicial Education Outreach Seminars on Psychopathy (Assessment, Risk Assessment, Treatment, & Neuroscience); Sponsored by the Gruter Institute for Law and Behavioral Research (<http://www.gruterinstitute.org>) and the John T. and Catherine D. MacArthur Foundation 'Law and Neuroscience Project' <http://lawandneuroscienceproject.org>
- 2009- Lecturer - Judicial Education Outreach Seminars on Psychopathy (Assessment, Risk Assessment, Treatment, & Neuroscience) and Functional and Structural Brain Imaging in Forensic and Legal System, Sponsored by ASTAR-The Advanced Science and Technology Adjudication Resource Center, Inc. <http://einshac.org/index.html>

RESEARCH EXPERIENCE & CONSULTING

- 1988-93 Research Laboratory Technician (Work Study position), Department of Anesthesiology, School of Medicine, University of California, Davis
- 1992-94 Post Graduate Researcher to Michael R. Levenson, Ph.D., Human Development & Family Studies, Applied Behavioral Sciences, University of California, Davis
- 1992-94 Research Assistant to Rosemarie Kraft, Ph.D., Applied Behavioral Sciences, University of California, Davis
- 1992-94 Assistant Cetacean Researcher, Marine World Africa USA, Vallejo, CA
- 1993-94 Post-Graduate Researcher to George R. Mangun, Ph.D., Center for Neuroscience, University of California, Davis
- 1995 Graduate Research Assistant to James T. Enns, Ph.D., Department of Psychology, University of British Columbia
- 1996 Psychology Internship, Assistant to Johann Brink, M.D., Regional Health Centre (Pacific), A division of Correctional Services of Canada, Abbotsford, B.C., Canada
- 1994-97 Graduate Research Assistant to Robert D. Hare, Ph.D.

1996-00	Department of Psychology, University of British Columbia Graduate Research Assistant to Peter F. Liddle, Ph.D., M.D.
1997	Department of Psychiatry, University of British Columbia Clinical Psychology Internship, Assistant to Carson Smiley, Ph.D. Regional Health Centre (Pacific), A division of Correctional Services of Canada, Abbotsford, B.C., Canada
1997-01	Clinical Functional Magnetic Resonance Imaging Technician, Department of Radiology, University Hospital, University of British Columbia
1998	Clinical Psychology Internship, Assistant to Carson Smiley, Ph.D. Regional Health Centre (Pacific), A division of Correctional Services of Canada, Abbotsford, B.C., Canada
1999-01	Consultant to Lakshmi Yatham, M.D., Department of Psychiatry, University of British Columbia
2001-02	Consultant to Karen Bolla, Ph.D., Department of Neurology, Psychiatry and Behavioral Services, and Environmental Health Services, Johns Hopkins Bayview Medical Center
2001-02	Consultant to Vince Clark, Ph.D., Functional Brain Imaging Program, University of Connecticut Health Science Center
2002-04	Consultant to Anna Rose Childress, Ph.D., Department of Psychiatry, University of Pennsylvania.
2004-05	Consultant to Lynn Hasher, Ph.D., Chair, Department of Psychology, University of Toronto on purchase of MRI for main campus.
2004-05	Consultant to Robert A. Veselis, M.D., Director, Neuroanesthesiology Research Laboratory, Associate Attending Anesthesiologist, Memorial Sloan-Kettering Cancer Center, Cornell Medical School.
2001-07	Senior Research Scientist, Departments of Psychiatry, Neurosurgery, and Neurology, Institute of Living, Hartford Hospital.
2002-07	Consultant to Vince Clark, Ph.D., Functional Brain Imaging Program, University of New Mexico
2006-08	Consultant to Uma Rao, M.D., Department of Psychiatry, University of Texas, Southwestern.
2006	Consultant to William Burdon, Ph.D., UCLA Integrated Substance Abuse Programs, Criminal Justice Research Group.
2009-10	Consultant to The Ohio State University, Department of Psychology on purchasing MRI for main campus (Chair Richard Petty, Ph.D.). With Vince Calhoun.

STUDENTS/ POSTDOCS/ SCIENTISTS SUPERVISED

Current:

- Eyal Aharoni (2009-current). Received B.A., 2003, University of California, Santa Barbara, Psychology; Ph.D., 2009, University of California, Santa Barbara, Psychology. NRSA Post-Doctoral Fellowship 2010-2012. Role: NRSA mentor and primary post-doctoral supervisor.
- Julie Brovko (2009-current). Received B.A., 2007, University of California, Berkeley. Psychology. Currently Ph.D. candidate in clinical psychology. Role: Primary graduate school advisor.
- Elsa Ermer, Ph.D. (2008-current). Received B.A., 2000, Franklin and Marshall College; M.A., 2002 and Ph.D., 2007, University of California, Santa Barbara. NRSA Post-

Doctoral Fellowship 2010-2012. Role: NRSA mentor and primary post-doctoral supervisor

Lora Cope (2007- current). Received B.S., 2004, The Ohio State University. Graduate student in Cognitive Science, Department of Psychology, University of New Mexico. Role: Primary graduate school advisor.

Carla Harenski, Ph.D., (2006-current). Received Ph.D., 2006, Emory University. NRSA Post-Doctoral Fellowship 2007-2010. Role: NRSA mentor and primary post-doctoral supervisor.

Past: (sample)

Mathew Shane, Ph.D. (2006-2009). Received Ph.D., 2004, University of Toronto. Role: Primary post-doctoral supervisor; NIDA I/START Mentor.

Gillian Munro, Ph.D. (2008-2009). Received B.A. 2002, University College of the Cariboo, M.A. 2004 and Ph.D. 2008, University of Waterloo. Role: Primary post-doctoral supervisor.

Deidre Reis (2006-2009), doctoral student in cognitive psychology, NRSA recipient, Department of Psychology, Yale University, Role: Imaging advisor, dissertation committee.

Michael Stevens, Ph.D., (2002-2009). Received Ph.D. 1999, Department of Psychology, University of Connecticut-Storrs. Appointed junior faculty in the Olin Neuropsychiatry Research Center, 2002-2004. Currently K-awardee 'Neuroimaging Cognition in Adolescent Behavior Disorders' (2004-2009). Role: Primary Advisor; co-mentor on K-Award.

Jana Schaich Borg (2005-2007). Received B.A. Dartmouth College, 2003; Currently NRSA recipient and doctoral student in neuroscience, Stanford University. Role: Primary NRSA mentor and post-graduate mentor 2005-2007.

Elizabeth Stevens (2004-2006). Received B.A., University of California, Los Angeles 2001. Received Ph.D. in Clinical Psychology in 2006, Dissertation Title "Cognitive Style and Adolescent Psychopathy: An Exploratory Investigation", Department of Psychology, Yale University. Role: Primary Graduate School Advisor

Derek Mitchell, Ph.D. (1996-1998), University of British Columbia; Post doc, NIMH Mood Disorders Program, currently faculty University of Western Ontario. Received Ph.D., 2005, Department of Psychology, Institute of Cognitive Neuroscience, University College London. Role: Co-advisor of Undergraduate Honors Thesis.

Sara Johnson, M.D. (1996-1998), University of British Columbia Currently in private practice. Received MD, 2002, University of British Columbia. Role: Primary Advisor of Undergraduate Honors Thesis.

Adrien Desjardins, Ph.D., (1998-2001), University of British Columbia, Ph.D., MIT-Harvard College Biophysics. Role: Primary Advisor of Undergraduate Honors Thesis.

Kristin Laurens, Ph.D. (2000-2001). Received Ph.D. 2003, Neuroscience, University of British Columbia; Post-doctoral Fellow, University of Nottingham 2004-5; Currently faculty, University College London, London UK. Role: Co-mentor on dissertation.

Athena Vouloumanos, Ph.D. (1999-2000). Received Ph.D., 2003, Department of Psychology, University of British Columbia. Currently Assistant Professor McGill University, Montreal, CA. Role: Primary mentor on fMRI training

- Alan Bates, Ph.D. (1998-2000). Received Ph.D., University of Nottingham, 2004; Currently medical student, University of British Columbia. Role: Primary mentor on undergraduate training in fMRI and ERPs.
- Adrianna Mendrek, Ph.D. (2000-2001). Received Ph.D., 2002, Department of Psychology, University of British Columbia. Currently, Research Professor, University of Montreal, Montreal, CA. Role: Co-mentor on doctoral dissertation.
- Timothy O'Keefe, B.S. (2002-2004). Currently research trainee, Brown University. Role: Primary supervisor of post-graduate training period.
- Kim Celone, B.S. (2002-2004). Currently doctoral candidate Clinical Psychology, Boston University, 2005. Role: Primary supervisor of post-graduate training period.
- Matthew Johnson, B.A. (2003-2005). Currently doctoral candidate Neuroscience, Yale University. Role: Co-supervisor of post-graduate training period.
- Joseph Bates (2004-2005), Masters student in cognitive science, Department of Psychology, Yale University. Role: Primary Advisor
- Valentina Gumenyuk, Ph.D. (2004-2005). Received Ph.D., 2004, Cognitive Brain Research Unit, Department of Psychology, University of Helsinki (Supervisor, Risto Naatanen). Currently, post-doctoral fellow (part-time), Olin Neuropsychiatry Research Center, Institute of Living, Hartford, CT. Role: Primary Post-doctoral supervisor.
- Heather Gordon, Ph.D. (2004-2005). Received Ph.D., Cognitive Psychology, Department of Psychology and Brain Sciences, Dartmouth College. Postdoctoral fellow (part time), Olin Neuropsychiatry Research Center, Institute of Living, Hartford, CT. Role: Adjunct Advisor of Doctoral Dissertation.

GRANT HISTORY**FEDERAL GRANTS – ACTIVE**

NIDA; 1R01DA026505-01A1 (PI: Kiehl) 9/01/09 – 5/31/14 20% or 2.4
Socio-moral processing in psychopathy and substance abuse \$424,868/yr direct costs;
 \$3,436,621 total costs

To use functional imaging to elucidate and characterize the functional neuroanatomy of processing of moral stimuli for linguistic and picture stimuli in psychopathy and substance abuse

Role: Primary Investigator

NIMH/NIDA; 1R01MH085010-01A1 (PI: Kiehl) 07/17/09–04/30/14 20% or 2.4
The cognitive neuroscience of female psychopathy \$396,653/yr direct costs;
 \$3,360,119 total costs

To test the paralimbic dysfunction hypothesis of psychopathy in female offenders using event-related potentials and functional magnetic resonance imaging

Role: Primary Investigator

NIMH; 1 R01 MH072681-01 (PI: Kiehl) 07/01/05-06/30/10 10% or 1.2
Abnormal functional connectivity in psychosis \$212,500/yr direct costs;
 \$1,542,750 total costs

To use functional imaging measures to differentially diagnose schizophrenia from psychotic bipolar illness.

Role: Primary Investigator

NIMH; 1 R01 MH071896-01 (PI: Kiehl) 02/01/06-12/30/10 14% or 1.68
Neurocognitive assessment of 'Callous' Conduct Disordered youth \$212,500/yr direct costs;
 \$1,815,000 total costs

To use ERP and fMRI measures to test the hypothesis that youth with Callous Conduct Disorder show abnormalities in the paralimbic system

Role: Primary Investigator

NIDA; 1 R01 DA020870-01 (PI: Kiehl) 10/01/05-09/30/10 10% or 1.2
Neurocognitive changes associated with behavioral treatment in cocaine abusers \$388,096/yr direct costs;
 \$2,942,529 total costs

To examine functional and structural changes associated with three cognitive behavioral treatment protocols in cocaine abusers.

