**CURRICULUM VITAE**

**Martin Peter Paulus, MD**

**PRESENT TITLE AND AFFILIATION**

Professor in Residence

Department of Psychiatry

Laboratory of Biological Dynamics and Theoretical Medicine

University of California San Diego

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BIRTHDATE: 06/20/1961

CITIZENSHIP: U.S., German.

BOARD CERTIFICATION: American Board of Psychiatry and Neurology,

valid March 2009 – December 2019

LICENSE: California A053845, valid until June 2014

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| **TRAINING** |
| **Medical School** | Johannes Gutenberg University Mainz, GermanyOctober, 1979 – September, 1986 |
| **Postgraduate Fellowship****German Federation of Research (DFG)** | University of California San DiegoOctober, 1986 – September, 1987 |
| **Postdoctoral Fellow** | University of California San DiegoOctober, 1987 – July, 1990 |
| **Assistant Research Psychobiologist** | University of California San DiegoJuly, 1990 – June, 1993 |
| **Internship** | Long Island Jewish Medical CenterHillside HospitalJuly, 1993 – June, 1994 |
| **Residency in Psychiatry** | University of California San DiegoJuly, 1994 – June, 1996 |
| **Fellowship in Biological Psychiatry and Neuroscience** | University of California San DiegoJuly, 1996 – June, 1997 |
| **FACULTY POSITIONS** |
| **Assistant Professor in Residence** | University of California San DiegoJuly, 1997 – June, 2000 |
| **Staff Psychiatrist** | Veterans Affairs San Diego Health Care System July, 1997 - Present |
| **Associate Professor in Residence** | University of California San DiegoJuly, 1997 – June, 2005 |
| **Associate Chief of Psychiatry** | Veterans Affairs San Diego Health Care System July, 1999 – Dec, 2011 |
| **Acting Chief of Psychiatry** | Veterans Affairs San Diego Health Care System 2011 |
| **Director of Telemental Health** | Veterans Affairs San Diego Health Care System Dec, 2011- Present |
| **Professor in Residence** | University of California San DiegoJul, 2005 – Present |
| **Training Director T32 Fellowship in** **Biological Psychiatry and Neuroscience** | University of California San DiegoJul, 2009 – Present |
| **HONORS AND AWARDS** |
| 1996 | NIMH Outstanding Resident Award |
| 1997 | Lewis Judd Resident Research Award |
| 1997 | Society for Biological Psychiatry Outstanding Resident Award |
| 2000 | National Alliance for the Mentally Ill Young Investigator Award |

#### **PROFESSIONAL ORGANIZATIONS**

* American Medical Association
* Society for Neuroscience
* European Behavioral Pharmacology Society
* American College for Neuropsychopharmacology
* Society for Biological Psychiatry
* Anxiety Disorders Association of America

#### **EDITORIAL AND REVIEW WORK**

**Reviewing Editor / Editorial Board:**

* Progress in Neuro-Psychopharmacology & Biological Psychiatry
* Neuroscience & Biobehavioral Reviews
* Frontiers in Neuroscience
* Biological Psychiatry
* Social Neuroscience

**Reviewer for:**

* American Journal of Geriatric Psychiatry
* American Journal of Psychiatry
* Archives of General Psychiatry
* Behavioral Brain Research
* Behavioral Neuroscience
* Biological Psychiatry
* Biological Psychology
* Brain Imaging and Behavior
* Brain Research
* Brain Structure and Function
* Cerebral Cortex
* Cognitive, Affective, and Behavioral Neuroscience
* Drug and Alcohol Dependence
* Human Brain Mapping
* Journal of Affective Disorder
* Journal of Cognitive Neuroscience
* Journal of Neuroscience
* Journal of Neuroscience, Psychology, and Economics
* Journal of Psychopharmacology
* Journal of Studies on Alcohol
* Journal of the American Academy of Child and Adolescent Psychiatry
* Nature Neuroscience
* Neuroimage
* Neuron
* Neuropsychologia
* Neuropsychopharmacology
* Pharmacology Biochemistry and Behavior
* Physical Review Letters
* PLOS one
* Proceedings of the National Academy of Science of the U.S.A.
* Psychiatry Research
* Psychiatry Research: Neuroimaging
* Psychological Medicine
* Psychological Science
* Psychopharmacology
* Science
* Trends in Cognitive Science

**SERVICE: UNIVERSITY OF CALIFORNIA SAN DIEGO**

* Member of the Institutional Review Board (2000 – 2010)
* Member of the Biological Psychiatry Fellowship Committee (1999-2009)
* Member Search Committee for Medicine Chair (2010-2011)