Role: Primary Investigator

NIDA/NIH 1R21DA027149-01 (MPIs: Shane, Posse, Kiehl) 08/15/09 - 07/31/11 5% or 0.6
Using rt-fMRI to modulate neural responses to drug and nondrug rewards in cocaine abusers \$469,334

To test the feasibility of real-time functional magnetic resonance imaging (rt-fMRI) aided neurofeedback for facilitating voluntary modulation of reward-related neural activity in incarcerated adolescent cocaine abusers.

Role: Co-Primary Investigator

NIH/NIDA 1R01DA026932-01 (PI: Shane) 06/01/10-05/30/15 5% or .6
Error detection and error awareness in incarcerated cocaine dependent individuals \$2,084,576

 Role: Co-Investigator

NIDA: 1 R21DA029464-01 (MPsI: Shane, Posse. **Kiehl**) 10/01/09 – 9/30/12 10% or 1.2
Using Real-Time MRI to facilitate neuromodulation to drug-cues in adolescent substance abuse \$671,560 total

To characterize the extent to which rt-fMRI real-time neurofeedback can facilitate adolescent cocaine abusers' ability to modulate their neural response to drug- and nondrug-related reward in NAc and/or ACC.

Role: Co-Primary Investigator

NIBIB 2R01 EB000840 (PI: Calhoun) 1/1/08-12/31/12 5% or .6
A unified framework for flexible brain image analysis \$344,000/yr

Extend our semi-blind ICA (sbICA) framework to provide a general framework for incorporating prior information from multiple spatial and temporal sources; validate the algorithms including using fMRI data collected on multiple days from a variety of paradigms; develop a decision mechanism for selecting the best combination of methods given a particular problem; focus upon statistical inference and develop a framework for integrating the relevant functional components; and apply our methods to data collected during four well-studied paradigms in healthy controls and patients with schizophrenia

Role: Co-Investigator

NIBIB/NIH R01EB005846 (PI: Calhoun) 8/1/05 - 3/31/13 5% or .6
Informed data-driven fusion of behavior, brain function, and genes \$360,000/yr

To develop data fusion approaches for fMRI, EEG, behavior and whole genome SNP array & CNV data.

Role: Co-Investigator

NIBIB/NIMH; 1R01EB006841 (PI: Calhoun) 04/01/07-03/31/11 10% or 1.2
Multivariate methods for identifying multi-task/multimodal brain imaging biomarkers \$220,000/yr

To develop methods, based upon independent component analysis, for joint-statistical analysis of multi-task and multimodal brain data (functional MRI, DTI, structural MRI) in order to make inferences about brain connectivity, to apply these methods to patients with schizophrenia and healthy controls, and to develop, and make publicly available, an online web-enable database implementing our joint ICA approach.

Role: Co-Investigator

NIMH 2 R01 R3743775-14 (PI: Pearlson) 03/01/05-02/28/09 5% or .6
Quantitative neuroimaging in psychosis \$250,000

Investigates circuit-wide abnormalities in schizophrenia using functional and structural brain MRI in schizophrenia and healthy controls.

Role: Co-Investigator

NIH/NCRR 1P20 RR021938-01A1 (Calhoun) 9/8/08-6/30/13 5% or .6
COBRE: Neural mechanisms of schizophrenia: Use of multiple tools to examine dysfunctions in neural integration \$1,725,415/yr

Examines functional and anatomical connectivity in schizophrenia using multimodal neuroimaging analyses

Role: Co-Investigator

NIMH: 1 R01 MH074934-01 (PI: Tolin) 05/01/06-04/30/10 consultant
Neural mechanisms of compulsive hoarding \$200,000

To use functional brain imaging to assess error processing dysfunction in compulsive hoarding syndrome, obsessive-compulsive disorder, and anxious control groups.

Role: Co-Investigator

NIDA: RO1 DA020709. (PI: Pearlson) 09/01/06-10/30/11 2% or 0.24
Reward, impulsivity and cocaine Addiction: fMRI studies \$332,688

Studies 240 adult subjects who are either currently cocaine dependent, formerly cocaine dependent but currently abstinent and matched controls. The subjects will be characterized on scales, interviews and computer tasks assessing impulsivity. With functional MRI two distinct tasks will examine reward deficit and a response inhibition, to dissect the underlying functional anatomy of the relevant circuits.

Role: Co-Investigator

NIAAA; 1 R01 AA017390-01 (PI: Bryan) 10/01/07-09/30/12 8% or .96
HIV prevention with adolescents: Neurocognitive deficits and treatment response \$395,531

This research is designed to understand the genetic and neurocognitive predispositions that contribute to sexual risk behaviors that place criminally-involved adolescents at high risk of unintended pregnancy and STDs including HIV/AIDS. The findings will help us to design better interventions to decrease alcohol-related sexual risk behavior in this population of highly vulnerable young people.

Role: Co-Investigator

NIMH: RO1 MH077945-01 (PI: Pearlson) 12/01/07-11/30/12 2.5% or 0.3
Bipolar & schizophrenia consortium for parsing endophenotypes \$670,295/yr; \$3,936,632 total

To examine electrophysiologic, oculomotor, cognitive and structural brain changes and genotypes associated with psychotic bipolar illness and schizophrenia in patients and unaffected first-degree relatives. This is a 5-site collaborative linked investigation.

Role: Co-Investigator

FEDERAL GRANTS – PENDING

NSF (PI: Kiehl) 8/01/10 - 7/30/13 15% or 1.8
The cognitive neuroscience of three functional domains of disgust \$850,342 total

Functional neuroimaging techniques are used to test the hypothesis that there are at least three overlapping and distinct neurocognitive domains of disgust: pathogen, incest avoidance and morality.

Role: Primary Investigator

NIDA: 1R01DA026964-01A1 pending (PI: Kiehl) 04/01/10 - 03/31/15 20% or 2.4
Action monitoring, action observation and dopamine genes as predictors of substance abuse \$3,883,434 total

To utilize multimodal imaging techniques (ERP/fMRI) to characterize the integrity of neural circuits engaged in action-monitoring in incarcerated drug-abusers

Role: Primary Investigator

NIH: R01 MH087525-01 pending (PI: Decety) 07/01/10 - 03/30/14 10% or 1.2
Neurological mechanisms of empathetic and emotional processes in individuals who vary in psychopathic traits 1,381,382 total

Develop an integrative understanding of the functional neuroanatomy of empathy dysfunctions in psychopathic individuals.

Role: Co-Investigator

FEDERAL GRANTS – PAST

NSF; 1R01EB005846-01 (PI: Calhoun)	08/01/05-07/31/08	6% or 0.72
<i>Collaborative Research: Spatiotemporal fusion of fMRI, EEG, and genetic data using Independent Component Analysis</i>		
\$210,000		
To develop data fusion approaches for fMRI, EEG, and gene SNP array data with application to healthy controls and patients with schizophrenia		
Role: Co-Investigator		

NIBIB; 1 R01 EB 000840-01 (PI: Calhoun)	04/01/03-04/01/08	8% or 0.96
<i>Multi-group semi-blind ICA of fMRI</i>		
\$250,000		
To develop, evaluate the performance of, and optimize semi-blind independent component analysis for the analysis of multi-group functional magnetic resonance imaging data and to use study data previously collected from patients with schizophrenia and healthy controls performing an auditory oddball task.		
Role: Co-Investigator		

NIDA: 1 R03 (PI: Shane)	1/01/08-12/31/08	5% or .6
<i>Error detection and error awareness in incarcerated cocaine dependent individuals</i>		
\$237,990		
To investigate integrity of error monitoring systems in incarcerated cocaine dependent individuals, with specific consideration of conscious awareness of committed errors.		
Role: Co-Investigator		

K23 MH070036-01 Stevens (PI)	08/01/04 -07/01/09	No salary
<i>Neuroimaging cognition in adolescent behavior disorders</i>		
\$142,250		
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		

NIMH; 1 R01 MH070539-01 (PI: Kiehl)	12/01/04-11/30/08	10% or 1.2
<i>ERP and fMRI of emotion and cognition in psychopathy</i>		
\$202,000/yr direct costs;		
\$1,192,320 total costs		
To test the paralimbic dysfunction hypothesis of adult psychopathy using event-related potentials and functional magnetic resonance imaging.		
Role: Primary Investigator		

NIDA; RO1 DA 11426 (PI: Bolla).	10/01/98-09/30/02	Consultant
<i>Cocaine abuse and limbic prefrontal function</i>		
\$738,423		
Examination of prefrontal function in cocaine abusers using positron emission tomography.		
Role: Consultant		

ADDITIONAL NON-FEDERAL FUNDING – ACTIVE

MacArthur Foundation Law and Neuroscience Project (Part 2)	1/1/2009-6/31/2010	
<i>Analysis of Moral Judgment in Psychopaths, Punishment Decisions by Psychopaths, Brain Structure in Psychopaths and Addicts (sMRI), and Dehumanization in Psychopaths via fMRI imaging and clinical assessment.</i>		
\$534,900		
Role: Primary Investigator		

MacArthur Foundation Law and Neuroscience Project (Part 1) <i>Mapping of brain activity to chart connections among brain region and activities to fully understand brain functions and disorders.</i>	7/1/2008-6/30/09	\$150,000
Role: Primary Investigator		

ADDITIONAL NON-FEDERAL FUNDING - PAST

National Alliance on Research in Schizophrenia and Depression (NARSAD) (PI: Kiehl) <i>Hemodynamic assesment of neurocognitive remediation in schizophrenia.</i>	08/01/01-07/31/03	No salary \$60,000
Young Investigator Award to assess changes in attention and working memory in schizophrenia as assessed with fMRI following cognitive remediation.		
Role: Primary Investigator		
Mentors: Drs. John Krystal and Bruce Wexler, Yale University		

Institute of Living Open Grant Competition Award (PI: Stevens) <i>Response inhibition in Attention-Deficit/Hyperactivity Disorder</i>	07/01/04-06/30/06	No salary \$65,000
Double-blind placebo study of the effects of stimulant medication on response inhibition processes in ADHD.		
Role: Co-Investigator		

Institute of Living Open Grant Competition Award (PI: Stevens) <i>Neuropsychology and DTI of Traumatic Brain Injury</i>	07/01/04-06/30/06	No salary \$75,000
<i>Test-retest study examining functional and structural (gray and white matter) changes associated with acute traumatic brain injury</i>		

Institute of Living Open Grant Competition Award (PI: Kiehl) <i>Electrophysiological assessment of error monitoring in psychotic illnesses</i>	8/01/02-7/31/03	No salary \$50,000
To examine brain potential correlates of error-monitoring in patients with schizophrenia		
Role: Primary Investigator		

Institute of Living Open Grant Competition Award (PI: Kiehl) <i>Differentiating the neural systems involved in psychosis: Affective disorder versus schizophrenia</i>	01/15/03-01/14/04	No salary \$50,000
Pilot study to collect ERP and fMRI data in patients with bipolar illness and schizophrenia to develop algorithms to discriminate them.		
Role: Primary Investigator		

Institute of Living Open Grant Competition Award (PI: Tolin) <i>A pilot study of conflict monitoring in obsessive-compulsive disorder: Relationship to symptoms and treatment response</i>	08/01/02-07/31/03	No salary \$50,000
A pilot study examining changes in conflict monitoring in obsessive-compulsive disorder associated with cognitive behavioral treatment		
Role: Co-Investigator		

Institute of Living Open Grant Competition Award (PI: Maltby)	01/15/03-01/14/04	No salary
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Dismantling the neural systems of obsessive-compulsive disorder: a symptom provocation study of compulsive hoarding. \$50,000

A pilot fMRI study of a symptom provocation paradigm in individuals with compulsive hoarding disorder.

Role: Co-Investigator

Institute of Living Open Grant Competition Award (PI: Calhoun) 01/15/03-01/14/04 No salary

Functional mapping of the neocortical network in schizophrenia: \$50,000

Executive-function impairments and spontaneous fluctuations in fMRI.

A pilot study employing Independent Component Analyses to examine functional connectivity in patients with schizophrenia during working memory and 'resting' state paradigms.

Role: Co-Investigator

SOFTWARE AND HARWARE DEVELOPMENT

- 1994–99 LumiTouch reply system. Fiber-optic response device for collection of behavioral data in magnetoencephalography and functional magnetic resonance imaging experiments. In collaboration with John Kidder, CEO, and Doug Broadfoot, Lightwave Medical Inc. Vancouver, B.C., Canada. <http://www.photonixco.com> Patent Pending.
- 1995 Conversion programs for creating ANALYZE format images from GE structural and functional data sets. In collaboration with Scott Morrison. Software available upon request.
- 1995 MRI off-line reconstruction software for EPI data on the Silicon Graphics Workstations. In collaboration with Bryan Mock, University of Wisconsin – Madison; General Electric Medical Systems, Milwaukee, WI. Software available upon request.
- 1998-04 CIRC – computer program designed to monitor and analyze behavioral performance online during behavioral, event-related potential, magnetoencephalography, and functional magnetic resonance imaging experiments. In collaboration with Arthur Jones.
- 1998-04 Digitize – Solaris based high-resolution EEG acquisition system. Designed for collection of up to 128 channels of EEG for brain mapping and source localization. In collaboration with Arthur Jones. <http://sourceforge.net/projects/digitize>
- 1999 Talairach atlas labeling system. Software designed to automatically search the results of functional imaging data and label with brain structures from the Talairach atlas. In collaboration with Adrien Desjardins and Peter Liddle. Software available upon request.
- 1994-2008 Visual and Auditory Presentation Package (VAPP). Software designed for presenting visual and auditory stimuli for behavioral, event-related potential, magnetoencephalography, and functional magnetic resonance imaging experiments. In collaboration with Tony Gray, Peter Liddle, Ron Mangun, Steve Hillyard, Steve Luck and Marty Woldorff
- 2008- Event-related Potential Software System (ERPSS) for Matlab. Software designed to integrate state-of-the-art event-related potential (ERP) and electroencephalographic (EEG) analyses into a Matlab platform. Effort directed by Steve Luck, Ph.D., UC Davis.

PRINT AND FILM MEDIA FEATURING KIEHL LABORATORY

PRINT:

1. "Suffering Souls" by John Seabrook, New Yorker, November 10, 2008, pages 64-73.
2. "Investigating the Psychopathic Mind" by Greg Miller, Science, September 5, 2008, 321, 1284-1286.
3. "fMRI Evidence Used in Murder Sentencing" by Greg Miller, ScienceInsider, November 23, 2009. <http://news.sciencemag.org/scienceinsider/2009/11/fmri-evidence-u.html>
4. "Can a cure be found for criminal psychopaths?" By Vancouver Province, November 9, 2008, <http://www.canada.com/theprovince/news/story.html?id=ae435865-342e-4371-8cdd-999555eded4b>
5. "A Mind of Crime" (Lead cover article) by Michael Haederle, Miller-McCune, February 23, 2010, <http://www.miller-mccune.com/legal-affairs/a-mind-of-crime-8440/>
6. "Science labors to understand `biology of violence'" by University of New Mexico for the Albuquerque Tribune, May 16, 2007. <http://www.abqtrib.com/news/2007/may/16/kent-kiehl-science-labors-understand-biology-viole/>
7. "Study: Brain scans can help identify schizophrenia", by William Hathaway, Hartford Curreant, April 6, 2004.
8. "New Mexico scientist studies psychopaths using brain scans", by Sue Vorenberg, Albuquerque Tribune, September 26, 2007.
9. "Psychopaths Keep Their Eyes on the Prize" by Michael Torrice, Science Now. <http://news.sciencemag.org/sciencenow/2010/03/psychopaths-keep-their-eyes-on-t.html>, March 26, 2010.
10. "Science in court: Head Case", by Virginia Hughes. Nature. <http://www.nature.com/news/2010/100317/full/464340a.html>, March 18, 2010. See also <http://www.nature.com/nature/podcast/index-2010-03-18.html>
11. "Psycho Killers, Qu'est-ce que C'est?" by Jeannette Cooperman in St. Louis Magazine <http://www.stlmag.com/media/St-Louis-Magazine/February-2010/Psycho-Killers-Qu-rsquoest-ce-que-C-rsquoest/>

PEER-REVIEWED PUBLICATIONS

1. Levenson, M.R., **Kiehl, K.A.**, & Fitzpatrick, C. (1995) Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology*, *68*, 151-158.
2. **Kiehl, K. A.**, Smith, A. M., Forster, B.B., & Hare, R.D. (1995). Protocol for a functional MRI study of semantic and affective processing in psychopaths. *Issues in Criminological & Legal Psychology*, *24*, 84.
3. Forster, B.B., MacKay, A., Whittall, K. P., **Kiehl, K.A.**, Smith, A.M., Liddle, P.F. & Hare, R.D. (1998). Functional MRI: The basics of the BOLD (blood oxygen level dependent) technique. *Canadian Journal of Radiology*, *49*, 320-329.
4. **Kiehl, K.A.**, Hare, R.D., McDonald, J. J., & Brink, J. (1999). Semantic and affective processing in psychopaths: An event-related potential (ERP) study. *Psychophysiology*, *36*, 765-774.
5. **Kiehl, K.A.**, Hare, R.D., Liddle, P.F. & McDonald, J.J. (1999). Reduced P300 responses in criminal psychopaths during a visual oddball task. *Biological Psychiatry*, *45*, 1498-1507.
6. **Kiehl, K.A.**, Liddle, P.F., Smith, A.M., Mendrek, A. Forster, B.B., & Hare, R.D. (1999). Neural pathways involved in processing concrete and abstract words. *Human Brain Mapping*, *7*, 225-233.
7. Szymanski, M.D., Bain, D., **Kiehl, K.A.**, Henry, K., Pennington, S., & Wong, S. (1999). Killer whale (*Orcinus orcas*) hearing: Auditory brainstem response (ABR) and behavioral audiograms. *Journal of the Acoustic Society of America*, *106*, 1134-1141.
8. McDonald, J.J., Ward, L.M., & **Kiehl, K.A.** (1999). An event-related brain potential analysis of inhibition of return. *Perception and Psychophysics*, *61*, 1411-1423.
9. **Kiehl, K.A.**, Liddle, P.F., & Hopfinger, J.B. (2000). Error processing and the rostral anterior cingulate: An event-related fMRI study. *Psychophysiology*, *37*, 216-223.
10. **Kiehl, K.A.** Smith, A.M., Liddle, P.F., & Hare, R.D. (2000). An event-related potential investigation of response inhibition in schizophrenia and psychopathy. *Biological Psychiatry*, *48*, 210-221.
11. Liddle, P.F., **Kiehl, K.A.**, & Smith, A.M. (2001). An event-related fMRI study of response inhibition. *Human Brain Mapping*, *12*, 100-109.
12. **Kiehl, K.A.**, Laurens, K.R., Duty, T.L., Forster, B.B., & Liddle, P.F. (2001). Neural sources involved in auditory target detection and novelty processing: An event-related fMRI study. *Psychophysiology*, *38*, 133-142.
13. **Kiehl, K.A.** & Liddle, P.F. (2001). An event-related functional magnetic resonance imaging study of an auditory oddball task in schizophrenia. *Schizophrenia Research*, *48*, 159-171.

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15. **Kiehl, K.A.**, Laurens, K.R., Duty, T.L., Forster, B.B., & Liddle, P.F. (2001). An event-related fMRI study of visual and auditory oddball tasks. *Journal of Psychophysiology*, *21*, 221-240.
16. Desjardins, A., **Kiehl, K.A.**, & Liddle, P.F. (2001). Removal of confounding effects of global signal in functional MRI analyses. *NeuroImage*, *13*, 751-758.
17. Vouloumanos, A., **Kiehl, K.A.**, Werker, J. F., & Liddle, P.F. (2001). Detection of sounds in the auditory stream: fMRI evidence for differential activation to speech vs. non-speech. *Journal of Cognitive Neuroscience*, *13*, 994-1005.
18. Bates, A.T., **Kiehl, K.A.**, Laurens, K.R., & Liddle, P.F. (2002). Error-related negativity and correct response negativity in schizophrenia. *Clinical Neurophysiology*, *113*, 1454-63.
19. Ngan, E.T.C., Bates, A.T., Power, Y., Laurens, K.R., **Kiehl, K.A.**, & Liddle, P.F. (2002). Decreased BOLD activation in right heteromodal association cortex in patients with schizophrenia during error detection. *Schizophrenia Research (Supplement)*, *52*, 212.
20. Ngan, E.T.C., Stip, E., Whitman, J., **Kiehl, K.A.**, & Liddle, P.F. (2002). No changes in P300 amplitude or latency following acute administration to the alpha-1 agonist modafinil. *Schizophrenia Research (Supplement)*, *52*, 212.
21. Bates, A.T., Liddle, P.F., **Kiehl, K.A.**, & Ngan, E.T.C. (2002). Increased amplitude of caudal error related negativity and positivity potentials during the performance of an error detection task in acutely ill patients following 6 weeks' treatment with neuroleptics. *Schizophrenia Research (Supplement)*, *52*, 219.
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revealed by functional magnetic resonance imaging. *Psychiatry Research: Neuroimaging*, 130, 27-42.