**SERVICE: SCIENTIFIC COMMUNITY**

* NIH Center Grant reviewer (2003/2004)
* NIMH adhoc reviewer (2000 – present)
* ZRG1-SBIB-H(40) NIH Committee – member
* Special Emphasis Panel/Scientific Review Group 2006/10 ZRG1 RPHB-H
* RPIA Study Section Member (2006 – 2009)
* Adhoc NIDA Center Review Committee Member (07/2007 – present)
* National Academies of Sciences – Panel Member: “Opportunities in Neuroscience for Future Army Applications (2008)
* DoD Grant Review Committee Member
* NIH Roadmap Reviewer (2007)
* NIDA K-committee regular member (2010- 2012)
* NASA - Behavioral Health & Performance (BHP) - Standing Review Panel (SRP) (2010-present)
* NIDA Intramural Program Review – Adhoc Member (2011)
* Laureate Institute Board of Scientific Advisors (2011)
* CDMRP Reviewer (2012)
* NIH Pioneer Award Reviewer (2012)
* FDA/NIH Tobacco Regulation Research Reviewer (2013)
* NIH Eureka Award Reviewer (2013)
* NIH Interventions Committee for Adult Disorders (ITVA) Ad-hoc Reviewer (2013)

**Web of Science Report:**

 

Publications / Year Citations / Year

Sum of the Times Cited: 7752

Sum of Times Cited without self-citations: 7210

Citing Articles: 5775

Citing Articles without self-citations: 5633

Average Citations per Item: 28.71

h-index: 48

**SHORT NARRATIVE OF RESEARCH INTERESTS:**

I am a Professor in Residence in the Department of Psychiatry at the University of California San Diego (UCSD) and the Director of Telemental Health at the Veterans Affairs San Diego Health Care System (VASDHS). My research focuses on the interface between interoception, i.e. the processing of sensory information coming from the inside of the body, and decision-making, i.e. how to process preferences to arrive at making choices. In particular, I am interested how interoception and decision-making go awry in individuals with psychiatric disorders. For example, how do decision-making dysfunctions contribute to transition from casual use of drugs to drug dependence and how these dysfunctions contribute to relapse in individuals with substance dependence? Moreover, I am interested in the use of functional magnetic resonance imaging (fMRI) as a tool to discover new drugs for psychiatric disorders.

I am collaborating with several investigators at UCSD and other institutions to study the neural basis of psychiatric disorders. Specifically, I am working with Drs. Susan Tapert and Gerhard Schulteis on NIDA supported P-20 Center Grant to examine the role of interoception for drug addiction. Interoception consists of the afferent information the brain processes coming from the inside of the body, which is integrated in the insula cortex to provide “a general state of the body” contributing to how an individual feels at any given moment in time. The goal of this center is to determine whether modulation of interoceptive processing can be used to develop novel treatments for drug addiction.

In collaboration with Dr. Murray Stein, I am working on determining whether fMRI can be used as a biomarker in the development of novel anxiolytic drugs. We also utilize fMRI as a tool to elucidate basic affective processing dysfunctions in individuals with different types of anxiety disorders. In particular, we are focusing on dysfunctions of affective processing in social phobia and the effect of both pharmacological and behavioral treatment on these processes.

In collaboration with the Naval Health Research Center (NHRC), the NAVY SEAL psychologist, and the Olympic Training Center, we are currently examining the neural basis of optimal performance. The goal of these studies is to identify the brain systems that are important for optimal performance so as to be able to train these systems in the future.

In collaboration with Dr. William Mobley (Chair of the Department of Neurosciences), we have been establishing the UCSD Center for Science and Education of Empathy and Compassion (SEEC). The goals of SEEC is to use neuroscience tools such as functional neuroimaging, electroencephalography, and genetic approaches to understand the brain mechanisms underlying empathy and compassion; develop scientifically based mechanistic models that can help to promote a neuroscience-based understanding of empathy and compassion; and translate these insights into new approaches to increase empathy and compassion

In collaboration with Dr. Walt Kaye, we have been establishing various neuroimaging approaches to determine dysfunctions in reward processing and decision-making in recovered anorectic and bulimic individuals. In particular, we currently examine whether there is a dysfunction of interoceptive processing in these individuals that contributes to the altered reward processing of primary reinforcers.

Over the past years, I have focused on helping young academic investigators to establish a program of research in psychiatry. As part of these efforts, I have worked in the areas of pain and depression, time perception and drug abuse, anticipatory processing dysfunctions in anxiety disorders, novel models for stop signal behavior, and social science methods to quantify interactions between individuals at risk for drug addiction.