27. Calhoun, V.D., **Kiehl, K. A.**, Liddle, P. F. & Pearlson, G. D. (2004). Aberrant localization of synchronous hemodynamic activity in auditory cortex reliably characterizes schizophrenia. *Biological Psychiatry*, 55, 842-849.
28. Calhoun, V. D., Stevens, M. C., Pearlson, G. D., & **Kiehl, K.A.** (2004). fMRI analysis with the General Linear Model: Removal of latency-bias by incorporation of hemodynamic derivative terms. *NeuroImage*, 22, 252-257.
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31. Bates, A.T., Liddle, P.F., **Kiehl, K.A.**, & Ngan, E.T.C. (2004). State dependent changes in error monitoring in schizophrenia. *Journal of Psychiatry Research*, 38, 347-56.
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37. **Kiehl, K.A.**, Stevens, M.C., Laurens, K.R., Pearlson, G.P., Calhoun, V.D., & Liddle, P. F. (2005). An adaptive reflexive processing model of neurocognitive function: Supporting evidence from a large scale (n=100) fMRI study of an auditory oddball task. *NeuroImage*, 25, 899-915.
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41. Stevens, M.C., Calhoun, V.D., & **Kiehl, K.A.** (2005). fMRI in an oddball task: Effects of target-to-target interval. *Psychophysiology*, *42*, 636-642.
42. **Kiehl, K.A.**, Bates, A. T., Laurens, K. R. & Liddle, P F. (2006). Psychopathy and semantic processing: An examination of the N400. *Personality and Individual Differences*, *40*, 293-304.
43. Calhoun, V.D., Adali, T., Giuliani, N.R., Pekar, J.J., **Kiehl, K.A.**, & Pearlson, G.D. (2006). Method for multimodal analysis of independent source differences in schizophrenia: Combining gray matter structural and auditory oddball functional data. *Human Brain Mapping*, *27*, 47-62.
44. Calhoun, V.D., Pearlson, G.D., & **Kiehl, K.A.** (2006). Neuronal chronometry of target detection: Fusion of hemodynamic and event-related potential data. *NeuroImage*, *30*, 544-553.
45. **Kiehl, K.A.** (2006). A cognitive neuroscience perspective on psychopathy: Evidence for paralimbic system dysfunction. *Psychiatry Research*, *142*, 107-128. PMID: pending
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48. Calhoun, V.D., Adali, T, **Kiehl, K.A.**, Astur, R., Pekar, J.J. & Pearlson, G.D. (2006). A method for multi-task data fusion applied to schizophrenia. *Human Brain Mapping*, *27*, 47-62.
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50. Liddle, P.F., Laurens, K.R., & **Kiehl, K.A.**, & Ngan, E.T.C. (2006). Abnormal function of the brain system supporting motivated attention in medicated patients with schizophrenia: An fMRI study. *Psychological Medicine*, *36*, 1097-1108.
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62. Schaich Borg, J., Lieberman, D., & **Kiehl, K.A.** (2008). Infection, incest, and iniquity: Neural correlates of disgust and morality. *Journal of Cognitive Neuroscience*, 20, 1529-1546. PMID 197546
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72. Harenski, C.L., Antonenko, O., Shane, M. S., & **Kiehl, K.A.** (2009). A functional imaging investigation of moral deliberation and moral intuition. *Neuroimage, 49*, 2707-2716.
73. Harenski, C.L., & **Kiehl, K.A.** (in press). Reactive aggression in psychopathy and the role of frustration: Susceptibility, experience, and control. *British Journal of Psychology*.
74. Arja, S. K., Feng, Z., Chen, Z., Caprihan, A., **Kiehl, K. A.**, Adali, T., & Calhoun, V.D. (2009). Changes in fMRI magnitude data and phase data observed in block-design and event-related tasks. *Neuroimage, 49*, 3149-3160.
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77. Sakoglu, U., Pearlson, G. D., **Kiehl, K.A.**, Wang, Y. M., Michael, A. M., & Calhoun, V. D. (in press). A method for evaluating dynamic functional network connectivity and task-modulation: application to schizophrenia. *MAGMA*
78. Joshi, S., Karthikeyan, S., Manjunath, B.S., Grafton, S. & **Kiehl, K.A.** (in press). Anatomical parts-based regression using non-negative matrix factorization. *IEEE Conference on Computer Vision and Pattern Recognition proceedings*.
79. Calhoun, V.D., Wu, L., **Kiehl, K.A.**, Eichele, T., & Pearlson, G.D. (in press). Aberrant processing of deviant stimuli in schizophrenia revealed by fusion of fMRI and EEG data. *Acta Neuropsychiatrica*.
80. Swanson, N., Eichele, T., Pearlson, G.D., **Kiehl, K.A.** & Calhoun, V.D. (in press). Lateral differences in the default mode network in healthy controls and schizophrenia patients. *Human Brain Mapping*.
81. Ermer, E. & **Kiehl, K.A.** (in press). Psychopaths are impaired in social exchange and precautionary reasoning. *Psychological Science*
82. Harenski, C.L. & **Kiehl, K.A.** (in press). Emotion and morality in psychopathology. *Emotion Review*

BOOK CHAPTERS AND POPULAR PRESS ARTICLES

1. **Kiehl, K.A.** (2007). Without morals: The cognitive neuroscience of psychopathy. *Moral Psychology, Volume 3: The Neuroscience of Morality: Emotion, Brain Disorders, and Development*. W. Sinnott-Armstrong, Ed. Bradford Books, NY.
2. **Kiehl, K.A.** (2007). A Reply to de Oliveira-Souza, Ignácio, and Moll and Schaich Borg. *Moral Psychology, Volume 3: The Neuroscience of Morality: Emotion, Brain Disorders, and Development*. W. Sinnott-Armstrong, Ed. Bradford Books, NY.
3. Shane, M. S., & **Kiehl, K.A.** (2007). Psychopathy as a Measure of Offender Risk: An Important Component of a Comprehensive Risk Assessment Battery. In K. Knight, D. Farabee (Eds.). *Treating Addicted Offenders: A continuum of effective practices*. Vol. 2. (pp. 8.1-8.10). Civic Research Institute: NJ.
4. Harenski, C. L., Hare, R.D., & **Kiehl, K.A.** (in press). Neuroimaging, Genetics, and Psychopathy: Implications for the legal system. *Responsibility and Psychopathy: Interfacing Law, Psychiatry and Philosophy*. L. Malatesti & J McMillan, Ed., Oxford University Press, London, UK.
5. Buckholtz, J.W. & **Kiehl, K.A.** (in press). Inside the Mind of the Psychopath. *Scientific American Mind*

BOOKS

1. **Kiehl, K.A.**, & Calhoun V.D. (under contract). *Introduction to Functional Magnetic Resonance Imaging*. Oxford Press.
2. Calhoun, V.D. & **Kiehl, K.A.** (under contract). *Advanced Functional Magnetic Resonance Imaging*. Oxford Press.
3. **Kiehl, K.A.**, & Sinnott-Armstrong, W., (Editors; in press). *Psychopathy and Law*, Oxford Press.

MANUSCRIPTS SUBMITTED FOR PUBLICATION

1. Harenski, C.L., Antonenko, O., Shane, M.S., & **Kiehl, K.A.** (submitted 1/28/2009). *Task-dependent associations between psychopathic traits and neural correlates of moral sensitivity*. Manuscript submitted for publication.
2. Schaich Borg, J., Sinnott-Armstrong, W., & **Kiehl, K.A.** (submitted 1/28/2009). *Wrong or not wrong? Questioning the neural basis of moral judgments*. Manuscript submitted for publication.
3. Stevens, M.S., Kim, J., Lovejoy, D., Oakes, H., **Kiehl, K.A.**, Skudlarski, P., & Pearlson, G.D. (submitted 4/28/2008). *Diffusion tensor imaging detects neuropsychologically-significant white matter injury in patients with mild traumatic brain injury*. Manuscript submitted for publication.
4. Harenski, C.L., Harenski, K.A., Shane, M.S., & **Kiehl, K.A.** (submitted 6/1/2009). *Reduced fronto-temporal activity associated with moral sensitivity in incarcerated psychopathic males*. Manuscript submitted for publication.
5. Byrd, A., Shane, M.S., Harenski, C.L. & **Kiehl, K.A.** (submitted 9/20/2009). *Impulsivity in psychopathy: Distinctions Between Response Inhibition and Cognitive Impulsivity*. Manuscript submitted for publication.
6. Christodoulou, A.G., **Kiehl, K.A.**, Feldstein Ewing, S.W., Bryan, A.D., & Calhoun, V.D. (submitted 9/1/09). *A quality control method for detecting and suppressing uncorrected residual motion in fMRI studies*. Manuscript submitted for publication.
7. **Kiehl, K.A.**, & Hoffman, M.B. (law review submitted 12/20/09). *Psychopaths and crime*. Manuscript submitted for publication.
8. Tant, A., Fink, B., & **Kiehl, K.A.** (submitted 3/1/10). *A comparison of the procedures for the assessment of psychopathic traits in an incarcerated maximum-security youth population*. Manuscript submitted for publication.
9. Cope, L.M., Schaich Borg, J., Harenski, C.L., Sinnott-Armstrong, W., Lieberman, D., Nyalakanti, P.K., Calhoun, V.D., & **Kiehl, K.A.** (submitted 1/20/10). *Hemispheric asymmetries during processing of immoral stimuli*. Manuscript submitted for publication.
10. Allen, E., Liu, J., **Kiehl, K.A.**, Gelernter, J., Pearlson, G.D., Perrone-Bizzozzerod, N.I., & Calhoun, V.D. (submitted 2/10/10). *Genetic influences on cross-frequency modulation in schizophrenia patients and healthy controls*. Manuscript submitted for publication.
11. Feldstein Ewing, S.W., Hutchison, K.E., Sabbineni, A., Magnan, R.E., **Kiehl, K.A.**, & Bryan, A.D. (submitted 12/15/09). *The relationship between response inhibition and adolescent substance-related risk behavior: Examination in an fMRI paradigm*. Manuscript submitted for publication.

12. Claus, E.D., **Kiehl, K.A.**, & Hutchison, K.E. (submitted 11/15/09). *Determinants of impulsive choice: Neural mechanisms and relationship with alcohol use problems*. Manuscript submitted for publication.
13. Brody, R. & **Kiehl, K.A.** (submitted 12/15/09). *From white-collar crime to red-collar crime*. Manuscript submitted for publication.
14. Aharoni, E., Antonenko, O, & **Kiehl, K.A.** (submitted 4/15/10). *Disparities in the moral values of adult criminal offenders: The role of psychopathy*. Manuscript submitted for publication.

PRESENTATIONS

1. Kiehl, K.A. (1993, June). *The relationship between psychopathy and two psychophysiological measures of arousability*. Paper presentation at the annual research conference of the Department of Psychology, University of California, Davis. Invited speaker.
2. Levenson, M.R., Kiehl, K.A., & Fitzpatrick, C. (1993, August). *Assessing psychopathic attributes in a noninstitutionalized population*. Poster session presented at the annual meeting of the American Psychological Association, Toronto, Canada.
3. Kiehl, K.A. & Levenson, M.R. (1994, February). *Psychopathy, arousal, and sensation seeking: A psychophysiological investigation*. Poster session presented at the annual meeting of the American Association for the Advancement of Science, San Francisco.
4. Levenson, M.R. & Kiehl, K.A. (1994, April) *Personality and deviant alcohol behavior in a nonclinical sample*. Poster session presented at the annual meeting of the Western Psychological Association, Kona, Hawaii.
5. Kiehl, K.A., Mangun, G.R., & Hare, R.D. (1995, March) *Differential hemispheric processing of affective language: An ERP study*. Poster session presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
6. Kiehl, K.A. & Hare, R. D. (1995, April) *Neuroimaging and its implications for understanding the psychopathic mind*. In C. Davis (Chair), Cognitive and biological correlates of psychopathy. Symposium conducted at the Mental Disorder and Criminal Justice Conference, Vancouver, Canada
7. Kiehl, K.A., Smith, A.M., Forster, B.B., & Hare, R.D. (1995, December). *Protocol for a functional MRI study of semantic and affective processing in psychopaths*. Psychopathy, Theory, Research, and Implications for Society. NATO ASI, Alvor, Portugal.
8. McDonald, J.J., Ward, L.M., Kiehl, K.A., & Richard, C.M. (1996, March) *An electrocortical analysis of inhibition of return*. Poster session presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
9. Forster, B.B., MacKay, A., Whittall, K.P. Kiehl, K.A., Smith, A.M., & Hare, R.D. (1996, June). *Functional MRI: The basics of the BOLD (blood oxygen level dependent) technique*. Poster session presented at the annual meeting of Canadian Association of Radiologists, Vancouver, B.C.
10. Brink, J. H., Kolton, D.J.C., Kiehl, K.A., & Strauss, P. R. (1996, October). *Schizophrenia and psychopathy: A study of comorbidity in a Canadian forensic psychiatric population*. Paper presented at the meeting Schizophrenia 1996; Breaking Down the Barriers 4th International conference. Vancouver, Canada.
11. Kiehl, K. A. & Hare, R. D. (1997, March). *Abnormal processing of affective words by psychopaths: Emotional polarity discrimination*. Poster session presented at the annual meeting of the Cognitive Neuroscience Society, Boston, MA.