As a consequence of my interest in fostering young academics, I have taken over the directorship of the NIMH supported T-32 Fellowship on Biological Psychiatry and Neuroscience, which provides 5 post-doctoral fellow positions.

**SHORT NARRATIVE OF CLINICAL INTERESTS:**

My main clinical focus at this time is to develop novel ways of providing mental health care to Veterans. Specifically, we have been awarded special funds from the Department of Veterans Affairs to establish evidence-based psychotherapy for individuals with post-traumatic stress disorder. More recently, the VASDHS has been identified as a Regional Center of Excellence for Telemental Health. As the Director of this center, we will utilize these additional funds to determine whether novel treatment delivery using tablet computers and video interface can be useful for both psychotherapy and medication management of psychiatric disorders in Veterans.

I am the Director of the Mood Clinic at the VASDHS, a large outpatient service that focuses on treating patients with unipolar and bipolar depressive disorder. My patient case-load has varied between 250-400 patients over the past two years. I have regularly scheduled clinic hours during which I see patients for both medication management and treatment plan coordination with a multi-disciplinary treatment team. I also continue to determine the efficacy of a standardized treatment class for patients with anger management problems. Working with several clinicians at the VASDHS, we have developed a standardized treatment manual and are in the process of training various clinicians in the VA hospital to lead this standardized anger management program.

**TEACHING AND TRAINING**

* Psychiatry Resident Instructor (1997 – present)
* Medical Student Instructor (1997 – present)
* Supervisor to Postgraduate Fellows (1997 – present)
* Member of Neuroscience Faculty at UCSD (2000 – present)
* Neuroscience 200C Instructor
* T32 Program Director: Fellowship for Biological Psychiatry and Clinical Neuroscience

#### **SUPERVISED STUDENTS, POSTDOCTORAL FELLOWS OR JUNIOR FACULTY**

The following table summarizes my mentorship activity in promoting young researchers to establish themselves in various fields.

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| --- | --- | --- | --- |
| **Faculty/Postdoctoral Fellows** | **Research Topic** | **Supervision** | **Funding Support****Current Position** |
| **Scott Matthews, M.D.** | The use of fMRI to characterize the neural correlates of emotional, behavioral and autonomic control | 7/2003–2013 | NARSAD Young Investigator Award; APA Young Investigator Award; DOD Young Investigator Award; VA Career Development Award |
| **Alan Simmons, Ph.D.** | Neural system dysfunctions in combat veterans returning from Iraq and Afghanistan | 7/2003–09/2009 | NARSAD Young Investigator Award; Department of Defense Young Investigator Award |
| **Tony Yang, M.D. Ph.D**. | Neural systems dysfunction in adolescent depression | 7/2004–06/2012 | R01Associate Professor UCSF |
| **Amanda Bishoff-Grethe, Ph.D.** | Relationship between reward mechanisms and motor control in the basal ganglia. | 7/2003–7/2010 | K-Award |
| **Marc Wittmann, Ph.D.** | Neural systems underlying the experience of time. | 9/2004–7/2010 | Staff Scientist Institute for Frontier Areas of Psychology, Freiburg |
| **Irina Strigo, Ph.D.** | Neural networks of affective processing in depression | 9/2004–7/2009 | K/R Award; NIH R21 GrantAssistant Adjunct Professor UCSD |
| **Sara Mednick, Ph.D.** | Pharmaco Imaging to determine the neural basis of napping. | 7/2007–7/2011 | Associate Professor UC Riverside |
| **Estibaliz Arce, Ph.D.** | Neural systems underlying resilience | 7/2005–7/2009 | Director, Clinical, Neuroscience Research Unit at Pfizer |
| **David Leland. Ph.D.** | Neural system underlying risk-taking in stimulant users | 3/2004–3/2008 | Assistant Professor University of Wisconsin-Eau Claire |
| **Jennifer Aron** | Tactile c-fiber afferents: a system for probing affective processing, anticipation, and models of drug abuse | 10/2005–7/2011 | Minority Supplement Award |
| **Justin Feinstein** | Insula Function and Emotion | 10/2001–2/2006 | Postdoctoral Fellow Cal Tech |
| **Guido Frank, M.D**. | Reward Processing and Eating Disorders | 10/2005–6/2007 | R01Assistant Professor University of Colorado, Denver |
| **Martina Reske, Ph.D.** | Inhibitory Processing in Stimulant Using Individuals | 1/2008 – 1/2010 | Staff ScientistForschungszentrum Jülich · Computational and Systems Neuroscience (INM-6) |
| **Dharol Tankersley**  | Pharmaco-fMRI: Benzodiazepine effects on emotion processing | 7/2008–7/2009 |  |
| **Adrienne Moore** | Interoception and Empathy | 6/2008–7/2009 | Graduate Student Researcher |
| **Sarah Wu** | Genetics and Neuroimaging in Anxiety | 1/2009–7/2009 | Graduate Student Researcher, University of Colorado, Denver |
| **Jennifer Stewart, Ph.D**  | Decision-making and Stimulant use | 2/2010–Current | Project Scientist |
| **Colm Connoly, Ph.D**. | Risk-taking and Methamphetamine dependence | 1/2010–06/2012 | Project Scientist, UCSF |
| **Tali Manber Ball** | Neural processing underlying Anxiety disorders | 7/2009–Current | Graduate Student Researcher |
| **Robin Aupperle, Ph.D.** | Approach-Avoidance Conflict in Anxiety disorders | 7/2009 – 7/2011 | Assistant ProfessorDept. of PsychologyUniversity of Kansas |
| **Charlie Taylor, PhD****CharlieT** | Neural Basis of Computerized Attention Training | 7/2011–12/2012 | K/R AwardeeAssistant Adjunct Professor, UCSD |
| **M. Scott Mackey, PhD****Scott M** | Structural Brain Changes associated with stimulant use | 8/2011–Current |  |
| **Joshua Gowin, PhD**C:\Users\Sonja\Downloads\CVpicture.jpg | Behavioral and neuroimaging ofRisk-taking | 02/2012-08/2013 | Postdoctoral Fellow NIAAA |
| C:\Users\Sonja\Downloads\P1010890_kh.jpg**Katia Marina Harle, PhD** | Neural systems underlying emotion regulation in stimulant dependence | 07/2012-Current | NIMH T32-Fellowship |
| **C:\Users\Sonja\Downloads\LoriPic.jpgLori Hasse, PhD** | Neural systems underlying optimal performance and stress-resilience | 07/2012-Current | NIMH T32 Fellowship  |
| **Jonathon Howlett, MD**C:\Users\Sonja\Desktop\j howlett.jpg | The influence of counterfactual comparisons on decision making in depression | 07/2012-Current | Research Resident |
| **Max Schiff MD PhD**http://psychresidency.ucsd.edu/residents/PublishingImages/PGY2-1.jpg | Bayesian Models of Decision-making in Psychiatry | 07/2013-Current | Research Resident |

#### **PUBLICATIONS**

**1.** **Paulus** MP, Gass SF, Mandell AJ. A realistic, minimal 'middle layer' for neural networks. *Physica D.* 1989;vol.40(no.2):135-155.

**2.** **Paulus** MP, Geyer MA, Gold LH, Mandell AJ. Application of entropy measures derived from the ergodic theory of dynamical systems to rat locomotor behavior. *Proc.Natl.Acad.Sci.U.S A.* 1990;87:723-727.

**3.** **Paulus** MP, Geyer MA. A scaling approach to find order parameters quantifying the effects of dopaminergic agents on unconditioned motor activity in rats. *Prog.Neuropsychopharmacol.Biol.Psychiatry.* 1991;15:903-919.

**4.** **Paulus** MP, Geyer MA. A temporal and spatial scaling hypothesis for the behavioral effects of psychostimulants. *Psychopharmacology (Berl.).* 1991;104:6-16.

**5.** **Paulus** MP, Geyer MA, Mandell AJ. Statistical mechanics of a neurobiological dynamical system: the spectrum of local entropies (S( alpha )) applied to cocaine-perturbed behavior. *Physica A.* 1991;vol.174(no.2-3):567-577.

**6.** Geyer MA, **Paulus** MP. Multivariate and nonlinear approaches to characterizing drug effects on the locomotor and investigatory behavior of rats. *NIDA.Res.Monogr.* 1992;124:203-235.

**7.** **Paulus** MP, Geyer MA. The effects of MDMA and other methylenedioxy-substituted phenylalkylamines on the structure of rat locomotor activity. *Neuropsychopharmacology.* 1992;7:15-31.

**8.** Weiss F, **Paulus** MP, Lorang MT, Koob GF. Increases in extracellular dopamine in the nucleus accumbens by cocaine are inversely related to basal levels: effects of acute and repeated administration. *J.Neurosci.* 1992;12:4372-4380.

**9.** **Paulus** MP, Callaway CW, Geyer MA. Quantitative assessment of the microstructure of rat behavior: II. Distinctive effects of dopamine releasers and uptake inhibitors. *Psychopharmacology (Berl.).* 1993;113:187-198.

**10.** **Paulus** MP, Geyer MA. Three independent factors characterize spontaneous rat motor activity. *Behav.Brain Res.* 1993;53:11-20.