12. Smith, A.M., Mendrek, A., Kiehl, K.A., Forster, B.B., MacKay, A., & Liddle, P.F. (1997, October). *Sex differences in brain activity associated with word generation: An fMRI study*. Poster presented at the annual meeting for the Society for Neuroscience, New Orleans, Louisiana.
13. Kiehl, K.A., Smith, A.M., Forster, B.B., MacKay, A.L., Whittall, K.P., Liddle, P.F. & Hare, R.D. (1997, September) *A whole-brain multi-subject fMRI comparison of EPI spin-echo, asymmetric spin-echo and gradient-echo sequences at 1.5 T*. Paper presented at the annual meeting of the Radiological Society of North America, Chicago, IL.
14. Smith, A.M., Kiehl, K.A., & Liddle, P.F. (1998, February). *Event-related potentials during a Go/No Go task in schizophrenia*. Poster presented at the International Winter Workshop on Schizophrenia, Davos, Switzerland.
15. Kiehl, K.A. (1998, February). *Functional imaging: Watching the working brain*. Paper presented at the University of British Columbia, Science First Lecture Series. Invited speaker.
16. Kiehl, K. A., Liddle, P. F., Smith, A. M., Mendrek, A., Forster, B.B., & Hare, R.D. (1998, April) *Neural pathways involved in the processing of concrete and abstract language*. Poster session presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco.
17. Smith, A.M., Kiehl, K.A., Forster, B.B., Whittall, K.P., MacKay, A.L., Liddle, P.F. & Hare, R.D. (1998, April). *Whole brain EPI gradient echo fMRI: Optimizing TE to maximize signal activation and minimize susceptibility artifact in the orbitofrontal cortex*. Poster presented at the annual meeting of the International Society for Magnetic Resonance in Medicine. Sydney, Australia.
18. Kiehl, K. A., Smith, A. M., Mendrek, A., Forster, B.B., Hare, R.D., & Liddle, P. F. (1998, June) *Activation of the amygdala during an affective memory task*. Poster presented at the annual meeting of the International Society for Human Brain Mapping, Montreal, Canada.
19. Smith, A.M., Kiehl, K.A., Mendrek, A., Forster, B.B., Hare, R.D., & Liddle, P.F. (1998, June). *Whole brain fMRI of a Go/No Go task*. Poster presented at the annual meeting of the International Society for Human Brain Mapping, Montreal, Canada.
20. Kiehl, K.A., Hare, R.D., McDonald, J.J., & Liddle, P.F. (1998, September). *Event-related potential investigation of semantic processing in criminal psychopaths*. Poster presented at the annual meeting of the Society of Psychophysiological Research, Denver, Colorado.
21. Kiehl, K.A., Laurens, K.R. & Liddle, P.F. (1998, April). *Reading anomalous sentences: An event-related fMRI study of semantic processing*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Washington D.C.
22. Liddle, P.F., Mendrek, A., Kiehl, K.A., Smith, A.S., & Duty, T. (1999, April). *Fronto-temporal coordination in schizophrenia*. Paper presented at the International Congress on Schizophrenia, Santa Fe, New Mexico.

23. Liddle, P.F., Smith, A.S., Kiehl, K.A., Mendrek, A., & Hare, R.D., (1999, April). *Response inhibition in schizophrenia & psychopathy: Similarities & differences*. Poster presented at the International Congress on Schizophrenia, Santa Fe, New Mexico.
24. Kiehl, K.A., Liddle, P.F., & Hopfinger, J.B. (1999, July). *Error processing and the rostral anterior cingulate: An event-related fMRI study*. Paper presented at ICON: 7th International Conference on Cognitive Neuroscience. Budapest, Hungary. Invited speaker.
25. Smith, A.S., Liddle, P.F., Kiehl, K.A., Mendrek, A., Forster, B.B., & Hare, R.D. (1999, July). *Neural mechanisms of inhibitory processing in psychopathy and schizophrenia during a Go/No go task using fMRI*. Poster presented at the annual meeting of the European Association of Psychology and Law Conference, Dublin, Ireland.
26. Kiehl, K.A., Forster, B.B., & Liddle, P.F. (1999, October). *Abnormal semantic activation in schizophrenia as revealed by event-related fMRI*. Poster presented at the annual meeting for the Society for Neuroscience, Miami, Florida.
27. Mendrek, A., Kiehl, K.A., Smith, A.S., Duty, T., Forster, B.B., & Liddle, P.F. (1999, October). *Abnormal coordination of cerebral activity during a working memory task in schizophrenia: An fMRI study*. Poster presented at the annual meeting for the Society for Neuroscience, Miami, Florida.
28. Laurens, K.R., Kiehl, K.A., Schwarz, D. W. F., Forster, B.B., & Liddle, P.F. (1999, October). *A whole-brain event-related fMRI study of an auditory oddball task in schizophrenia*. Poster presented at the Annual meeting of the Society for Neuroscience, Miami, Florida.
29. Liddle, P. F. & Kiehl, K.A. (1999, October). *fMRI of an auditory oddball task in schizophrenia*. Paper presented at the ISBET annual meeting, Adelaide, Australia.
30. Kiehl, K.A., Liddle, P.F., & Hopfinger, J.B. (2000, April). *Error processing and the rostral anterior cingulate: An event-related fMRI study*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, California.
31. Vouloumanos, A., Kiehl, K.A., Werker, J.F., & Liddle, P.F. (2000, April). *Neurological bases of speech and non-speech processing: An event-related functional magnetic resonance imaging study*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, California.
32. Mendrek, A., Kiehl, K.A., Forster, B.B., & Liddle, P.F. (2000, April). *Encoding and retrieval of affective words: An fMRI study*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, California.
33. Mendrek, A., Laurens, K.R., Kiehl, K.A., Ngan, E., Stip, E., & Liddle, P.F. (June, 2000). *An fMRI investigation of cerebral state and trait markers of schizophrenia*. Poster presented at the annual meeting of the International Society for Human Brain Mapping, San Antonio, Texas.

34. Kiehl, K. A., Smith, A.M., Hare, R.D., Mendrek, A., Forster, B.B., Brink, J., & Liddle, P.F. (June, 2000). *Limbic abnormalities in affective processing by criminal psychopaths as revealed by fMRI*. Poster presented at the annual meeting of the International Society for Human Brain Mapping, San Antonio, Texas.
35. Kiehl, K.A. (2000, September). *Electrophysiological and hemodynamic evidence of fronto-temporal abnormalities in psychopathic offenders*. Paper presented at the Executive Control, Errors, and the Brain meeting. Jena, Germany. Organizers Wolfgang H. R. Miltner and Michael Coles. Invited speaker.
36. Kiehl, K.A., Liddle, P.F., & Hopfinger, J.B. (2000, September). *Error processing and the rostral anterior cingulate: An event-related fMRI study*. Poster presented at the Executive Control, Errors, and the Brain meeting. Jena, Germany. Organizers Wolfgang H. R. Miltner and Michael Coles.
37. Kiehl, K.A., Bates, A.T., Laurens, K.R., Hare, R.D., Forster, B.B., & Liddle, P.F. (October, 2000). *Electrophysiological and hemodynamic evidence for fronto-temporal abnormalities in psychopathic offenders*. Poster presented at the annual meeting of the Society for Psychophysiological Research, San Diego, California.
38. Bates, A.T., Kiehl, K.A., & Liddle, P.F. (October, 2000). *Abnormal error-related negativity in schizophrenia: An event-related potential study*. Poster presented at the annual meeting of the Society for Psychophysiological Research, San Diego, California.
39. Kiehl, K.A. (January, 2001). *The psychopath electrified: Brain potentials reflect fronto-temporal abnormalities in psychopathic offenders*. Invited address given to the faculty at the Western Psychiatric Clinic, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania.
40. Kiehl, K.A., Laurens, K.R., Mendrek, A., & Liddle, P.F. (April, 2001). *Improved hemodynamic activity in first episode psychotic patients with atypical neuroleptic treatment: A six week test-retest event-related fMRI study*. Poster presented at the International Congress on Schizophrenia, Whistler, British Columbia, Canada.
41. Bates, A.T., Kiehl, K.A., & Liddle, P.F. (April, 2001). *Error-related negativity in schizophrenia and its relation to symptom profiles: An event-related potential study*. Poster presented at the International Congress on Schizophrenia, Whistler, British Columbia, Canada.
42. Mendrek, A., Laurens, K.R., Kiehl, K.A., Ngan, E., Stip, E., & Liddle, P.F. (April, 2001). *New insights into prefrontal function in schizophrenia*. Poster presented at the International Congress on Schizophrenia, Whistler, British Columbia, Canada.
43. Kiehl, K.A., Laurens, K.R., Mendrek, A., & Liddle, P.F. (June, 2001). *Improved hemodynamic activity in first-episode psychotic patients with atypical neuroleptic treatment: A six-week test-retest event-related fMRI study*. Poster presented at the annual meeting of the Organization for Human Brain Mapping. Brighton, U.K.

44. Laurens, K.R., Kiehl, K.A., Smith, A., Bates, A., Forster, B.B., & Liddle, P.F. (June, 2001). *Abnormal response inhibition in criminal psychopaths: Evidence from event-related fMRI.* Poster presented at the annual meeting of the Organization for Human Brain Mapping. Brighton, U.K.
45. Kiehl, K.A. (September, 2001). *The clinical utility of functional MRI: From presurgical mapping to diagnosing psychiatric illnesses.* Invited lecture, New England Technologists Association Annual Conference.
46. Kiehl, K.A. (September, 2001). *The psychopath electrified, then magnetized: ERP and fMRI evidence for fronto-temporal abnormalities in criminal psychopaths.* Invited lecture, Yale University School of Medicine, fMRI talk series.
47. Kiehl, K.A. (December, 2001). *Delineating neural signatures in psychotic illnesses using functional brain imaging: Implications for diagnosis, treatment, and prevention.* Grand Rounds lecture for the Department of Psychiatry at the Institute of Living Psychiatry.
49. Kiehl, K.A. (December, 2001). *The psychopath electrified, then magnetized: ERP and fMRI evidence for fronto-temporal abnormalities in criminal psychopaths.* Invited lecture, Nathan Kline Institute, Orangeburg, New York.
50. Kiehl, K.A. (April, 2002). *The psychopath electrified, then magnetized: ERP and fMRI evidence for fronto-temporal abnormalities in criminal psychopaths.* Invited lecture, Dartmouth College.
51. Kiehl, K.A. (October, 2002). *The psychopath electrified, then magnetized: ERP and fMRI evidence for fronto-temporal abnormalities in criminal psychopaths.* Invited lecture, University of California, Davis.
52. Kiehl, K.A. (December, 2002). *Deconstructing psychopathy: Assessment, treatment, recidivism, and neurobiology.* Invited lecture, Department of Criminology, University of Pennsylvania.
53. Kiehl, K.A. (December, 2002). *A cognitive neuroscience perspective on criminal psychopathy: Neuroimaging evidence for temporal-limbic brain abnormalities.* Invited lecture, Center for Cognitive Neuroscience, University of Pennsylvania.
54. Kiehl, K.A. (January, 2003). *The oddball task magnetized: fMRI studies in health and psychopathology.* Invited lecture, New York Psychiatric Institute, Columbia University.
55. Stevens, M.C., Laurens, K.R., Liddle, P.F., & Kiehl, K.A. (2003, March). *New brain imaging findings from a random-effects analysis of 100 participants using a three-stimulus auditory oddball task.* Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York, NY.
56. Celone, K., Laurens, K.R., Liddle, P.F., & Kiehl, K.A. (2003, March). *Negative picture processing: Engagement of the temporal-limbic system and beyond.* Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York, NY.