**11.** **Paulus** MP, Geyer MA. Quantitative assessment of the microstructure of rat behavior: I, f(d), the extension of the scaling hypothesis. *Psychopharmacology (Berl.).* 1993;113:177-186.

**12.** **Paulus** MP, Kadtke JB, Menkello FV. Statistical mechanics of biological and other complex experimental time series: assessing geometrical and dynamical properties. *International Journal of Bifurcation and Chaos in Applied Sciences and.* 1993;vol.3(no.3):717-727.

**13.** Judd LL, Rapaport MH, **Paulus** MP, Brown JL. Subsyndromal symptomatic depression: a new mood disorder? *J Clin Psychiatry.* Apr 1994;55 Suppl:18-28.

**14.** **Paulus** MP, Geyer MA, Braff DL. The assessment of sequential response organization in schizophrenic and control subjects. *Prog.Neuropsychopharmacol.Biol.Psychiatry.* 1994;18:1169-1185.

**15.** Weinger MB, Herndon OW, Zornow MH, **Paulus** MP, Gaba DM, Dallen LT. An objective methodology for task analysis and workload assessment in anesthesia providers. *Anesthesiology.* 1994;80:77-92.

**16.** Zisook S, Shuchter SR, Sledge PA, **Paulus** M, Judd LL. The spectrum of depressive phenomena after spousal bereavement. *J Clin Psychiatry.* Apr 1994;55 Suppl:29-36.

**17.** Judd LL, **Paulus** MP, Wells KB, Rapaport MH. Socioeconomic burden of subsyndromal depressive symptoms and major depression in a sample of the general population. *Am J Psychiatry.* Nov 1996;153(11):1411-1417.

**18.** **Paulus** MP, Geyer MA. Assessing the organization of motor behavior: New approaches based on the behavior of complex physical systems. In: Ossenkopp KP, Kavaliers M, Sanberg PR, eds. *Measuring Movement and Locomotion: From Invertebrates to Humans*: R.G. Landes Co; 1996:273-295.

**19.** **Paulus** MP, Geyer MA, Braff DL. Use of methods from chaos theory to quantify a fundamental dysfunction in the behavioral organization of schizophrenic patients. *Am.J.Psychiatry.* 1996;153:714-717.

**20.** **Paulus** MP, **Paulus** Mp GSFMAJ. Models and predictability of biological systemsA realistic, minimal 'middle layer' for neural networks. In: Kravtsov YA, Kadtke JB, eds. *Models and predictability of biological systems*. Karlsruhe: Springer-Verlag; 1996:153-168.

**21.** Judd LL, Akiskal HS, **Paulus** MP. The role and clinical significance of subsyndromal depressive symptoms (SSD) in unipolar major depressive disorder. *J Affect Disord.* Aug 1997;45(1-2):5-17; discussion 17-18.

**22.** **Paulus** MP. Long-range interactions in sequences of human behavior. *Physical Review E.* 1997;vol.55(no.3, pt.B):3249-3256.

**23.** **Paulus** MP, Geyer MA. Environment and unconditioned motor behavior: Influences of drugs and environmental geometry on behavioral organization in rats. *Psychobiology.* 1997;25(4):327-337. PMCID:

**24.** Zisook S, **Paulus** M, Shuchter SR, Judd LL. The many faces of depression following spousal bereavement. *J Affect Disord.* Aug 1997;45(1-2):85-94; discussion 94-85.

**25.** Judd LL, Akiskal HS, Maser JD, Zeller PJ, Endicott J, Coryell W, **Paulus** MP, Kunovac JL, Leon AC, Mueller TI, Rice JA, Keller MB. Major depressive disorder: a prospective study of residual subthreshold depressive symptoms as predictor of rapid relapse. *J Affect.Disord.* 1998;50(2-3):97-108.

**26.** Judd LL, Akiskal HS, Maser JD, Zeller PJ, Endicott J, Coryell W, **Paulus** MP, Kunovac JL, Leon AC, Mueller TI, Rice JA, Keller MB. A prospective 12-year study of subsyndromal and syndromal depressive symptoms in unipolar major depressive disorders. *Arch.Gen.Psychiatry.* 1998;55(8):694-700.

**27.** Judd LL, Kessler RC, **Paulus** MP, Zeller PV, Wittchen HU, Kunovac JL. Comorbidity as a fundamental feature of generalized anxiety disorders: results from the National Comorbidity Study (NCS). *Acta Psychiatr.Scand.Suppl.* 1998;393:6-11.

**28.** Krebs-Thomson K, Lehmann-Masten V, Naiem S, **Paulus** MP, Geyer MA. Modulation of phencyclidine-induced changes in locomotor activity and patterns in rats by serotonin. *Eur.J Pharmacol.* 1998;343(2-3):135-143.

**29.** Krebs-Thomson K, **Paulus** MP, Geyer MA. Effects of hallucinogens on locomotor and investigatory activity and patterns: influence of 5-HT2A and 5-HT2C receptors. *Neuropsychopharmacology.* 1998;18(5):339-351.

**30.** **Paulus** MP, Bakshi VP, Geyer MA. Isolation rearing affects sequential organization of motor behavior in post-pubertal but not pre-pubertal Lister and Sprague-Dawley rats. *Behavioural Brain Research.* 1998;94(2):271-280.

**31.** **Paulus** MP, Geyer MA, Sternberg E. Differential movement patterns but not amount of activity in unconditioned motor behavior of Fischer, Lewis, and Sprague-Dawley rats. *Physiology & Behavior.* 1998;V65(N3):601-606.

**32.** Dulawa SC, Grandy DK, Low MJ, **Paulus** MP, Geyer MA. Dopamine D4 receptor-knock-Out mice exhibit reduced exploration of novel stimuli. *J Neurosci.* 1999;19(21):9550-9556.

**33.** Judd LL, **Paulus** MP, Zeller P. The role of residual subthreshold depressive symptoms in early episode relapse in unipolar major depressive disorder [letter]. *Arch.Gen.Psychiatry.* 1999;56(8):764-765.

**34.** **Paulus** MP, Bilder RL. Complex Dysregulation In Sequential Organization And Dysregulation In Dopaminergic Modulation In First Episode Schizophrenia Patients. In: Pradhan N, Screenivasan L, Rapp PE, eds. *Nonlinear Dynamics and Brain Functioning*: Nova Science Publishers, Inc.; 1999.

**35.** **Paulus** MP, Dulawa SC, Ralph RJ, Mark AG. Behavioral organization is independent of locomotor activity in 129 and C57 mouse strains. *Brain Res.* 1999;835(1):27-36.

**36.** **Paulus** MP, Geyer MA, Braff DL. Long-range correlations in choice sequences of schizophrenic patients. *Schizophr.Res.* 1999;35(1):69-75.

**37.** **Paulus** MP, Perry W, Braff DL. The nonlinear, complex sequential organization of behavior in schizophrenic patients: neurocognitive strategies and clinical correlations. *Biol Psychiatry.* Sep 1 1999;46(5):662-670.

**38.** Judd LL, Akiskal HS, Zeller PJ, **Paulus** M, Leon AC, Maser JD, Endicott J, Coryell W, Kunovac JL, Mueller TI, Rice JP, Keller MB. Psychosocial disability during the long-term course of unipolar major depressive disorder. *Arch Gen Psychiatry.* Apr 2000;57(4):375-380.

**39.** Judd LL, **Paulus** MJ, Schettler PJ, Akiskal HS, Endicott J, Leon AC, Maser JD, Mueller T, Solomon DA, Keller MB. Does incomplete recovery from first lifetime major depressive episode herald a chronic course of illness? *Am.J.Psychiatry.* 2000;157(9):1501-1504.

**40.** **Paulus** MP, Varty GB, Geyer MA. The genetic liability to stress and postweaning isolation have a competitive influence on behavioral organization in rats. *Physiol Behav.* Jan 2000;68(3):389-394.

**41.** Varty GB, **Paulus** MP, Braff DL, Geyer MA. Environmental enrichment and isolation rearing in the rat: effects on locomotor behavior and startle response plasticity. *Biol.Psychiatry.* 2000;47(10):864-873.

**42.** **Paulus** MP, Hozack N, Zauscher B, McDowell JE, Frank L, Brown GG, Braff DL. Prefrontal, Parietal, and Temporal Cortex Networks Underlie Decision-Making in the Presence of Uncertainty. *Neuroimage.* 2001;13(1):91-100.

**43.** **Paulus** MP, Rapaport MH, Braff DL. Trait contributions of complex dysregulated behavioral organization in schizophrenic patients. *Biol.Psychiatry.* 2001;49(1):71-77.

**44.** Ralph RJ, **Paulus** MP, Fumagalli F, Caron MG, Geyer MA. Prepulse Inhibition Deficits and Perseverative Motor Patterns in Dopamine Transporter Knock-Out Mice: Differential Effects of D1 and D2 Receptor Antagonists. *J.Neurosci.* 2001;21(1):305-313.

**45.** Ralph RJ, **Paulus** MP, Geyer MA. Strain-specific effects of amphetamine on prepulse inhibition and patterns of locomotor behavior in mice. *J Pharmacol.Exp.Ther.* 2001;298(1):148-155.