57. O'Keefe, T.O., Liddle, P.F., & Kiehl, K.A. (2003, March). *Neural sources underlying emotional lexical decision*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York, NY.
58. Calhoun V. D., Kiehl, K. A., Liddle, P. F., & Pearlson, G. D. (2003, March). *Aberrant Localization of synchronous fMRI activity in temporal auditory cortex reliably characterizes schizophrenia*. Proceedings from the International Congress on Schizophrenia Research, Colorado Springs, CO.
59. Kiehl, K.A., Stevens, M.C., Laurens, K.R., Pearlson, G.D., & Liddle, P.F. (2003, June). *The missing stimulus: An event-related fMRI study of a 'gap' detection oddball task*. Poster presented at the annual meeting of the Society for Human Brain Mapping, New York, NY.
60. Laurens, K.R., Kiehl, K.A., Ngan, E.T.C., Mendrek, A., Stip, E., & Liddle, P.F. (2003, June). *Dysfunction in a supramodal network supporting attention to salient stimuli in schizophrenia: Evidence from event-related fMRI of novelty processing*. Poster presented at the annual meeting of the Society for Human Brain Mapping, New York, NY.
61. Stevens, M.C., Laurens, K.R., Liddle, P.F., Pearlson, G.D., & Kiehl, K.A. (2003, June). *Hemodynamics of oddball processing during single, two-, and three-tone target detection tasks*. Poster presented at the annual meeting of the Society for Human Brain Mapping, New York, NY.
62. Stevens, M.C., Laurens, K.R., Liddle, P.F., Calhoun, V.C., Pearlson, G.D., & Kiehl, K.A. (2003, July). *Independent component analyses of fMRI auditory oddball task reveals paralimbic abnormalities in psychopaths*. Developmental and Neuroscience Perspectives on Psychopathy, Madison, WI.
63. Kiehl, K.A. (2003, July). *The paralimbic hypothesis of psychopathy: Evidence from multimodal neuroimaging*. Invited Lecture - Developmental and Neuroscience Perspectives on Psychopathy, Madison, WI.
64. Kiehl, K. A., Laurens, K. R., Celone, K., Pearlson, G. P., & Liddle, P.F. (2003, October). *Abnormal affective picture processing in criminal psychopaths: Evidence supporting the paralimbic dysfunction hypothesis*. Poster presented at the annual meeting of the Society for Psychophysiological Research, Chicago, IL.
65. Liddle, P. F., Mendrek, A., Laurens, K. R., Kiehl, K. A., & Ngan, E. T. C. (2004, February). *An fMRI study of state-dependent abnormalities of frontal lobe function during working memory in schizophrenia*. Poster to be presented at the International Congress on Schizophrenia, Davos, Switzerland.
66. Bates, A. T., Kiehl, K. A., Laurens, K. R., Ngan, E. T. C. & Liddle, P. F. (2004, February). *Inefficient coordination of slow oscillations in schizophrenia*. Poster presented at the International Congress on Schizophrenia, Davos, Switzerland.

67. Maltby, N., Worhunsky, P., Kiehl, K. A., & Tolin, D. F. (2004, March). *Hyperactive error processing in Obsessive Compulsive Disorder*. Paper presented to the Annual Meeting of the Anxiety Disorders Association of America, Miami, FL.
68. Maltby, N., Worhunsky, P., Kiehl, K., & Tolin, D.F. (2004, March). *Is Dysfunctional Action Monitoring Functionally Related to Obsessive Compulsive Disorder: an fMRI Study*. Presented to the Annual Meeting of the Anxiety Disorders Association of America, Miami
69. Aikens, D. E., O'Keefe, T., Anticevic, A., & Kiehl, K. A. (2004, April). *Implicit associative learning for affective materials*. Poster presented at the Annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
70. Kiehl, K.A., Stevens, M.C., Laurens, K.R., Pearlson, G.P, & Liddle, P. F. (2004, April). *An adaptive reflexive processing model of neurocognitive function*. Poster presented at the Annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
71. Kiehl, K.A. (April, 2004). *The cognitive neuroscience of psychopathic personality disorder: Evidence for paralimbic dysfunction*. Invited lecture. Department of Psychology, University of California, Santa Barbara.
72. Kiehl, K.A. (April, 2004). *The cognitive neuroscience of criminal psychopaths: Evidence for paralimbic dysfunction*. Invited lecture. Department of Psychology, University of Toronto.
73. Kiehl, K.A., Stevens, M.C., Celone, K., Kurtz, M.M., & Pearlson, G.D. (2004, April). *fMRI of auditory oddball processing in schizophrenia II: Replication and extension*. Poster presented at the annual meeting of the Society for Biological Psychiatry, New York, NY.
74. Hejnar, M.P., Kurtz, M.M., Calhoun, V.D., Kiehl, K.A., & Pearlson, G.D. (2004, April). *Performance on the Penn Conditional Exclusion Task (PCET) in patients with schizophrenia (SZ) and healthy controls: An fMRI study*. Poster presented at the annual meeting of the Society for Biological Psychiatry, New York, NY.
75. Egolf, E., Kiehl, K.A., & Calhoun, V.D. (2004, April). *GIFT*. Poster presented at the annual meeting of the Society for Biological Psychiatry, New York, NY.
76. Stevens, M.C, Celone, K., Kurtz, M.M., Pearlson, G.D., & Kiehl, K.A. (2004, May). *fMRI of oddball processing in schizophrenia: Support for the disconnection hypothesis*. Poster to be presented at the annual meeting of the American Psychiatric Association, New York, NY.
77. Kiehl, K.A., Stevens, M.C, Celone, K., Ortengren, A., & Pearlson, G.D. (2004, May). *fMRI of oddball processing in bipolar illness*. Poster presented at the annual meeting of the American Psychiatric Association, New York, NY.
78. Maltby, N., Worhunsky, P., Kiehl, K. A., & Tolin, D. F. (2004, May). *Hyperactive error processing in Obsessive Compulsive Disorder*. Paper presented to the annual meeting of the American Psychiatric Association, New York. NY.

79. Kiehl, K.A. (2004, May). *Without morals: The cognitive neuroscience of criminal psychopaths*. Paper presented at The Psychology and Biology of Morality Conference, Dartmouth College, Hanover, NH (invited speaker).
80. Kiehl, K.A. (2004, August). *Focal hemodynamic measures of the P3a and P3b event-related potentials*. Symposium paper presented at the Biomag Annual meeting. Boston, MA.
81. Kiehl, K.A. (2004, September). *What has hemodynamic imaging of oddball target detection taught us about how the brain works?* Paper presented at the symposium 'The P300: Past and Present' at the ECNS and ISNIP joint meeting. Irvine, CA. (Organizer and chair).
82. Kiehl, K.A. (2004, September). *Functional MRI – An introduction*. Educational course presented at the ECNS and ISNIP joint meeting. Irvine, CA.
83. Kiehl, K.A. (2004, October). *The psychopath electrified: Brain potentials implicate paralimbic abnormalities*. Early Career Award Address presented at the ECNS and ISNIP joint meeting. Irvine, CA.
84. Kiehl, K.A. & Liddle, P.F. (2004, October). *Electrophysiological evidence for paralimbic abnormalities in psychopathic offenders*. Poster presented at the annual meeting of the Society for Psychophysiological Research. Santa Fe, New Mexico.
85. Maltby, N., Worhunsky, P., Kiehl, K.A., & Tolin, D.F. (2004, November). *Compulsive hoarding: The neurobiological perspective*. In T.L. Hartl (Chair), *Compulsive hoarding: Recent advances in research and important clinical considerations*. Presented to the Annual Meeting of the Association for Advancement of Behavior Therapy, New Orleans.
86. Kiehl, K.A. (2004, December). *Deconstructing Psychopathy: Assessment, Treatment, Recidivism, and Neurobiology*. Invited Lecture, NIDA Special Emphasis Panel: Developing Efficacious Behavioral Therapies for Criminal Justice Involved Populations, Gaithersburg, MD.
87. Kiehl, K.A. (2004, December). *Brain potentials in cetaceans - can they illuminate language processes?* Educational lecture given the staff and researchers at Mystic Aquarium, Mystic, CT.
88. Kiehl, K.A. (2004, December). *Paralimbic system dysfunction model of psychopathic personality: Evidence from ERPs and fMRI*. Guest lecture at the Massachusetts General Hospital Brain Mapping Lecture Series. Boston, MA.
89. Kiehl, K.A. (2005, January). *Word of the day: Cetaceans (it mean's dolphins and whales)*. Guest lecture at Bay Laurel Elementary School, Calabasas, CA.
90. Kiehl, K.A. (2005, January). *Hemodynamic measures of oddball responses*. Invited lecture, Forty Years of P300 meeting hosted by Manny Donchin (Carmel, 2005). University of South Florida, St. Petersburg, FL.

91. Kiehl, K.A. (2005, February). *Paralimbic dysfunction in criminal psychopaths: Evidence from ERP and fMRI studies*. Invited lecture, NIDA Intramural Program, Bethesda, MD.
92. Maltby, N., Worhunsky, P., Kiehl, K.A., & Tolin, D.F. (2005, May). *Dysfunctional action monitoring: Specificity to obsessive compulsive disorder*. Poster presented to Annual Meeting of the Society of Biological Psychiatry, Atlanta, Georgia.
93. Maltby, N., Worhunsky, P., Kiehl, K.A., & Tolin, D.F. (2005, May). *Dismantling the neural systems of Obsessive-Compulsive Disorder: A symptom provocation fMRI study of compulsive hoarding*. Poster presented to Annual Meeting of the Society of Biological Psychiatry, Atlanta, Georgia.
94. Kiehl, K.A. (2005, May). *Psychopathy: Assessment, substance abuse, treatment, and neurobiology*. Invited lecture, Department of Psychiatry, University of California, Los Angeles.
95. Kiehl, K.A. (2005, May). *ERP and fMRI studies in psychopathy: Evidence of paralimbic dysfunction*. Invited lecture by the Department of Neuroscience, University of California, Los Angeles.
96. Kiehl, K.A. (2005, July). *A paralimbic dysfunction model of psychopathy*. Invited lecture by the Department of Psychology, University of British Columbia, Vancouver, British Columbia, Canada.
97. Kiehl, K.A. (2005, July). *Brain potentials and fMRI suggest paralimbic abnormalities in orienting processes in adolescent and adult psychopathy*. Symposium lecture "The Cognitive Neuroscience of Psychopathy" Chair Kiehl, K.A., Paper given at the Biannual meeting of the Society for the Scientific Study of Psychopathy, Vancouver, British Columbia, Canada.
98. Kiehl, K.A. (2005, September). *P300 from the perspective of fMRI*. Symposium lecture "40 Years of the P300: A tribute" Chair Donchin, E. Paper given at the Annual meeting of the Society for Psychophysiological Research, Lisbon, Portugal.
99. Kiehl, K.A. (2005, September). *A paralimbic dysfunction model of psychopathy*. Award address for Distinguished Early Career Contributions to Psychophysiology. Paper given at the Annual meeting of the Society for Psychophysiological Research, Lisbon, Portugal.
100. Kiehl, K.A. (2005, September). *The killer whale electrified: Can brain potentials indicate language processing in cetaceans?* Paper given to the public and staff at Mystic Aquarium, Mystic, CT.
101. Kiehl, K.A. (2005, October). *The cognitive neuroscience of psychopathic personality: Evidence for paralimbic dysfunction*. Paper given to the Department of Psychology, University of Connecticut – Storrs, Connecticut.
102. Kiehl, K.A. (2006, January). *The Hemodynamics of the Oddball Paradigm*. Paper given at the annual Carmel meeting on the Basis of the P300. Hosted by Emmanuel Donchin, St. Petersburg, Florida.