**46.** Feinstein JS, Goldin PR, Stein MB, Brown GG, **Paulus** MP. Habituation of attentional networks during emotion processing. *Neuroreport.* 2002;13(10):1255-1258.

**47.** McDowell JE, Brown GG, **Paulus** M, Martinez A, Stewart SE, Dubowitz DJ, Braff DL. Neural correlates of refixation saccades and antisaccades in normal and schizophrenia subjects. *Biol.Psychiatry.* 2002;51(3):216-223.

**48.** **Paulus** MP, Hozack N, Frank L, Brown GG. Error Rate and Outcome Predictability Affect Neural Activation in Prefrontal Cortex and Anterior Cingulate during Decision-Making. *Neuroimage.* 2002;15(4):836-846.

**49.** **Paulus** MP, Hozack NE, Zauscher BE, Frank L, Brown GG, Braff DL, Schuckit MA. Behavioral and Functional Neuroimaging Evidence for Prefrontal Dysfunction in Methamphetamine-Dependent Subjects. *Neuropsychopharmacology.* 2002;26(1):53-63.

**50.** **Paulus** MP, Hozack NE, Zauscher BE, Frank L, Brown GG, McDowell J, Braff DL. Parietal dysfunction is associated with increased outcome-related decision-making in schizophrenia patients. *Biol Psychiatry.* 2002;51(12):995-1004.

**51.** Eyler Zorrilla LT, Jeste DV, **Paulus** M, Brown GG. Functional abnormalities of medial temporal cortex during novel picture learning among patients with chronic schizophrenia. *Schizophr.Res.* 2003;59(2-3):187-198.

**52.** Ludewig K, **Paulus** MP, Vollenweider FX. Behavioural dysregulation of decision-making in deficit but not nondeficit schizophrenia patients. *Psychiatry Res.* 2003;119(3):293-306.

**53.** Ludewig S, **Paulus** MP, Ludewig K, Vollenweider FX. Decision-making strategies by panic disorder subjects are more sensitive to errors. *J Affect.Disord.* 2003;76(1-3):183-189.

**54.** **Paulus** MP, Braff DL. Chaos and schizophrenia: does the method fit the madness? *Biol.Psychiatry.* 2003;53(1):3-11.

**55.** **Paulus** MP, Frank L, Brown GG, Braff DL. Schizophrenia Subjects Show Intact Success-Related Neural Activation but Impaired Uncertainty Processing during Decision-Making. *Neuropsychopharmacology.* 2003;28(4):795-806.

**56.** **Paulus** MP, Frank LR. Ventromedial prefrontal cortex activation is critical for preference judgments. *Neuroreport.* 2003;14(10):1311-1315.

**57.** **Paulus** MP, Hozack N, Frank L, Brown GG, Schuckit MA. Decision making by methamphetamine-dependent subjects is associated with error-rate-independent decrease in prefrontal and parietal activation. *Biol.Psychiatry.* 2003;53(1):65-74.

**58.** **Paulus** MP, Rogalsky C, Simmons A, Feinstein JS, Stein MB. Increased activation in the right insula during risk-taking decision making is related to harm avoidance and neuroticism. *Neuroimage.* 2003;19(4):1439-1448.

**59.** Powell SB, **Paulus** MP, Hartman DS, Godel T, Geyer MA. RO-10-5824 is a selective dopamine D4 receptor agonist that increases novel object exploration in C57 mice. *Neuropharmacology.* 2003;44(4):473-481.

**60.** Ralph-Williams RJ, **Paulus** MP, Zhuang X, Hen R, Geyer MA. Valproate attenuates hyperactive and perseverative behaviors in mutant mice with a dysregulated dopamine system. *Biol.Psychiatry.* 2003;53(4):352-359.

**61.** Tapert SF, Cheung EH, Brown GG, Frank LR, **Paulus** MP, Schweinsburg AD, Meloy MJ, Brown SA. Neural response to alcohol stimuli in adolescents with alcohol use disorder. *Arch.Gen.Psychiatry.* 2003;60(7):727-735.

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**CURRENT & PENDING SUPPORT**

**PAULUS, MARTIN P.**

ACTIVE

P20 DA027843 (Paulus) 03/15/10 - 02/28/14 2.64 calendar

NIH/NIDA $622,262

Center on Interoceptive Dysregulation in Addiction

This application requests initial support for an Exploratory Center for Translational Research on the

Clinical Neurobiology of Drug Addiction (CIDIA).

Role: Principal Investigator

R01 DA027797 (Paulus) 09/01/09 - 07/31/14 1.80 calendar

NIH/NIDA $216,068

Negative Reinforcement and Interoceptive Dysfunction in Stimulant Dependence

This application aims to determine the relationship between aversive interoceptive experience and decision-making in stimulant dependent individuals.

Role: Principal Investigator

I01 CX000273 (Paulus) 10/01/11 - 09/30/15 1.38 calendar (Contributed)

Department of Veterans Affairs $144,087

Does Amphetamine use Impair Brain Systems in OEF/OIF Veterans with PTSD?

To use functional MRI (fMRI) to predict how people with drug use problems do over time. In particular, we are interested in how decision-making and interoception, the way feelings are processed from the inside of the body, is affected by psychostimulants such as amphetamine.

Role: Principal Investigator

W911QY-12-C-0143 (Paulus) 09/14/12 - 03/13/14 (NCE) 1.20 calendar

DA/ARMY Misc Bases & Agen $163,783

Brain Basis for Mindfulness Skill Development to Reduce Stress in Special Warfighter Personnel: Prediction of Performance

This study will evaluate whether stress-resilience factors can be enhanced in a training setting. The Basic Reconnaissance Course (BRC) at the School of Infantry – West will be utilized as the platform for practice of mental skills during a stressful tactical skills assessment. Mechanisms underlying stress-resilience will be measured to assess the efficacy of mindfulness-based mental fitness training (MMFT) versus generic mental skills training (GMST), comparing both to a placebo group.

Role: Principal Investigator

N000141110958 (Paulus) 10/01/11 - 09/30/13 1.20 calendar

Office of Naval Research $63,387

Neural Mechanisms Underlying Resilience and Its Modification

The main goal of this research project is to identify the neural mechanisms of resilience and our ability to modify the neural substrates underlying resilience with a previously validated technique.
Role: Principal Investigator

R01 MH042984 (Kaye) 04/01/09 - 03/31/14 0.60 calendar

NIH/ NIMH $348,595

Neurobiology of Anorexia and Bulimia Nervosa

This project aims to determine the brain changes during reward and taste processing in recovered individuals with anorexia or bulemia nervosa.

Role: Co-Investigator

P50 DA026306 (Grant) 09/01/09 - 05/31/14 0.60 calendar

NIH/NIDA $2,116,631

Translational Methamphetamine AIDS Research Center (TMARC)

The major goal of this project is to examine the effect of both HIV/AIDS and methamphetamine on brain activation during reward processing and risk-taking.

Role: Co-Investigator

R01 MH071916 (Perry) 06/01/10 - 02/28/15 0.60 calendar

NIH/NIMH $279,395

Inhibitory Deficits in Human and Animal Models of Bipolar Disorder

The primary focus of this translational project is to assess deficits in three domains of inhibition in manic bipolar disorder patients and in parallel animal models based on pharmacological challenges and gene engineering technology.

Role: Co-Investigator

PENDING

R01 MH101453 (Paulus) 09/01/13 - 06/30/17 1.20 calendar

NIH/NIMH $351,289

Latent Constructs: Negative-Positive Valence Domains in Anxiety and Depression

The aim of this project is to fill this critical gap by validating a battery of measures including brain imaging, psychophysiology, behavior, and self-report that will reliably assess positive and negative valence system functioning in a broad sample of individuals referred for treatment of anxiety and/or depression.

Role: Principal Investigator

R01 AA022974 (Paulus) 04/01/14 – 03/31/19 1.20 calendar

NIH/NIAAA $351,093

Approach Avoidance Training for Abstinence in Alcohol Dependent Veterans

This project will combine a novel computerized Approach-Avoidance Training procedure and functional brain imaging to investigate the malleability of brain systems that regulate the urge to use alcohol, thereby identifying new ways to train the brain to abstain from alcohol.

Role: Principal Investigator

R01 DA037495 (Paulus) 04/01/14 – 03/31/19 2.40 calendar

NIH/NIDA $346,303

Neural Mechanisms of Recovery in Stimulant Dependence

This project aims to examine how brain function recovers during the course of 1 year of sobriety from the drug. We will examine the question whether better recovery is associated with longer sobriety and whether certain characteristics can predict brain recovery.

Role: Principal Investigator

R21 DA037498 (Paulus) 04/01/14 – 03/31/16 1.20 calendar

NIH/NIDA $125,000

Context Dependent Valuation in Methamphetamine Dependent Individuals

This project will use functional magnetic resonance neuroimaging to determine the neural substrates mediating the role of body sensations in decision-making. This research may identify novel targets for therapeutic intervention and provide a means of quantifying treatment progress.

Role: Co-Principal Investigator