103. Kiehl, K.A. (2006, January). *Neuroscientific assessment of 'Callous' Conduct Disordered Youth*. Paper given to the Director and Staff of the Miami Dade County Juvenile Assessment Center (JAC). Miami.
104. Kiehl, K.A., (2006, February). *The cognitive neuroscience of psychopathic personality: Evidence for paralimbic dysfunction*. Invited lecture, Department of Psychology, University of California – San Diego. La Jolla, California.
105. Kiehl, K.A. (2006, February). *The hemodynamics of the P300*. Invited lecture, Scripps Research Institute, La Jolla, California.
106. Kiehl, K.A., (2006, February). *Aberrant connectivity in schizophrenia: Is it diagnostic?* Paper presented at the Annual Winter Conference on Brain Research. Steamboat Springs, CO. Invited lecture.
107. Maltby, N., Worhunsky, P., Kiehl, K. A., & Tolin, D. F. (2006, March). *Dismantling the neural systems of obsessive-compulsive disorder: A symptom provocation fMRI study of compulsive hoarding*. In K. Cromer (Chair), *Elucidating the Relationship Between Hoarding Symptoms and Stressful Life Events*. Symposium presented to the Annual Meeting of the Anxiety Disorders Association of America, Atlanta.
108. Kiehl, K.A. (2006, March). *The cognitive neuroscience of psychopathic personality: Evidence for paralimbic dysfunction*. MIND Institute, Albuquerque, NM.
109. Kiehl, K.A. (2006, March). *Psycholinguistics in Psychopathic Personality: Decoding troubled processing*. Lecture presented to the Department of Psychology, University of Connecticut – Storrs. Storrs, CT. Invited Lecture.
110. Maltby, N., Tolin, D.F., & Kiehl, K.A. (2006, May). *Compulsive hoarding: Is there evidence for dysfunctional error processing*. Presented to the Annual Meeting of the Society of Biological Psychiatry, Toronto.
111. Anticevic, A., Aikins, D.E., & Kiehl, K.A. (2006, April). *Modulation of Brain Activity by Signaling Pictorial Valence*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
112. Schaich Borg, J., Lieberman, D. & Kiehl, K.A. (2006, April). *Moral, Sexual, and Pathogen Disgust – Distinct or Common Neural Networks?* Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
113. Schaich Borg, J. Sinnott-Armstrong, W. & Kiehl, K.A. (2006, April). *How we decide something is morally wrong: An fMRI study of moral judgment*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
114. Kiehl, K.A. (2006, April). *Update on the cognitive neuroscience of psychopathy*. Neuroscience Grand Rounds, Institute of Living, Hartford, CT.

115. Kiehl, K.A. (2006, April). *The cognitive neuroscience of psychopathic personality: Evidence for paralimbic dysfunction*. Department of Psychology, University of New Mexico, Albuquerque, NM. Invited lecture.
116. Stevens, M.C., Kiehl, K.A., Pearlson, G.D., Calhoun, V.D. (2006, June). *Functional neural circuits for mental timekeeping*. Poster presented at the annual meeting of the society for Human Brain Mapping, Florence, Italy.
117. Kiehl, K.A., (2006, June). *Designing fMRI studies for clinical populations*. Lecture provided during the Special Education Symposium, annual meeting of the society for Human Brain Mapping, Florence, Italy. Invited lecture.
118. Kiehl, K.A. (2006, September). *Integrating Neuroscience and Basic Research in Drug Courts: The Construct of Psychopathy*. National Institute on Drug Abuse: Drug Courts and Other Problem- Solving Courts: State of the Science – Special Emphasis Panel, Bethesda, MD. Invited lecture.
119. Kiehl, K.A. (2006, September). *Aberrant emotional word processing in psychopathy*. Paper presented in the symposium Emotional Processing in Psychopathy, Chair Verschuere, B. at the Annual Meeting of the Society for Psychophysiological Research, Vancouver, B.C., Canada.
120. Shane, M.S., Stevens, M.C., & Kiehl, K.A. (2006, September). *An fMRI Investigation of the Neural Response to Another's Errors*. Poster presented at the annual meeting of the Society for Psychophysiological Research, Vancouver, B.C.
121. Most, S.B., Chun, M.M., Johnson, M.R., Kiehl, K.A. (2006, November). *Attentional modulation of the amygdala varies with personality*. Poster presented at the annual meeting of the Psychonomic Society. Dallas, TX.
122. Kiehl, K.A. (2006, November). *Program in Forensic Psychology at The MIND Institute*. Lecture offered to the MIND Institute Board of Director's meeting. Albuquerque, NM. Invited lecture.
123. Kiehl, K. A., (2006, December). *The cognitive neuroscience of people who do bad things: A story of paralimbic dysfunction in psychopathic personality*. Lecture to the Department of Psychology, Stony Brook University, Stony Brook, NY. Invited lecture.
124. Kiehl, K.A. (2006, December). *Success and Barriers to Brain Imaging with Prisoners Populations*. Symposium on Research With Prisoners: Ethics and Opportunities, W. Compton, Chair (NIDA organizer). Annual Meeting of the American College of Neuropsychopharmacology (ACNP), Hollywood, FL. Invited lecture.
125. Mathalon, D.H., Kiehl, K.A., Calhoun, V.D., McGlashan, T.H. Pearlson, G D., Woods, S.W. (2006, December). *Abnormal fronto-temporal cortical activation during fMRI attention and working memory tasks in prodromal and early illness patients with schizophrenia*. Poster presented at the Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL.

126. Shane, M.S., Harenski, C.L., Stevens, M.C., & Kiehl, K.A. (2007, January) *This hurts me as much as it hurts you: Empathic concern and the observation of another's errors*. Memphis, TN
127. Kiehl, K.A. (2007, February). *The cognitive neuroscience of people who do bad things: A story of paralimbic dysfunction in psychopathic personality*. In symposium: What Are the Sociobiological Bases for Aggression? Buchesbaum, M. organizer. Annual meeting of the American Neuropsychiatric Association. Tucson, AZ.
128. Harenski, CL, Antonenko, O, Shane, MS, & Kiehl, KA (2007, April). *Neural correlates of explicit moral appraisals: an fMRI study*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York, NY
129. Byrd, A.L., Shane, M.S., Book, G., Kahn, R.E., Antonenko, O., & Kiehl, K.A. (2007, April). *Response inhibition as a protective factor against incarceration in those high and low in psychopathic traits*. Poster presented at the annual meeting of the Society for the Scientific Study of Psychopathy. St. Petersburg, FL.
130. Shane, M.S., Harenski, C.L., & Kiehl, K.A. (2007, April). *Why should I care what happens to you? fMRI evidence for reduced empathic concern associated with subclinical psychopathy*. Paper offered in the symposium: Psychopathy, Emotion, and Emotion Regulation; Chair: Kosson, D. Presented at the annual meeting of the Society for the Scientific Study of Psychopathy. St. Petersburg, FL.
131. Antonenko, O., Shane, M.S., Harenski, C.L., Kahn, R., Byrd, A., & Kiehl, K.A. (April, 2007). *The PCL-R and self-report Scales in a substance abusing sample*. Poster presented at the annual meeting of the Society for the Scientific Study of Psychopathy. St. Petersburg, FL.
132. Kahn, R. E., Shane, M., Antonenko, O., Bell, E., Byrd, A. L., & Kiehl, K. A. (2007, April). *Gender differences in the expression of psychopathic traits*. Poster presented at the 2nd Biennial Society for the Scientific Study of Psychopathy Conference, St. Petersburg, FL
133. Harenski, CL, Antonenko, O, Shane, MS, & Kiehl, KA (2007, April). *Psychopathic personality traits predict neural and behavioral responses to visually depicted moral violations*. Poster presented at the annual meeting of the Society for the Scientific Study of Psychopathy, St. Petersburg, FL.
134. Schaich Borg, J., Sinnott-Armstrong, W., & Kiehl, K.A. (2007, May). *How we decide something is morally wrong: An fMRI study*. Poster presented at the annual meeting of the Society for Cognitive Neuroscience, New York, NY.
135. Byrd, A. L., Shane, M., Book, G., Kahn, R.E., Antonenko, O., & Kiehl, K.A. (2007, May). *Response Inhibition as a Protective Factor Against Incarceration in Those High and Low in Psychopathic Traits*. Poster presented at the 2nd Biennial Society for the Scientific Study of Psychopathy Conference, St. Petersburg, FL.
136. Antonenko, O., Shane, M., Harenski, C. L., Kahn, R.E., & Kiehl, K. A. (2007, May). *The PCL-R and Self-Report Scales in a Substance Abusing Sample*. Poster presented at the

2nd Biennial Society for the Scientific Study of Psychopathy Conference, St. Petersburg, FL

137. Harenski, CL, Antonenko, O, Shane, MS, & Kiehl, KA (2007, June). *Gender differences in mechanisms underlying moral judgments*. Poster presented at the annual meeting of the Organization for Human Brain Mapping, Chicago, IL
138. Kiehl, K.A. (2007, September). *Psychopathic personality: How important is the construct for the legal system*. Paper for the Women's Lawyer's Association of San Luis Obispo County. Invited lecture.
139. Kiehl, K.A. (2007, September). *Psychopathy: Legal implications and neuroscience*. Inaugural meeting of the MacArthur Foundation Network on Law and Neuroscience. Invited speaker.
140. Kiehl, K.A. (2007, September). *The cognitive neuroscience of youth and adult psychopathic personality: Evidence for paralimbic abnormalities*. Grand rounds, Department of Psychiatry, Medical College of South Carolina, Charleston, SC. Invited speaker.
141. Kiehl, K.A. (2007, September). *The relevance of the assessment of psychopathy for forensic populations*. Paper presented at the 25th Annual Meeting of the New Mexico Criminal Justice Association. Invited speaker.
142. Chakroff, A.G., Harenski, C.L., Shane, M.S., & Kiehl, K. A. (2007, November). *Subliminal emotion perception is modulated by psychopathic traits: An ERP study*. Poster presented at the annual meeting of the Society for Neuroscience. San Diego, CA.
143. Kiehl, K.A. (2007, November). *The cognitive neuroscience of psychopathic personality: Evidence for paralimbic disturbances*. Grand Rounds in the Department of Psychiatry, University of New Mexico, Albuquerque, NM. Invited speaker.
144. Kiehl, K.A. (2007, November). *The cognitive neuroscience of people who do bad things: A story of paralimbic dysfunction in psychopathic personality*. Grand Rounds in the Department of Psychiatry, University of Massachusetts Medical School, Worcester, MA. Invited speaker.
145. Kiehl, K.A. (2007, November). *Brain imaging in psychopathy*. Lecture offered to the Center for Mental Health Services Research. University of Massachusetts Medical School, Worcester, MA. Invited speaker.
146. Kiehl, K.A. (2008, January). *The functional neuroanatomy of psychopathic personality*. Grand Rounds in the Department of Neurology, University of New Mexico, Albuquerque, NM. Invited speaker.
147. Byrd, A. L., Shane, M., & Kiehl, K. A. (2008, February). *Neural activity during successful response inhibition in substance abusers and psychopaths*. Poster presented at the annual meeting of the Society for Social and Personality Psychology, Albuquerque, NM.

148. Antonenko, O., Harenski, C. L., & Kiehl, K. A. (2008, February). *Investigating the association between empathy and moral decision making: an fMRI study*. Poster presented at the 9th annual Society for Personality and Social Psychology meeting. Albuquerque, NM
149. Kiehl, K.A. (2008, March). *The relevance of the assessment of psychopathy for forensic populations*. Lecture for the New Mexico Psychology Association. Invited speaker.
150. Kiehl, K.A., (2008, March). *Psychopathic personality: How important is the construct for the legal system?* Lecture for the New Mexico Rotary Club. Albuquerque, NM. Invited speaker.
151. Kiehl, K.A. (2008, April). *How to go to prison? The making of a forensic psychologist*. Keynote lecture for Department of Psychology Research Day, University of New Mexico, Albuquerque, NM. Invited speaker.
152. Shane, M. S., Byrd, A. L., Harenski, C. L., & Kiehl, K. A. (2008, April). *Unique neural recruitment during successful response inhibition associated with substance abuse and psychopathy*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
153. Kahn, R.E., Hansberry, H., Harenski, C., Shane, M. & Kiehl, K. A. (2008, May). *Improving the emotional profile of a psychopathy: The relationship between psychopathy and emotional intelligence*. Poster presented at the 20th Annual Convention Association for Psychological Science Conference, Chicago, IL.
154. Kiehl, K.A., (2008, May). *Paralimbic abnormalities in incarcerated youth and adults with psychopathic traits*. Psychopathology and Addiction among Criminal Justice Populations: New Directions. Chairs: Wilson Compton and Joseph Frascella, NIDA. American Psychiatric Association, Washington DC, USA. Invited speaker.
155. Kiehl, K.A. (2008, May). *Aberrant neural processing during decision-making in criminal psychopathy and substance abuse*. In symposium, Brain Substrates of impaired Error Detection, Moral Judgment and Agency As Core Deficits in Substance Abuse. Steve Grant, NIDA, Chair. American Psychiatric Association, Washington DC, USA. Invited speaker.
156. Harenski, CL, Harenski, KA, Shane, MS, & Kiehl, KA (2008, May). *Neural correlates of moral sensitivity in an adult incarcerated population*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA
157. Kahn, R.E., Hansberry, H., Harenski, C., Shane, M. & Kiehl, K.A. (2008, May). *Improving the Emotional Profile of a Psychopath: The Relationship between Psychopathy and Emotional Intelligence*. Poster presented at the 20th Annual Association for Psychological Science Conference, Chicago, IL.
158. Kiehl, K.A. (2008, July). *The criminal psychopath magnetized: Brain imaging evidence for paralimbic abnormalities*. Lecture for Department of Radiology, Washington University, St. Louis. Invited speaker.

159. Kiehl, K.A. (2008, September). *Psychopathy: Implications for the legal system*. In Neuroscience for Judges Seminar, Speaker series sponsored by the MacArthur Foundation Law and Neuroscience Network and the Gruter Institute, Minary Center, Dartmouth College, NH.
160. Kiehl, K.A. (2008, September). *Brain Imaging and the Criminal Psychopath: Assessment, Recidivism, and Neurobiology*. Lecture for the Vanderbilt Law School, Nashville, TN. Invited speaker.
161. Kiehl, K.A. (2008, October). *The Criminal Psychopath: Assessment, Recidivism, and Neuroscience*. Lecture for Science Writers of North America, Hosted by Stanford University. Invited speaker.
162. Kiehl, K.A. (2008, October). *The Criminal Psychopath: Assessment, Recidivism, and Neuroscience*. PAL lecture for Department of Psychology, University of New Mexico.
163. Cope, L.M., Shane, M.S., Nyalakanti, P.K., & Kiehl, K.A. (2008, November). *Structural analysis of psychopathic personality: A voxel-based morphometry study*. Poster presented at the annual meeting of the Society for Neuroscience, Washington, D.C.
164. Clark, V.P., Beatty, G.K., Anderson, R., Kodituwakku, P., Phillips, J., Kiehl, K.A., Calhoun, V.D. (2008, November). FMRI activity in cingulate and insular cortex predicts relapse in recovering stimulant addicts. Oral presentation at the annual meeting of the Society for Neuroscience, Washington, D.C.
165. Kiehl, K.A. (2008, November). *The Criminal Psychopath: Assessment, Recidivism, and Neuroscience*. Lecture for Gruter Judicial Education Conference, Riverside, CA. Invited speaker.
166. Kiehl, K.A. (2009, February). *Psychopathy, Violence, and Brain*. Lecture for EPFL Latsis Symposium 2009: Brain Mechanisms of Violence, Lausanne, Switzerland. Invited speaker.
167. Kiehl, K.A. (2009, February). *The criminal psychopath magnetized: Brain imaging reveals paralimbic abnormalities*. Lecture for Lake Ontario Visionary Establishment, Niagara Falls. Invited speaker.
168. Kiehl, K.A. (2009, February). *The Criminal Psychopath: Assessment, Recidivism, and Neuroscience*. Lecture for The 2009 Stanford Technology Law Review Symposium- Neuroscience and the Courts: The Implications of Advances in Neurotechnology, Stanford, CA. Invited speaker.
169. Kiehl, K.A. (2009, March). *Psychopathy, Risk Assessment, Treatment, and Neuroscience*. Lecture for Law & Neuroscience for Federal Judges, Sponsored by the Gruter Institute for Law and Behavioral Sciences and the Federal Judicial Center, New York, NY. Invited speaker.

170. Kahn, R.E., & Kiehl, K.A. (2009, April). *The Relationship Between Psychopathy and Emotional Intelligence in Incarcerated Youth*. Poster presented at the 3rd Biennial Society for the Scientific Study of Psychopathy Conference (SSSP), New Orleans, LA.
171. Harenski, CL, Harenski, KA, Shane, MS, & Kiehl, KA (April, 2009). *Neurobehavioral correlates of moral sensitivity in adult and adolescent psychopathy*. Paper presented at the annual meeting of the Society for the Scientific Study of Psychopathy (SSSP), New Orleans, LA.
172. Kiehl, K.A. (2009, April). *Brain Abnormalities in Incarcerated Youth with Psychopathic Traits*. Lecture for Society for Scientific Study of Psychopathy (SSSP), New Orleans, LA. Member.
173. Chandler, L., Filbey, F., Nyalakanti, P., Bryan, A., Kiehl, K.A., Hutchison, K., & Feldstein Ewing, S. W. (2009, April). *Searching for the Connection: The relationship between biological and behavioral correlates of adolescent alcohol abuse*. Poster presented at the Society for Research in Child Development, Denver, CO.
174. Bryan, A.D., Feldstein Ewing, S., Magnan, R., Claus, E., Filbey, F.M., Kiehl, K.A., & Hutchison, K.E. (2009, April). *Neurocognitive correlates of risky sexual behavior in adolescents: An fMRI approach*. Poster presented at the Society of Behavioral Medicine's 30th Annual Meeting. Montreal, Quebec, Canada.
175. Kiehl, K.A. (2009, April). *Psychopathy, Risk Assessment, Treatment, and Neuroscience*. Lecture for Paul D. Coverdell/Franklin Foundation Neuroimaging Lecture Series, University of Georgia, Athens, GA. Invited speaker.
176. Kiehl, K.A. (2009, May). *Substance Abuse, Psychopathy, and the Brain – What Have We Learned Using the Mind Mobile Imaging System and New Data Fusion Approaches?* Lecture for Domenici Neuroscience Symposium, Washington D.C. Invited speaker.
177. Kiehl, K.A. (2009, May). *Psychopathy, Risk Assessment, Treatment, and Neuroscience*. Lecture for Gruter Institute Annual Conference 2009: Law, Behavior & the Brain, Squaw Valley, CA. Invited speaker.
178. Ermer, E., & Kiehl, K. A. (2009, May). *Social reasoning in psychopathy*. Paper presented at the Human Behavior and Evolution Society Conference, Fullerton, CA.
179. Feldstein Ewing, S.W., Filbey, F.M., Claus, E., Sabbineni, A., Nyalakanti, P., Kiehl, K.A., Hutchison, K.E., & Bryan, A.D. (2009, June). *Neurological correlates of alcohol abuse behavior with high risk, juvenile justice-involved youth*. Paper presented at the Research Society on Alcoholism annual meeting, San Diego, CA.
180. Kiehl, K.A. (2009, June). *Psychopathy, Risk Assessment, Treatment, and Neuroscience*. Lecture for Neuroscience for Judges, sponsored by the Gruter Institute for Law and Behavioral Research with funding from the John D. and Catherine T. MacArthur Foundation's Law and Neuroscience Project, Nashville, TN. Invited speaker.
181. Clark, V.P., Beatty, G.K., Anderson, R., Koditwakku, P., Phillips, J., Kiehl, K.A., Calhoun, V.D. (2009, June). *Cingulate and insula activity predict relapse in recovering*

- stimulant addicts*. Abstract #1818, Oral Presentation, Psychiatric Disorders Session, Organization for Human Brain Mapping, San Francisco, CA, 2009.
182. Kiehl, K.A. (2009, June). *Psychopathic traits: Assessment, Recidivism, Treatment, Economics, and Neuroscience*. Lecture for 2009 District of Nevada Department of Probation Conference, Dana Point, CA. Invited speaker.
 183. Kiehl, K.A. (2009, June). *The cognitive neuroscience of psychopathic traits – who has them and what does it mean?* Lecture for Summer Institute in Cognitive Neuroscience, Santa Barbara, CA. Invited speaker.
 184. Kiehl, K.A. (2009, July). *All Things Psychopathic: Assessment, Criminal Recidivism, Treatment and Neuroscience*. Lecture for The Mind Research Network, Albuquerque, NM.
 185. Kiehl, K.A. (2009, July). *The Criminal Psychopath: Assessment, Recidivism, and Neuroscience*. Lecture for The United States Probation and Pretrial Services Middle District of Florida, Bonita Springs, Florida. Invited speaker.
 186. Kiehl, K.A. (2009, October). *The Criminal Psychopath: Assessment, Recidivism, Treatment and Neuroscience*. Seminar for Baylor College of Medicine for the Department of Neuroscience weekly seminar series Invited speaker, Houston, TX.
 187. Kiehl, K.A. (2009, November). *The Criminal Psychopath: Assessment, Recidivism, Treatment and Neuroscience*. Seminar for State Judges as part of the Gruter Institute/MacArthur Foundation Law and Neuroscience Project. Hosted by Northwestern Law School, Chicago, IL.
 188. Kiehl, K.A., (2009, November). *fMRI for judges*. Seminar for State Judges as part of the ASTAR program in Science Education for Judges. Chicago, IL.
 189. Kiehl, K.A. (2009, November). *Understanding Psychopathy for Judges*. Seminar for State Judges as part of the ASTAR program in Science Education for Judges. Chicago, IL.
 190. Kiehl, K.A. (2009, December). *Paralimbic dysfunction in psychopathy? Is there evidence from neuroimaging literature?* Invited lecture for the De Kijvelanden Forensisch Psychiatrisch Centrum, Rotterdam, Netherlands.
 191. Kiehl, K.A. (2010, March). *Psychopathy: Risk assessment, treatment, and neuroscience*. Seminar on Law and Neuroscience for Federal Judges, Gruter Institute for Law and Behavioral Research & Federal Judicial Center; Co-sponsored by Harvard Law School Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics and The John D. and Catherine T. MacArthur Foundation Law and Neuroscience Project. Boston, MA.
 192. Kiehl, K.A. (2010, March). *Neuroscience of Psychopathy: Can it be mitigating?* Invited Keynote lecture for Office of the State Appellate Defender and Illinois Institute for Continuing Legal Education: Defending Illinois Death Penalty Cases, Chicago, IL.

193. Kiehl, K.A. (April, 2010). *Exploring the brains of psychopaths*. Invited address for the Kenan Institute for Ethics, Duke University, Durham, NC.